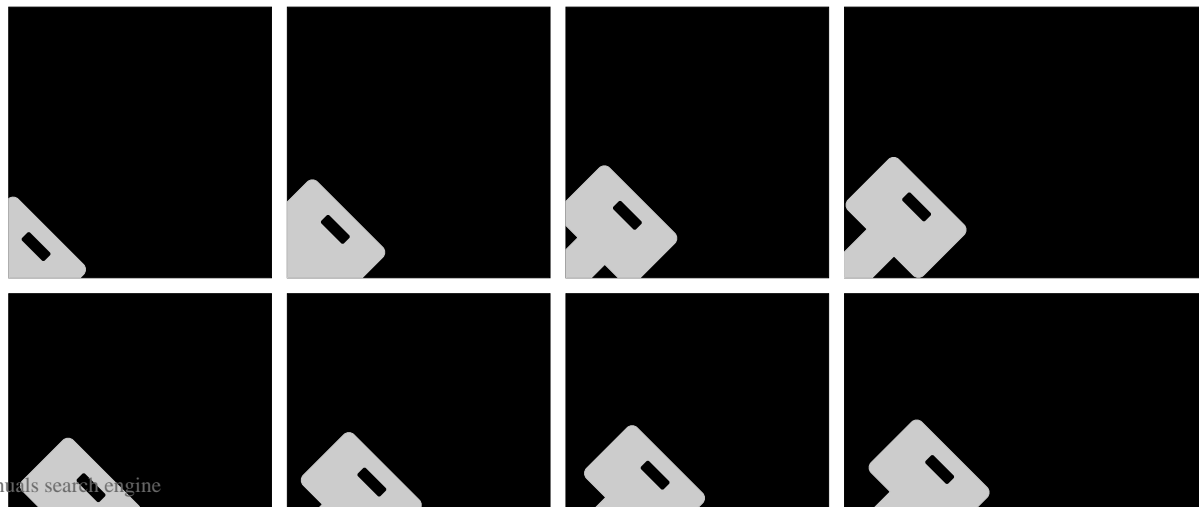




Owner's Manual

2008 Model

FK/FM



OWNER AND VEHICLE INFORMATION

OWNER NAME: _____

USER/COMPANY NAME: _____

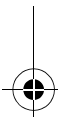
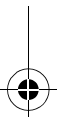
MAILING ADDRESS: _____

CITY, STATE: _____ ZIP: _____

VEHICLE IDENTIFICATION NUMBER: _____

DATE OF DELIVERY (WARRANTY START DATE): _____ / _____ / _____
MO. DAY YR.

SELLING DEALER IMPRINT HERE



Foreword

Thank you for purchasing a Mitsubishi Fuso FK/FM series truck.

This owner's manual explains proper vehicle handling, simple maintenance practices, and the periodic maintenance schedule to ensure that you are able to drive your vehicle safely and comfortably.

As improper use of the vehicle may result in a breakdown or cause an accident, we urge you to read this manual thoroughly before operating the vehicle.

Please keep this manual in the vehicle so it is always available for reference. If you sell the vehicle, make sure the next owner receives this manual and is aware of its contents.



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Reading the handbook

- The information in this manual is accurate as of the time of printing. Because of differences in specifications and improvements that may be added after preparation of this manual, some of the explanations and illustrations in this manual may not apply to your vehicle.

- The following symbols are used throughout this manual:

 : optional equipment

 : requests that reader should refer to the page of the number indicated.

- This manual contains important cautionary instructions and supplementary information under the following four headings which identify the nature of the instructions and information:

 **DANGER**

Precautions that should be taken when handling dangerous substances such as battery fluid in order to prevent a serious injury.

 **WARNING**

Precautionary instructions, which, if not observed, could result in serious injury or death.

 **CAUTION**

Precautionary instructions, which, if not observed, could result in damage to or destruction of equipment or parts.

NOTE:

Suggestions or supplementary information for more efficient use of equipment or better understanding.

- California Proposition 65 Warning

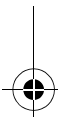
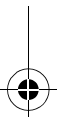
 **DANGER**

THIS PRODUCT CONTAINS OR EMITS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

CONTENTS

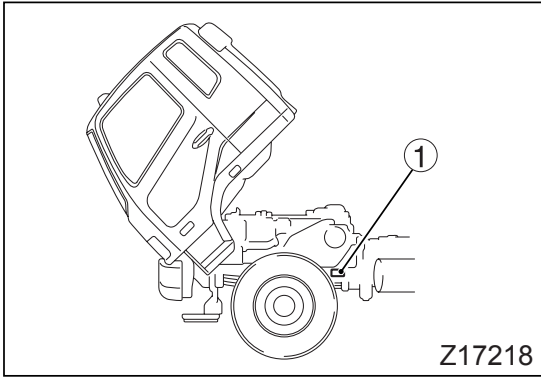
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17. Maintenance record	17-1

Each chapter has a table of contents on its first page.



1. Recommendation to drivers

Chassis and engine numbers	1-2
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Vehicle identification number (VIN)	1-3
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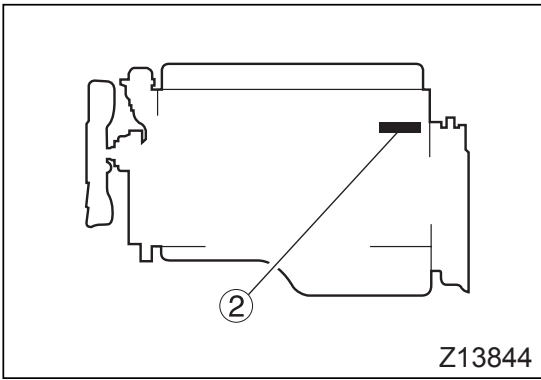
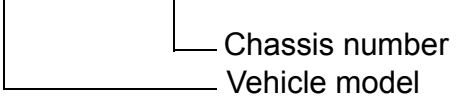


Chassis and engine numbers

1 Chassis number

The chassis number ① is indicated on the left frame, near the left front wheel.

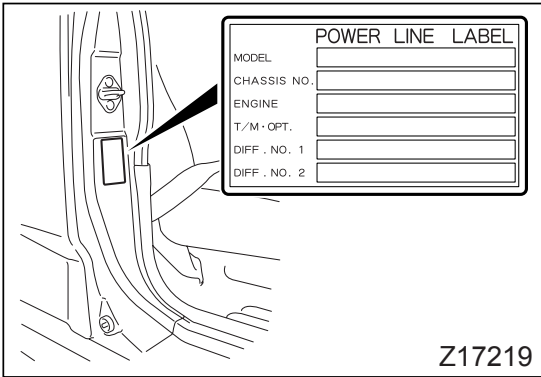
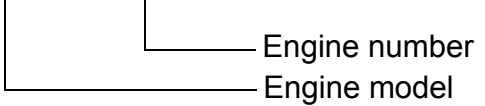
Example: FK61FJ - □□□□□□



2 Engine number

The engine number ② is indicated on the left side of the crankcase.

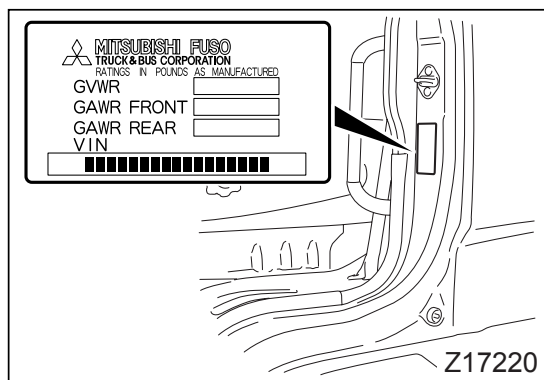
Example: 6M6 - □□□□□□



POWER LINE LABEL	
MODEL	□□□□□□
CHASSIS NO.	□□□□□□
ENGINE	□□□□□□
T./M. OPT.	□□□□□□
DIFF. NO. 1	□□□□□□
DIFF. NO. 2	□□□□□□

Powerline label

The powerline label located in the position shown indicates the vehicle model, chassis number and information relevant to the vehicle's power transmission components.



Vehicle identification number (VIN)

The VIN is stamped on a plate that is located as shown in the illustration.

The VIN comprises 17 numbers and letters, the meanings of which are listed below.

J L 6 D F F 1 E ■ 8 K ■■■■■■

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

- | | |
|-------------------------------------|---|
| ① Country | J: Japan |
| ② Make | L: Mitsubishi Fuso |
| ③ Type | 6: Incomplete vehicle |
| ④ Gross vehicle weight/Brake system | D: 19,501 to 26,000 lbs./Air over hydraulic
F: 26,001 to 33,000 lbs./Full air
H: 19,501 to 26,000 lbs./Full air |
| ⑤ Line | F: FK61F
J: FM65F
K: FK62F
L: FK65F |
| ⑥ Series (Wheel base) | F: 3.5 to 3.79 m (11.48 to 12.43 ft.)
J: 4.4 to 4.69 m (14.43 to 15.38 ft.)
K: 4.7 to 4.99 m (15.41 to 16.37 ft.)
L: 5.0 to 5.29 m (16.40 to 17.35 ft.)
M: 5.3 to 5.59 m (17.38 to 18.33 ft.)
P: 5.9 to 6.19 m (19.35 to 20.30 ft.)
S: 6.2 to 6.59 m (20.34 to 21.62 ft.) |
| ⑦ Cab/chassis type | 1: Chassis cab |
| ⑧ Engine | E: 7.545 L diesel turbo charged and charge air cooled |
| ⑨ Check digit | |
| ⑩ Model year | 8: 2008 |
| ⑪ Plant | K: Kawasaki |
| ⑫ Plant sequential No. | |



Z00011

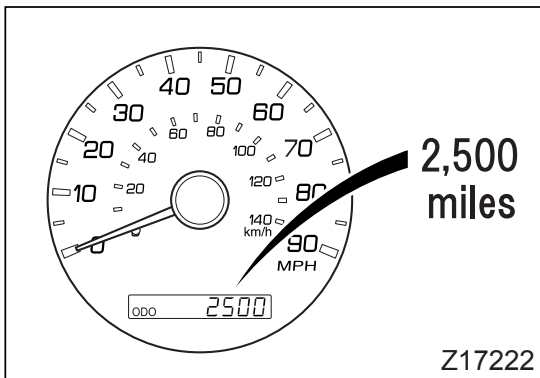
Maintenance

Checking your vehicle at regular intervals is very important for maximizing performance and extending service life. It is recommended that you make a habit of performing the following inspections.

This manual describes simple maintenance checks and procedures that can be carried out by the owner. If you have difficulty or your vehicle needs maintenance work that is not shown in this manual, please refer to an authorized dealer.

1 New vehicle inspection

After you have driven the first 4,000 km (2,500 miles), your vehicle requires a special inspection and adjustments to compensate for the initial run-in of various parts. When the distance has been reached, have your vehicle inspected by an authorized dealer by showing them this Owner's Manual.



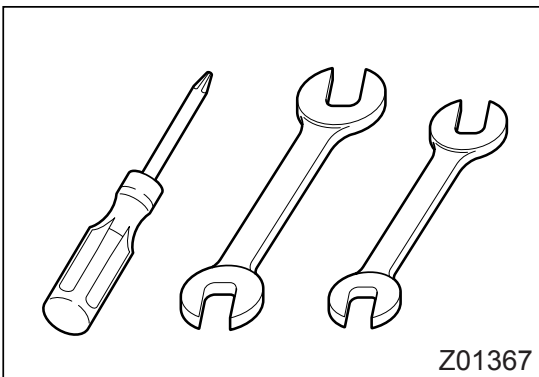
Z17222

2 Pre-operational check

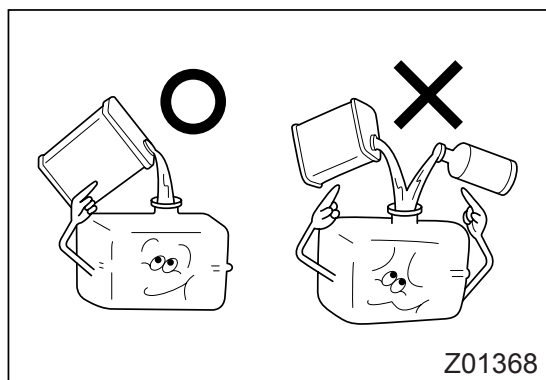
Make a habit of checking your vehicle at the start of every day's operation. This will ensure safe and comfortable operation. ⇨ P. 12-11

3 Periodic inspection

- In addition to maximizing the vehicle's working life, regular inspections also help prevent accidents. Periodic inspection is based on either the distance traveled (odometer reading) or period of use (months/years).
- The intervals between and content of periodic inspections are as shown in the Maintenance Schedule section. Please adhere to the maintenance schedule carefully.



Z01367



Fuels

Use only diesel fuel, without any additives, for diesel engines installed in Mitsubishi Fuso trucks.

1 Diesel-fuel properties

The following recommendations concerning diesel fuel used with Mitsubishi Fuso diesel engines are given for optimum fuel economy and performance.

Use condition	Recommendation
Normal operation at temperatures above -12°C (10°F)	ASTM D-975 Grade Ultra Low Sulfur Grade 2-D*
Operation at temperatures below -12°C (10°F), or long-hour no-load operation.	ASTM D-975 Grade Ultra Low Sulfur Grade 1-D*

NOTE:

* ASTM is an acronym for the American Society for Testing and Materials which recommends fuel containing 0.0015% – basis 15 ppm sulfur or less sulfur content.

Note that a sulfur content exceeding 0.0015% – basis 15 ppm sulfur deteriorates the performance of emission control device.

To meet fuel requirements, it is necessary to obtain cooperation from a reputable fuel oil supplier. Both fuel suppliers and users are responsible for keeping fuel clean.

2 Diesel fuel to be used in your engine

Use only a ultra low sulfur diesel fuel (with a sulfur content of 15 ppm or lower) for refueling your Mitsubishi Fuso diesel engine. Otherwise, the catalyst inside the diesel particulate filter (DPF) will not work effectively and the DPF's performance of removing small particles (particulate matter or PM) in exhaust gases will be degraded. Furthermore, your truck will not meet emission regulations if you replenish it with a non-approved fuel.

3 Danger of fire and explosion by using mixed fuel

Do not use diesel fuel mixed with gasoline, gasohol and/or alcohol. Fuel containing 5% gasoline has a flash point as low as 0°C (32°F), which can lead to a fire or explosion while the engine is running.

DANGER

- **NEVER MIX DIESEL FUEL WITH GASOLINE, GASOHOL OR ALCOHOL. USE OF FUEL MIXED WITH ONE OR MORE OF THESE COULD LEAD TO A FIRE OR EXPLOSION INVOLVING SERIOUS INJURY, DEATH OR PROPERTY DAMAGE.**
- **IF YOU MISTAKENLY FILL THE FUEL TANK WITH A MIXED FUEL, DRAIN OUT ALL THE FUEL FROM THE FUEL SYSTEM.**

4 Adverse effects of mixed fuel on engine

Using diesel fuel mixed with gasoline, alcohol, or both, has the following adverse effects on the engine:

- Fuel viscosity becomes lower, resulting in excessive wear, damage, and failure of fuel system parts.
- Difficulty in starting the engine will result due to a reduced cetane number.

CAUTION

- **The lower the cetane number, the more likely internal engine damage will occur.**
- **If dirt blocks the fuel tank breather (air hole), the tank may deform and the fuel injection system may fail. Be sure to clean them regularly.**

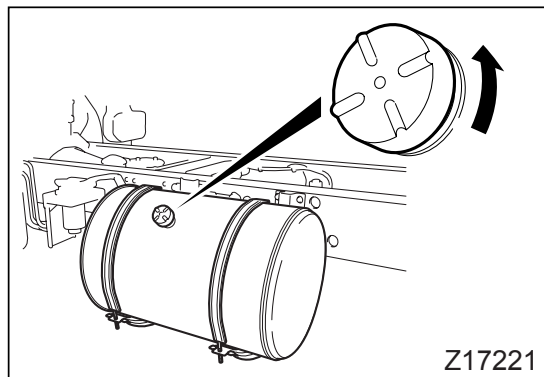
5 Refueling

WARNING

- **Stop the engine before fueling.**
- **Never smoke when fueling since diesel fuel could ignite or explode. Never operate lighters or other items that emit sparks.**

CAUTION

When refueling the vehicle, take care to prevent dirt and water from entering the fuel tank.



The fuel tank is on the left-hand side of the vehicle. To open the cap, slowly turn it counterclockwise. To close the cap, turn it fully clockwise.

Fuel tank capacity	200 liters (52.8 gallons)
--------------------	---------------------------

WARNING

If you inadvertently put gasoline in the fuel tank, pump it all out. Running the engine with gasoline in the tank could cause a fire or explosion endangering your or other people's lives.

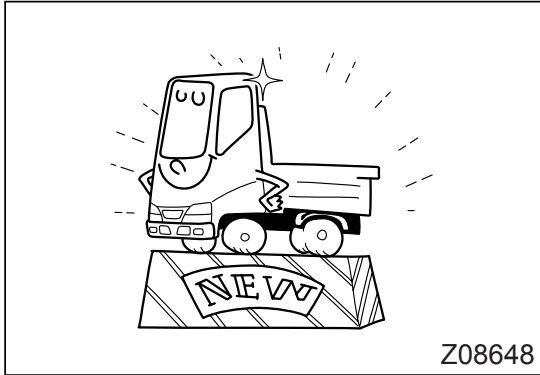
CAUTION

Be careful not to allow the engine to run out of fuel. Engine stall resulting from an empty tank could cause damage to the fuel injection system.

NOTE:

Air will be present in the fuel system after the engine has run out of fuel. This air will prevent the engine from restarting even after it is adequately refueled. You must bleed the fuel system before the engine can be started.

⇒  P. 13-26



Z08648

Handling of the new vehicle

The way the vehicle is handled when new greatly affects its subsequent performance and service life. Observe the following precautions when handling the new vehicle.

1 Maintenance

The "new vehicle inspection" is very important for extending the service life of your vehicle. We strongly recommend that you have this inspection carried out by an authorized dealer. Be sure to give the dealer this manual at that time.

During the initial run-in period, oil is quickly contaminated. Replace the following oils at the time of the "new vehicle inspection".

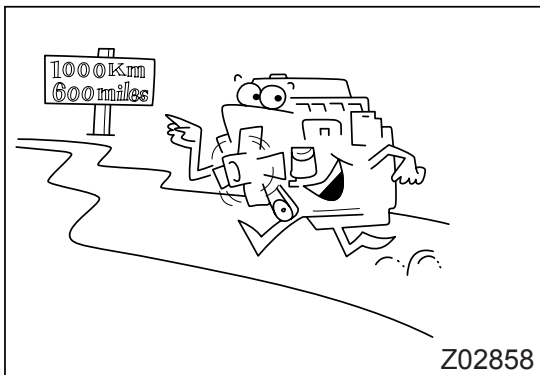
At 4,000 km (2,500 miles)

- Engine oil
- Manual transmission gear oil
- Axle housing gear oil

2 Maximum engine speed during run-in period

To avoid overburdening the new engine, limit engine RPM to those listed below for the first 1,000 km (600 miles).

Then, run in your vehicle step by step at various speeds, beginning with low gears.



Z02858

Maximum engine speed during run-in period	2,000 rpm
---	-----------

Reporting safety defects

If you believe that your vehicle has a defect that could cause a crash or could cause injury or death, you should immediately inform both the National Highway Traffic Safety Administration (NHTSA) and Mitsubishi Fuso Truck of America, Inc. (MFTA).

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or MFTA.

To contact NHTSA, you may either call the Vehicle Safety Hotline at 1-888-327-4236 (TTY: 1-800-424-9153) or write to: Administrator, National Highway Traffic Safety Administration, 400 Seventh Street, S.W., Washington, DC 20590.

You can also obtain other information about motor vehicle safety from the Vehicle Safety Hotline.

For further information, please visit the following NHTSA website:

<http://www.safercar.gov>

Obtaining service

At Mitsubishi Fuso Truck of America, Inc. (MFTA), we are proud of the quality and workmanship that is built into every MFTA Truck. We are equally proud of our corporate commitment to promote the highest possible degree of customer satisfaction with our products and services.

Today's trucks are extremely complex and are comprised of an enormous number of individual parts. Occasionally, a failure of one of these parts may occur. Should you experience such a failure, we are confident that you will find an Authorized Dealer prepared to provide you with high quality service. Every Authorized Dealer has trained personnel, plus the tools and equipment necessary to provide for your various service needs. In the event that a problem arises, we ask you to follow the procedure outlined as follows, and in the sequence listed:

STEP 1: Contact your Nearest Authorized Dealer

This is the most direct and expedient way to obtain service. Each Authorized Dealer has the ultimate responsibility for providing the services and repairs you may need. We recommend that you contact the Service Manager of your nearest Authorized Dealer for assistance. In the event that you feel additional assistance is required, ask to speak to the General Manager of the Authorized Dealer.

STEP 2: Contact MFTA

After the completion of Step 1, and in the event that your nearest Authorized Dealer has been unable to satisfactorily resolve the problem, please contact MFTA's Customer Service Representative at **1-877-711-0707**.

Please be prepared to provide the following information when you call:

- Your Name, Company Name, Address, Telephone Number
- Vehicle Model
- Vehicle Model Year
- Vehicle Identification Number
- Mileage
- Name of Dealer contacted under Step 1, if applicable
- Details of the Complaint/Comment

You also may correspond with the Customer Service Representative in writing, addressed to:

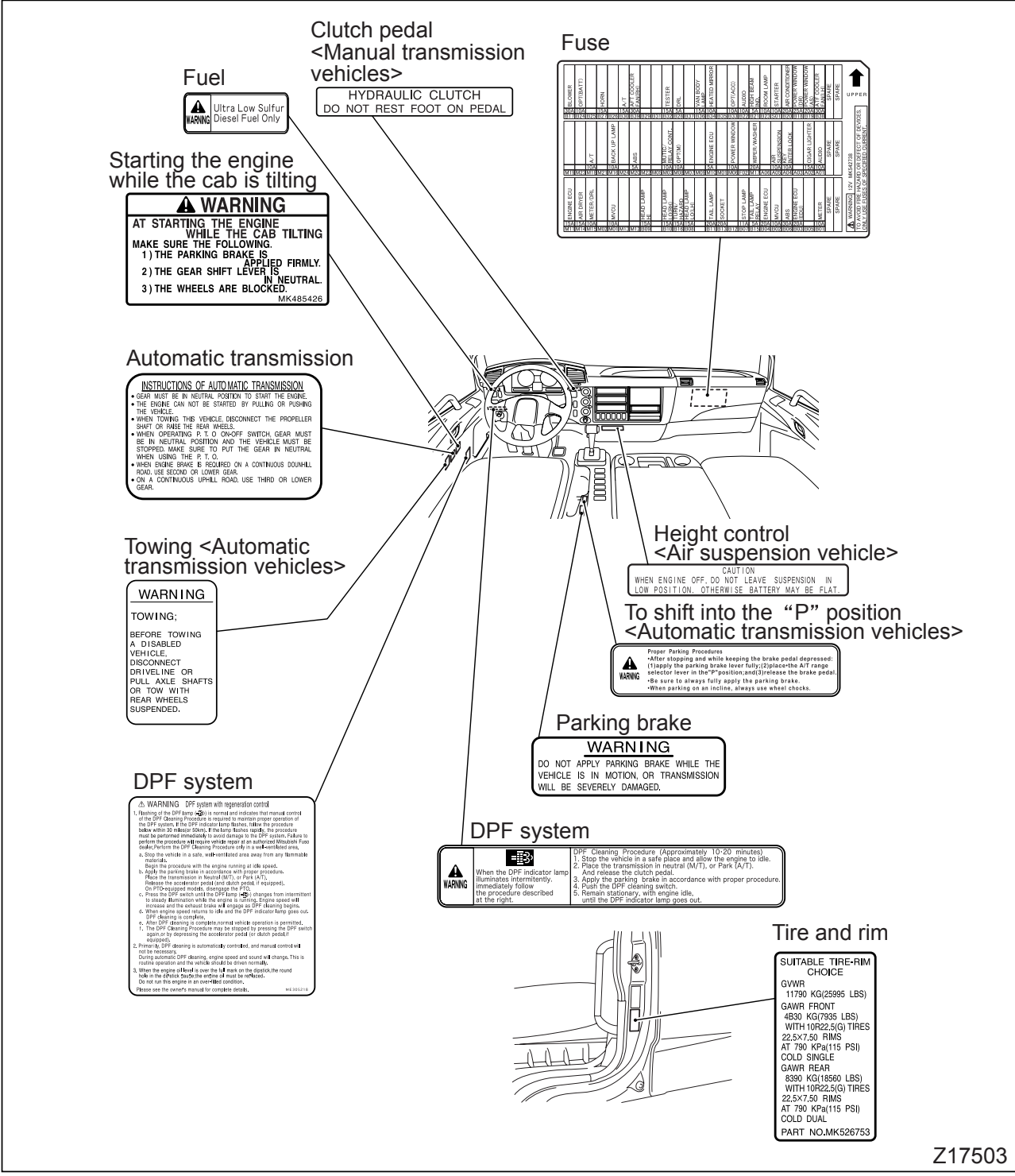
MITSUBISHI FUSO TRUCK OF AMERICA, INC.
CUSTOMER SERVICE REPRESENTATIVE
2015 CENTER SQUARE RD.
LOGAN TOWNSHIP, NJ 08085

2. Warning labels

Locations in cab 2-3
Locations outside cab 2-4

- The caution and warning labels show important information. Be sure to read them before using the vehicle.
- If any label has peeled so it is difficult to read, is scratched or otherwise damaged, or has peeled off completely, please inform an authorized dealer. The warning and caution labels apply only to the vehicle itself, not to any equipment mounted on the vehicle. For information on caution and warning labels that apply to equipment mounted on the vehicle, please refer to the Owner's Manual supplied by the manufacturer of the equipment.
- The caution and warning labels are located in the cab as shown below. Samples of these labels are indicated in this and following pages.

Locations in cab



Fuel
 Ultra Low Sulfur Diesel Fuel Only

Clutch pedal
 <Manual transmission vehicles>
 HYDRAULIC CLUTCH
 DO NOT REST FOOT ON PEDAL

Fuse

RECOVER	(OPTIONAL)	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355	360	365	370	375	380	385	390	395	400	405	410	415	420	425	430	435	440	445	450	455	460	465	470	475	480	485	490	495	500	505	510	515	520	525	530	535	540	545	550	555	560	565	570	575	580	585	590	595	600	605	610	615	620	625	630	635	640	645	650	655	660	665	670	675	680	685	690	695	700	705	710	715	720	725	730	735	740	745	750	755	760	765	770	775	780	785	790	795	800	805	810	815	820	825	830	835	840	845	850	855	860	865	870	875	880	885	890	895	900	905	910	915	920	925	930	935	940	945	950	955	960	965	970	975	980	985	990	995	1000
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Starting the engine while the cab is tilting
WARNING
 AT STARTING THE ENGINE WHILE THE CAB TILTING MAKE SURE THE FOLLOWING:
 1) THE PARKING BRAKE IS APPLIED FIRMLY.
 2) THE GEAR SHIFT LEVER IS IN NEUTRAL.
 3) THE WHEELS ARE BLOCKED.
 MK485426

Automatic transmission
INSTRUCTIONS OF AUTOMATIC TRANSMISSION
 • GEAR MUST BE IN NEUTRAL POSITION TO START THE ENGINE.
 • THE ENGINE CAN NOT BE STARTED BY PULLING OR PUSHING THE VEHICLE.
 • WHEN TOWING THIS VEHICLE, DISCONNECT THE PROPELLER SHAFT OR HUBS OF THE REAR WHEELS.
 • WHEN OPERATING P, T, O ON-OFF SWITCH, GEAR MUST BE IN NEUTRAL POSITION AND THE VEHICLE MUST BE STOPPED. MAKE SURE TO PUT THE GEAR IN NEUTRAL WHEN USING THE P, T, O.
 • WHEN ENGINE BRAKE IS ENGAGED ON A CONTINUOUS DOWNHILL ROAD, USE SECOND OR LOWER GEAR.
 • ON A CONTINUOUS UPHILL ROAD, USE THIRD OR LOWER GEAR.

Towing <Automatic transmission vehicles>
WARNING
TOWING:
 BEFORE TOWING A DISABLED VEHICLE, DISCONNECT DRIVE LINE OR PULL AXLE SHAFTS OR TOW WITH REAR WHEELS SUSPENDED.

DPF system
WARNING DPF system with regeneration control
 1. Flashing of the DPF lamp () is normal and indicates that manual control of the DPF cleaning procedure is required to maintain proper operation of the DPF system. If the DPF indicator lamp flashes, follow the procedure below within 10 minutes. After 10 minutes, the procedure must be performed immediately to avoid damage to the DPF system. Failure to perform the procedure will require vehicle repair at an authorized Mitsubshi Truck Sales Center. The DPF cleaning procedure will be a self-ventilating one.
 2. Stop the vehicle in a safe, well-ventilated area away from any flammable materials.
 3. Begin the procedure with the engine running at idle speed.
 4. Apply the parking brake in accordance with proper procedure.
 5. Place the transmission in Neutral (N/T), or Park (A/T).
 6. Release the accelerator pedal and clutch pedal, if equipped.
 7. On P/D-equipped models, disengage the PDS.
 8. Press the DPF switch until the DPF lamp () changes from intermittent to steady illumination while the engine is running. Engine speed will increase and the exhaust color will change to the DPF cleaning begins.
 9. When engine speed returns to normal and the DPF indicator lamp goes out, DPF cleaning is complete.
 10. After DPF cleaning is complete, normal vehicle operation is permitted.
 11. The DPF cleaning procedure may be stopped by pressing the DPF switch again or by depressing the accelerator pedal on clutch pedal-equipped models.
 12. Properly, DPF cleaning is automatically controlled, and manual control will not be necessary.
 During automatic DPF cleaning, engine speed and sound will change. This is normal operation and the vehicle should be driven normally.
 13. When the engine oil level is low, the oil level must be checked. Make the oil level in the engine oil tank be at the mark for the level.
 Do not run the engine in an overheat condition.
 Please see the owner's manual for complete details. WJ02222

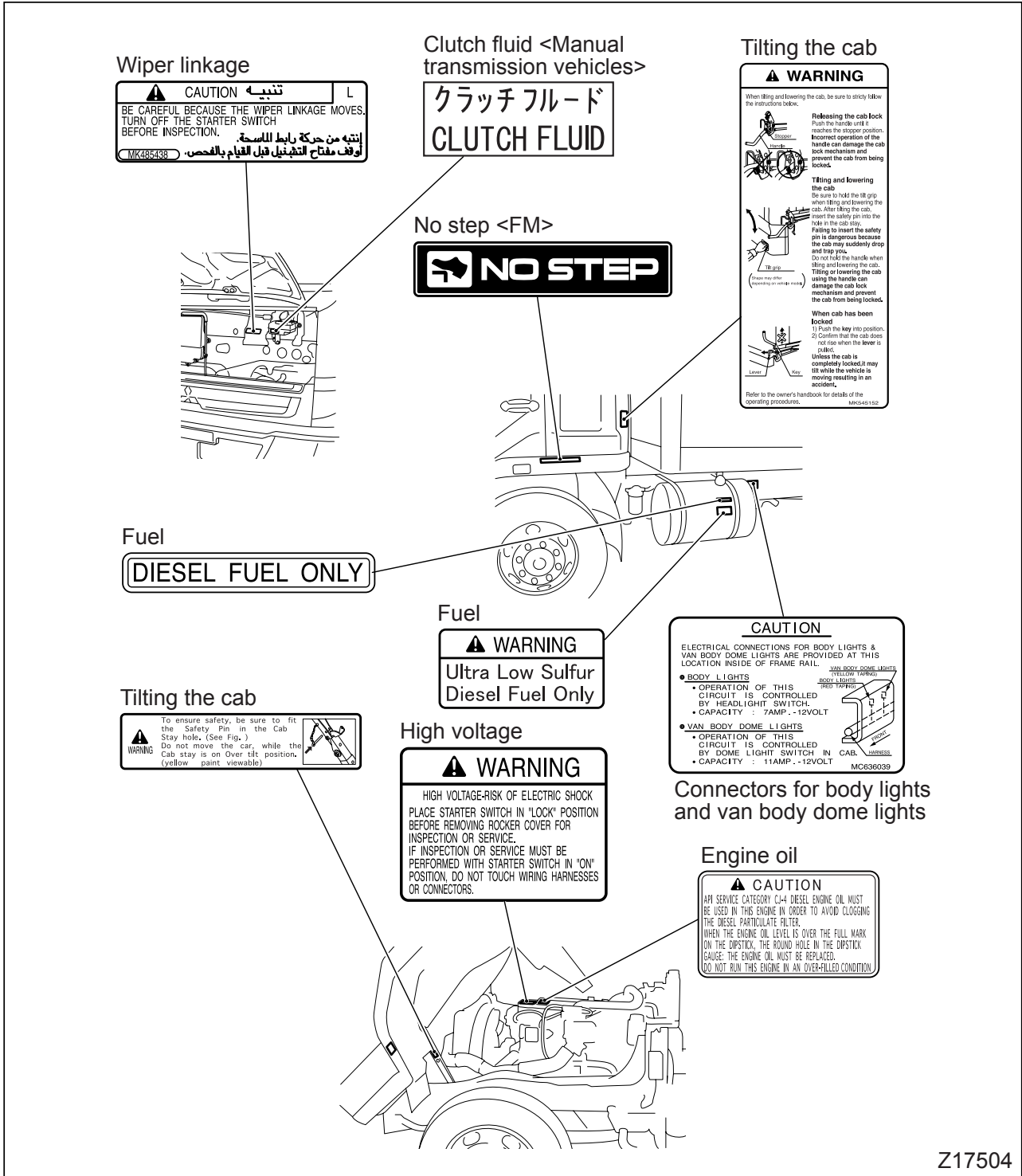
Parking brake
WARNING
 DO NOT APPLY PARKING BRAKE WHILE THE VEHICLE IS IN MOTION, OR TRANSMISSION WILL BE SEVERELY DAMAGED.

DPF system
WARNING When the DPF indicator lamp illuminates intermittently, immediately follow the procedure described at the right.
DPF Cleaning Procedure (Approximately 10-20 minutes)
 1. Stop the vehicle in a safe place and allow the engine to idle.
 2. Place the transmission in Neutral (N/T), or Park (A/T). And release the clutch pedal.
 3. Apply the parking brake in accordance with proper procedure.
 4. Push the DPF cleaning switch.
 5. Remain stationary, with engine idle, until the DPF indicator lamp goes out.

Height control <Air suspension vehicle>
CAUTION
 WHEN ENGINE OFF, DO NOT LEAVE SUSPENSION IN LOW POSITION, OTHERWISE BATTERY MAY BE FLAT.
To shift into the "P" position <Automatic transmission vehicles>
WARNING
Proper Parking Procedures
 • After stopping and while keeping the brake pedal depressed:
 1) Apply the parking brake lever fully. 2) Place the A/T range selector lever in the "P" position, and 3) release the brake pedal. Be sure to always fully apply the parking brake.
 • When parking on an incline, always use wheel chocks.

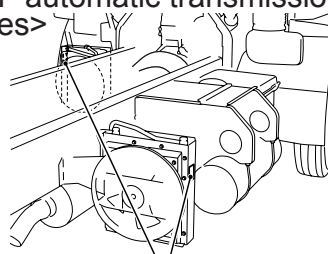
Tire and rim
SUITABLE TIRE-RIM CHOICE
 GWR
 11790 KG(25995 LBS)
 GAWR FRONT
 4830 KG(7935 LBS)
 WITH 10R22.5(G) TIRES
 22.5X7.50 RIMS
 AT 790 KPa(115 PSI)
 COLD SINGLE
 GAWR REAR
 8390 KG(18560 LBS)
 WITH 10R22.5(G) TIRES
 22.5X7.50 RIMS
 AT 790 KPa(115 PSI)
 COLD DUAL
 PART NO.MK526753

Locations outside cab



Z17504

<FM65F automatic transmission vehicles>

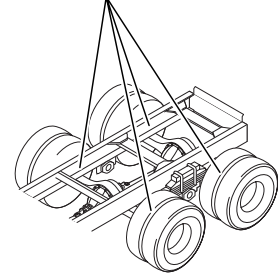


DANGER
HOT

Automatic transmission oil cooler

<Other than FK61F> Brake chamber

<p>警告 WARNING</p> <p>必ずサービス・メンテナンスの指示に従って作業を行ってください。誤った作業は、人身の怪我や機器の故障の原因となります。</p> <p>Always follow the service and maintenance instructions. Improper work may cause personal injury or equipment damage.</p>	<p>مهم</p> <p>دائمياً اتبعوا تعليمات الصيانة والخدمة التي في دليل الصيانة. العمل الخاطئ قد يتسبب في إصابة الأشخاص أو إتلاف المعدات.</p> <p>Always follow the PISOBACK service and maintenance instructions. Strictly observe service instructions and safety precautions for fluid maintenance. PISOBACK. Replace the PISOBACK hose every 3 years.</p>
--	---



<FK> Battery

INDICATOR SIGN
CHARGING OR ADDING DISTILLED WATER IS NECESSARY

MAINTENANCE FREE BATTERY
Normally the battery does not require additional water. However, adding distilled water may be necessary during the battery life.

DISTR. BY MITSUBISHI FUSO TRUCK OF AMERICA INC., LOGAN TOWNSHIP NEW JERSEY 08055

DANGER/POISON

DO NOT TOUCH WITH CARE TO PREVENT.

FLUSH EYES IMMEDIATELY WITH WATER

DO NOT GET ON CLOTHING

DO NOT GET ON SKIN

DO NOT GET ON FACE

DO NOT GET ON MOUTH

DO NOT GET ON HANDS

DO NOT GET ON FEET

DO NOT GET ON SHOES

DO NOT GET ON GLOVES

DO NOT GET ON SHOES

Starting the engine

WARNING

DO NOT USE ETHER OR OTHER VAPOR COMPOUND TYPE STARTING AIDS. USE OF SUCH FLUID ON THIS ENGINE COULD RESULT IN SERIOUS DAMAGE.

Air cleaner

Element Handling Attention

1. There is no need to clean this element. Even before it's recommended life, clean the element immediately only if the indicator light frequently.
2. If the indicator still lights after cleaning the element, replace immediately with a new element.
3. Replace element every 80,000mi(50,000kms).
4. Do not use the old element.
5. Do not install the safety element.

Air cleaner No. _____
Element No. _____

High current fuses

FH1 50A	FH2 40A	FH3 40A	FH4 40A	FH5 50A	FH7 40A	FH8 40A
FH6 140A	CAUTION! TO AVOID FIRE HAZARD, ONLY USE FUSES OF SPECIFIED CURRENT.		注意/注意! 火災の危険を回避するため、指定の電流のヒューズを使用してください。			

<FM> Battery

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CHARGING OR ADDING DISTILLED WATER IS NECESSARY

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Air cleaner

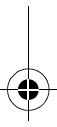
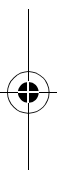
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Air cleaner No. _____
Element No. _____

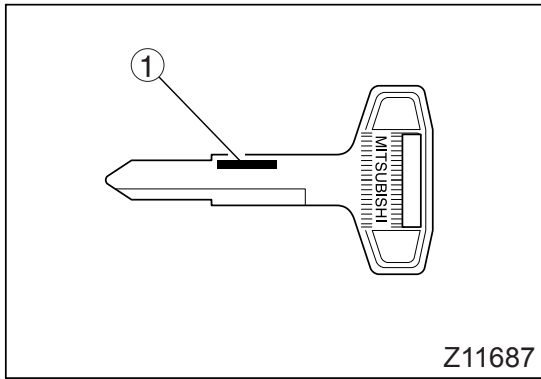
High current fuses

FH1 50A	FH2 40A	FH3 40A	FH4 40A	FH5 50A	FH7 40A	FH8 40A
FH6 140A	CAUTION! TO AVOID FIRE HAZARD, ONLY USE FUSES OF SPECIFIED CURRENT.		注意/注意! 火災の危険を回避するため、指定の電流のヒューズを使用してください。			



3. Opening and closing

Starter key	3-2
Doors	3-2
Central door locks	3-4
Keyless entry system	3-5
Entering and leaving the vehicle	3-10
Door window glass	3-11
Rear quarter window	3-13



Starter key

- Your vehicle is provided with two identical starter keys.
- The starter key can be used to start and stop the engine and lock and unlock the doors.
- Make a note of your starter key number ① so that you can order a replacement key from an authorized dealer in the event that it is lost.

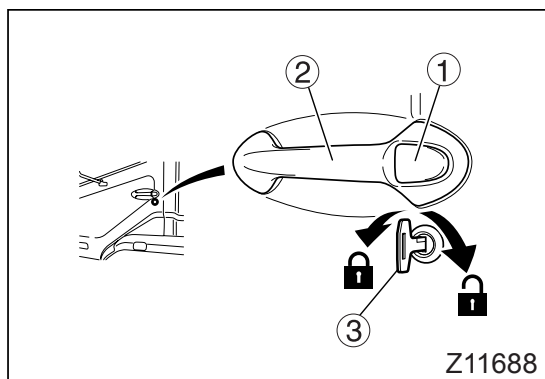
Doors

WARNING

- To help prevent accidents, always check for vehicles and pedestrians approaching from behind before opening the doors.
- Driving with a door ajar can be very dangerous. Make sure the doors are completely closed before starting.
- Exercise caution when opening a door in strong wind. Otherwise, the wind could catch the door and suddenly blow it open.
- Exercise caution when opening a door on a downward slope. Otherwise, the inclination of the vehicle could cause the door to suddenly fall open.
- When leaving the vehicle, take with you any children or pets who were riding in the cab. Never leave children or pets in the cab. A child left in the cab could interfere with the vehicle, causing it to move or catch fire. Also, the cab gets extremely hot in sunshine and in hot weather so a child left in the cab could suffer heatstroke.
- When closing a door, be careful not to trap your hand or anything else.

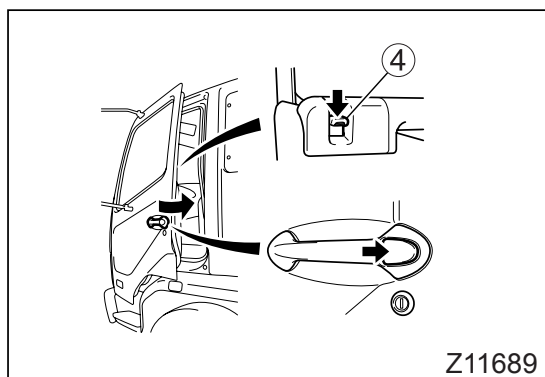
CAUTION

- Avoid applying undue force to a door when opening or closing it; otherwise the door could be damaged.
- Do not swing on or hang anything heavy on any of the doors. Doing so could damage the door components.



1 From the outside

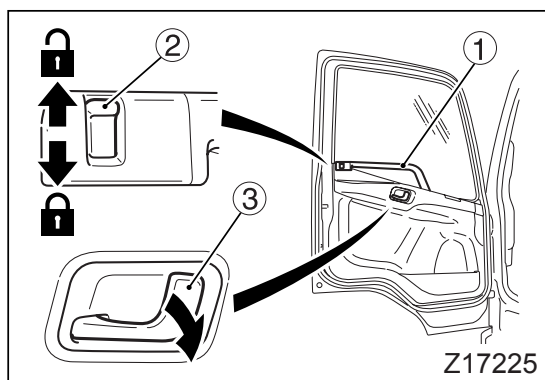
- To open, pull outer handle ② toward you while pressing button ①.
- Use starter key ③ to lock or unlock the door.



- To lock the door without using starter key, press lock knob ④ to the lock position and then, while pressing the button, close the door.

NOTE:

- When you lock the driver's door using the starter key or by lowering the lock knob, the passenger's door is automatically also locked.
- When you leave your vehicle, be sure to remove the starter key from the starter switch and lock all doors to prevent theft.
- Be careful not to lock the doors with the starter key inside the vehicle.

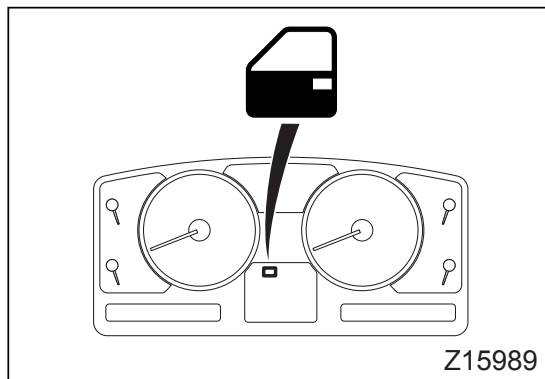


2 From the inside


- To close, pull door waist bar ①. Be sure to close the door completely.
- To lock, press lock knob ②.
- To open, raise the lock knob and pull inner handle ③.

CAUTION

Closing the door by pulling any part other than the waist bar could damage the door mechanism.

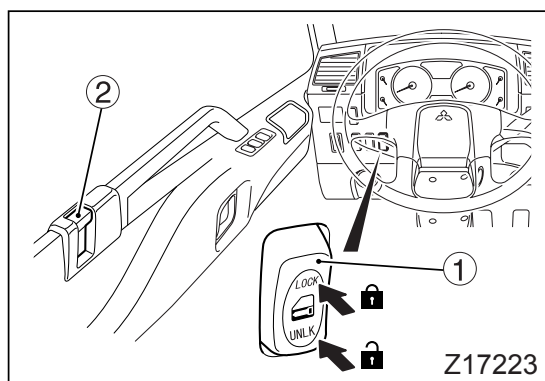


3 When the door is open

The  indicator lamp illuminates when the door is opened or not closed completely with the starter key in the ON position. If the door does not close completely, close it again properly.

NOTE:

With the interior lamp switch in the “•” position, the interior lamp illuminates whenever the door is opened.



Central door locks

- When the “LOCK” side of the switch ① is pressed, both doors are locked. When the “UNLK” side of the switch is pressed, both doors are unlocked.
- When the lock knob ② on the driver’s door is lowered, the passenger’s door is also automatically locked. If the lock knob on either door is subsequently lifted, only that door is unlocked.
- When the driver’s door is locked from the outside using the starter key, the passenger’s door is automatically also locked. If the starter key is subsequently used to unlock either door, the other door remains locked.

Keyless entry system

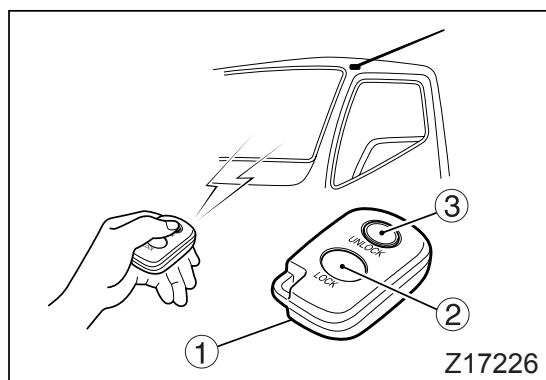
1 The Grant of Equipment Authorization certificate for wireless transmitter (remote control switch) H7027*-00-00

TCB	<p>GRANT OF EQUIPMENT AUTHORIZATION</p> <p>Certification Issued Under the Authority of the Federal Communications Commission</p> <p>By:</p> <p>PCTEST Engineering Laboratory, Inc. 6660-B Dobbin Road Columbia, MD 21045</p>	TCB
	Date of Grant: 10/10/2006	
	Application Dated: 10/10/2006	
<p>U-shin Ltd 5217, Nakaze, Hamamatsu-shi Shizuoka-ken, 434-0012 Japan</p>		
Attention: Satoru Gokuda , Acting Executive Manager design Dept.2		
NOT TRANSFERABLE		
EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.		
<p>FCC IDENTIFIER: OBIH7027TX Name of Grantee: U-shin Ltd Equipment Class: Part 15 Security/Remote Control Transmitter Notes: Keyless Entry System Transmitter</p>		
<u>Grant Notes</u>	<u>FCC Rule Parts</u>	<u>Frequency Range (MHZ)</u>
	15.231	315.0 - 315.0
		<u>Output Watts</u>
		<u>Frequency Tolerance</u>
		<u>Emission Designator</u>

1. FCC ID: OBIH7027TX
2. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
 - This device may not cause harmful interference.
 - This device must accept any interference received, including interference that may cause undesired operation.
3. Changes or modifications not expressly approved by U-shin could void the FCC compliance and negate your authority to operate the product.

2 The Grant of Equipment Authorization certificate for wireless receiver Tuner H7028*-00-00

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
 - This device may not cause harmful interference.
 - This device must accept any interference received, including interference that may cause undesired operation:
2. Changes or modifications not expressly approved by U-shin could void the FCC compliance and negate your authority to operate the product.



3 Keyless entry system

The keyless entry system allows you to lock/unlock the doors of the driver's seat and assistant driver's seat by operating the remote-control switch ①.

⚠ CAUTION

- Do not expose the remote control switch to water, disassemble it, or apply shock by dropping it.
- Do not leave the remote control switch in a place that is exposed to direct sunlight or where the temperature rises to 60°C/140°F or above. Doing so will shorten the life or cause failure of the remote control switch.
- Do not remove the cover from the remote control switch unless you replace the battery. Removing it for no reason could lead to a remote control switch malfunction.

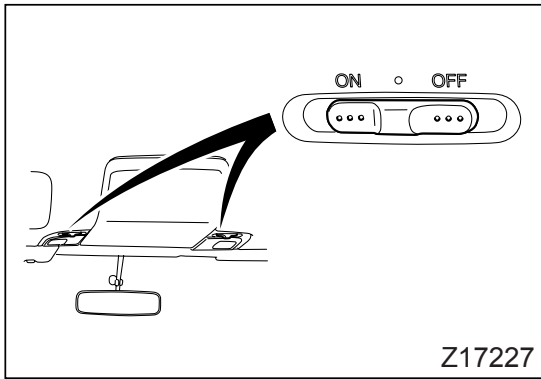
4 How to operate the remote control switch

- Point the remote control switch toward the center of the cabin.
- Operate the remote control switch within 3 m (9.8 ft.) from the center of the cabin.
- Press the "LOCK" button ② to lock all doors.
- Press the "UNLOCK" button ③ once to unlock the driver's door. You can unlock the assistant driver's door if you press the "UNLOCK" button one more time within 3 seconds.

NOTE:

The assistant driver's door does not unlock if you press the "UNLOCK" button ③ more than 3 seconds after unlocking the driver's door.

- When you press the buttons, be sure to press them for at least one second. If a button does not work after one press, press the button again after one or two seconds.
- After locking the doors with the remote control switch, always check that the doors are locked by lifting the outside handle of a door.
- You cannot lock the doors using the lock knob at the driver's seat if the starter key is inserted in the starter switch.



- You can check the locking/unlocking of the doors by the flashing of the hazard lamps and the room lamp. Leave the switch of the room lamp ① “•” (in the center “•” position). When the doors are locked, the room lamp and the hazard lamps flash twice. When the doors are unlocked, the hazard lamps flash once and the room lamp lights up for about 10 seconds.
- If you do not open a door within 30 seconds after unlocking with the remote control switch, the doors will automatically be locked again.

NOTE:

- *The range in which you can operate the remote control varies somewhat depending on the surroundings, such as proximity to a TV tower, power station, broadcasting station, etc.*
- *If you lose the remote control switch or the switch does not work, please contact an authorized dealer to obtain a spare remote control switch.*

The remote control switch does not work under the following conditions:

- *A door is open or incompletely closed.*
- *When the starter key is in the position other than “LOCK”.*
- *While the engine is running.*

5 Replacing the remote control switch battery

The battery may have run down if the remote control switch does not lock or unlock the doors upon pressing the corresponding button. Replacing the battery will solve the problem.

WARNING

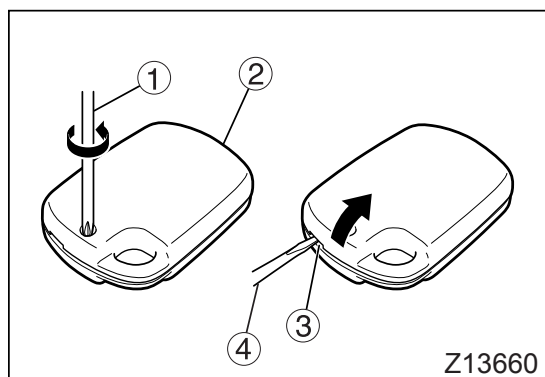
- **Keep the batteries out of the reach of children. If a child swallows a battery, visit a doctor immediately.**
- **Do not disassemble, heat or drop the battery in water. Doing so could cause a fire or explosion.**

CAUTION

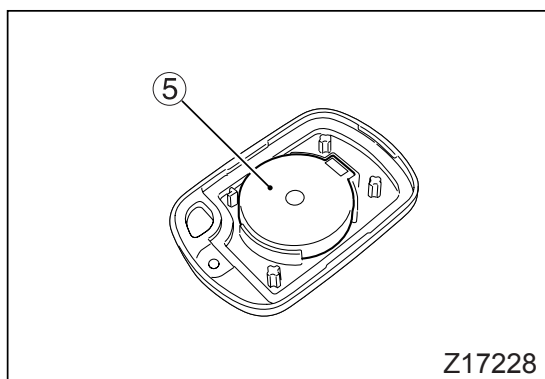
- **Use the designated standard type of battery. If the battery is replaced with an incorrect type, the battery could explode.**

Designated Battery	Quantity
Lithium Battery CR2032	1

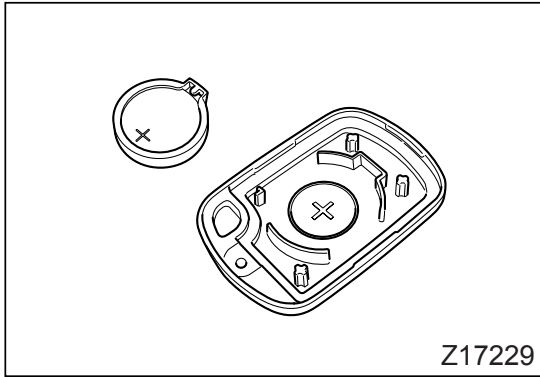
- Attach the battery with the “+” mark facing upward.
- Do not use a metal tool such as tweezers to replace the battery. Doing so could cause a short circuit.
- Dispose of used batteries in accordance with local regulations. Inconsiderate disposal could adversely affect the environment. For disposal, wrap the battery with tape, vinyl sheet, etc. for insulation so that the battery cannot contact other metal objects or be exposed to water.
- Do not expose the inside of the remote control switch to water, and keep it away from dirt and dust. Otherwise, the switch could fail.



1. Use a crosshead screwdriver ① to turn the screw and remove the cover ②. If the cover is difficult to open, insert a flat-blade screwdriver ④ into the slot ③ to pry the cover open.



2. Remove the battery holder ⑤ from the cover.
3. Put a new battery in the battery holder with the “+” mark on the battery facing up. Then install the battery holder in the cover with the “+” mark on the battery facing against the “+” mark on the cover.
4. Fit the cover on the remote control switch and fasten it with the screw.
5. Operate the remote control switch and check that it works correctly.

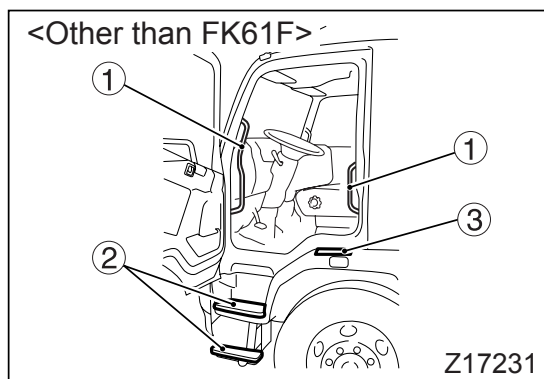
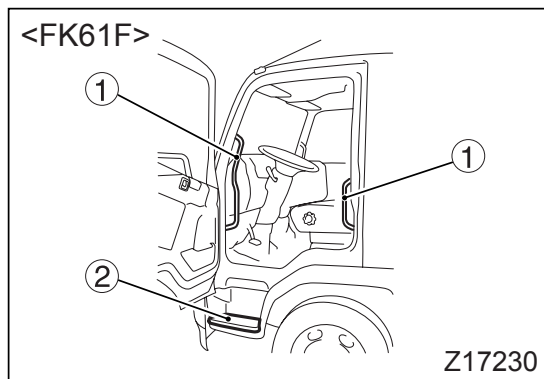


Z17229

Entering and leaving the vehicle

WARNING

- Always use the step to climb into or down from the vehicle. Never put your foot on the wheel or tire since it could easily slip off.
- The step can become slippery in rain or snow. Firmly hold the grip while climbing into or down from the vehicle. Holding the grip is particularly important when snow has settled and frozen on the step.
- If the soles of your shoes are oily or greasy, you could slip when climbing down from the vehicle or when operating the brake or clutch pedal. Wipe any oil and grease off the soles of your shoes before entering or leaving the vehicle.
- When putting your foot on the step, make sure your body is supported in three places for safety.
- Do not hold luggage or other items in your hands when entering or leaving the vehicle since this can be dangerous.
- Do not jump down from the vehicle. Jumping down from the vehicle could cause you to fall or sustain an injury.
- Take care when entering or leaving the vehicle on a slope or in a strong wind since the door could open or close suddenly.



! CAUTION

- **Climb into and out of the cab by holding only the grip. If you hold onto any other parts of the vehicle, they could break or fail.**
- **Do not step on a fender. Doing so not only may damage the fender but also can be dangerous as it is slippery.**

Hold the grip ① tightly and put your foot fully on the step ② when entering or leaving the vehicle. If you place your hand on the fender, put it on the non-slip section ③.

Door window glass

! WARNING

- **Do not put your hands or head outside a window or let anyone in your vehicle do so. Serious injury could result from external objects or in the event of sudden braking. Be particularly careful when carrying a child in your vehicle.**
- **Always make sure that no one has their head or hands out of the window when closing it.**
A body part could be injured if caught in a closing window.
Never allow a child to open or close the window.
- **When a child is in the cab, be sure to press the power window lock switch to prevent the child from opening and closing the assistant driver's window. Otherwise, the child may accidentally operate the power window switch and get its hands or head trapped.**

! CAUTION

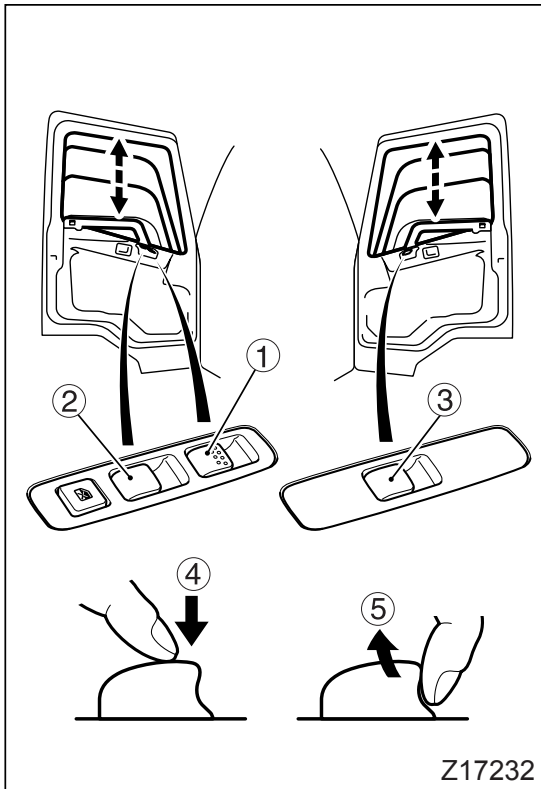
Do not keep any door or window open in rainy weather, and be careful not to spill a drink on any of the window switches. If water or any other liquid gets on a window switch, it can cause a malfunction.

1 Power window switches

The power window switches function only when the starter switch is in the "ON" position.

On the driver's door, there are two switches: switch ① for controlling the driver's window and switch ② for controlling the assistant driver's window.

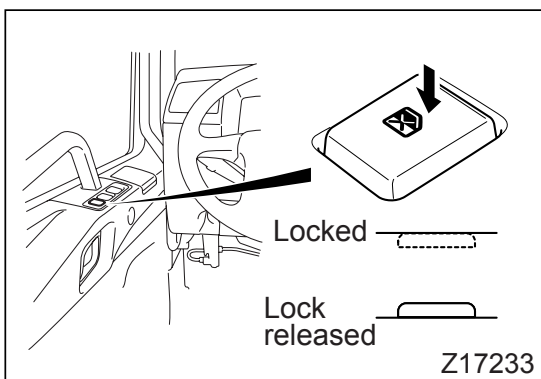
- ③ Switch for assistant driver's window.
- ④ Press the switch to open the window.
- ⑤ Raise the switch to close the window.



2 Power window lock switch

Press the power window lock switch to prevent the assistant driver's window from being opened or closed.

Pressing the switch a second time releases the lock.

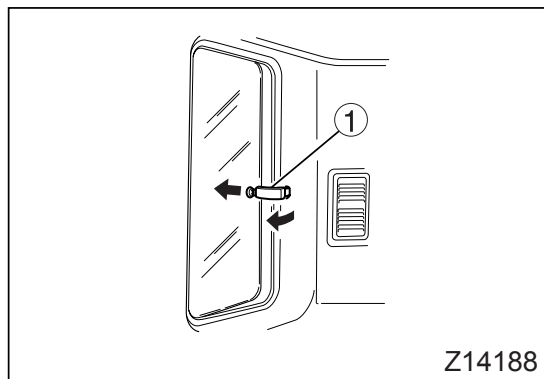


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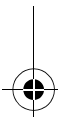
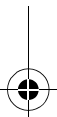
NOTE:

If a child is in your vehicle, it is important for safety's sake to press the power window lock switch to prevent the child from opening or closing the assistant driver's window.



Rear quarter window

Pull latch ①, and push it outward to open.



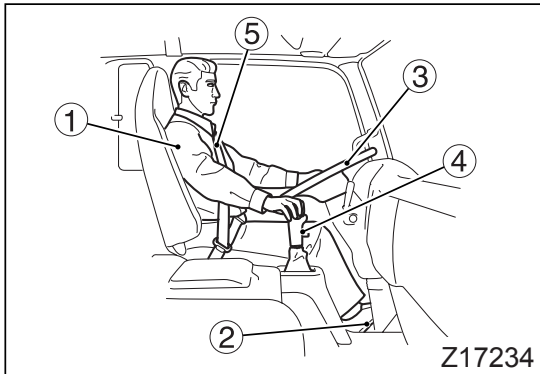
4. Seat and steering wheel adjustments

Seats	4-2
Seat belts	4-5
Steering wheel	4-9

Seats

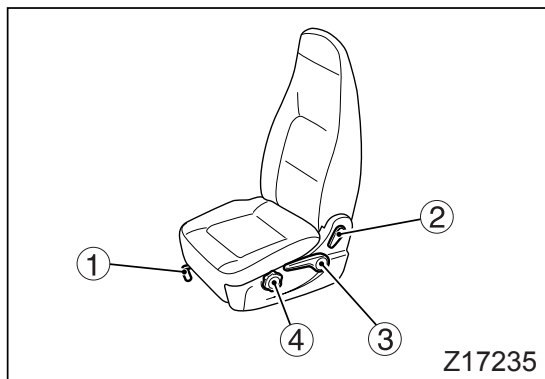
! WARNING

- Avoid adjusting the seat while the vehicle is moving since the seat may move more than you intend and cause an accident by impeding operation of the vehicle. Be sure to stop the vehicle and set the parking brake before performing any adjustment of the seat.
- After you have adjusted the seat, gently move or rock the seat to ensure that it is locked in the desired position.
- When adjusting the seat, keep your hands away from the bottom of the seat and from moving parts of the seat. Otherwise, you could suffer an injury by getting your hands and fingers trapped.



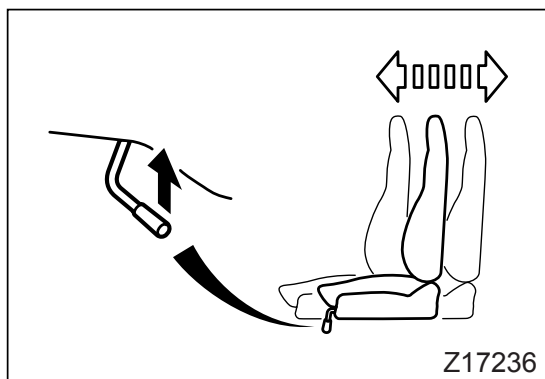
1 Correct driving position

- Before driving the vehicle, adjust the driver's seat with reference to the following points:
 - ① Your back must touch the seatback, and you must be able to see the warning lamps and gauges.
 - ② You must be able to reach and firmly press the pedals.
 - ③ You must be able to operate the steering wheel and switches with ease.
 - ④ You must be able to operate the gearshift lever or range selector lever with ease.
 - ⑤ You must be able to fasten the seat belt correctly. ⇒ P. 4-5
- Adjust the steering wheel to a position at which you can operate it comfortably with your arms slightly bent. ⇒ P. 4-9



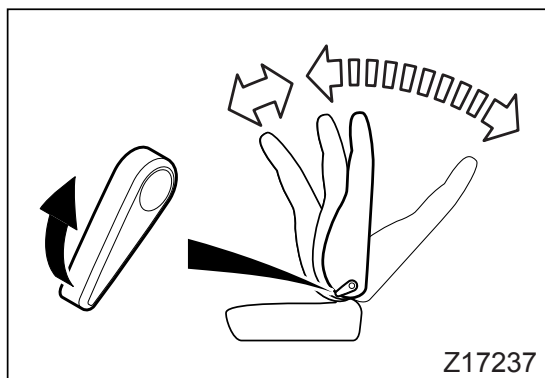
2 Driver's seat

- ① Slide lever
- ② Reclining lever
- ③ Height adjustment lever
- ④ Tilt adjustment knob



2.1 Front/rear slide adjustment

With the slide lever pulled, slide the seat forward or backward to the desired position.

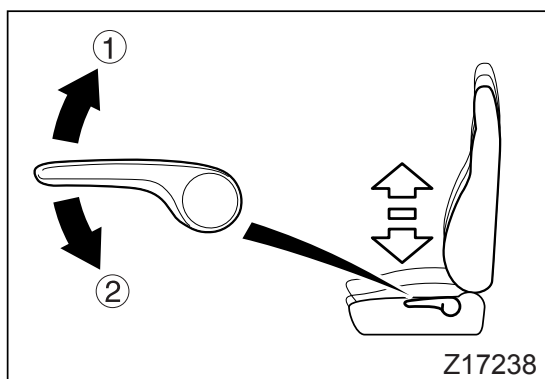


2.2 Recline adjustment

! WARNING

When adjusting the recline angle, sit back against the seatback or place your hand on it. Unless restrained, the seatback could return forward suddenly and injure your face or other body parts.

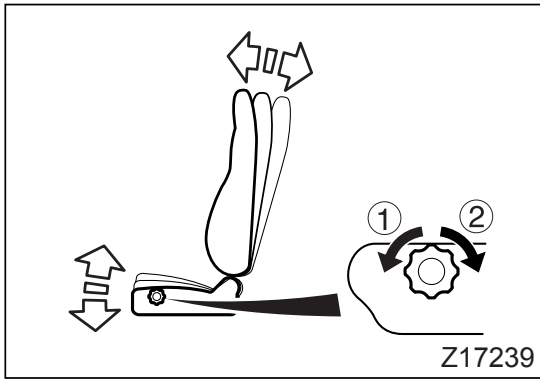
Pull the reclining lever and set the seatback at the desired angle.



2.3 Seat height adjustment

The seat rises or lowers by one step every time you pull up or push down the height adjustment lever.

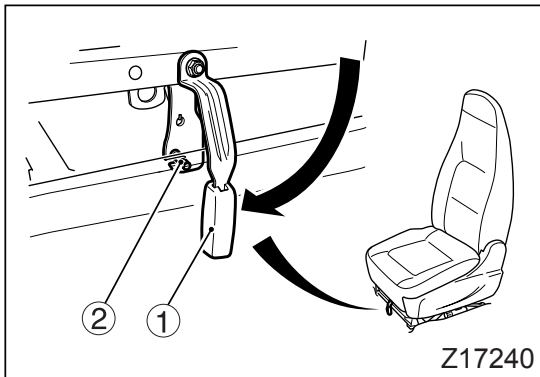
- ① To raise
- ② To lower



2.4 Seat angle adjustment

You can tilt the whole seat forward or backward by turning the seat angle adjustment knob.

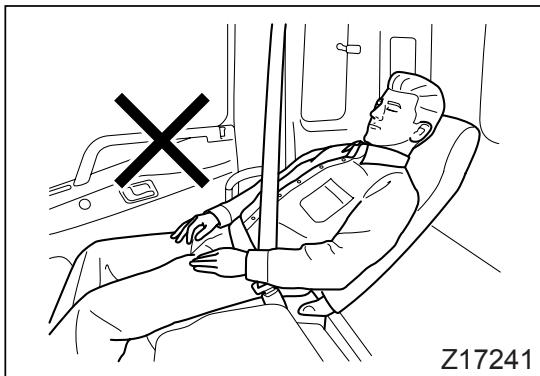
- ① To tilt backward
- ② To tilt forward



2.5 Air suspension seat OPT.

<Standard on FM65F>

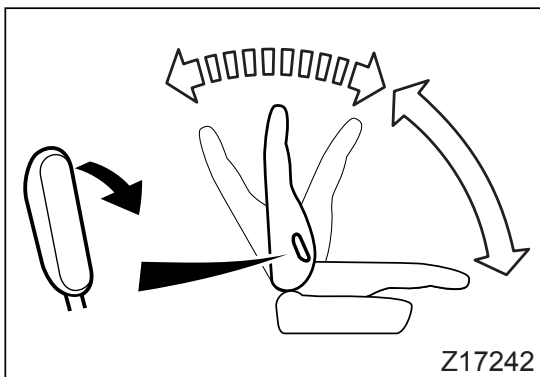
- With an air suspension seat, the air pressure is automatically adjusted to suit the weight of the user.
- To cancel the air suspension function of the seat, fit the lever ① on the pin ②.



3 Assistant driver's seat

! WARNING

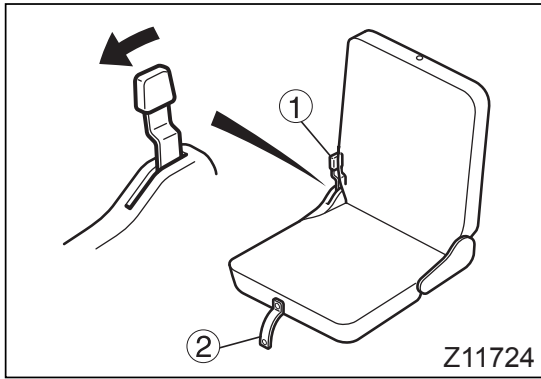
- During vehicle operation, the seatback must not be reclined further than necessary. In the event of sudden braking, the occupant could slide forward and suffer severe injuries.
- When adjusting the recline angle, sit back against the seatback or place your hand on it. Unless restrained, the seatback could return forward suddenly and injure your face or other body parts.



To adjust the angle of the seatback of the assistant driver's seat, move reclining lever ①.

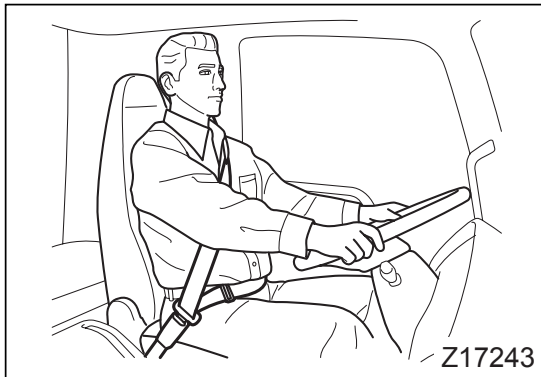
NOTE:

The forward/backward adjusting feature is not adjustable on the assistant driver's seat.



4 Center seat OPT.

The seatback can be folded down by moving lever ①. Secure the folded seatback with strap ②.



Seat belts

- To help prevent injury in the event of a sudden stop or accident, the driver and all assistants must wear their seat belts correctly.
- When wearing your seat belt, sit back in your seat with your back straight. If a seat belt is used incorrectly, its effectiveness is greatly diminished and it could aggravate injuries in the event of accident.
- For details of seat belt usage for children and pregnant women, refer to page 4-7.

! WARNING

- **Assistant's must never be in the cargo area while the vehicle is in motion. Unless seated and properly belted up, the risk of injury is greatly increased.**
- **Seat belts should be worn as low as possible over the hips. Wearing a seat belt across the abdomen could be dangerous since undue pressure would be placed on internal organs in the event of a collision.**
- **Make sure that the seat belt is not twisted when fastening it. A twisted seat belt could be dangerous since its reduced width will apply a larger force to a smaller part of your body in the event of impact.**
- **Replace any seat belt that is cut or frayed, or if its buckle does not work properly.**
- **Never use a single seat belt for more than one person.**
- **It is dangerous to fasten or unfasten your seat belt while driving since the momentary diversion of your attention could lead to a serious accident. Always stop the vehicle first.**

- The seats feature 3-point lap and shoulder belts with Emergency Locking Retractor (ELR).

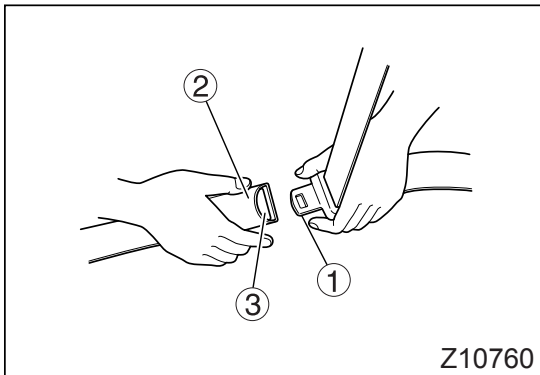
1 Three-point ELR seat belt

NOTE:

It is not necessary to adjust the length of these seat belts.

An ELR seat belt extends and retracts automatically as its wearer moves but locks automatically for protection in the event of a sudden stop or shock.

The belt's tightness should be adjusted automatically. If there is any looseness, lift the shoulder belt gently and the mechanism will take up the slack. With the belt properly tightened, the risk of it slipping off in a collision is reduced.

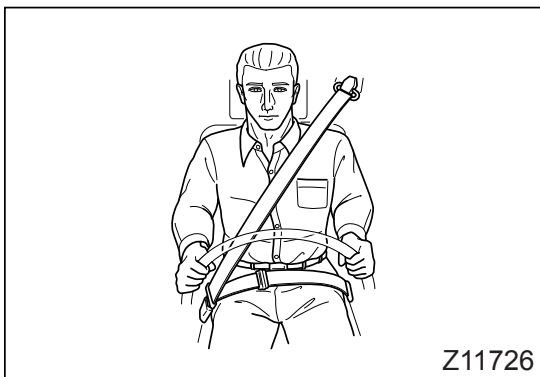


- **Fastening**

! WARNING

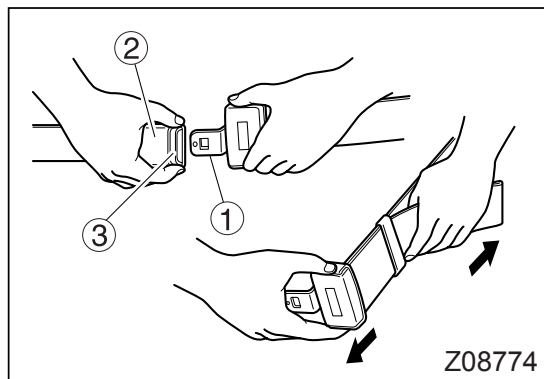
The shoulder belt can be dangerous if worn across the neck. Adjust its position so that it does not cross over the neck.

1. Hold tang ① and gently extend the belt. If the belt locks or is difficult to extend, let it retract and pull it gently again.
2. Take care that the belt does not become twisted. Insert the tang into the buckle ② until you hear a click.
3. Pull on the tang to confirm that it is locked in.
4. Adjust the belt so it is across your hips and shoulder.



- **Unfastening**

1. Press the red button ③ to unlock the buckle.
2. The belt automatically retracts when unlocked. To prevent the tang causing damage or injury, hold it while the belt retracts.



2 2-point seat belt

WARNING

For maximum protection in the event of an accident, the belt must not be loose. A loose belt could even aggravate injuries.

• **Fastening**

1. Take care that the belt does not become twisted. Inset the tongue ① into the buckle ② until you hear a click.
2. Pull on the tongue to confirm that it is locked in.
3. Adjust the belt so it is low across you hips.
4. To adjust the belt's length, hold the tongue at 90° to the belt.
Pull the belt end to shorten the belt or the tongue to lengthen it.

• **Unfastening**

Press the red button ③ on the buckle to separate the tongue and buckle.

- Insert tongue ① into buckle ② until you hear a click.
- Press red button ③ to unlock the belt buckle.
- To adjust the seat belt length, hold the tongue at right angles to the belt. Pull the belt end to shorten or the tongue to lengthen the belt as desired.

3 Children and babies

- When carrying children or babies, they must be restrained properly to minimize the risk of injury in the event of a sudden stop or accident. Never allow children to stand or kneel on the seats. For maximum safety, we recommend fitting and using a restraint system that complies with Federal Motor Vehicle Safety Standards. The use of child and/or baby restraint systems is mandatory in some states. Please abide by your state's regulations.
- Older children may sit on the regular seats and use the regular seat belts. However, make sure that the shoulder belts do not cross their necks or faces.

4 Pregnant women

Since a seat belt could exert undue pressure on the abdomen in the event of an accident, pregnant women should consult a doctor about the use of seat belts before riding in the vehicle. A pregnant woman should wear her seat belt as low as possible across the hips, not across her abdomen.

5 Seat belt care

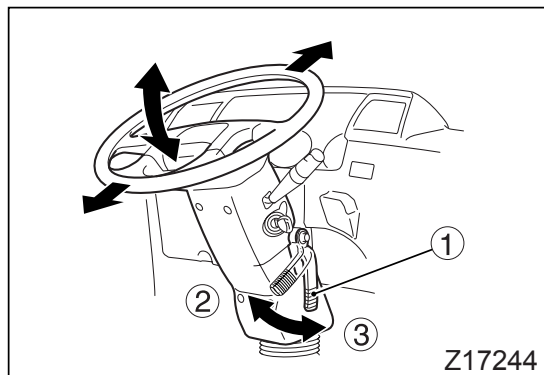
- Periodically, check the action of the mechanical parts such as the buckles, tangs, and ELR units. Check also for any damage that could stop the seat belts from functioning properly. Replace seat belt unit if there is any malfunction or damage.
- Replace any webbing that is cut, rayed, or otherwise damaged.
- Replace any seat belt that has received a shock due to a collision.
- Keep sharp or other potentially damaging objects away from the seat belts, especially the webbing.
- Keep the seat belts clean and dry. Use a mild soap and lukewarm water to clean seat belts. Such solvents as gasoline and thinner may seriously affect the strength of webbing.
- Never attempt to bleach or dye the seat belts, as this could weaken them considerably.
- Do not attempt to remove the seat belts or disassemble the ELR units.

Steering wheel

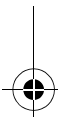
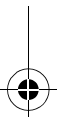
The steering wheel can be adjusted to the preferred height and tilted forward/backward. Adjust the steering wheel as well as the seat to the best positions for easy, safe driving.

WARNING

- After every adjustment, try to move the steering wheel back and forth to make sure that it is securely locked. Unless the lever returns to the locking position, the steering wheel may move while the vehicle is in motion and cause an accident.
- Adjusting the steering wheel while driving is dangerous since it could detract from your concentration or cause the steering wheel to move more than desired.



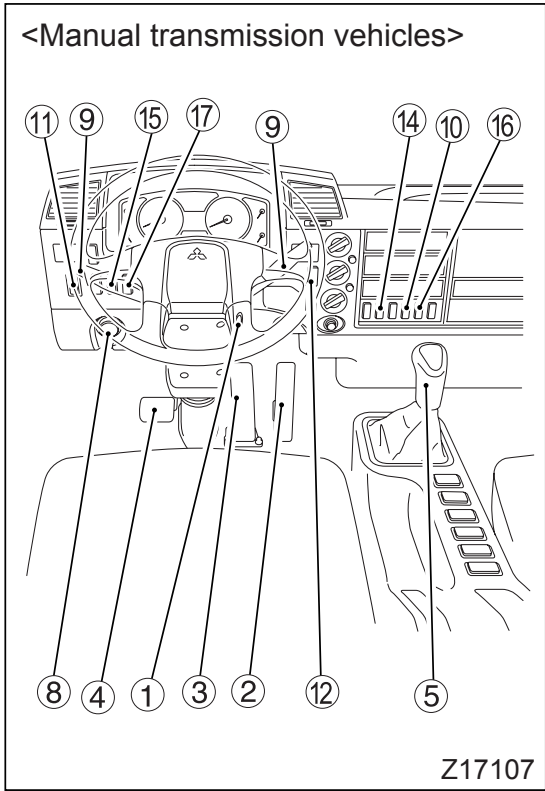
1. Raise lock lever ① to adjustment position ②, and adjust the steering wheel to the desired height and angle.
2. After performing the adjustments, firmly push the lock lever down ③ to lock the steering wheel in position.



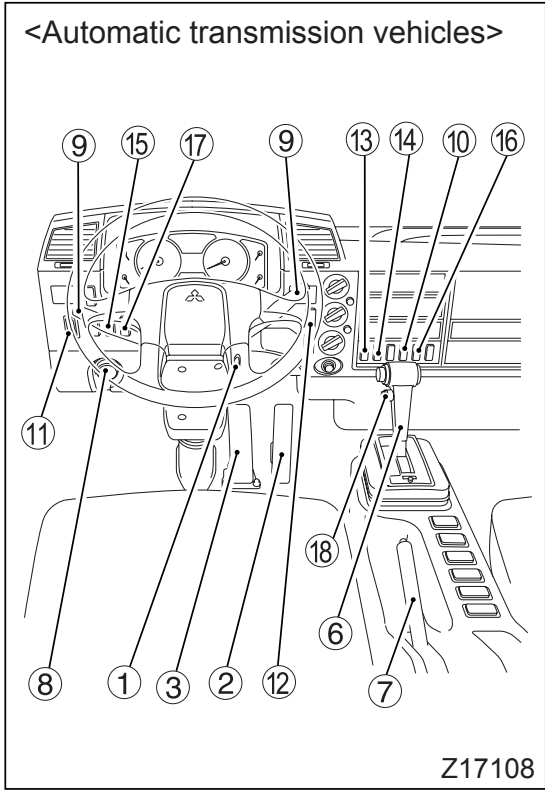
5. Switches and controls

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Arrangement of switches and controls



- ① Starter switch
- ② Accelerator pedal
- ③ Brake pedal
- ④ Clutch pedal
- ⑤ Gearshift lever
- ⑥ Range selector lever
- ⑦ Parking brake lever <FK61F>
- ⑧ Parking brake control valve <other than FK61F>
- ⑨ Combination switch
- ⑩ Van body dome light switch
- ⑪ Brightness control switch
- ⑫ Cruise control main switch
- ⑬ Power mode switch <other than FM65F>
- ⑭ Height control switch <Air suspension vehicle>
- ⑮ Oil level check switch ⇒ P. 12-25
- ⑯ DPF cleaning switch
- ⑰ Central door locking switch ⇒ P. 3-4
- ⑱ Overdrive switch



Starter switch

WARNING

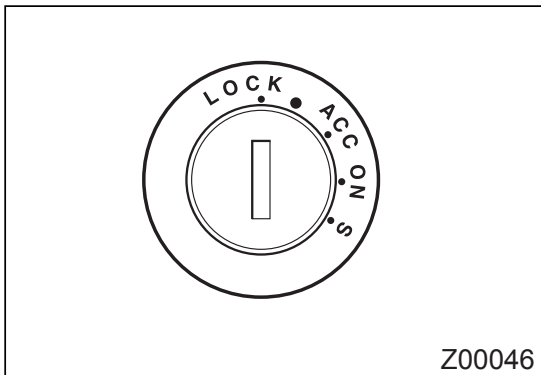
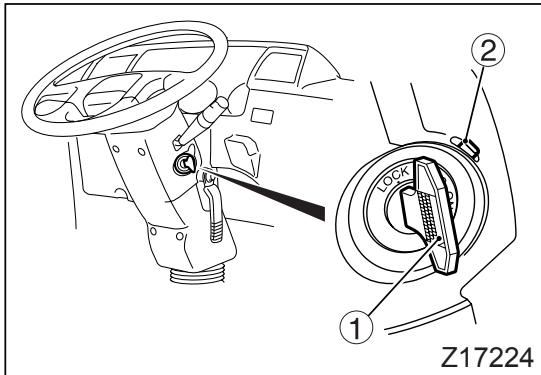
Never turn the starter switch to any position other than the “ON” position while driving the vehicle. Turning the starter switch to the “ACC” position would be dangerous because the engine would stop and the following problems would occur:

- The compressed air used to enhance braking ceases to be generated. This could significantly reduce the effectiveness of the brakes.
- The power steering system becomes inoperative, rendering steering dangerously sluggish.
- The electrical circuits of the warning lamps, meters, etc. become inoperative, causing electric components to malfunction.

Removing the starter key causes the steering wheel to lock, making it impossible to steer the vehicle.

CAUTION

- If you attempt to turn the starter key from the “ACC” to “LOCK” position without pressing the reset button, the key will turn only to the position midway between the “ACC” and “LOCK” positions (marked “•”). Do not force the key.
When the reset button is pressed while in this position, the starter key can be turned to the “LOCK” position and then removed from the switch. Once the reset button is pressed, you need not keep it pressed to be able to turn the key.
- Do not turn the key to the “S” position while the engine is running since this could damage the starter.
- If it is not possible to move the vehicle with only the starter. If the engine stops while the vehicle is on the road, turning the starter switch to the “S” position will have no effect.



- If you park the vehicle over an extended period of time, always place the starter key in the “LOCK” position and remove it from the starter switch, or keep it in the position midway between the “ACC” and “LOCK” positions (marked “•”). Leaving the key in the “ON” or “ACC” position could run down the battery.

- LOCK:
Starter key ① can be inserted and removed only when it is in this position. To return the starter key to the “LOCK” position, first turn the key to the position midway between the “ACC” and “LOCK” positions (marked “•”), and after holding down reset button ②, turn it the rest of the way back to the “LOCK” position. When the key is removed, the steering wheel locks.

The light switch, brightness control switch, hazard warning lamps, interior lamp, personal lamp, horn, and central door lock can be used.

- ACC:
The engine is shut off or is not running in this position. The turn signal lamp, wipers, washer, power windows and cigarette lighter can be used. Any audio system (such as a radio) that has been installed in the vehicle and correctly wired can also be used.

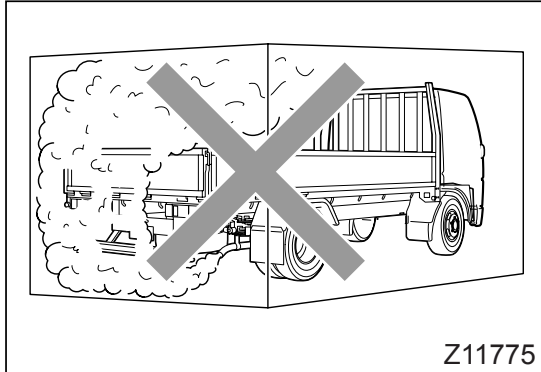
- ON:
The engine is running in this position. All electrical circuits are operable.

- S:
The engine is turned over and started in this position. Once the engine is running, release the starter key and the switch will automatically return to the “ON” position.

NOTE:

- *Insert the starter key fully in the starter switch before turning it.*
- *If you are unable to turn the starter key, gently turn the steering wheel clockwise and counter-clockwise as you turn the key.*
- *The starter key on an automatic transmission vehicle can neither be turned to the “LOCK” position nor pulled out unless the range selector lever is in the “P” position.*

Starting the engine



! WARNING

- Do not warm up the engine in a garage or other closed area. When starting the engine or entering or leaving a garage, do not run the engine for longer than is necessary as the accumulation of exhaust gas in closed areas is very dangerous. Exhaust emissions contain carbon monoxide (CO), which if breathed can cause unconsciousness or death.
- If you smell exhaust gases inside the cab, inspect the exhaust pipe and check whether exhaust gases are leaking through holes or cracks caused by corrosion or damage. If exhaust gases are leaking, have the exhaust pipe inspected by an authorized dealer.
If exhaust gases that have leaked from the exhaust pipe come into the cab, ventilate the cab with fresh air by opening the windows fully or by opening the doors.
- Make sure that there are no flammables such as dry grass under or behind the parked vehicle, especially close to the exhaust pipe. A fire could be started by the heat from the engine or exhaust pipe.
- When you start the engine, be sure to sit in the correct position on the driver's seat to wait for the engine to warm up. If you are leaning out of the door window or otherwise incorrectly seated and the vehicle suddenly moves, a serious accident could occur.

! CAUTION

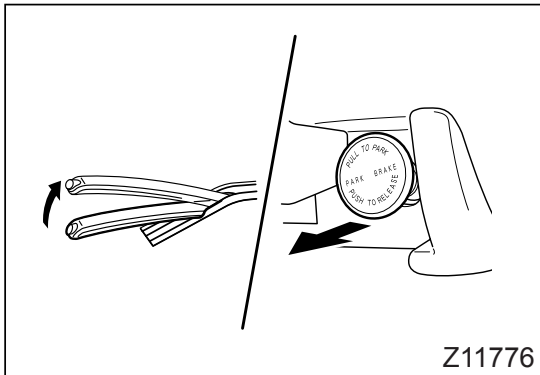
- It is dangerous to push-start the engine since, at the time of start, sufficient assist power is not available for both braking and steering. Only push-start the engine when it is unavoidable.
- It is impossible to push-start an automatic transmission vehicle, and attempting to do so could damage the transmission.
- Do not use ether or other vapor compound type starting aids. Use of such fluid on this engine could result in serious damage.

NOTE:

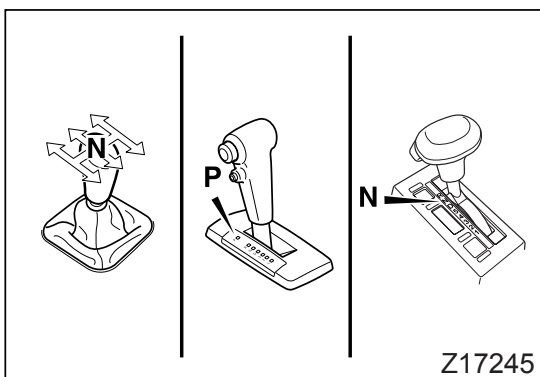
- Do not continue to turn over the starter for more than 15 seconds as this could damage the starter or wear down the battery.
- If you operate the starter continuously for 10 seconds and the engine still does not start, turn the starter switch to the "ACC" position and wait 30 seconds before trying again to start the engine.
- If the engine does not start in cold weather, check if the preheating circuit fuse has blown. ⇒ P. 13-10
- On a vehicle that has not been operated for a long period, or after replacement of engine oil or engine oil filter element, be sure to crank the engine before turning it over. ⇒ P. 5-8

1 Pre-starting steps

1. Pull parking brake lever or parking brake control valve to fully apply the parking brake.



2. Manual transmission vehicle:
Place gearshift lever in the neutral position.
Automatic transmission vehicle:
Place range selector lever in the "P" position <other than FM65F> or "N" position <FM65F>.




NOTE:

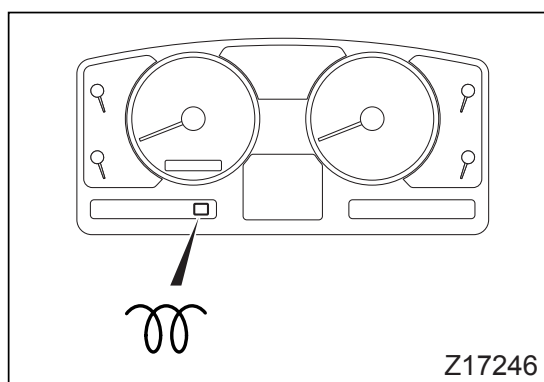
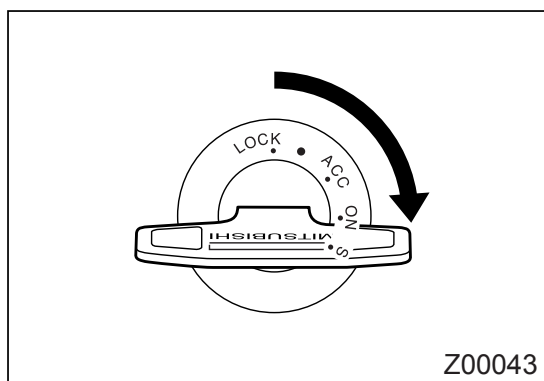
- For safety, the engine in a manual transmission vehicle cannot be started unless the gearshift lever is in the neutral position.
- In an automatic transmission vehicle other than FM65F, the engine cannot be started unless the range selector lever is in "P" or "N" position. It is safer to start the engine with the range selector lever in the "P" position. Start the engine with the range selector lever in the "N" position only when absolutely necessary, for example, if the engine stops while the vehicle is on a level crossing.
- In an automatic transmission vehicle of the FM65F, the engine cannot be started unless the range selector lever is in the "N" position.


2 Starting procedure

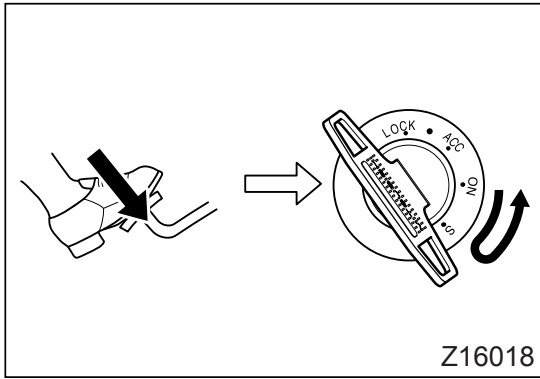
1. Turn the starter key to the "ON" position.



NOTE:

If a buzzer sounds when the starter key is turned to the "ON" position, activate the parking brake. Should the buzzer still continue sounding with the parking brake activated, the air tank pressure or the brake fluid level is too low. ⇒  P. 6-9, P. 6-10



2. Check whether the  indicator lamp illuminates or not.



- If the lamp does not illuminate:
With the clutch pedal depressed, turn the starter switch to the “S” position to start the engine.
- If the lamp illuminates:
Wait until the  lamp goes out. Pump the accelerator pedal several times while waiting. When the  lamp goes out, turn the starter switch to the “S” position to start the engine with the clutch pedal depressed.

3 Starting the engine when vehicle has been parked over an extended period

When a vehicle sits idle over an extended period of time, its engine becomes oil starved and should be cranked using the following method to distribute oil throughout the engine:

CAUTION

- For safety, apply the parking brake fully and chock the wheels to prevent the vehicle from moving.
 - Cranking the engine as described here is essential for protection of the turbocharger.
1. Pull the parking brake lever or knob to fully apply the parking brake.
 2. Manual transmission vehicle:
Place the gearshift lever in the neutral position.
On automatic transmission vehicle other than FM65F, place the range selector lever in the “P” position.
On FM65F, place the range selector lever in the “N” position.
 3. Without pressing the accelerator pedal, turn the starter switch to the “S” position and crank the engine for about 15 seconds.
If the engine starts, release the starter key and do not depress the accelerator pedal for roughly 15 seconds.

4 Starting engine with the cab tilted

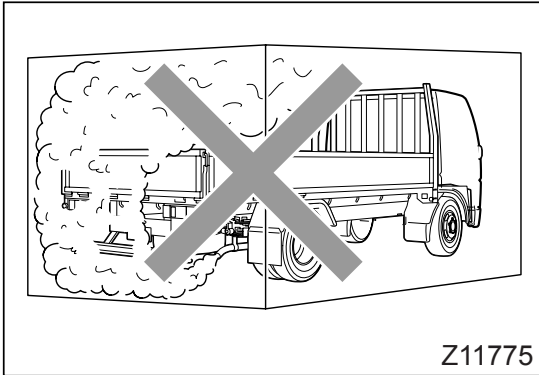
When you need to start the engine with the cab tilted for inspection or servicing purposes, be sure to observe the following safety precautions:

- Set the parking brake firmly, chock the wheels, and take other necessary measures to prevent the vehicle from moving.
- With a manual transmission vehicle, check that the gear shift lever is in the neutral position. With an automatic transmission vehicle other than FM65F, check that the range selector lever is in the “P” position. With the FM65F automatic transmission vehicle, check that the range selector lever is in the “N” position.
- Place the starter switch in the “S” position to start the engine.

Warming up the engine

Do not drive the vehicle immediately after starting the engine. Allow the engine to warm up at least until the needle moves in the water temperature gauge.

Engine idling speed
600 rpm



! WARNING

- Do not warm up the engine in a garage or other closed area. When starting the engine or entering or leaving a garage, do not run the engine for longer than is necessary as the accumulation of exhaust gas in closed areas is very dangerous. Exhaust emissions contain carbon monoxide (CO), which if breathed can cause unconsciousness or death.
- If you smell exhaust gases inside the cab, inspect the exhaust pipe and check whether exhaust gases are leaking through holes or cracks caused by corrosion or damage. If exhaust gases are leaking, have the exhaust pipe inspected by an authorized dealer.
If exhaust gases that have leaked from the exhaust pipe come into the cab, ventilate the cab with fresh air by opening the windows fully or by opening the doors.
- Make sure that there are no flammables such as dry grass under or behind the parked vehicle, especially close to the exhaust pipe. A fire could be started by the heat from the engine or exhaust pipe.

! CAUTION

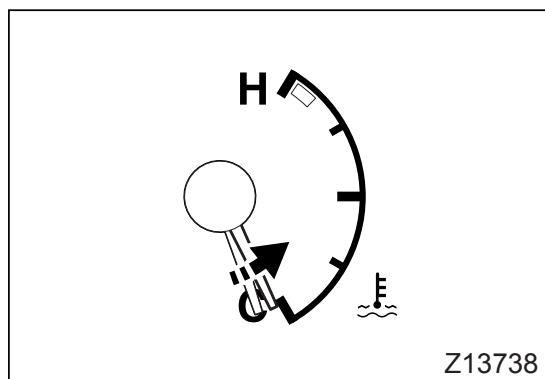
Racing the engine immediately after starting may cause rapid wear of cylinders and pistons, leading to engine failure. Be sure to follow the following warming up procedure.

NOTE:

- *Immediately after starting, ignition is somewhat harder to take place due to the low temperature of the engine, which may cause knock, especially in cold regions.*
- *Idling the engine for long time wastes fuel, and is therefore detrimental to environmental protection and resource conservation. So shut down the engine whenever you leave the vehicle, even for a short period.*

You may encounter any or all of the following conditions. They are due to the actions particular to the oxidation catalyst inside the diesel particulate filter (DPF) and do not indicate any abnormalities.

- White smoke from the exhaust pipe when setting the vehicle in motion after idling the engine for a relatively long-time or when accelerating the vehicle.
 - White smoke from the exhaust pipe when the vehicle starts off immediately after the engine is started.
 - The exhaust smells irritating (with a vinegar-like odor).
1. When the engine has started, remove your foot from the clutch pedal.
 2. Continue warming up the engine until the water temperature gauge needle moves.



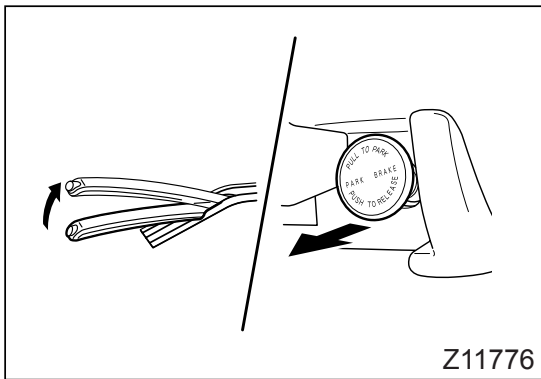
Stopping the engine

WARNING

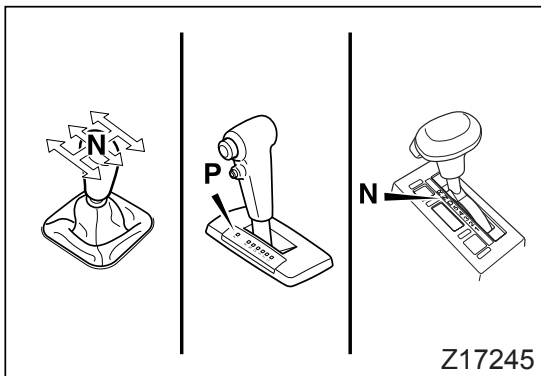
- **Never allow the vehicle to coast with the engine stopped as braking may be ineffective and steering difficult when engine is not running. This may also cause trouble in the fuel injection system.**
- **The engine and exhaust pipe are extremely hot just after stopping the vehicle. Avoid parking the vehicle where the exhaust pipe could set fire to materials such as dry grass.**

⚠ CAUTION

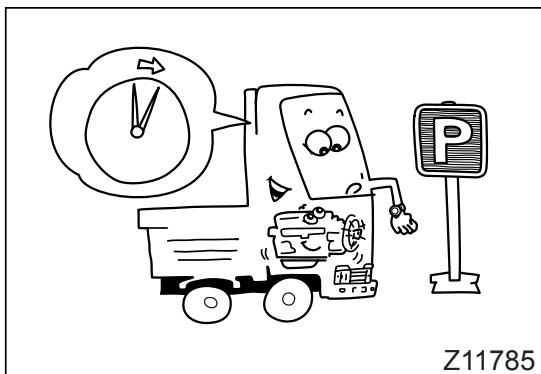
- Allow the engine to idle for at least 3 minutes before stopping it. Not doing so could result in an engine malfunction.
- The engine should only be stopped from an idle. Stopping it at a high RPM could result in an engine malfunction.
- After stopping the engine, do not leave the starter switch in the “ON” or “ACC” position since this could drain the battery. Turn the switch to the “LOCK” position or to the position between the “ACC” and “LOCK” positions (marked with a “•”).



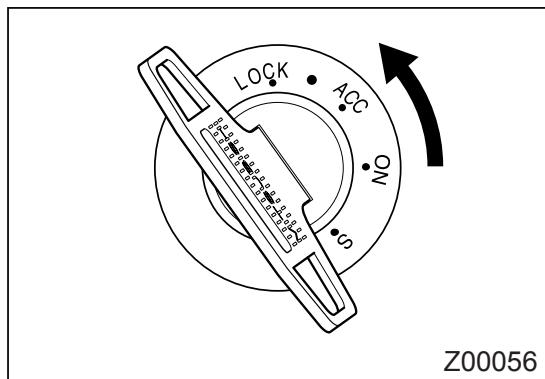
1. Apply the parking brake while depressing the brake pedal.



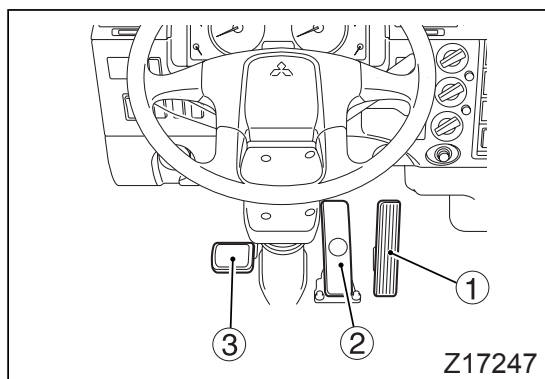
2. Manual transmission vehicle:
Place gearshift lever in the neutral position.
Automatic transmission vehicle:
Place range selector lever in the “P” position <other than FM65F> or “N” position <FM65F>.



3. Allow the engine to idle for more than 3 minutes before stopping it.
When the vehicle is in motion, engine parts become extremely hot. This is particularly true during uphill or high-speed driving. Therefore, let the engine cool down sufficiently by allowing it to idle for a time before stopping it.



4. Turn the starter switch to the "ACC" position to stop the engine.



Pedals

① Accelerator pedal

Racing the engine also increases fuel consumption.

! WARNING

If you use a floor mat, lay it correctly and make sure it is suitable for the size of the vehicle. It is dangerous for a floor mat to cover the accelerator pedal or for floor mats to be laid in multiple layers since the accelerator pedal may be prevented from returning when released.

② Brake pedal

Use the brake pedal correctly.

⇒ P. 7-7

! WARNING

Do not allow the floor mat, gravel, or empty beverage cans or bottles to get under the brake pedal as they will interfere with brake pedal movement.

Keep the floor free of any objects obstructive to operation of the pedal. Mud, dust or floor mat, if caught in the pedal, may also cause dragging of brakes.

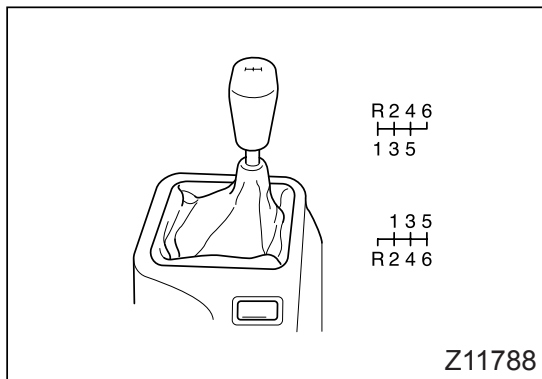
③ Clutch pedal

<Manual transmission vehicles>

Do not operate the vehicle with your foot on the clutch pedal as doing so can shorten the service life of the clutch. It may also cause the engine braking and exhaust braking performance to deteriorate.

For details of clutch pedal usage when pulling away, refer to "Precautions when setting the vehicle in motion" on page 7-2.

For details of clutch pedal usage while driving, refer to "Precautions when driving a manual transmission vehicle" on page 7-5.



Gearshift lever

<Manual transmission vehicles>

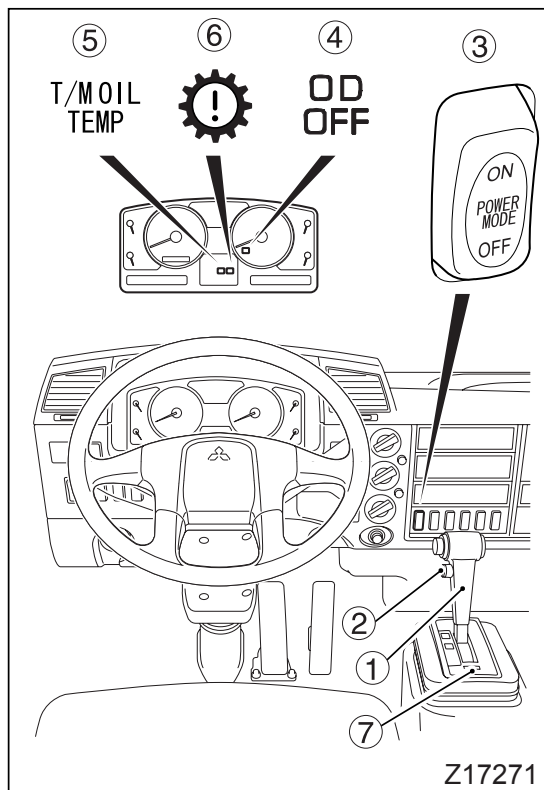
 **WARNING**

When the gearshift lever is in the neutral position, never keep your hand on it. Such forward or backward pressure on the lever could cause the vehicle to move accidentally, possibly leading to an accident.

 **CAUTION**

- Shifting from a forward gear to the reverse gear or vice versa, should be done only after the vehicle has come to a complete stop. When backing up, always double check to make sure that there is nothing in your path.
- When the gearshift lever is in the neutral position, never keep your hand on it. Such forward or backward pressure on the lever could cause the transmission to malfunction, especially if you use a gearshift lever extender because the gearshift lever is very likely to move even if the pressure on the extender is slight.
- Depress the clutch pedal fully whenever changing gear. If you do not depress the pedal completely, the clutch will slip and the clutch disc will be damaged, which could lead to an accident.

- The shift pattern is inscribed on gearshift lever.
- When the gearshift lever is placed in the reverse “R” position, the backup lamps light up and the backup buzzer sounds simultaneously.



Allison automatic transmission 1000RDS/2200RDS

<All models except FM65F with automatic transmission>

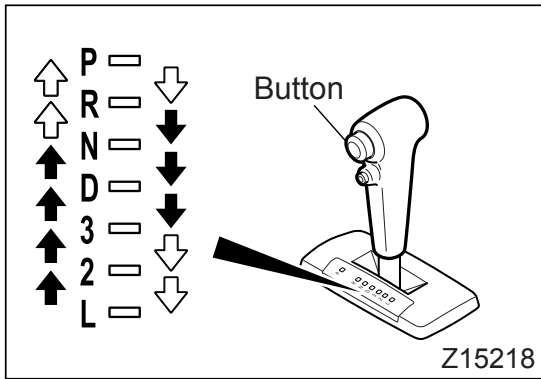
Please refer to the attached Allison Operator's Manual for instructions not covered in this Owner's Manual.

- ① Range selector lever
- ② Overdrive switch
- ③ Power mode switch
- ④ Overdrive off indicator lamp
- ⑤ Transmission fluid temperature warning lamp
- ⑥ Transmission warning lamp
- ⑦ Shift lock release button

1 How to use the range selector lever

! WARNING

- When shifting from the “P” or “N” position to other positions, be sure to keep the brake pedal depressed or set the parking brake.
- Do not move the range selector lever to the “D” or “R” position when the engine speed is high during engine warm up, operation of the air conditioner, or depression of the accelerator pedal. Shifting under this condition is highly dangerous as the vehicle will jerk.



The range selector lever is used to select gear ranges.

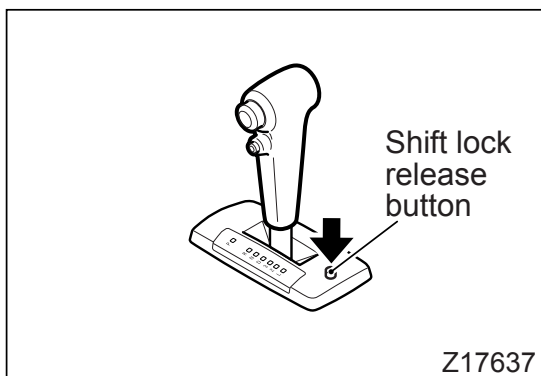
Select lever positions carefully to ensure proper engagement of each gear.

When the gearshift lever is placed in the reverse “R” position, the backup lamps light up and the backup buzzer, if provided, sounds simultaneously.

- ⬆ Push the button and move the lever.
- ⬆ Move the lever without pushing the button.

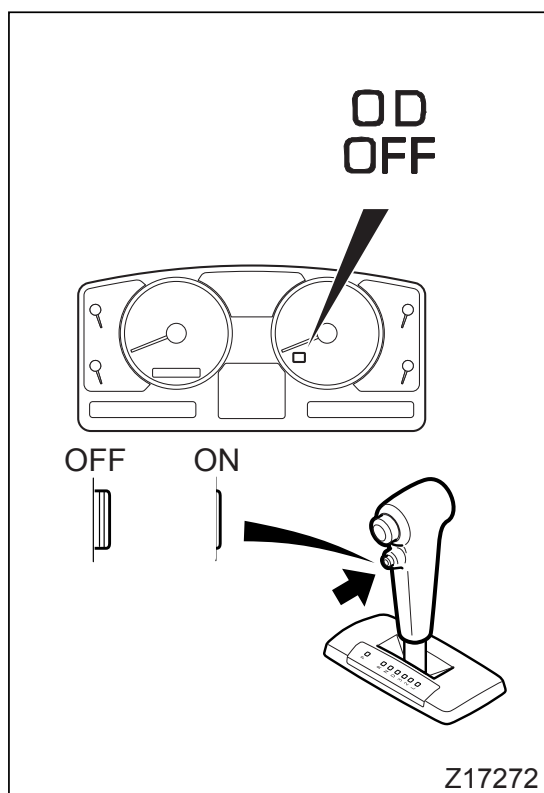
NOTE:

- *Before starting to move the vehicle forward or backward, you must depress the brake pedal and wait until the engine speed reaches a regular idling speed before placing the range selector lever in the “D” or “R” position.*
If you try to move the range selector lever to the “D” or “R” position while the engine is running faster than a regular idling speed or the vehicle is in motion, the safety system may cause the transmission to remain in neutral. If this happens, a buzzer will sound and you must then perform the range selector lever operation again.
- *To place the range selector lever in the “P” position, proceed as follows. Depress the foot brake pedal to bring the vehicle to a halt, then apply the parking brake. Move the range selector lever from either the forward or reverse range, whichever the gear is in at the time, to the “N” position. Then, finally move the lever to the “P” position until the lever cannot be moved any further. If this procedure is not followed, the vehicle could reverse accidentally. In addition, it may require great effort to move the lever out of the “P” position and back to other ranges.*
- *For safety, the range selector lever cannot be moved out of the “P” position unless the brake pedal is depressed. Even with the brake pedal depressed, the range selector lever cannot be moved if the starter switch is in the “LOCK” position or “ACC” position.*



If the range selector lever cannot be moved out of the “P” position even with the starter switch in the “ON” position and the brake pedal depressed, move the range selector lever while pushing the shift lock release button.

This problem can be caused by an electrical fault, so have an inspection carried out by an authorized dealer.

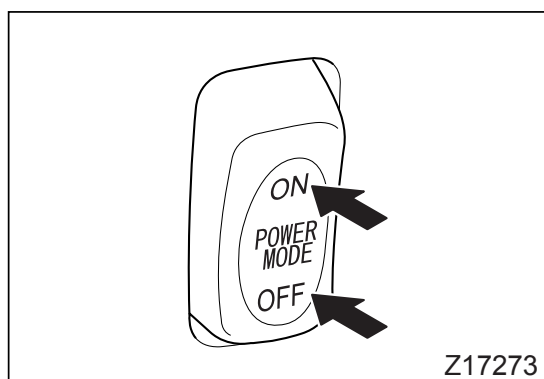


2 Overdrive switch

Pressing the switch to the down position will turn it ON and pressing it again to the up position will turn it OFF.

The ^{OD}OFF indicator lamp will light up when the switch is pressed to the OFF position.

- ON:** Place the switch in this position for normal driving. Make sure the switch is in this position during high-speed driving. When the overdrive switch is ON, the transmission will operate in the 5-speed mode, which makes driving more economical.
- OFF:** Use this position for downhill driving requiring engine braking and long uphill driving. The transmission will operate in the 4-speed mode.



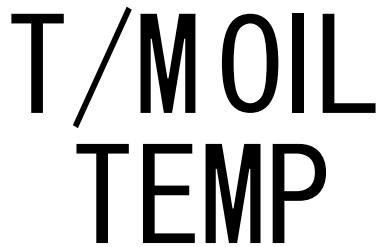
3 Power mode switch

A choice of two driving modes is available to suit the road conditions and the load being carried.

Press the ON side of this switch to activate the power mode. Pressing the OFF side of the switch will cause the transmission to revert to the normal mode.

The lamp inside the switch will light up when the power mode is selected.

- **Power mode**
This is used when a powerful driving force is needed, such as in mountainous areas, when carrying heavy loads, and when overtaking safely on expressways.
- **Normal mode**
This is used for normal driving, and provides a smoother, quieter, and more economical ride.



T/M OIL
TEMP

Z10987

4 If a warning lamp illuminates

- **Transmission fluid temperature warning lamp**

This lamp illuminates if the automatic transmission fluid becomes excessively hot. If the lamp illuminates while the vehicle is in motion, pull over at the nearest safe place, put the range selector lever in the “P” position, and run the engine at slightly higher than idling speed to cool down the transmission.

If the warning lamp goes out, it is safe to continue driving.

If the warning lamp does not go out, or if it repeatedly lights up, you must have your vehicle repaired by an authorized dealer.

While cooling the transmission, check the automatic transmission for fluid leakage. If any leakage is found, call an authorized dealer for repair.



Z10839

- **Transmission warning lamp**

- This lamp illuminates when there is something wrong in the transmission’s electronic control system.

If it illuminates when the starter key is moved to the “ON” position, but then goes out after a few seconds, this means the electronic control system is working properly.

If the lamp illuminates while the vehicle is moving, drive to a safe place and stop.

- If the electronic control system fails, the fail-safe feature kicks in and the vehicle goes into backup mode. In this mode, the vehicle can still be driven to a safe place. If it is not possible to shift between gears, do it manually as follows to drive the vehicle to a safe place.

- **Manually driving the vehicle to a safe place**

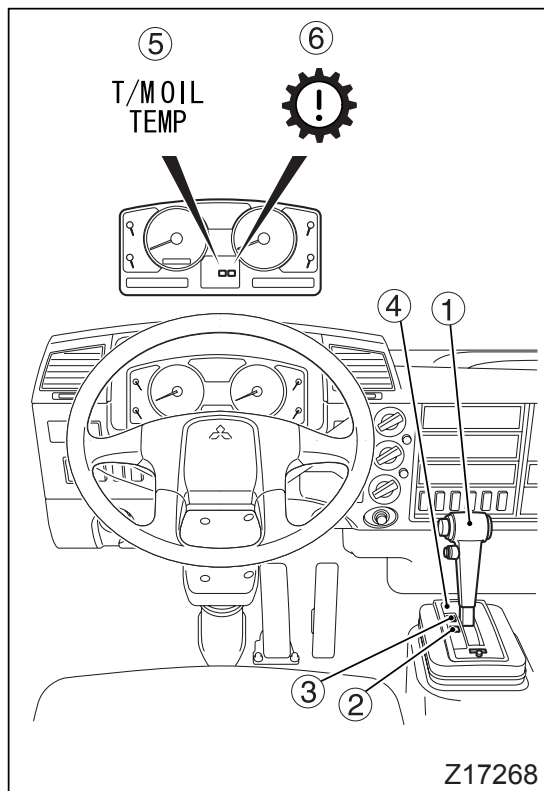
If a failure in the electronic control system disables gear shifting, remove the 2 “A/T” fuses in the sub-fuse box. This will enable driving using the range selector lever as follows.

For the locations of the “A/T” fuses, refer to the decal on the back of the glove box lid.

⇒  P. 13-11

Range selector lever position	Corresponding range/gear in manual mode
P	Park
R	Reverse
N	Neutral
D	Fixed in 3rd
3	Fixed in 3rd
2	Fixed in 3rd
L	Fixed in 3rd

- Wait 10 seconds after stopping the engine, then start it again. If the fault was only temporary, the system may return to normal. If the warning lamp does not go out, or if it keeps illuminating from time to time, the system needs repairing. Contact an authorized dealer.



Allison automatic transmission 3000RDS series

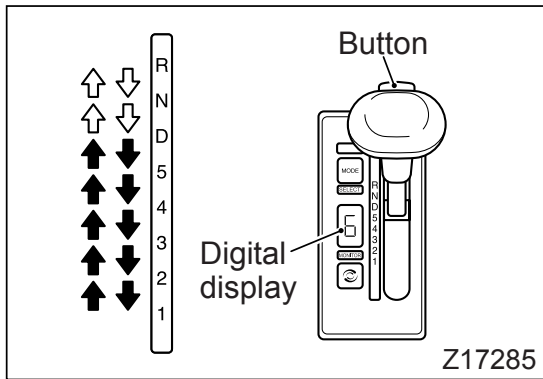
<FM65F model with automatic transmission>
Please refer to the attached Allison Operator's Manual for instructions not covered in this manual.

- ① Range selector lever
- ② Digital display
- ③ Mode button
- ④ Mode indicator
- ⑤ Transmission oil temperature warning lamp
- ⑥ Transmission warning lamp

1 How to use the range selector lever

! WARNING

- When shifting from the "N" position to other positions, be sure to keep the brake pedal depressed or set the parking brake.
- Do not move the range selector lever to the "D" or "R" position when the engine speed is high during engine warm-up, operation of the air conditioner, or depression of the accelerator pedal. Shifting under this condition is highly dangerous as the vehicle will jerk.



The range selector lever is used to select gear ranges. Select lever positions carefully to ensure proper engagement of each gear.

When the gearshift lever is placed in the reverse “R” position, the backup lamps light up and the backup buzzer, if provided, sounds simultaneously.

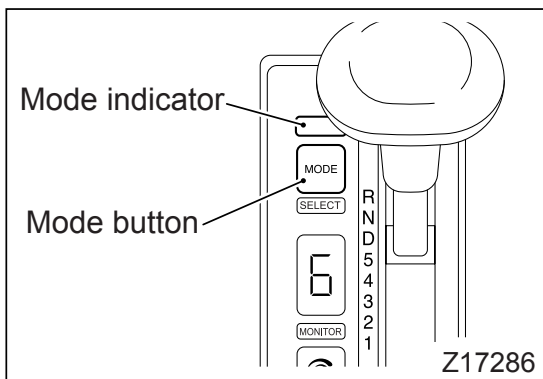
- ↑ Push the button and move the lever.
- ▲ Move the lever without pushing the button.

- The digital display will indicate the selected range.

NOTE:

Before starting to move the vehicle forward or backward, you must depress the brake pedal and wait until the engine speed reaches a regular idling speed before placing the range selector lever in the “D” or “R” position.

If you try to move the range selector lever to the “D” or “R” position while the engine is running faster than a regular idling speed or the vehicle is in motion, the safety system may cause the transmission to remain in neutral. If this happens, a buzzer will sound and you must then perform the range selector lever operation again.



2 Mode button

A choice of two driving modes is available to suit the road conditions and the load being carried.

Pressing the mode button changes the mode back and forth between Power mode and Normal mode. When the transmission is in Power mode, the mode indicator illuminates.

- **Power mode**
This is used when a powerful driving force is needed, such as in mountainous areas, when carrying heavy loads, and when overtaking safely on expressways.
- **Normal mode**
This is used for normal driving, and provides a smoother, quieter, and more economical ride.

T/M OIL TEMP

Z10987

3 If a warning lamp illuminates

- **Transmission fluid temperature warning lamp**

This lamp illuminates if the automatic transmission fluid becomes excessively hot. If the lamp illuminates while the vehicle is in motion, pull over at the nearest safe place, put the range selector lever in the “N” position, and run the engine at slightly higher than idling speed to cool down the transmission.

If the warning lamp goes out, it is safe to continue driving.


If the warning lamp does not go out, or if it repeatedly lights up, you must have your vehicle repaired by an authorized dealer.

While cooling the transmission, perform the following inspection:

1. Check that the electric fans on both sides of vehicle are operating.

WARNING

Never touch the fan even if it is not turning. The fan could suddenly start operating and cause injury.

2. If the fan is not operating, check the fuse; replace it if blown.
Check the oil cooler for mud or other dirt, and clean it if necessary. ⇒  P. 12-82
3. Check the automatic transmission for fluid leakage. If any leakage is found, call an authorized dealer for repair.



Z10839

- **Transmission warning lamp**

This lamp illuminates when there is something wrong in the transmission's electronic control system.

If it illuminates when the starter key is moved to the “ON” position, but then goes out after a few seconds, this means the electronic control system is working properly.

If the lamp illuminates while the vehicle is moving, drive to a safe place and stop.

NOTE:

Do not stop the engine until the vehicle is in a safe place. If the engine is stopped, the gear will automatically go into the neutral, and the vehicle will not be able to move.

Wait 10 seconds after stopping the engine, then start it again. If the fault was only temporary, the system may return to normal.

If the warning lamp does not go out, or if it keeps illuminating from time to time, the system needs repairing. Contact an authorized dealer.

Parking brake


WARNING

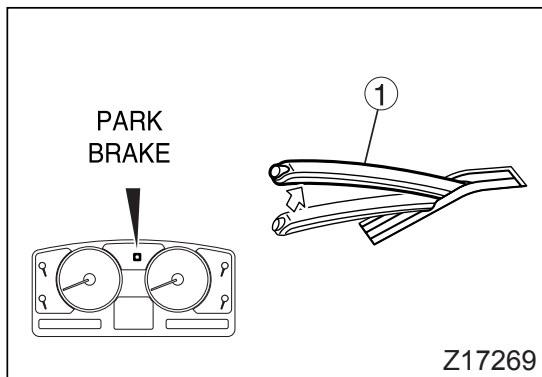
Do not use the parking brake when driving except in an emergency, link if the service brakes have failed. Such use of the parking brake may make the vehicle spin or, at worst, roll over. It may also cause faults in vehicle components.

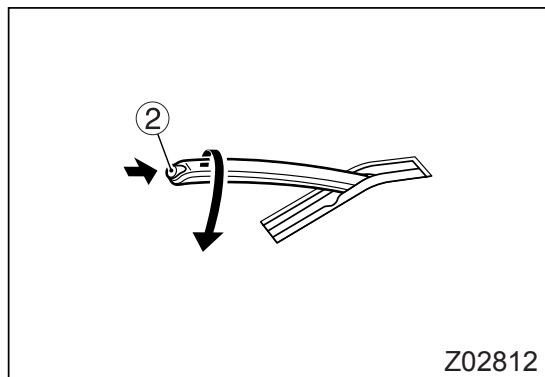
1 Parking brake lever

<FK61F>

- **To set for parking**

The parking brake is activated when the parking brake lever ① is pulled. At the same time, indicator lamp  lights up.





- **To release**

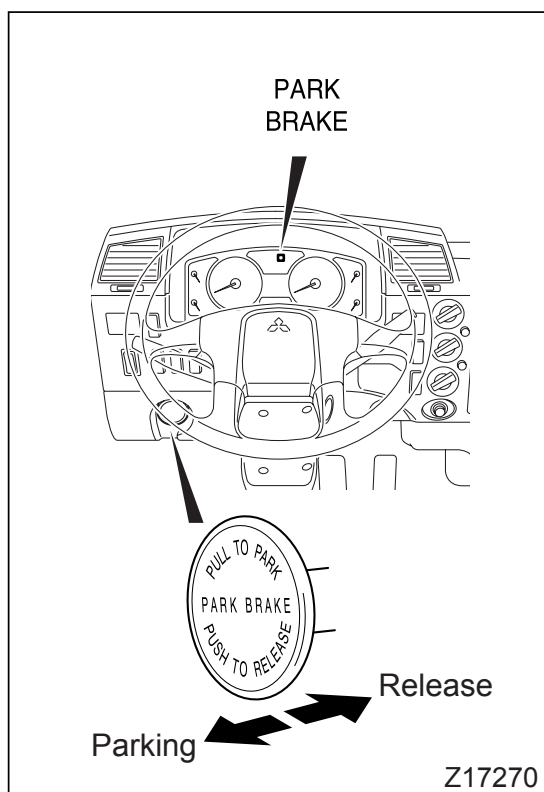
To release the parking brake, press the button ② at the end of the lever while raising the latter slightly. Then, with the button pressed, return the lever to its original position.

- **How to park**

⇒ P. 7-13

⚠ CAUTION

- **Illumination of indicator lamp ^{PARK BRAKE} does not necessarily indicate that the parking brake has been fully activated. Be sure to pull the lever all the way.**
- **Before putting the vehicle in motion, check that indicator lamp ^{PARK BRAKE} is not illuminated.**
- **Do not drive with the parking brake applied. Doing so will not only degrade the parking brake performance but also cause the parking brake to overheat, possibly resulting in a fire.**



2 Parking brake control valve

<All models except FK61F>

- **To set for parking**

Pull knob of the parking brake control valve; the rear wheels are blocked and the ^{PARK BRAKE} indicator lamp lights up.

- **To release**

Make sure that the ^{BRAKE AIR} warning lamp is not illuminated. Push the knob and confirm that the ^{PARK BRAKE} indicator lamp goes out.

- **How to park**

⇒ P. 7-13

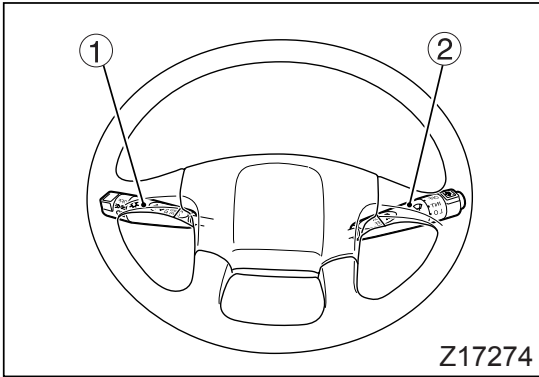
⚠ CAUTION

- **Brake line air pressure may temporarily drop after a release of the parking brake. Always check the air pressure before driving.**
- **When the ^{BRAKE AIR} warning lamp is illuminated, the brakes are not completely released even if the knob is pressed. Driving under such a condition may cause the brakes to drag.**

NOTE:

If the air pressure in the parking brake system falls due to factors like damage to the brake line, the brake might not release even when the brake control valve knob is pressed.

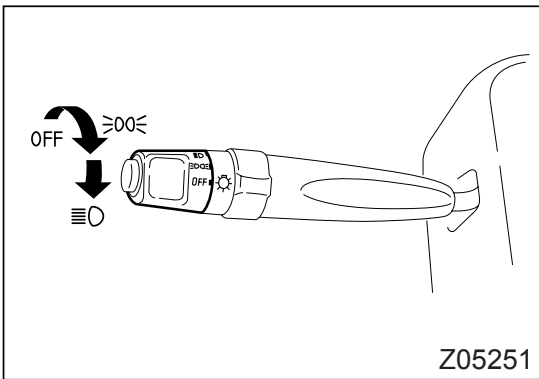
⇒ P. 13-22



Combination switch

1 Arrangement of switches

- ① Lighting switch
Turn signal lamp switch
Passing signal/dimmer switch
Auto cruise cancel switch and set/
resume switch ⇒ P. 5-29
- ② Wiper and washer switch
Hazard warning lamp switch
Exhaust brake switch



2 Lighting switch

The lighting switch can be used with the starter switch in any position.

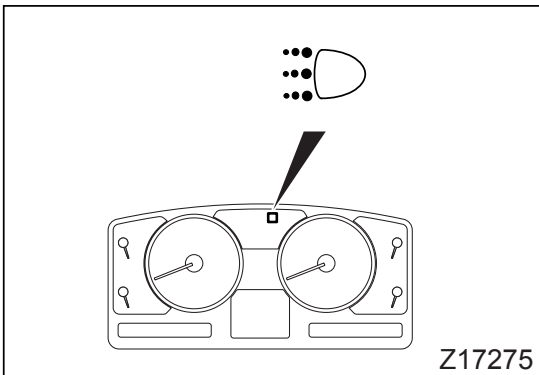
Turning the knob at the end of the lever controls the illumination of lamps as follows:

Switch position	Clearance/side marker lamps, identification lamps, parking lamps, rear combination lamps, license plate lamp, and meter illumination lamps	Head-lamps
OFF	Off	On*
≡ 〇 ≡	On	On*
≡ 〇	On	On

*: Illuminated by daytime running light system

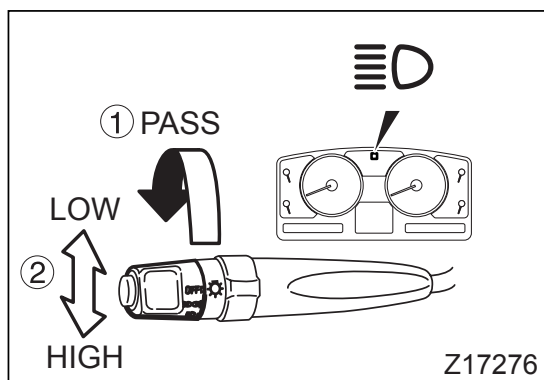
⚠ CAUTION

Keeping the headlamps on for a long period without the engine running can drain the battery, making the engine impossible to start.



NOTE:

Even when the vehicle is operated with the lighting switch in the "OFF" or ≡ 〇 ≡ position, the daytime running light system causes the low-beam headlamps to be lit. (The headlamps are dimmer than when activated using the lighting switch.) The ≡ 〇 indicator lamp is also lit. When the parking brake is applied or the engine is stopped, the headlamps and the ≡ 〇 indicator lamp go off.




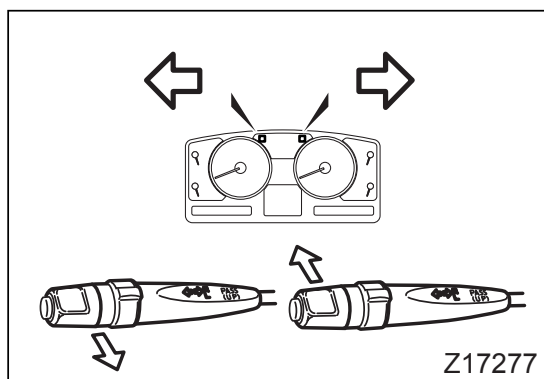
3 Passing signal/dimmer switch

① Passing signal

Pulling the lever up activates the high beams. Use this to flash a signal when overtaking another vehicle.



② Dimmer

With the headlamps illuminated, pushing the lever down activates the headlamp high beams and pulling it back to the original position reactivates the low beams. When the high beams are on, indicator lamp  lights up.



4 Turn signal lamp switch

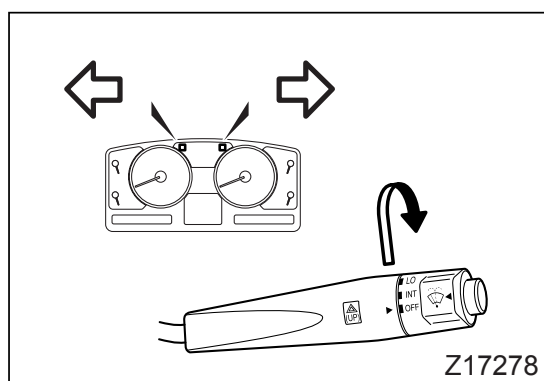
• Turn signal

Moving the lever forward or backward activates the corresponding turn signal causing it to flash. At the same time, the corresponding indicator lamp  or  flashes.

When the steering wheel is returned to the neutral wheel after a right or left turn, the switch automatically moves back to the neutral position and the lamp stops flashing. After making a moderate turn, however, the switch will sometimes not return automatically. In this case, put the switch in the neutral position by hand.

• Lane changer



Lightly pushing the lever forward or backward causes the corresponding turn signal lamp to flash while the lever is held in this position.



5 Hazard warning lamp switch

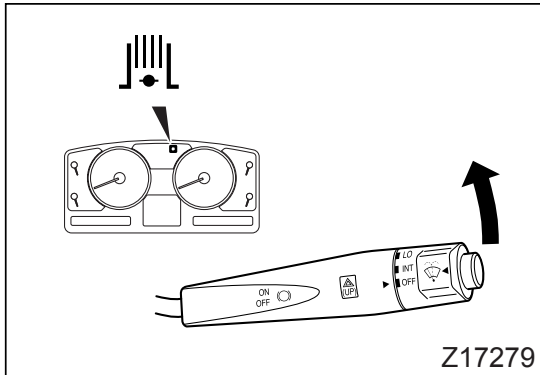
The hazard warning lamps may be used as a warning to other vehicles when you suddenly find it necessary to stop your vehicle in emergencies.

The lamps can flash in any of the starter switch positions.

Pulling the lever up causes all turn signal lamps to flash simultaneously. At the same time, indicator lamps   start flashing. Pulling the lever another time causes the lamps to stop flashing.

! CAUTION

The battery may be discharged and the engine impossible to restart if the hazard warning lamps are operated for an extended period of time.




6 Exhaust brake switch


! WARNING

Using the exhaust brake on a wet, frozen, snow-covered, or otherwise slippery road surface when the vehicle is lightly loaded or not loaded can cause the tires to slip on the road surface, resulting in a skid. Do not use the exhaust brake on slippery road surfaces.

The exhaust brake enhances engine braking. Use it as an auxiliary braking means on downhill stretches or during high-speed driving.

NOTE:

- Do not keep the exhaust brake switch in the activation position at all times. Frequent use of the exhaust brake reduces fuel economy. Move the exhaust brake switch between the activation and non-activation positions as necessary according to road and traffic conditions.
- The exhaust brake is activated when the automatic DPF regeneration takes place during parking. The  indicator, however, is not illuminated.

Pushing the lever forward activates the exhaust brake. While the exhaust brake activated, indicator lamp  stays illuminated.

The exhaust brake is temporarily deactivated if any of the actions listed below are performed. It will become active again as soon as the vehicle returns to its previous state.

- Depressing the accelerator pedal
- Depressing the clutch pedal <manual transmission models>
- Moving the gearshift lever or selector lever to the neutral position
- Operating the anti-lock brake system
- Driving at a very low speed or reversing <automatic transmission models>

NOTE:

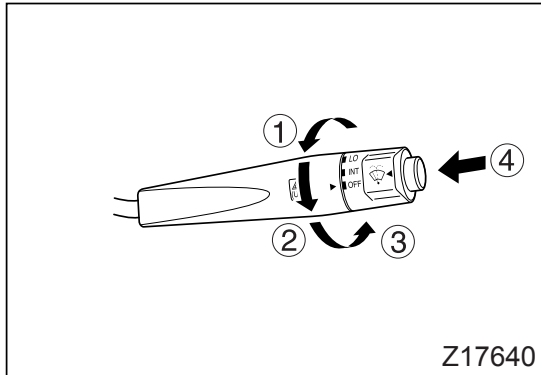
In an FM65F automatic transmission vehicle, activating the exhaust brake while the vehicle is running in 6th gear causes the transmission to shift down to 5th gear.

7 Wiper and washer switch** WARNING**

- Do not operate the windshield wipers or washer when you are servicing your vehicle with the front panel opened as the wiper link inside is potentially dangerous.
- In cold weather, warm the windshield with the heater before operating the washer since washer fluid could otherwise freeze onto the windshield and obstruct your vision.

 CAUTION

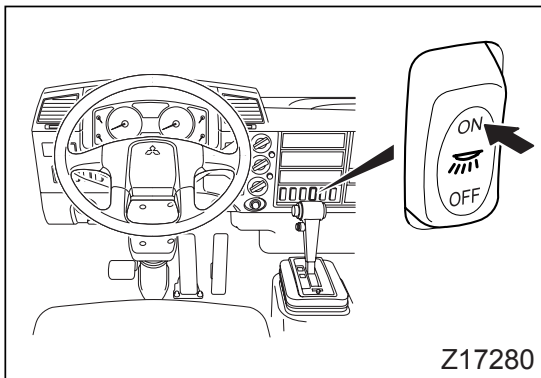
- Operating the wipers when the windshield is dry damages the windshield glass. Always squirt the glass with washer fluid before operating the wipers.
- Never operate the wipers and washer with the wiper arms raised. The arms could be damaged.
- Do not operate the wipers when the rubber parts of the wiper blades are frozen onto the windshield or otherwise stuck to the windshield. The wiper blades could get damaged, and the wiper motor could fail.
- When the wipers are not used for a long time, dust, sand, and other substances can collect between the wiper blades and windshield. Clean the wipers before using them. Otherwise, the windshield may get scratched.
- Operating the washer continuously for more than 20 seconds or when there is no fluid in the reservoir could burn out the washer motor.



- Rotating the grip at the end of the lever activates the windshield wipers in one of the following three modes:

- ① INT: Wipers operate intermittently at 3 to 5 second intervals.
- ② LO: Wipers operate at a slow speed.
- ③ HI: Wipers operate at a rapid speed.

- If the wipers chatter on the windshield or wipe the windshield unevenly, replace the wiper blades. ⇨ P. 12-74
- To activate the windshield washer, push ④ the button at the end of the lever; the washer fluid will be sprayed and the wiper will operate one or two strokes automatically.
- Refill the washer fluid reservoir if the fluid level is low. ⇨ P. 12-75
- If there is washer fluid in the reservoir but none is sprayed when you operate the washer, the nozzles may be blocked. Clean the nozzles using a piece of thin wire. If fluid is still not sprayed when you operate the washer, have the vehicle inspected by an authorized dealer.

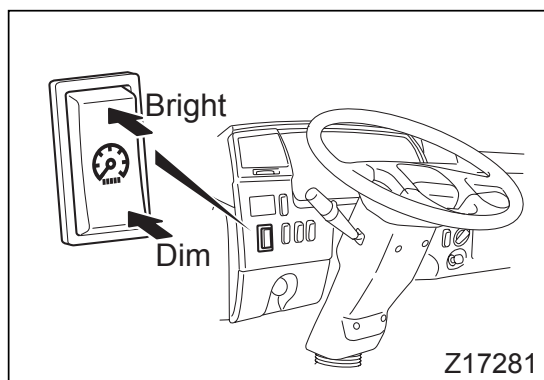


Van body dome light switch

This switch operates the lighting inside the van body. With the starter switch in the “ON” position, operate the van body dome light switch to turn the van body interior lighting on or off. An indicator lamp comes on in the switch when it is in the ON position.

! CAUTION

Leaving the van body interior lighting on for an extended period without the engine running can drain the battery.



Brightness control switch

Use the brightness control switch to adjust the intensity of the meter cluster illumination lamps. With the meter cluster lamps on, press and hold either side of the switch to set the lamps to your desired brightness, then release the switch.

To brighten: Press upper side of the switch
To darken: Press lower side of the switch

Cruise control

Cruise control memorizes any desired speed above the speeds given below and maintains that speed automatically without operating the accelerator pedal. It is especially useful for freeway driving that involves almost no chances of pulling over and stopping.

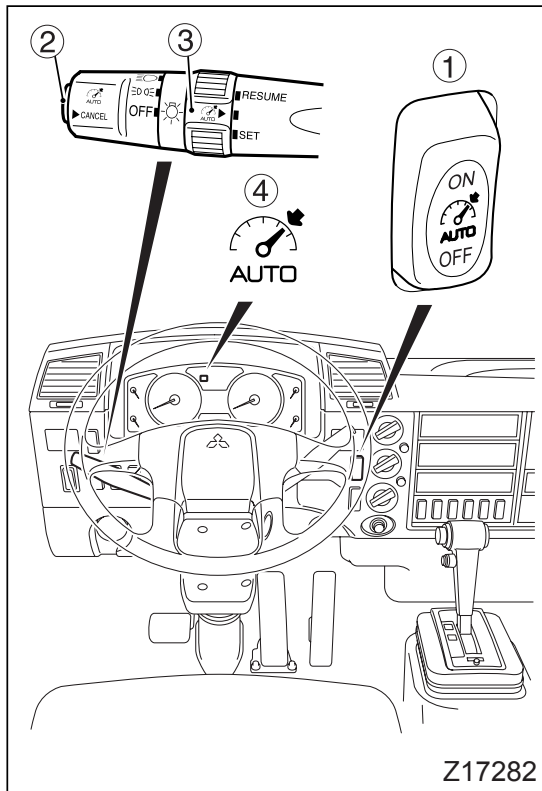
	Speeds above which cruise control functions
Manual transmission vehicle	Approx. 40 km/h (25 mph)
Automatic transmission vehicle	Approx. 57 km/h (35 mph)

NOTE:

For the sake of safety, do not use the cruise control in the following driving conditions:

- *In heavy traffic which does not allow sufficient vehicle to vehicle distance*
- *On roads with sharp turns or poor visibility*
- *On icy, snow-covered, or otherwise slippery roads*
- *Steep downhill road*

The vehicle speed may become higher than the set speed on a steep downhill road. Stop using the cruise control if this occurs.



① **Main switch**

This switch is used to activate and deactivate the cruise control function. The lamp inside the switch illuminates when the cruise control is on. The switch will return to the neutral position when you release it.

! WARNING

For safety, turn off the main switch when the cruise control is not in use.

② **Cancel switch**

Used to terminate cruise-control operation.

③ **SET/RESUME switch**

SET position:

Used to set a desired speed and to reduce the set speed.


RESUME position:

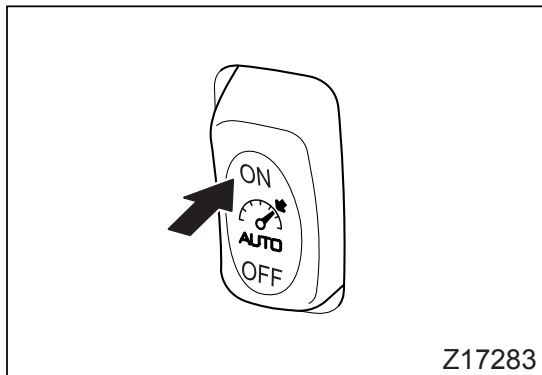
Used to increase the set speed and to return to a previously memorized speed.

④ **Cruise control indicator lamp**

If the cruise control is activated, this lamp illuminates during driving.

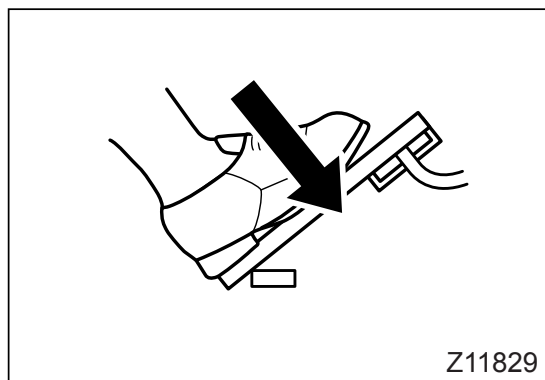
NOTE:

The  indicator lamp will light up when the starter switch is turned to the "ON" position and the engine is not running. It will go out in a few seconds if there are no problems.

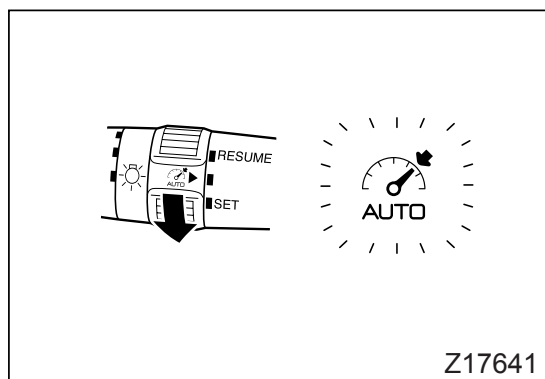



1 To set a desired speed

1. Check that the exhaust brake switch is in the OFF position. If the switch is in the ON position, place it in the OFF position. Press the ON side of the main switch. The lamp inside the switch will illuminate.



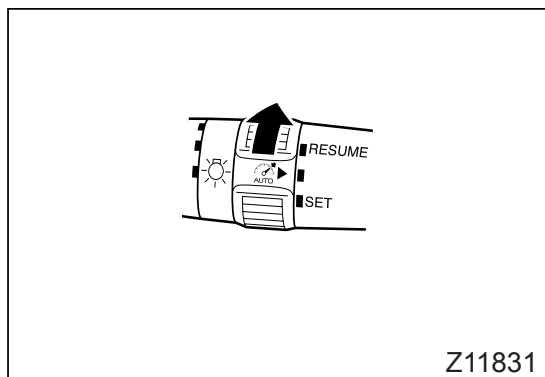
2. Depress the accelerator pedal until the desired speed is reached.



3. When the desired speed is reached, turn the "SET/RESUME" switch to the "SET" position. The  indicator lamp will illuminate indicating that the cruise control is activated. Now the desired speed is memorized, so release the accelerator pedal. The vehicle will run maintaining that speed automatically.

NOTE:

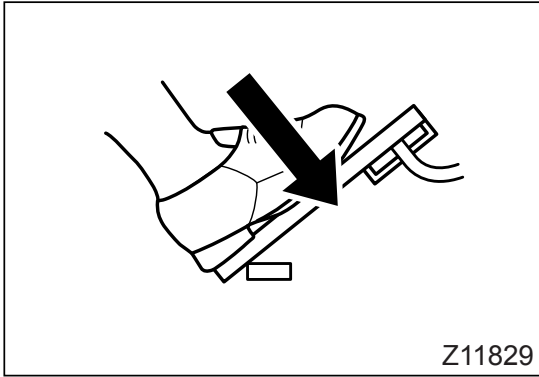
- When setting the desired speed, the gearshift lever in a manual transmission vehicle must be in the 4th or higher gear position and in an automatic transmission vehicle, the selector lever must be in the "D" position.
- Before pressing the ON side of the main switch to set a desired speed, make sure the exhaust brake switch is in the OFF position. You will not be able to set the speed if the exhaust brake switch is in the ON position. When driving with the cruise control active, exhaust braking can be used as usual, but the cruise control function will be deactivated while exhaust braking is being used.



2 To increase the set speed in cruise control mode

- **By using the resume switch**

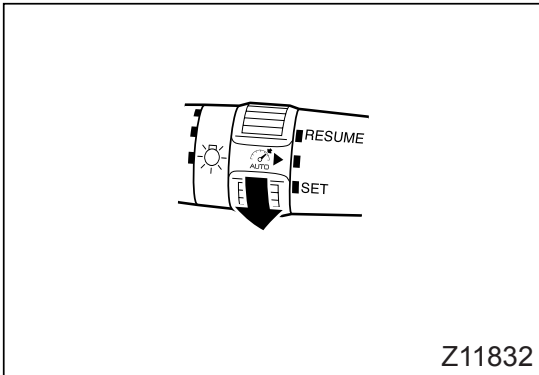
Turn the "SET/RESUME" switch to the "RESUME" position. The vehicle will accelerate. When the desired speed is reached, release the switch. The vehicle will cruise at the new, higher speed.



Z11829

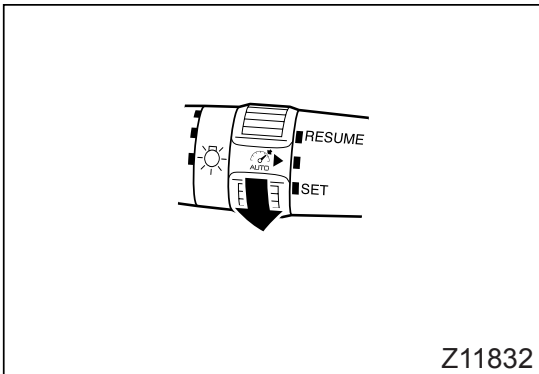
- **By using the accelerator pedal and speed set switch**

1. Use the accelerator pedal to reach the desired speed.



Z11832

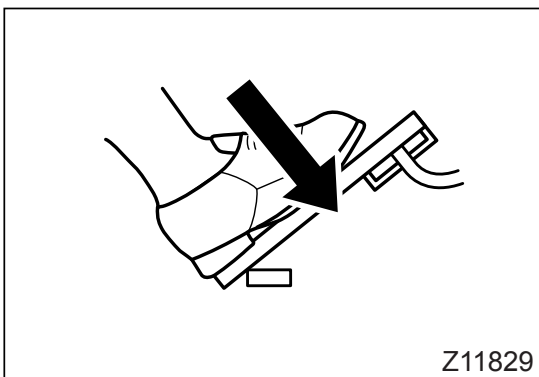
2. When the desired speed is reached, turn the "SET/RESUME" switch to the "SET" position. The vehicle will cruise at the current speed.



Z11832

- 3 **To decrease the set speed in cruise control mode**

Turn the "SET/RESUME" switch to the "SET" position. The vehicle will decelerate. When the desired speed is reached, release the switch. The vehicle will cruise at the new, lower speed.




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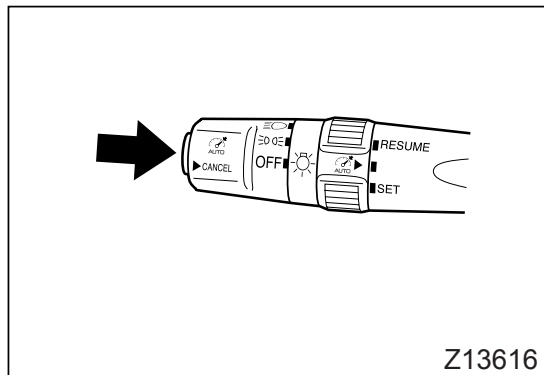
- 4 **To accelerate temporarily in cruise control mode**

Depress the accelerator pedal as you do in normal accelerating. When the pedal is released, the vehicle will cruise at the set speed again.

5 Automatic deactivation of the cruise control

The cruise control is deactivated automatically and the  indicator lamp also goes out in the following conditions:



- When the cancel switch is pushed
- When the brake pedal is depressed
- When the exhaust brake is activated
- When the clutch pedal is depressed <Manual transmission vehicles>
- When the gearshift lever is placed in the neutral position <Manual transmission vehicles>
- When the range selector lever is placed in the “N” position <Automatic transmission vehicles>



CAUTION

In an automatic transmission vehicle, placing the range selector lever in the “N” position temporarily deactivates the cruise control. However, such practice is dangerous during driving because engine braking will no longer be possible. It will also cause malfunction of the automatic transmission.

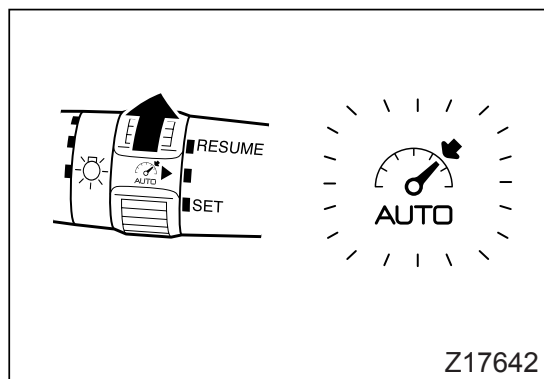
6 To reactivate the temporarily deactivated cruise control

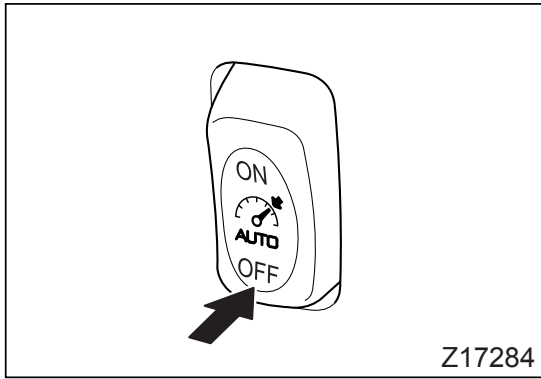
- To reactivate the cruise control, turn the “SET/RESUME” switch to the “RESUME” position. The  indicator lamp will illuminate again and the vehicle will resume running at the set speed.
- To reactivate the cruise control with a different speed specified, turn the “SET/RESUME” switch to the “SET” position when the vehicle reaches your desired speed. The  indicator lamp will light up, and the vehicle will continue running at the set speed.

NOTE:

Under any of the following conditions, you cannot resume the set speed by performing the above operation. In these situations, perform the speed setting procedure from the beginning.

- The vehicle speed is lower than 30 km/h (18 mph).
- The 3rd or lower speed gear is selected.







7 To deactivate the cruise control

Press the OFF side of the main switch.

CAUTION

- Consult an authorized dealer if you wish to install a radio transmitter/receiver equipment. Proper operation of the cruise control cannot be ensured if this equipment is installed in an inappropriate location or is incorrectly adjusted.
- If the  (red) or  warning lamp illuminates, turn off the cruise control main switch and have the vehicle inspected by an authorized dealer.
- When there is a problem with the engine control system, the cruise control cannot be used.

Air suspension height control

<Rear air suspension vehicles>

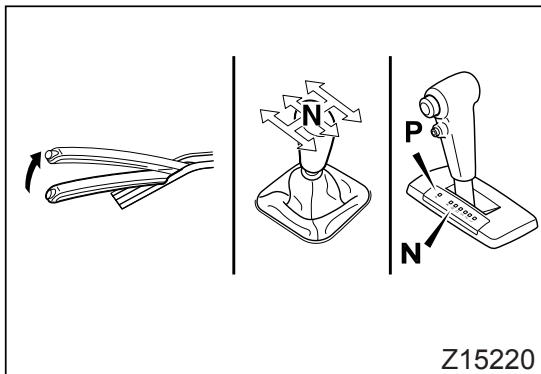
It is possible to lower the cargo bed while the vehicle is stationary. This function can be used with the starter switch in "ON" or "ACC" position.

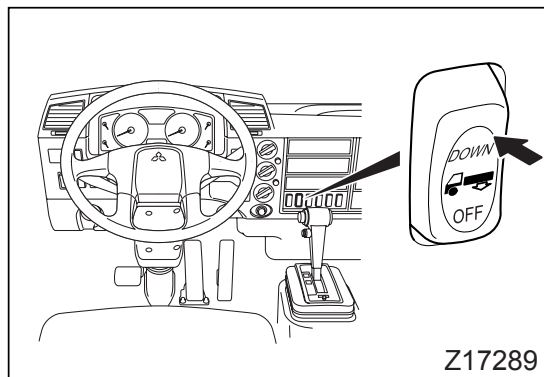
NOTE:

- *The height control switch should be turned off when adjustment of the cargo bed height is not being performed.*
- *Compressed air will be required to move the cargo bed back to driving height. It is important, therefore, that the engine be started up.*
- *Extended periods of use while the engine is not running can be the cause of flat batteries.*

1 Lowering the cargo bed

1. Set the starter switch in "ON" or "ACC" position.
2. Apply the parking brake securely. In a manual transmission vehicle, set the gearshift lever in neutral. In an automatic transmission vehicle, set the range selector lever in "P" or "N" range.

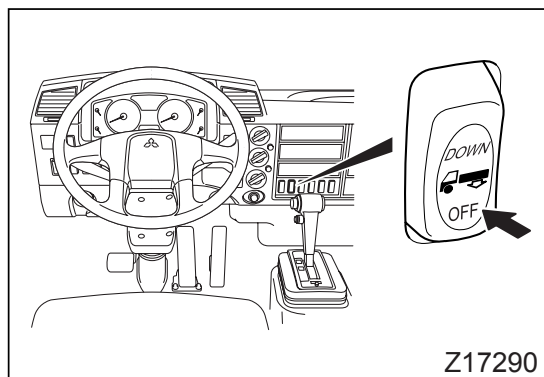




3. Push the DOWN side of the height control switch to lower the cargo bed.

NOTE:

- The system will prevent the cargo bed from lowering if the vehicle is in any of the following conditions.
 - The parking brake is not applied.
 - The starter switch is not in the "ON" or "ACC" position.
 - The gear shift lever is not in "neutral" (vehicle with manual transmission).
 - The range selector lever is not in the "P" or "N" range (vehicle with automatic transmission).
- If either of the following operations are performed during the lowering process, the cargo bed will automatically return to driving height. The height control switch will automatically return to OFF.
 - The parking brake is released.
 - The starter switch is turned to positions other than "ON" or "ACC".
 - The gear shift lever is moved out of "neutral" (vehicle with manual transmission).
 - The range selector lever is moved out of the "N" or "P" range (vehicle with automatic transmission).



2 Returning the cargo bed to driving height

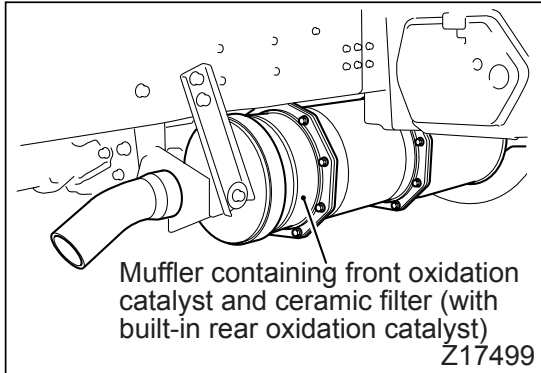
Push the OFF side of the height control switch to automatically return the cargo bed to driving height.

NOTE:

Be sure to push the OFF side of the height control switch before the vehicle is driven.

WARNING




The air suspension height control system uses compressed air from the brake system. It is important to confirm that the ^{BRAKE}_{ATR} warning lamp is not lit and that no buzzer is sounding before the vehicle is driven.



DPF cleaning switch

DPF is short for “diesel particulate filter”. The DPF system is essentially formed of a ceramic filter and an oxidation catalyst. The ceramic filter collects small particles (particulate matter or PM) contained in diesel engine exhaust, while the catalyst works to continuously regenerate the ceramic filter (or remove the PM trapped by the filter by oxidation).

- The regeneration controlling DPF system on your vehicle can maintain its full PM removing capability thanks to an automatic computer control it employs to actively regenerate the filter (or remove the collected PM by oxidation) and thus prevent an overfilled ceramic filter under low-speed driving or similar conditions when continuous filter regeneration is impossible (this is called “automatic DPF regeneration”). However, the automatic DPF regeneration cannot work in such cases as extremely slow driving and frequently repeated engine start and shutdown. If the DPF is loaded with PM to its maximum capacity following these types of driving, you must manually regenerate it after bringing the vehicle to a stop (this is called “manual DPF regeneration”). The following table shows when the system continuously or automatically regenerates the DPF and when you must manually regenerate the DPF or have the system inspected by an authorized dealer.

PM accumulation	Vehicle condition	DPF regeneration/inspection	Ref. page
Small  Large	Normal speed driving - - - →	During high-speed or high-load driving, filter trapped PM is removed continuously by oxidation (continuous regeneration).	5-37
	Automatic DPF regeneration - - - - - →	When PM accumulates to a predetermined amount, it is actively removed by oxidation (automatic regeneration).	
	The  indicator lamp flashes (frequency varies with degree of PM accumulation) - - - - - →	You must bring the vehicle to a stop and perform the appropriate procedure to clean out DPF (manual regeneration).	5-38
	Red  warning lamp - - - → illuminates	The engine output is automatically limited. Have your vehicle inspected by an authorized dealer.	5-40

CAUTION

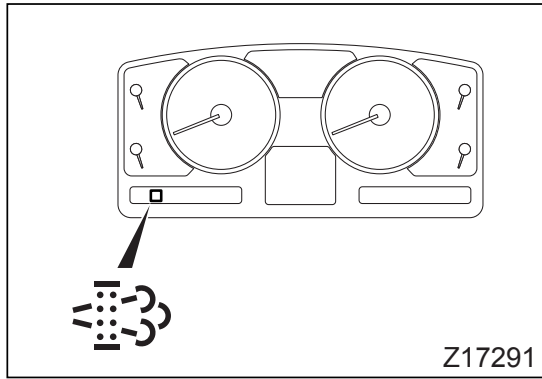
You must neither change the length and direction of the exhaust pipe and muffler, nor modify the DPF and exhaust brake. Since the exhaust gases are extremely hot (hot enough to remove particulate matter by oxidation inside the DPF), such changes could cause a fire or burn you. Furthermore, such changes would degrade the exhaust emission control performance of your vehicle and cause the DPF to malfunction.

1 Automatic DPF regeneration


The system actively removes PM by oxidation to prevent an overfilled DPF under automatic control. The operating sound and idling speed of the engine will change but you can drive the vehicle in its normal manner.

NOTE:

- During the automatic DPF regeneration, there may be a change in engine operating sound and, when your vehicle is in park, a rise in idling speed (to approx. 700 to 800 rpm) accompanied by exhaust brake valve operation. These do not indicate any abnormalities.
- Exhaust temperature is higher when the automatic DPF regeneration is taking place.





2 Manual DPF regeneration (performed following illumination of the indicator lamp)

The system sometimes cannot automatically remove the DPF trapped PM by oxidation, typically when you drive the vehicle at very low speeds or start and stop the engine frequently during operation. The system informs you of such a condition by flashing the  indicator lamp to prompt you to manually remove the DPF trapped PM by oxidation. The flashing interval of the indicator lamp differs depending on the amount of the PM accumulated in the DPF as follows:

- **Slow flashing (1-second interval)**
You must use the DPF cleaning switch within 50 km/31 miles of driving after the start of the flashing of the indicator lamp to perform the manual DPF regeneration in order to remove the PM inside the DPF by oxidation.
- **Fast flashing (0.3-second interval)**
You must bring the vehicle to a stop in a safe place as soon as possible, then use the DPF cleaning switch to perform the manual DPF regeneration in order to remove the PM inside the DPF by oxidation.

3 How to perform the manual DPF regeneration

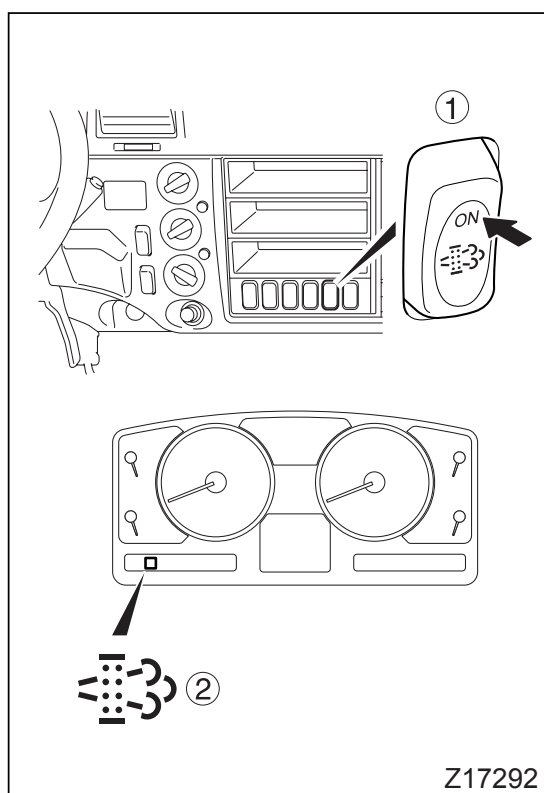
The manual DPF regeneration steps you should follow upon flashing of the  indicator lamp are indicated below. You may perform the manual DPF regeneration only when the  indicator lamp flashes. The manual DPF regeneration time is as a general rule 10 to 30 minutes although it varies with the conditions in which the vehicle is operated.


WARNING

Do not perform the manual DPF regeneration in a poorly ventilated garage or other closed area. Exhaust gas contains carbon monoxide, which is toxic and very dangerous.

CAUTION

Do not perform the manual DPF regeneration in a place where there are flammable materials, such as dead grass or paper. During the manual DPF regeneration, all surfaces of and around the exhaust pipe and muffler as well as the exhaust gases are extremely hot and nearby flammable materials can catch fire easily. Also, keep all people away from the exhaust pipe and muffler. Should anyone touch the exhaust pipe, muffler or other hot surfaces or expose any part of his/her body the exhaust gases, he/she could get burned.




1. Park the vehicle in a safe place and warm up the engine.
2. Firmly set the parking brake and place the gear-shift lever in the neutral position if your vehicle is equipped with a manual transmission, or place the selector lever in the "P" position <other than FM65F> or "N" position <FM65F> if your vehicle is equipped with an automatic transmission. Do not depress the accelerator pedal. If you are in a manual transmission vehicle, depress neither the accelerator pedal nor the clutch pedal.
3. With the engine still in operation, continuously press the "ON" side of the DPF cleaning switch ① until the  indicator lamp ② stops flashing and shifts to continuous illumination. The engine will increase its idling speed (to approx. 1500 rpm) to start the manual DPF regeneration. The exhaust brake valve may also operate during the manual DPF regeneration.

NOTE:

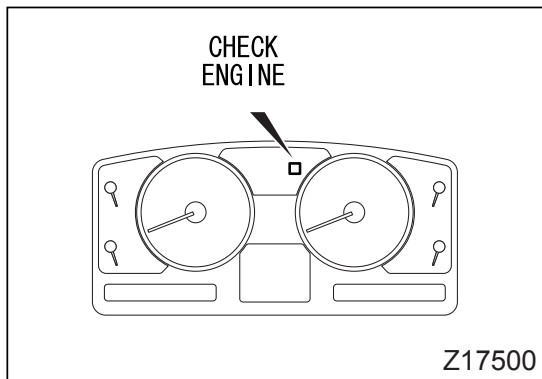
The manual DPF regeneration sequence does not start under the following conditions:

- The engine coolant temperature is too low. (Then the engine must be warmed up.)
- The accelerator pedal or clutch pedal (manual transmission vehicle) is depressed.
- The parking brake is released.




4. The idling speed of the engine returns to the original idling speed (approx. 600 rpm) and the  indicator lamp ② goes out. This indicates completion of the manual DPF regeneration.
5. Once the manual DPF regeneration is completed, you may drive the vehicle normally.
6. If you need to suspend the manual DPF regeneration before completion of the sequence, repress the "ON" side of the DPF cleaning switch or depress the accelerator pedal or clutch pedal (manual transmission vehicle).

NOTE:

When you deliberately suspend the manual DPF regeneration, complete the remaining part of the sequence without delay by performing the above steps again.



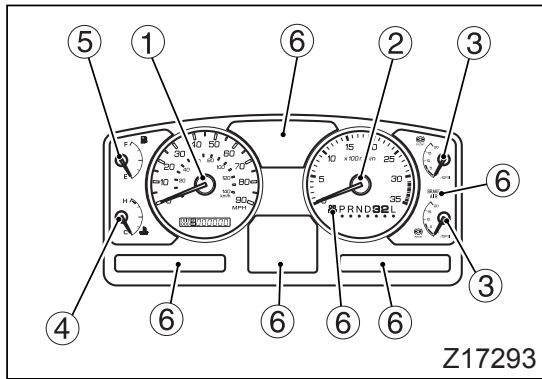
4 If the red warning lamp is illuminated

The red  warning lamp will be illuminated if you continue to drive with the  indicator lamp quickly flashing. A red color  warning lamp that remains illuminated while driving probably indicates a blocked DPF and/or failure of the system. Park the vehicle in a safe place as soon as possible and proceed to the following.

1. Hold the starter switch in the "ACC" or "LOCK" position for more than 5 seconds, then restart the engine.
2. If the warning lamp goes out, there is nothing abnormal with the system.
3. If the warning lamp remains illuminated, have an authorized dealer perform the necessary inspection.

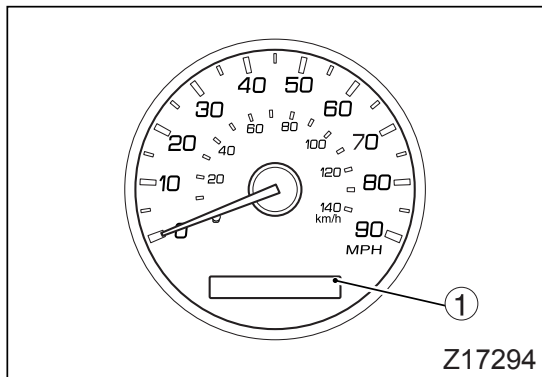
6. Instruments and warning lamps

Arrangement of instruments and warning lamps	6-2
Speedometer	6-2
Tachometer	6-3
Air pressure gauge	6-3
Water temperature gauge	6-4
Fuel gauge	6-4
Warning/indicator lamps	6-5



Arrangement of instruments and warning lamps

- ① Speedometer
- ② Tachometer
- ③ Air pressure gauge
- ④ Water temperature gauge
- ⑤ Fuel gauge
- ⑥ Warning/indicator lamps

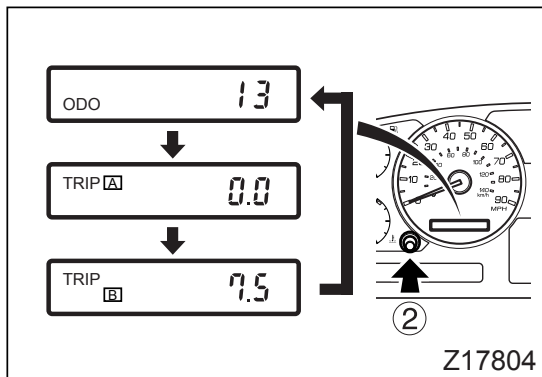


Speedometer

1 Speedometer

The speedometer indicates vehicle speed in MPH and km/h.

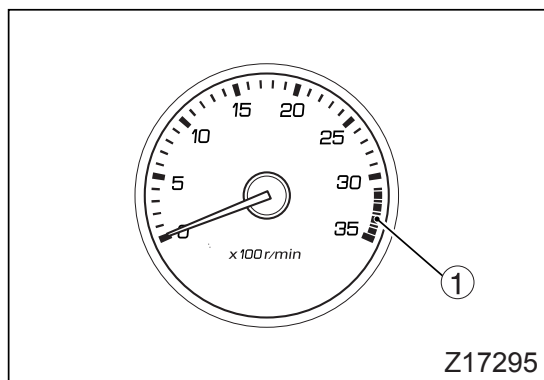
The outer numbers denote MPH, and the inner numbers denote km/h.



2 Odometer/tripmeter

With the starter switch in "ON" position, the meter indicates ODO (odometer) or TRIP (trip meter) ① reading.

- Each time the trip knob ② is pushed, the indication switches as shown in the illustration.
 ODO (odometer): Indicates the total distance covered by the vehicle in miles.
 TRIP (trip meter): Indicates the distance covered after the final resetting of the meter in one-tenth miles.
- The trip meter has TRIP "A" and TRIP "B", which operates independently.
- The trip meter displayed can be zeroed by pushing the trip knob for about 1 seconds or longer.



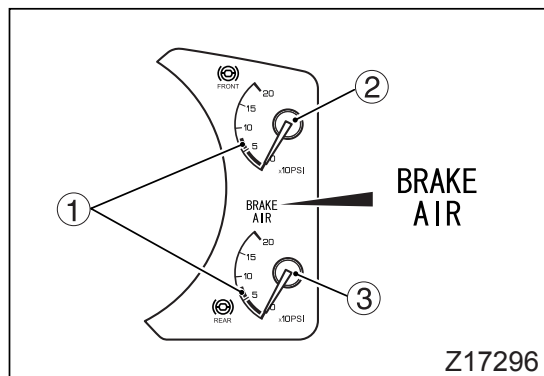
Z17295

Tachometer

- The tachometer indicates engine speed in revolutions per minute.
- The red zone ① indicates that engine is over-revved. Reduce the vehicle speed sufficiently so that the needle does not enter this range during downhill driving or downshifting.

! CAUTION

The term “overrev” refers to an operational state of the engine in which it turns at an RPM exceeding the maximum limit. Persistent over-revving could lead to an engine failure.



Z17296

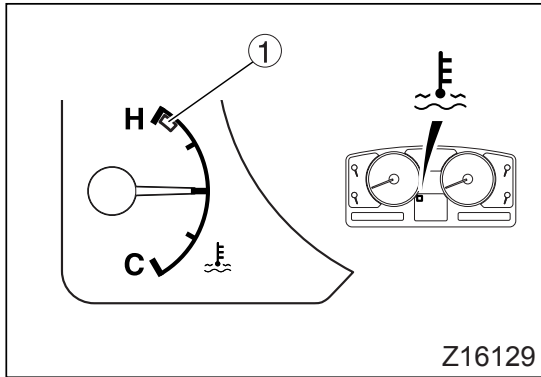
Air pressure gauge

The air pressure gauge indicates the amount of air pressure in the air tank. The upper gauge ② indicates the front brake line air pressure, and the lower gauge ③ indicates the rear brake line pressure. Red zone indicates that air pressure is either too low or too high.

If the needle deflects into the red zone ①, warning lamp ^{BRAKE}_{AIR} lights up and a buzzer sounds. Whenever the warning lamp ^{BRAKE}_{AIR} illuminates, pull off the road as soon as you can safely do so, and let the engine rotate at a speed in the intermediate range until air pressure builds to a normal level. If air pressure fails to build or takes longer to return to a normal level than it should, or again, if the needle indicates a high pressure over 130 psi, call an authorized dealer.

! WARNING

Never operate the vehicle if warning lamp ^{BRAKE}_{AIR} is lit up as brakes may be inoperative.




Z16129


Water temperature gauge

This gauge indicates the temperature of the engine coolant.

With the engine running normally, the needle should be in the center of the gauge.

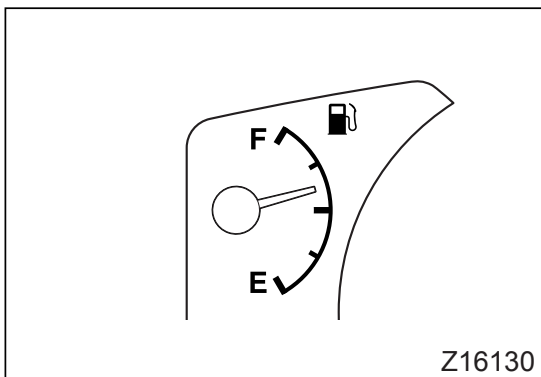
If the needle points in the red zone ①, the engine has overheated. The  warning lamp will light up and a buzzer will sound simultaneously. Should this occur, pull off the road as soon as you can safely do so and let the engine rotate at a speed above idling speed to cool it down.

If the vehicle has an air conditioner, switch it off.

⇒  P. 13-9

CAUTION

Be sure to stop the engine only after letting it run at a speed slightly above the idling RPM until the coolant cools down. Turning off the engine immediately after stopping will cause the coolant temperature to rise quickly and may cause the engine to seize up.



Z16130

Fuel gauge

The fuel gauge indicates the amount of fuel still remaining in the fuel tank.

F: Full

E: Empty

When the needle approaches the "E" mark, refuel as soon as possible.

⇒  P. 1-5

CAUTION

The fuel injection system may fail if the engine stops due to lack of fuel.

NOTE:

Air will be present in the fuel system after the engine has run out of fuel. This air will prevent the engine from starting even after it is adequately refueled. You must bleed the fuel system before the engine can be started.

⇒  P. 13-26

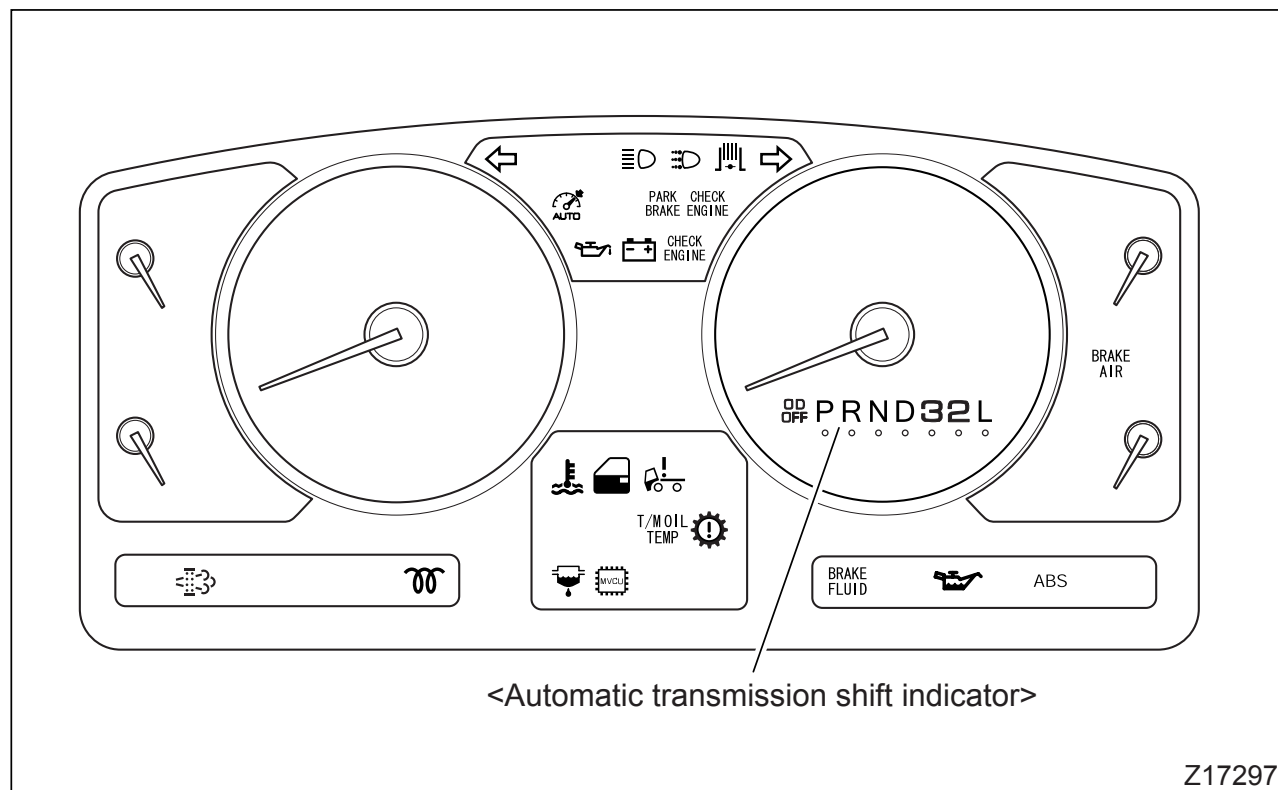
Warning/indicator lamps










1 Arrangement of warning/indicator lamps










The illustrations below show the standard arrangement of the warning and indicator lamps. Some lamps may not be included depending on vehicle specifications.

CAUTION

The red warning lamps, if illuminated, warn you of vehicle component failures and possible danger of accident. Never drive the vehicle while a red warning lamp is illuminated. If any of them light up, stop the vehicle as soon as it is safe to do so and make checks for locating the cause. If necessary, have your vehicle repaired by an authorized dealer.

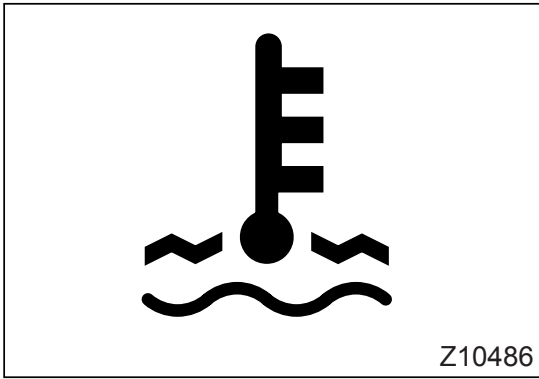


Lamp symbol	Warning/indicator lamp	If illuminates or flashes	Ref. page
	Charge warning lamp	Problem in battery charging system	6-10
	Open door warning lamp	Door not completely closed	3-2
	Cab tilt lock warning lamp	Cab is tilting or incompletely locked	12-10
	Low coolant level/engine over-heating warning lamp	<ul style="list-style-type: none"> Coolant is at an excessively low level (*) Engine is overheating (*) 	6-8, 12-47
	Engine oil pressure/clogged oil filter warning lamp	<ul style="list-style-type: none"> Excessively low engine oil pressure (*) Clogged oil level (*) 	6-11, 12-37
	Engine oil level warning lamp	Engine oil level is correct (when oil level check switch is operated)	12-25
BRAKE FLUID	Brake warning lamp <FK61F>	<ul style="list-style-type: none"> Brake fluid at an excessively low level (*) Excessive brake shoe clearance (*) 	6-9
BRAKE AIR	Air pressure warning lamp	Low air pressure in air tank (*)	6-10
T/M OIL TEMP	Transmission fluid temperature warning lamp <Automatic transmission vehicles>	Automatic transmission fluid excessively hot	5-18, 5-21
	Transmission warning lamp <Automatic transmission vehicles>	Fault in electronic control circuitry of automatic transmission	5-18, 5-21
CHECK ENGINE	(Red) Engine control warning lamp	Abnormality in engine control system or DPF system	6-12
CHECK ENGINE	(Amber) Engine control warning lamp	Abnormality in exhaust gas control system	6-13
	Fuel filter warning lamp	Water level in fuel filter is high	12-45
	Vehicle control warning lamp	Malfunction in electrical control system	6-13
ABS	ABS warning lamp	Malfunction in anti-lock brake system (ABS)	8-4

Lamp symbol	Warning/indicator lamp	If illuminates or flashes		Ref. page
	Daytime running light indicator lamp	Headlamps (low-beam) illuminated by daytime running light system		5-24
	Turn signal indicator lamp	Turn signal or hazard warning lamps flashing		5-25
	Headlamp high beam indicator lamp	Headlamp high beams illuminated		5-25
	Parking brake indicator lamp	Parking brake activated		5-22
	Exhaust brake indicator lamp	Exhaust brake activated		5-26
	Engine preheat indicator lamp	Engine being preheated		5-7
	Overdrive OFF indicator lamp <Allison automatic transmission 1000RDS/2200RDS series>	Overdrive switch OFF		5-17
	Cruise control indicator lamp	Cruise control activated		5-29
	DPF indicator lamp	Slow flashing (1-second interval)	DPF loaded with much PM	5-36
		Fast flashing (0.3-second interval)		
		Continuous illumination	Manual regeneration of DPF in progress	

NOTE:

(*): Warning lamps illumination of which is accompanied by a buzzer sounding.




2 Low coolant level/engine overheating warning lamp

- This lamp illuminates and a buzzer sounds if there is insufficient engine coolant or if the engine overheats.

NOTE:

The buzzer stops sounding when the vehicle is stopped and the parking brake is activated.

- If the water temperature gauge's needle enters the red zone, the engine has overheated. Pull off the road as soon as it is safe to do so and run the engine slightly faster than idling speed until it cools down and then take necessary action against overheating. →  P. 13-9

WARNING

Driving with an overheated engine can damage the engine or even cause a fire.

CAUTION

Be sure to stop the engine only after letting it run at a speed slightly above the idling RPM until the coolant cools down. Turning off the engine immediately after stopping will cause the coolant temperature to rise quickly and may cause the engine to seize up.

- If the water temperature gauge's needle does not point to the red zone, there is insufficient engine coolant. Check the coolant level and add the coolant.

WARNING

Driving with insufficient coolant will cause overheating, which can damage the engine and even cause a fire.

BRAKE FLUID

Z10912

3 Brake warning lamp

<FK61F>

The brake warning lamp will light up and a buzzer will sound if the brake fluid in the brake fluid reservoir tank falls below the predetermined level, or if the brake shoe clearance exceeds the predetermined value.



WARNING

Never continue driving if the BRAKE FLUID warning lamp is illuminated. The brakes are dangerously ineffective and could cause an accident.

NOTE:

With the starter switch in the "ON" position and the engine not running, the BRAKE FLUID warning lamp will illuminate. It is normal if the lamp will go out when the engine is started.

- **If the warning lamp stays illuminated**

1. Check the level of the fluid in the brake fluid reservoir tank.
2. If fluid level is found to be low, check for leaks.
3. If leaks are detected, call an authorized dealer.
4. If fluid leaks are not detected, fill with fluid to the normal level.
5. If the lamp illuminates even when the brake fluid level is correct or after fluid has been added, have the brakes inspected by an authorized dealer as soon as possible.

- **If the warning lamp illuminates when the brake pedal is depressed**

Brake shoe clearance (the clearance between the brake drum and brake shoe lining) is adjusted automatically. If the brake performance has deteriorated and BRAKE FLUID warning lamp illuminates together with the buzzer sounding when the brake pedal is depressed, the brake shoe clearance has become excessive. Have the brakes inspected by an authorized dealer as soon as possible.

⚠ CAUTION

Although the brake shoe clearance is adjusted automatically, unexpected failure of the automatic adjuster can result in excessive clearance and poor brake performance. Regularly check the brake shoe clearance and how much the brake lining is worn to confirm that the automatic adjuster is functioning correctly.

BRAKE AIR

Z10913

4 Air pressure warning lamp

This lamp lights up and the buzzer sounds when the brake air pressure has dropped to an unsafe level at which sufficient braking performance is not ensured. Pull off the road as soon as it is safe to do so, and perform the following checks.

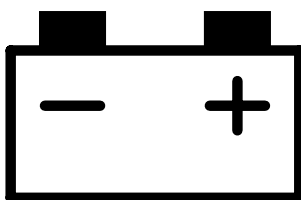
⚠ WARNING

- The brakes become completely inoperative when the compressed air in the air tank is exhausted.
- When the warning lamp is illuminated, the brakes are dangerously sluggish and could cause an accident. Never continue driving with the vehicle in this condition.

NOTE:

With the starter switch in the "ON" position and the engine not running, the ^{BRAKE}_{AIR} warning lamp will illuminate. It is normal if the lamp will go out if the engine is started.

1. Let the engine run at an intermediate RPM until the warning lamp goes out.
2. Check piping and its connections for air leaks.
3. If the lamp does not go out or goes on again soon after it has gone out, the system must be repaired. Call an authorized dealer.







Z10484



5 Charge warning lamp

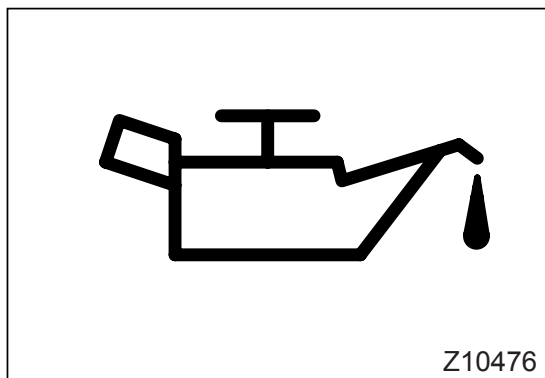
The charge warning lamp lights up when the starter switch is turned to the "ON" position and goes out as soon as the alternator starts charging the battery after the engine has turned over.

The lamp also lights up if a problem occurs in the battery charging system while the engine is running. If this occurs, pull off the road as soon as it is safe to do so, and perform the following checks.

NOTE:

- The  warning lamp will light up if the starter switch is turned to the "ON" position when the engine is not running. It goes out after the engine is started if there are no problems.
- If the alternator is malfunctioning, the  and  warning lamps may light up simultaneously with the  warning lamp.
- The buzzer stops sounding when the vehicle is stopped and the parking brake is activated.


1. Check for a broken V-belt. Also check belt tension. ⇒  P. 12-54
2. Check for a blown high-current fuse in the battery charging circuit. If blown, replace with a new one. ⇒  P. 13-10
3. If both the above checks have turned out normal, the problem is probably in the battery charging system. Call an authorized dealer.




6 Engine oil pressure/clogged oil filter warning lamp

The engine oil pressure/clogged oil filter warning lamp lights up when the oil filter element is clogged or the engine oil pressure becomes abnormally low. Pull off the road as soon as it is safe to do so, stop the engine, and perform the following inspection.


NOTE:

The  warning lamp will light up when the starter switch is turned to the "ON" position and the engine is not running. It goes out after the engine is started if there are no problems. In cold climates, the warning lamp may remain illuminated for a while after starting the engine due to high viscosity of the engine oil.

- **If the lamp lights up without buzzer sounding**
The oil filter element is clogged. Replace the element as early as possible. ⇒  P. 12-37

CAUTION

Continued driving with the lamp illuminated may cause engine to seize up. Replace the element as early as possible.

- **If the lamp lights up and buzzer sounds**
The engine oil pressure is abnormally low.
 1. Check the engine oil level. Add if insufficient. ⇒  P. 12-24
 2. Check the engine for any trace of oil leaks.

3. If the oil level is normal and there is no trace of oil leaks, there is probably a problem in the lubricating system. Call an authorized dealer.

CAUTION

Never continue driving with the lamp illuminated. The engine could seize up.

NOTE:

The buzzer stops sounding when the vehicle is stopped and the parking brake is activated.

**CHECK
ENGINE**

Z11795

7 Engine control warning lamp


• Illumination of red lamp

The red lamp illuminates when an abnormality is detected in the engine control system or DPF system. The engine output may be limited or the engine may stop depending on the location of the fault. If the lamp illuminates, stop the vehicle at a safe place. Place the starter switch in "ACC" or "LOCK" position for 5 seconds or longer and then restart the engine. If the lamp stays off, there is no problem. If the lamp illuminates again, stop the engine and contact the nearest authorized dealer.

The red lamp is also illuminated if you continue to drive while the DPF indicator lamp quickly flashes. Illumination of this lamp may indicate a blocked DPF and/or faulty DPF system. If this lamp illuminates during driving, stop the vehicle as soon as it is safe to do so and perform the following inspection.

1. Hold the starter switch in the "ACC" or "LOCK" position for more than 5 seconds, then restart the engine.
2. If the warning lamp goes out, there is nothing abnormal with the system.
3. If the warning lamp remains illuminated, have an authorized dealer perform the necessary inspection.


NOTE:

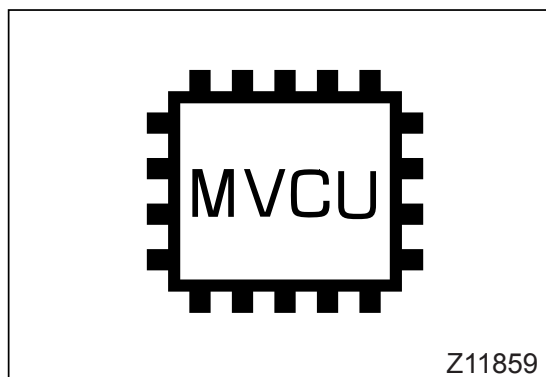
The  warning lamp will light up when the starter switch is turned to the "ON" position and the engine is not running. It goes out after the engine is started if there are no problems.

- **Illumination of amber lamp**

The amber lamp illuminates if the exhaust gas control system has some abnormality and its function deteriorates. The engine output may be limited depending on the location of the fault. If the lamp is lit, have your vehicle inspected at an authorized dealer in the earliest opportunity.

NOTE:

The  warning lamp will light up when the starter switch is turned to the "ON" position and the engine is not running. It goes out after the engine is started if there are no problems.




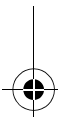
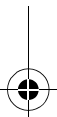
8 Vehicle control warning lamp

The vehicle control warning lamp lights up when problems occur in the vehicle's electrical control system. If it lights up, pull off the road as soon as it is safe to do so.

Place the starter switch to the "ACC" or "LOCK" position for more than five seconds, then restart the engine. If the warning lamp goes out, there are no problems. If it remains on, have your vehicle inspected by an authorized dealer as soon as possible.

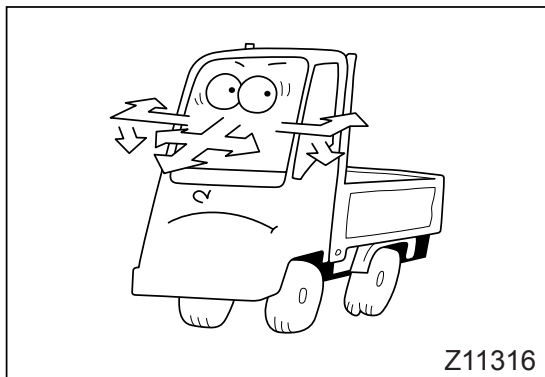
NOTE:

The  warning lamp will light up when the starter switch is turned to the "ON" position and the engine is not running. If it goes out after a few seconds, there are no problems.



7. Starting and driving

Precautions when setting the vehicle in motion	7-2
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Z11316

Precautions when setting the vehicle in motion

- Do not carry containers of fuel or spray cans in the cabin.

WARNING

Carrying fuel in the cabin is extremely dangerous because an increase in the cabin temperature could cause fuel vapor to catch fire or cause the container to rupture.

- Do not attach anything to the windshield.
- Check the immediate area around the vehicle, using mirrors as necessary: there should be no persons or obstacles under, in front of, on either side, or behind the vehicle. Be particularly careful when backing up. If you cannot see behind the vehicle in the mirrors, get out of the vehicle and check that it is safe to start moving the vehicle.
- Check that none of the red warning lamps are illuminated. The ^{PARK}_{BRAKE} warning lamp will go out when the parking brake is released.
- Fully release the parking brake.
- In a manual transmission vehicle, put it in the first gear and set it in motion carefully. When pulling away, avoid racing the engine and suddenly engaging the clutch. Sudden starts place undue strain on the vehicle and should be avoided. Also, avoid slipping the clutch for extended periods since this can damage it.
- In an automatic transmission vehicle, depress the brake pedal and move the range selector lever out of the "P" or "N" position. If the engine's idling speed is too high, selecting the "D" or "R" ranges may make the vehicle lurch. Normalize the engine's idling speed before pulling away. Running the air conditioner, if fitted, raises the engine's idling speed and may make the vehicle pull away faster than expected.

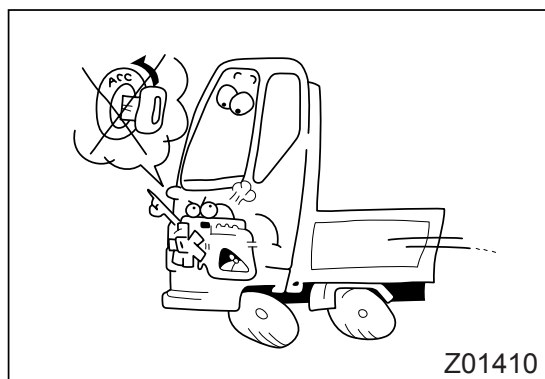
NOTE:

If the range selector lever is operated with the engine speed too high, the intended gear may not be selected properly. If this happens, a buzzer will sound.

Precautions for driving

Observe the following precautions while driving. Should you notice anything unusual about the vehicle, immediately stop the vehicle in a safe place and inspect the relevant sections to find the cause of the trouble. If you are unable to identify the cause of the trouble or unable to do the repairs yourself, call an authorized dealer.

- Do not stop the engine while the vehicle is moving.



! WARNING

Never place the starter switch in any position other than the “ON” position while operating the vehicle.

If you turn the starter switch to the “ACC” position, the engine will stop. This is highly dangerous.

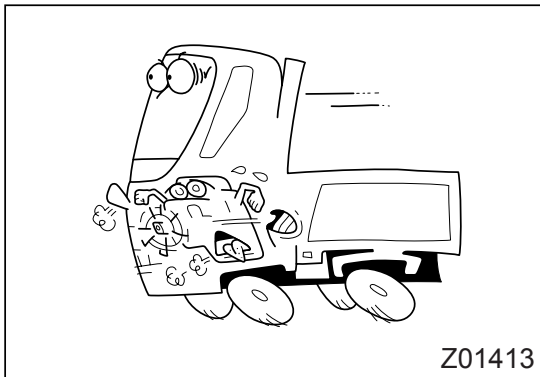
If the engine stops during driving:

- **The compressed air used to enhance braking ceases to be generated. This could significantly reduce the effectiveness of the brakes. Also, the exhaust brake ceases to function.**
- **The power steering system becomes inoperative, rendering steering dangerously sluggish.**
- **The electrical circuits of the warning lamps, meters, etc. become inoperative, causing electric components to malfunction.**

Removing the starter key causes the steering wheel to lock, making it impossible to steer the vehicle.

- Should the engine stall while the vehicle is in motion, do not panic. Simply depress the brake pedal to slow the vehicle, and pull off the road as soon as it is safe to do so.
- When any of the red warning lamps light up or a buzzer sounds, pull the vehicle off the road as soon as it is safe to do so and take the necessary measures. Contact an authorized dealer if the cause of the problem is unclear or if the problem requires complex repair work.

⇒ P. 6-5



- Avoid making sharp turns and braking hard except in emergencies. Doing so during high-speed driving could cause the vehicle to tip over.
- Avoid accelerating sharply on slippery roads since this could make the tires slip and impair directional stability.
- If you notice a strange noise, vibration, or smell, or if steering or braking feels unusual, pull the vehicle off the road as soon as it is safe to do so and check for the source of the trouble.
- When driving on narrow streets or when making a turn, keep in mind that the tracking of the front and rear inner wheels is different, and also make sure of rearward safety using the rearview mirrors.
- Remember that the mirrors protrude from the vehicle body. Be careful not to hit pedestrians and obstructions with the mirrors when driving on narrow roads.

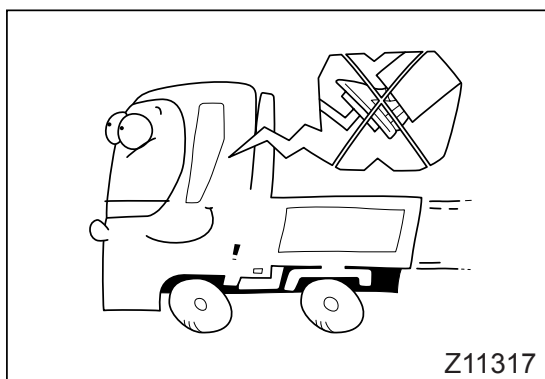
Looking at the mirrors while driving causes your line of vision to move significantly. Be sure to keep paying attention to safety ahead of the vehicle.

- Continuous high-speed driving burdens the engine and other vehicle parts. Allow yourself enough time that you do not need to push the vehicle too hard.
- Perform your pre-operation checks with particular care when you expect to drive at high speeds.

When continuously driving at high speeds, your sense of speed may become dull. Pay constant attention to your speed, and maintain an adequate distance from the preceding vehicle.

- If a tire bursts or gets punctured while you are driving at high speed, do not panic. Keep a firm grip on the steering wheel and gradually reduce your speed. Stop the vehicle in the nearest safe place. Do not brake sharply. Braking sharply would be dangerous because the steering wheel would be pulled to one side with great force.
- Do not keep the steering wheel turned to the right or left stop for more than 10 seconds as doing so could lead to a failure of the power steering system.
- Do not try to forcefully turn the steering wheel when the front wheels are stuck against a curbstone or other object. Doing so could cause the steering gearbox to fail.

- When driving at high speeds in the rain, it sometimes happens that the tires ride on a film of water and lose contact with the road surface. This is known as “hydroplaning”. If this should happen, you will lose control of both steering and braking. Therefore, be sure to maintain moderate speeds on rainy days.
The hydroplaning can easily occur if tire tread is worn to the point where the tread pattern is very shallow.
- Using the exhaust brake on a wet, frozen, snow-covered, or otherwise slippery road surface when the vehicle is lightly loaded or not loaded can cause the tires to slip on the road surface, resulting in a skid. Do not use the exhaust brake on slippery road surfaces.
- Do not use a mobile telephone while driving. If you wish to use a mobile telephone, first stop the vehicle in a safe place. Using a mobile telephone while driving could distract your attention from the vehicle and from the road ahead, resulting in an accident.
- Operate the radio and other items of equipment in the cab when the vehicle is stationary. It is dangerous to operate such items of equipment or use a carphone (other than a hands-free type) while driving.
- Do not allow a child to touch the driver’s controls and other equipment. A child’s interference could cause a fault or accident.



Precautions when driving a manual transmission vehicle

- Avoid slipping the clutch excessively. Partially depressing the clutch pedal while the vehicle is in motion causes the clutch to slip and shortens the service life of the clutch. It may also cause the engine braking and exhaust braking performance to deteriorate.
- Avoid suddenly releasing the clutch pedal since this places undue stress on the vehicle and shortens the service life of the clutch.
- Depress the clutch pedal fully whenever changing gear. If you do not depress the pedal completely, the clutch will slip and the clutch disc will be damaged, which could lead to an accident.

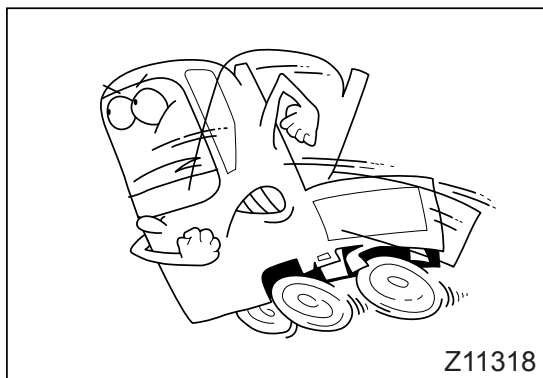
- **Do not operate the vehicle with the clutch disengaged or the gearshift lever in neutral.** Doing so will render the engine braking and exhaust brake features ineffective, forcing you to rely only on the service brakes and overusing them in the process.
- Before shifting down, wait for the tachometer needle to drop below 1,600 rpm or decelerate until the vehicle speed comes within the next gear's range. Not shifting down in this manner could cause the engine to overrev.

NOTE:

“Overrev” refers to an operating state of the engine in which it rotates at an RPM higher than the recommended maximum RPM. Overrevving the engine could lead to an engine failure.

Precautions when driving an automatic transmission vehicle

- Select the “D” range for normal driving. Other than FM65F, it is also possible to pull away using the range selector lever in the same way as a manual gearshift lever, starting in “L”, then upshifting position by position to “D”. On FM65F, it is also possible to pull away using the range selector lever in the same way as a manual gearshift lever, starting in “1”, then upshifting position by position to “D”.
- Do not push the range selector lever into the “N” position while the vehicle is in motion. This would make engine braking and exhaust braking impossible and force you to overuse the service brakes. It could also damage the transmission.
- For safety, the transmission will automatically refuse to shift down if the vehicle is moving too fast. Decelerate sufficiently by depressing the brake pedal before you can manually select a lower speed range.
- If you stop the vehicle momentarily, for example, at a red light, keep the brake pedal firmly depressed. If you must wait for longer than expected, select the “N” or “P” range (“N” range on FM65F) and activate the parking brake.
- If you stop temporarily when driving uphill, depress the brake pedal and activate the parking brake. Do not attempt to stop the vehicle from rolling backwards with the accelerator pedal.



Tips for improving fuel economy

Observe the following precautions to achieve maximum fuel economy and to extend tire life.


- Continue warming up the engine only to the point at which the water temperature gauge needle begins to move.
- Avoid racing the engine as doing so not only wastes fuel but also harms the engine.
- Avoid sudden starts, sudden acceleration, and sudden braking.
- When accelerating, do not allow the tachometer needle to approach the red zone before changing gears; instead, change gears before engine speed reaches a high RPM.
- Once cruising speed has been reached, select the appropriate gear so that the engine will rotate around the maximum torque generating RPM (1,400 rpm). Moreover, unnecessary acceleration and deceleration wastes fuel.
- Do not keep the exhaust brake switch in the activation position at all times. Frequent use of the exhaust brake reduces fuel economy. Move the exhaust brake switch between the activation and non-activation positions as necessary for road and traffic conditions.
- Always keep the air pressure in tires correctly adjusted.
- Try to load cargo in a way that minimizes wind resistance. → P. 7-15
- Be sure to perform the pre-operational checks and periodic inspections.

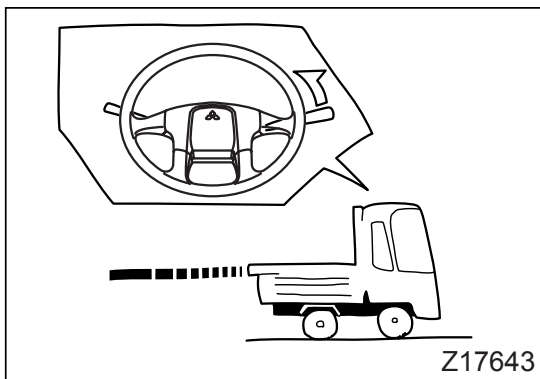
Braking

Applying even a light pressure to the brake pedal provides powerful braking. Therefore, do not step hard on the brake pedal except in emergencies.

When driving downhill, use engine braking as well as exhaust braking in combination with the foot brake. → P. 7-10

WARNING

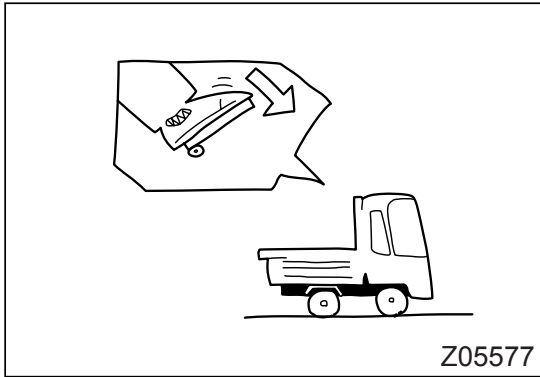
- If the **BRAKE AIR** or **BRAKE FLUID** warning lamp illuminates while the vehicle is in motion, stop at the nearest safe place and identify the problem.  P. 6-6
- If you release the brake pedal completely, the vehicle will coast past the point at which you wish to come to a halt.
- Do not pump the brake pedal as doing so reduces the air pressure, which in turn could reduce braking power.
- Using the exhaust brake on a wet, frozen, snow-covered, or otherwise slippery road surface when the vehicle is lightly loaded or not loaded can cause the tires to slip on the road surface, resulting in a skid. Do not use the exhaust brake on slippery road surfaces.
- Sudden braking will wear down tires and could cause malfunctions in other sections of the vehicle.
Sudden braking could also result in an injury due to shocks.
- Do not use the parking brake when driving except in an emergency, like if the service brakes have failed. Such use of the parking brake may make the vehicle spin or, at worst, roll over. It may also cause faults in vehicle components.



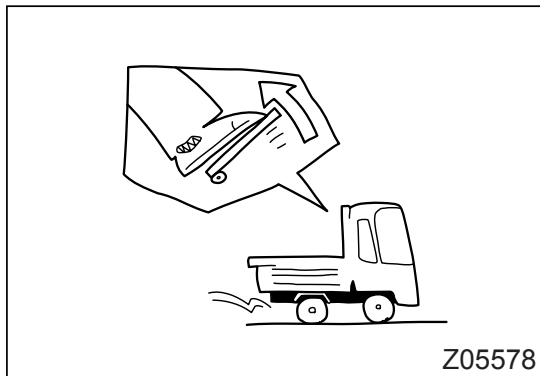
1. The distance needed for braking varies with speed, load weight, and road conditions. Make effective use of engine braking and exhaust braking to decelerate sufficiently before applying the brakes.

NOTE:

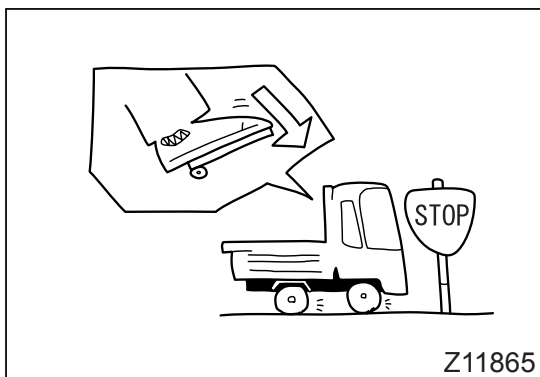
Engine braking is a braking effect realized when the accelerator pedal is released during vehicle operation. The lower the transmission gear, the more powerful the engine braking.



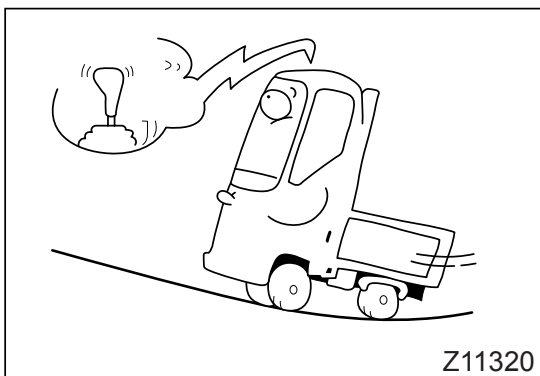
2. Depress the brake pedal halfway when you are nearby the place at which you wish to stop.



3. Slowly release the pedal (half or one-third of the stroke which you have used until then).



4. Just before reaching the point at which you wish to come to halt, depress the pedal again very slightly to stop the vehicle.



On uphill and downhill roads

1 Uphill roads

- Downshift early when the speed begins to drop to minimize the load on the engine.
- With an automatic transmission vehicle, downshifting can be performed either with the range selector lever or by depressing the accelerator pedal hard. If you depress the accelerator pedal to maintain a constant speed when driving uphill, the transmission may shift down and the engine speed increase.

2 Downhill roads

- If you are going to drive down a steep road or a road with a long downhill grade, test the service brake and exhaust brake in advance to make sure that they are functioning well.
- Place the vehicle in the gear used when driving uphill and use engine braking and exhaust brake to help slow the vehicle. Never drive downhill at high speeds.

If your vehicle is equipped with an automatic transmission, leaving the range selector lever in the “D” position will result in insufficient engine braking, causing the vehicle to speed up too much. Add engine braking as required by shifting down the gears.

Other than FM65F:

Shift down to “3”, “2” or “L” position. Use the service brakes to prevent engine overrev when shifting to “2” or “L” position.

FM65F:

Shift down to “5”, “4”, “3”, “2” or “1” position. Use the service brakes to prevent engine overrev when shifting to “2” or “1” position.

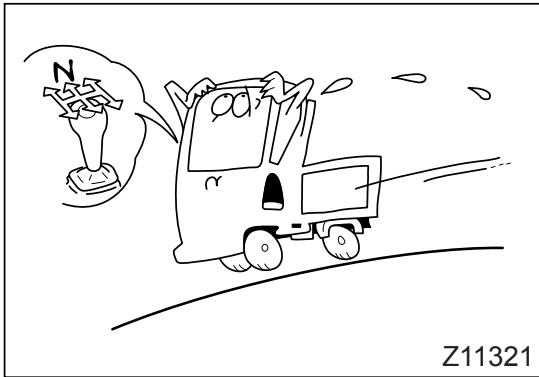
- On slippery roads, avoid sudden engine braking since this could cause a skid.
- Never coast downhill with the gearshift lever in neutral (manual transmission vehicles) or the range selector lever in the “N” position (automatic transmission vehicles). Doing so makes both engine braking and exhaust brake inoperative, which in turn excessively burdens the service brakes. This also causes the brakes to overheat and the brake linings to wear out prematurely.

In an automatic transmission vehicle, this can also cause damage to the transmission.

- Avoid overusing the service brakes as the resultant overheating could cause undesirable vapor lock (FK61F) and fading, both of which contribute to poor braking.

NOTE:

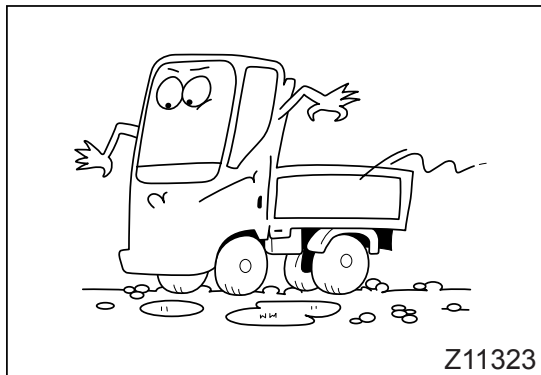
- “Vapor lock” refers to the condition in which the brake system overheats, causing the brake fluid to boil and form bubbles that weaken hydraulic pressure, resulting in poor braking.
- “Fading” refers to the condition in which the brake linings overheat to the point where friction with the brake drum is significantly reduced. This also results in poor braking.



- First decelerate the engine sufficiently before downshifting.
Downshifting more than two gears at a time or downshifting at a high engine speed could cause the engine to overrev.
Generally speaking, you should decelerate to roughly 1,600 rpm before downshifting.
For safety in an automatic transmission vehicle, the transmission will automatically refuse to shift down if the vehicle is moving too fast. Depress the brake pedal to decelerate.

NOTE:

“Overrev” refers to an operating state of the engine in which it rotates at an RPM higher than the recommended maximum RPM. Overrevving the engine could lead to an engine failure.



On rough roads and in bad weather

- Use a low gear and try to drive at a constant speed when driving on gravel roads or muddy roads.
- Do not race the engine when attempting to move out of mud. Racing the engine is useless and even worsens the condition as the spinning wheels will make ruts deeper. Instead, place thick waste cloth, gravel or the like under tires, and engage the 1st and reverse gears alternately or, in an automatic transmission vehicle, select the “D” and “R” positions alternately to move the vehicle back and forth until you can drive out.

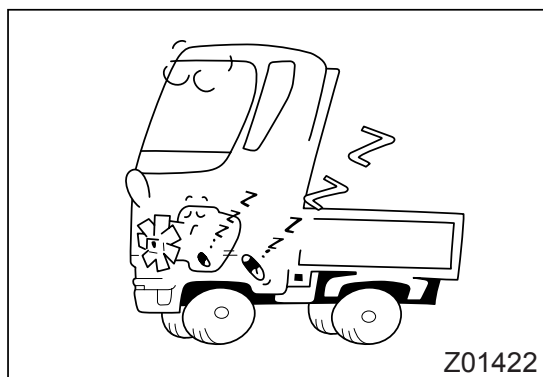
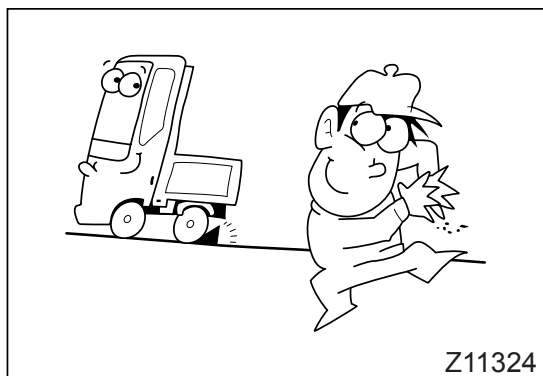
When shifting from “D” or “R” or vice versa, release the accelerator pedal to lower the engine speed to idle.

! CAUTION

Do not operate an automatic transmission in this way for more than 5 minutes since it causes the automatic transmission fluid to heat up rapidly.

- Drive very slowly on bumpy roads and take care not to allow the undercarriage to bottom out. When the diesel particulate filter (DPF) strikes a rock or other obstacle, its internal catalyst and ceramic filter may be damaged. Have it checked by an authorized dealer.
- Avoid sudden steering and sudden braking on roads which are slippery from rain. Conditions are especially dangerous just after it begins to rain. Use engine braking and the exhaust brake together with the wheel brakes to decelerate. Note, however, that sudden engine braking can cause a skid. Drive at a speed at which you can stay comfortably in control of the vehicle.
- Brake performance may deteriorate when the vehicle is driven through puddles or washed and if water enters the brake drums. If this happens, drive slowly while paying careful attention to surrounding traffic and keeping light pressure on the brake pedal to dry the brake shoes and drums.
- Avoid driving when the road is covered with much water because of torrential rain or other causes. Should your vehicle be soaked by water, have it inspected by an authorized dealer as soon as possible.
 - If water gets into the engine, it can cause engine damage.
 - If water gets into the high-current fuse box, it can cause a short circuit that may result in a fire.
 - If water gets into wheel hub bearings, king pins, tie rod ends, and the components around them, it can cause the bearings and other parts used in them to be rusted and ultimately to seize up.
 - If water gets into the DPF, the oxidation catalyst and ceramic filter could be damaged.
- In fog, drive carefully at low speeds, paying attention to the center line and the vehicle ahead of you.
- When driving in snow or on frozen roads, use tire chains or snow tires and drive at moderate speeds. Avoid sudden braking and sharp turns.

Parking



! WARNING

- Park the vehicle on the flattest available surface.
Avoid parking on slopes. When you cannot avoid parking on a slope, apply chocks to the wheels. You can further improve safety by leaving the steering wheel turned so the vehicle will roll toward an obstacle (for example, a curbstone) in the unlikely event of movement.
- The engine and exhaust pipe are extremely hot immediately after the vehicle has been driven. Do not park the vehicle in any place where there is dry grass, waste paper, or other flammable material.
- Always stop the engine before sleeping in the cabin. You could otherwise cause an accident by unintentionally moving the accelerator pedal or shift lever while sleeping. Also, you could suffer carbon-monoxide poisoning from exhaust gases if the vehicle is parked in a closed space.
- Never leave lighters, cans of carbonated drink, and spectacles in the cabin when parking the vehicle in hot sunshine. The cabin will become extremely hot, so lighters and other flammable items may catch fire and unopened drink cans (including beer cans) may rupture. The heat may also affect plastic spectacle lenses and other spectacle parts that are made of plastic. For example, the coating on the lenses may crack and the lenses themselves may become deformed.
- Do not open the door suddenly when getting out of the vehicle. This is dangerous, as the door may obstruct the passage of vehicles, motorcycles, bicycles, or pedestrians coming from behind the vehicle. Always use the mirrors to check that it is safe to open the door.

1. Depress the brake pedal to bring the vehicle to a complete halt.
2. Parking procedures vary depending on the type of transmission used on the vehicle. Proceed as follows.
 - On a vehicle with manual transmission, move the gear shift lever to the “neutral” position and apply the parking brake.
 - On a vehicle with automatic transmission (excluding FM65F), apply the parking brake and then operate the range selector lever as follows.

Move the lever from the forward or reverse range, whichever the vehicle is in at that time, to the “N” position, and then set the lever to the “P” position. If this process is not followed, it may require great effort to move the range selector lever out of the “P” position and back to other ranges.


CAUTION

Do not park the vehicle only by setting the range selector lever to the “P” position. Be sure to also apply the parking brake at the same time.

- On a vehicle with automatic transmission (FM65F), apply the parking brake and then set the range selector lever to the “N” position.

WARNING

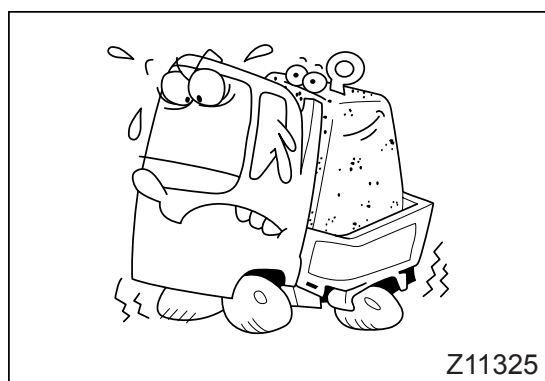
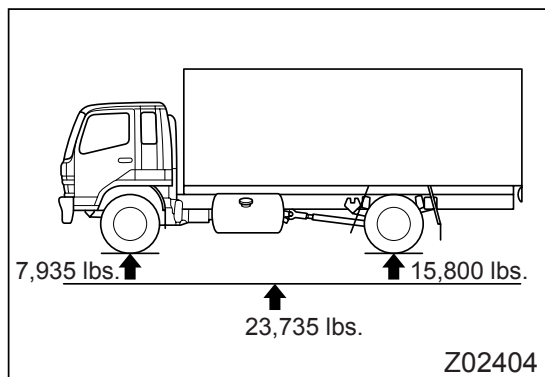
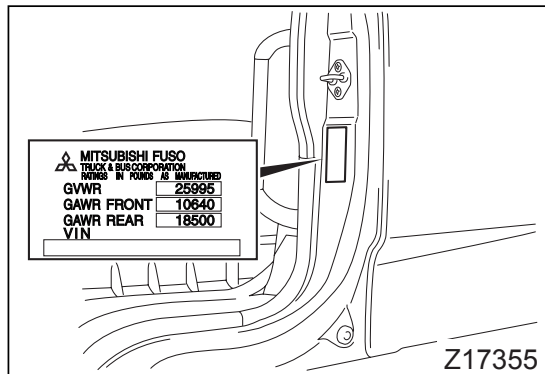
Illumination of the PARK BRAKE indicator lamp does not necessarily mean that the parking brake is sufficiently activated. Always activate fully the parking brake.

3. Stop the engine by turning the starter switch to the “ACC” position.  P. 5-11
4. To help prevent theft and needless consumption of electricity from the battery, be sure to remove the starter key and lock the doors.

CAUTION

- Leaving the starter switch in the “ON” position or “ACC” position for an extended period may drain the battery.
- Be sure to turn off all lights after parking to prevent drainage of the battery.

- If parking on a slope is unavoidable, block the wheels securely with chocks and take other necessary measures to prevent the vehicle from moving.



Loading cargo

1 Do not overload the vehicle.

- Overloading places undue stress on the vehicle and shortens its service life. The vehicle is designed to perform best when loaded within its Gross Vehicle Weight Rating (GVWR) and within its front and rear Gross Axle Weight Ratings (GAWRs). Try not to exceed these ratings.
- The vehicle's GVWR, front GAWR, and rear GAWR are listed on the VIN plate on the upper section of driver's door.

NOTE:

Loading to a weight almost equal to a total of the front and rear GAWRs may exceed the GVWR. For example, a vehicle with a GVWR of 23,000 lb. (10,430 kg) has a front GAWR of 7,935 lb. (3,600 kg) and a rear GAWR of 15,800 lb. (7,165 kg). Added together, the GAWRs total 23,735 lb. (10,765 kg), thus exceeding the GVWR. Be sure neither the GAWRs nor GVWR are exceeded.

! WARNING

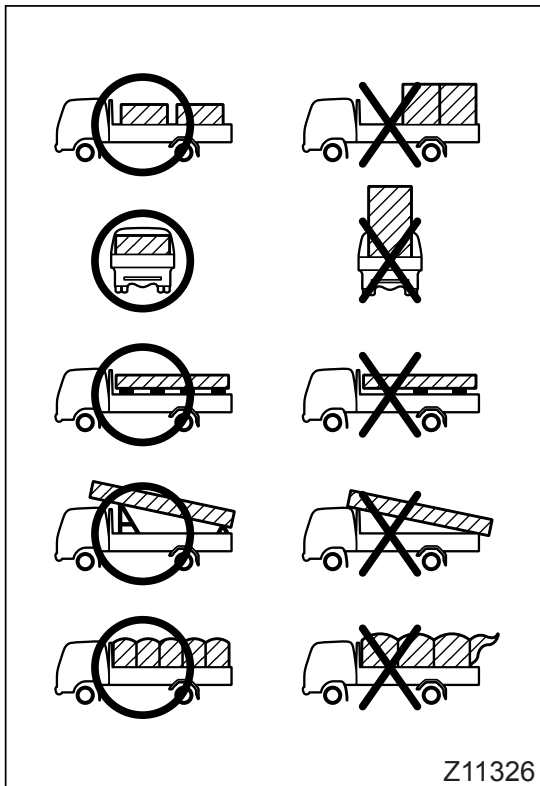
- Overloading the vehicle can damage the vehicle and make safe driving difficult. For safety, never overload.
- The GVWR and GAWRs pertain to the maximum load the vehicle can physically carry. Please also abide by state and regional loading limit requirements.
- Do not carry passengers in the cargo area while the vehicle is in motion.

2 How to load cargo

Improperly loaded cargo not only is unstable but also may result in uneven weight distribution which could damage the cargo deck and frame.

WARNING

- When roping up cargo or covering it with a tarpaulin, make sure that neither the rope nor the end of the tarpaulin hang down between the cab and the cargo deck as a loosely hanging rope or tarpaulin could catch fire from the engine heat.
- When spreading the tarpaulin, take care not to let it cover or be drawn into the engine air intake duct.
- When loading heavy cargo, take adequate measures to stop it from slipping. Also use wire to secure it.



- Place the cargo evenly on deck.
- If cargo is piled high, the vehicle is at risk of rolling over upon being hit with a side wind or making a turn.
- If you place supports under the cargo, position them at equal intervals.
- Use suitable supports when loading long objects. Avoid supporting long objects only with the gate and the rear edge of the cargo deck.
- To prevent cargo from falling, strap it down securely and cover it with a tarpaulin. Secure the tarpaulin ends neatly so they do not flap.

8. ABS – driving hints

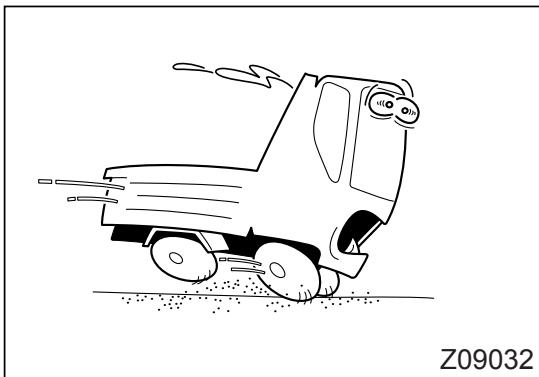
Anti-lock brake system (ABS) 8-2
ABS warning lamp 8-4

Anti-lock brake system (ABS)

The ABS operates automatically without need for any manual control. However, you are requested to read the following instructions and precautions to ensure safe driving with your ABS-equipped vehicle.

WARNING

Even the ABS cannot remove limitations on the vehicle's running and braking performance. It is your responsibility to judge road and other conditions properly and drive safely on slippery surfaces.



NOTE:

When driving on slippery surfaces, activating the brakes could lock the wheels and the vehicle is very likely to lose directional control due to resulting skids. The ABS minimizes such wheel locking by electronically controlling the braking force of each wheel.

- *On slippery surfaces, the braking distance for vehicles with an ABS is generally shorter than that for vehicles without it. This difference, however, varies with road surface conditions. It is always important to maintain sufficient distance from the vehicle ahead regardless of whether your vehicle is equipped with an ABS or not. Also, the braking distance of an ABS-equipped vehicle on gravel or heavily snow-covered roads may be longer than that for a vehicle without an ABS. On these roads, therefore, be sure to drive at reduced speeds. Also, avoid sudden maneuvering or braking on such roads to prevent collision with the vehicle behind you.*
- *Driving on icy roads or quickly braking from a high speed causes the ABS to work hard and in turn consume much air. If the ^{BRAKE}_{AIR} warning lamp illuminates and a buzzer sounds in such a situation, stop the vehicle in a safe place and wait until normal air pressure is recovered before continuing driving.*

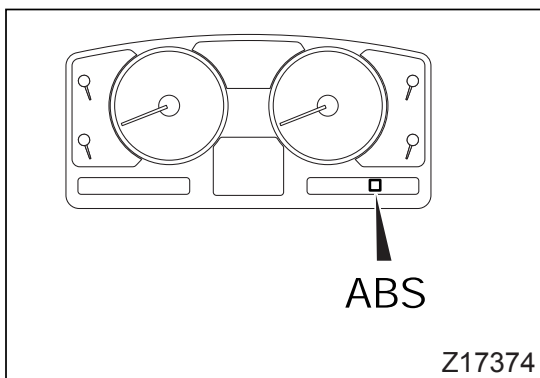
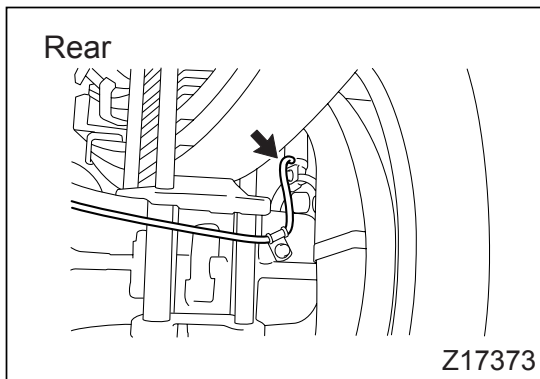
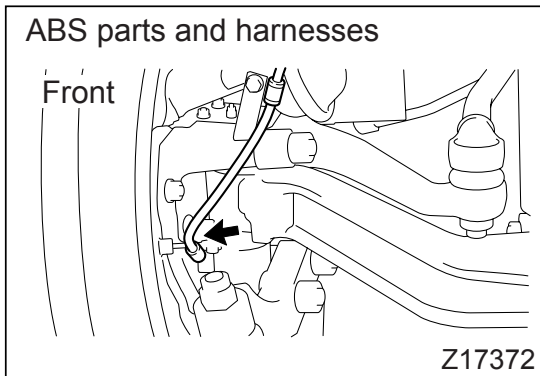
- *Slight vibration will be felt on the vehicle body and brake pedal when the ABS is in operation. Also, the sound of air discharging will be heard intermittently. These indicate the ABS is operating normally and do not indicate any abnormal condition. Keep fully depressing the brake pedal.*
- *When the ABS starts functioning after sudden braking, the steering wheel may be pulled slightly to one side because of braking power distribution control made by the system. Especially in a condition where the traction is different between the right and left wheels (on a road covered by ice on one side and not on the other side, for example), you may need to correct direction with the steering wheel.*
- *The ABS cannot prevent the vehicle from overturning on a slippery surface that could result from excessive speed being used in sharp turns. Avoid driving at too high a speed or in a way which requires quick operation of the steering wheel.*
- *There is likelihood of skidding due to the effect of engine braking on slippery surfaces when the vehicle carries little or no load. In such a situation, it is recommended to depress the clutch pedal first and then the brake pedal.*
- *If cargo is loaded only on the back half of the cargo bed, the rear wheel brakes must share an extremely large burden during braking to prevent the front wheels from locking. On a snow-covered or otherwise slippery, long downslope, use engine/exhaust braking and minimize use of the service brakes.*
- *The exhaust brake, if activated, is released temporarily when the ABS comes into function.*

**WARNING**

If the tires slip when driving around a slippery curve or over a gap with the exhaust brake working, the ABS will start functioning and the exhaust brake will be temporarily deactivated. Always slow down before entering a curve.

- *Before you install a radio transmitter/receiver equipment or tires of a size different from the original ones, be sure to consult an authorized dealer.*

- Even if the ABS system fails and the ABS warning lamp illuminates, the normal brakes still work properly. You must, however, drive very carefully on slippery roads.



CAUTION

There are ABS components and electric wiring located behind the wheels. When removing snow or ice having adhered to the wheel areas after driving on snow-covered roads, be careful not to damage the ABS components and wiring. Also, avoid exposing the ABS components and wiring to high-pressure water or cleaner steam as the system could be damaged and not operate properly.

ABS warning lamp

If illuminated, this lamp indicates that there is a malfunction in the anti-lock brake system (ABS). Should this lamp illuminate during driving, stop the vehicle in a safe place and perform the following inspection.

NOTE:

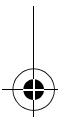
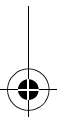
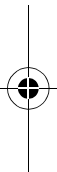
The ABS is normal if the ABS warning lamp lights up when the starter switch is turned on and goes out approx. 2 seconds later.

1. Turn off the engine, then set the ignition switch to the "ON" position again.
2. Determine the system condition as follows:
 - The system is faulty if the warning lamp does not illuminate.
 - The system is normal if the lamp illuminates and then it goes out when the vehicle speed exceeds approx. 10 km/h (6 mph).

3. If the system is found to be faulty, have the system repaired by an authorized dealer as soon as possible.

NOTE:

Even with the ABS faulty and the warning lamp remaining lit, the normal brake system is still functioning satisfactorily. Only the ABS function is lost.



9. Heating and air conditioning

Heater	9-2
Air conditioner	9-7

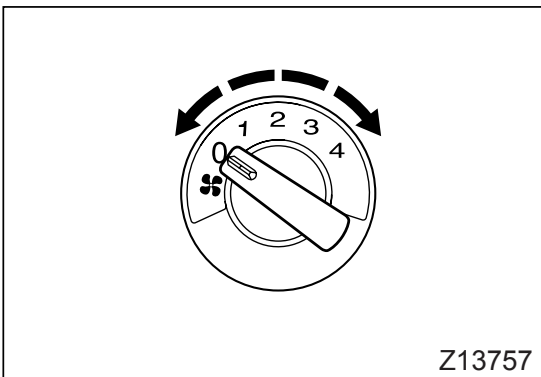
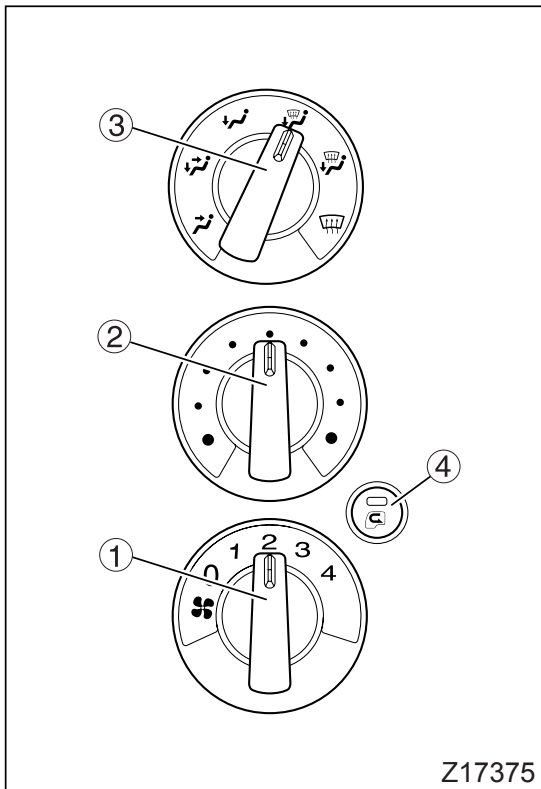
Heater

NOTE:

The heater uses the heat produced by the engine coolant. Warm air is, therefore, not available until the coolant temperature becomes sufficiently high.

1 Control panel

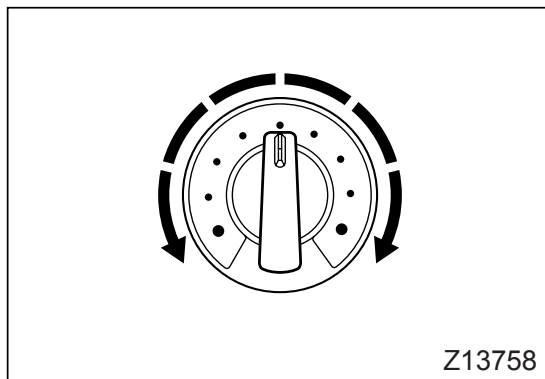
- ① Fan speed dial
- ② Temperature control dial
- ③ Mode selector dial
- ④ Air selector switch



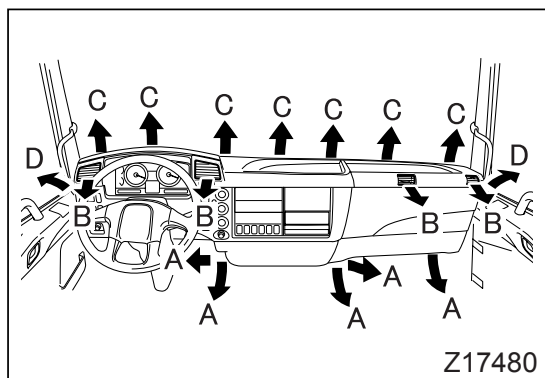
- **Fan speed dial**

Fan speed dial allows you to select 4 fan speeds. Select the desired speed.

- 0: Turned off
- 1: Breeze
- 2: Weak
- 3: Medium
- 4: Strong

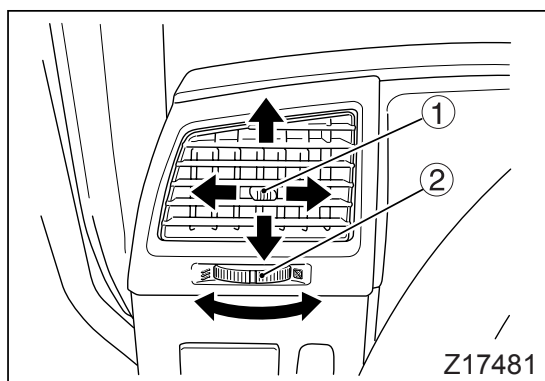


- **Temperature control dial**
Rotate the dial clockwise for warmer air.

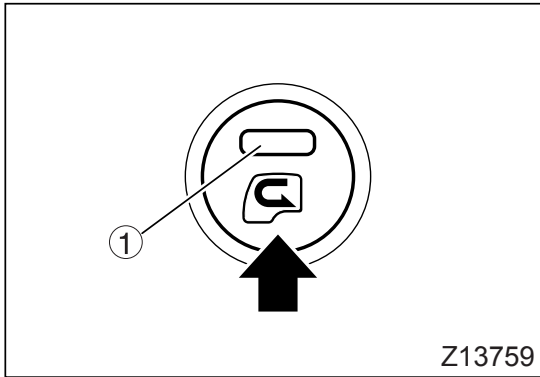


- **Mode selector dial**
Use mode selector dial to select the appropriate air outlet combination.

Lever position	Air outlets	Purpose
	"B"	Fresh air to head.
	"B" + "A"	Warm air to feet and relatively cooler air to head.
	"A"	Warm air to feet.
	"A" + "C"	Most air to feet and remaining air to windshield defroster.
	"A" + "C"	Air to feet, and, through the defroster, to windshield.
	"C" + "D"	Warm air to windshield and door windows through the defroster.



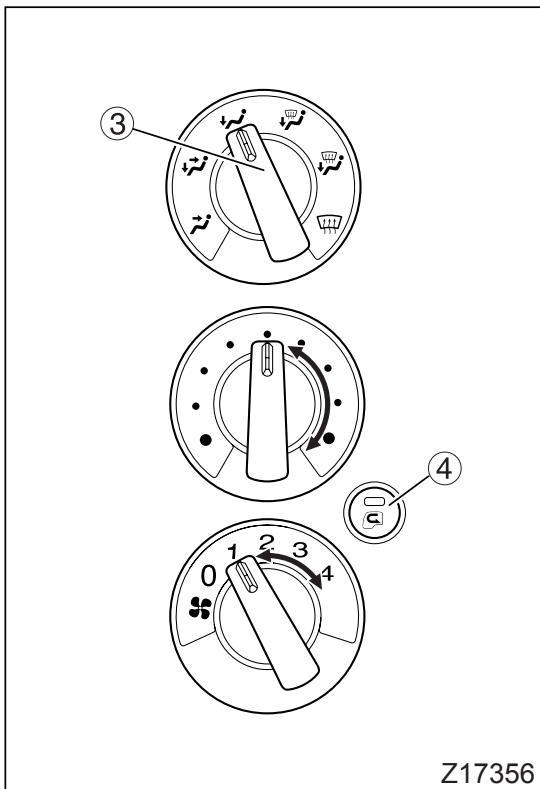
Outlets "B" have a louver ①. Change the direction of air by moving it as desired. You can adjust the air-flow by moving the lever ② right or left, or shut off the airflow by moving the lever to the ☒ position.




- **Air selector switch**

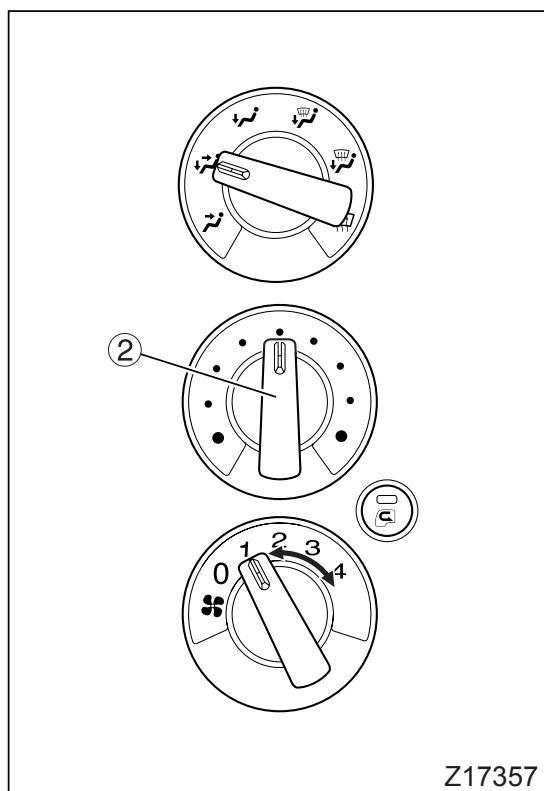
Pressing the air selector switch allows you to toggle the setting between recirculation of inside air and introduction of outside air. When recirculation is selected, the indicator lamp ① in the switch comes on.

- **Outside air**
Outside air is allowed to enter the cab. Use this setting under normal conditions.
- **Recirculation**
Air recirculation in the cab. Use this setting when you want to heat the cab quickly or the outside air is dusty or polluted.
If the air selector switch is left too long in the recirculation position, the windshield and windows will fog up, so set the switch to the outside air position during normal driving. You can also select the recirculation position when parking to stop dust from getting inside the cab.



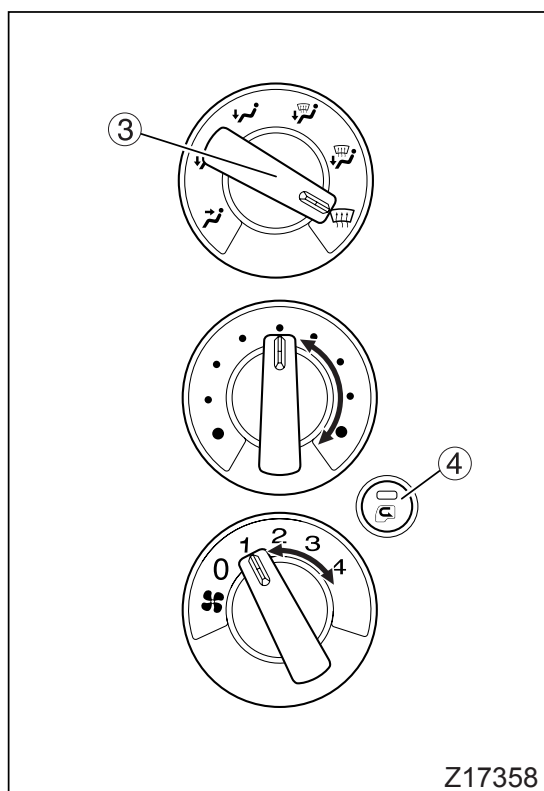
2 Heating

- Warm air is directed to your feet.
- If you want to heat the cab quickly or if the air outside is dusty or polluted, press the air selector switch ④ to ON (the indicator comes on).
- If the windows fog up, place mode selector dial ③ in the  position.




3 Bi-level heating

- Warm air is directed toward the feet, while relatively cooler air is directed toward the head.
- Place the temperature control dial ② in the central position. Turning the dial right or left changes the temperature of the air from both outlets.

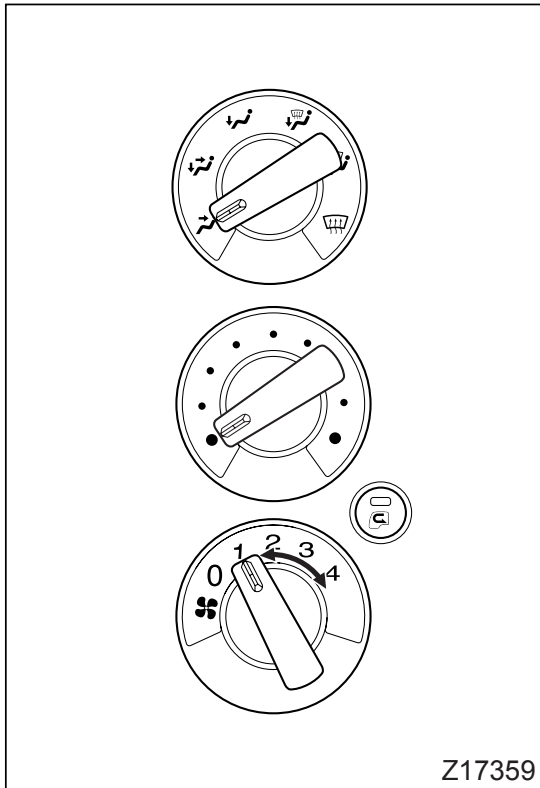


4 Defrosting

- Warm air is directed toward the windshield and door windows. Select the high blower speed if you need to defrost quickly.
- To remove frost or ice on the outside surface of the windshield glass, press the air selector switch ④ to ON (the indicator comes on).
- When mode selector dial is placed in the  position, warm air is directed to feet in addition to the windshield and door windows.

5 Ventilation

Outside air is directed to head.



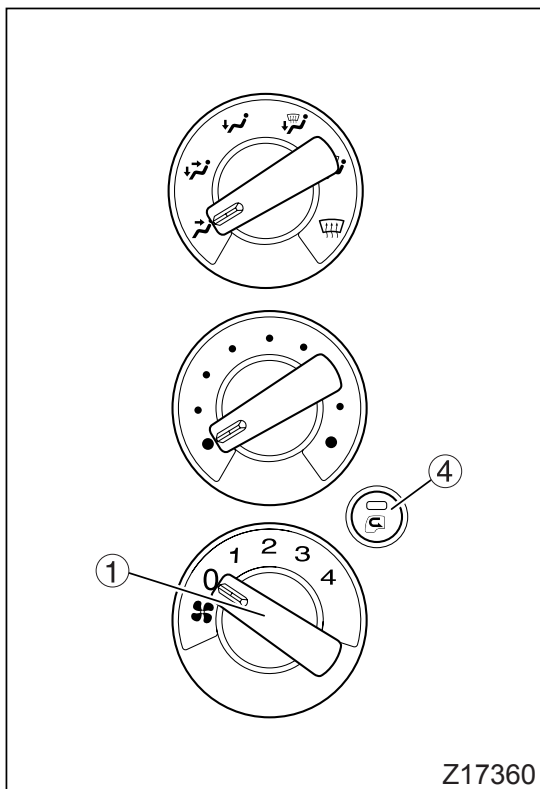
6 Shutting off the system

- When the heater is not used, turn the fan speed dial ① to the "0" position.
- Pressing the air selector switch ④ to ON (the indicator comes on) will prevent dust from entering the cab.

7 Cleaning the air filter

Clean the air filter every 6 months.

A dust-clogged air filter may cause a blower motor malfunction. → P. 12-80

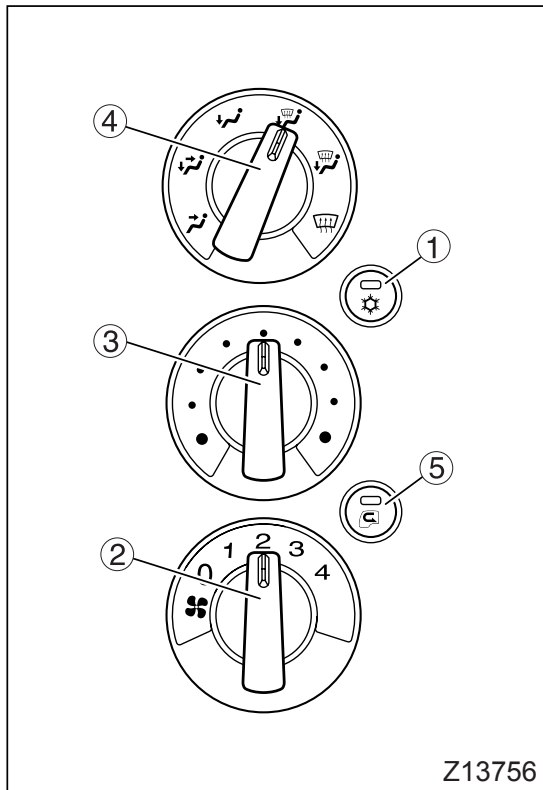


Air conditioner  **WARNING**

Never leave children alone in the vehicle. In hot weather or when the vehicle is parked under the sun, the temperature inside the vehicle may become extremely high and can cause heat stroke. Even if the air conditioning is left on, the temperature inside the vehicle will rise rapidly if the system stops functioning. This is very dangerous to children.

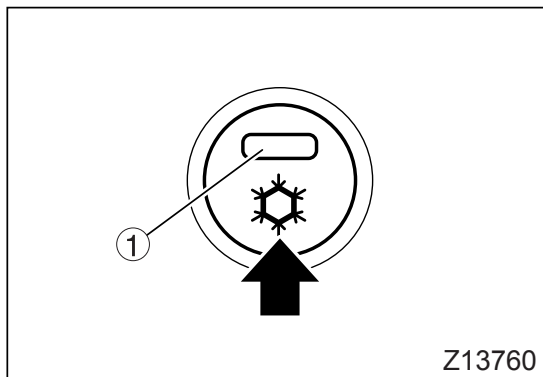
NOTE:

The heater uses heat produced by the engine coolant. Warm air is, therefore, not available until the coolant temperature becomes sufficiently high.



1 Control panel

- ① Air conditioner switch
- ② Fan speed dial
- ③ Temperature control dial
- ④ Mode selector dial
- ⑤ Air selector switch

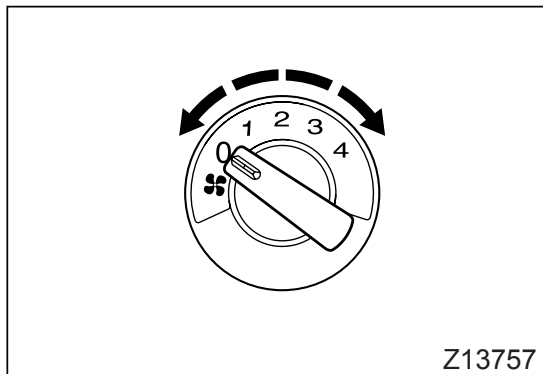


• Air conditioner switch

Pressing air conditioner switch turns on the air conditioner for cooling and dehumidifying.

When the air conditioner is on, the indicator lamp ① inside the switch stays illuminated.

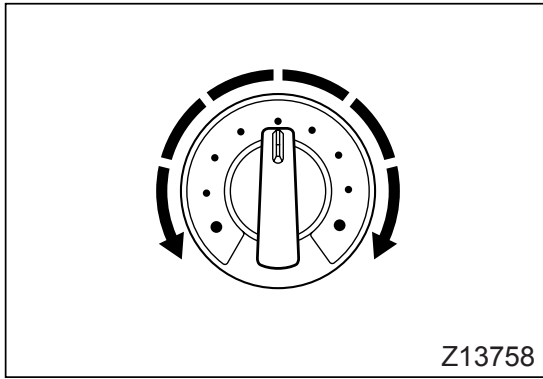
To turn off the air conditioner, press switch a second time.



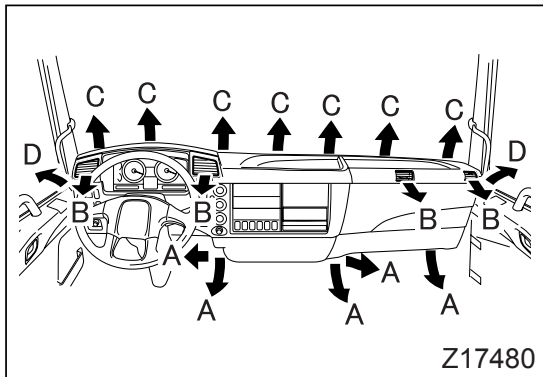
• Fan speed dial

Fan speed dial allows you to select 4 fan speeds. Select the desired speed.

- 0: Turned off
- 1: Breeze
- 2: Weak
- 3: Medium
- 4: Strong

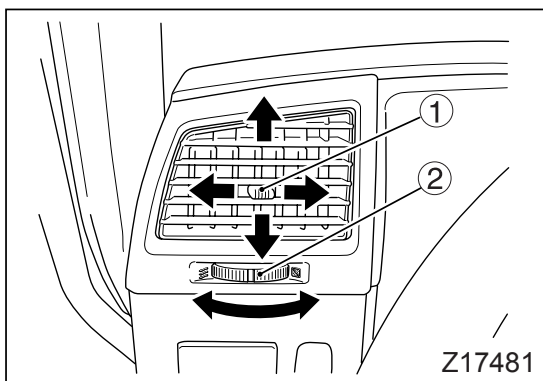


- **Temperature control dial**
Turn the dial clockwise for warmer air.

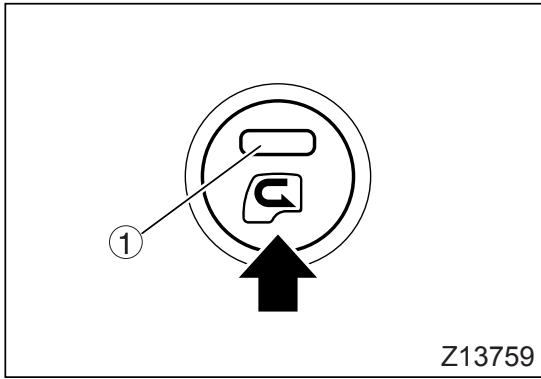


- **Mode selector dial**
Use mode selector dial to select the appropriate air outlet combination.

Lever position	Air outlets	Purpose
	"B"	Fresh air to head.
	"B" + "A"	Warm air to feet and relatively cooler air to head.
	"A"	Warm air to feet.
	"A" + "C"	Most air to feet and remaining air to windshield defroster.
	"A" + "C"	Air to feet, and, through the defroster, to windshield.
	"C" + "D"	Warm air to windshield and door windows through the defroster.



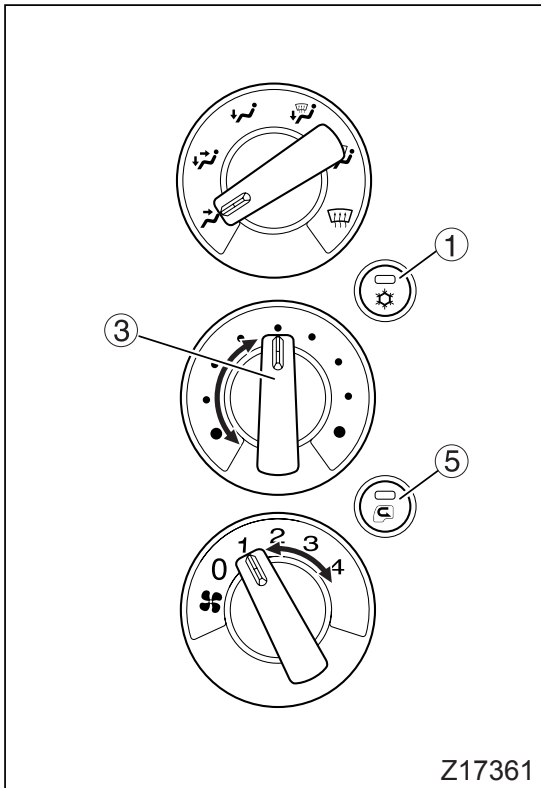
Outlets "B" have a louver ①. Change the direction of air by moving it as desired. You can adjust the airflow by moving the lever ② right or left, or shut off the airflow by moving the lever to the ☒ position.



- **Air selector switch**

Pressing the air selector switch allows you to toggle the setting between recirculation of inside air and introduction of outside air. When recirculation is selected, the indicator lamp ① in the switch comes on.

- **Outside air**
Outside air is allowed to enter the cab. Use this setting under normal conditions.
- **Recirculation**
Air recirculation in the cab. Use this setting when you want to heat the cab quickly or the outside air is dusty or polluted.
If the air selector switch is left too long in the recirculation position, the windshield and windows will fog up, so set the switch to the outside air position during normal driving. You can also select the recirculation position when parking to stop dust from getting inside the cab.



2 Cooling

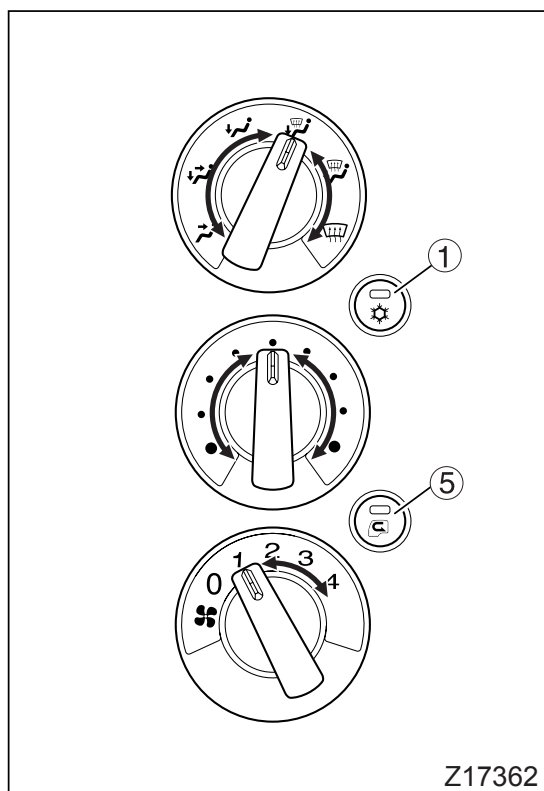
- Press the air conditioner switch ①, then turn the temperature control dial ③ as desired for a comfortable temperature.
- Unless necessary for ventilation, the air selector switch ⑤ should be in the ON position (the indicator is illuminated) when the air conditioner is used.

! CAUTION

If the air selector switch is kept in the ON (air recirculation) position too long, the interior air will become stale. Press the switch to the OFF (outside air) position from time to time to ventilate the cab.

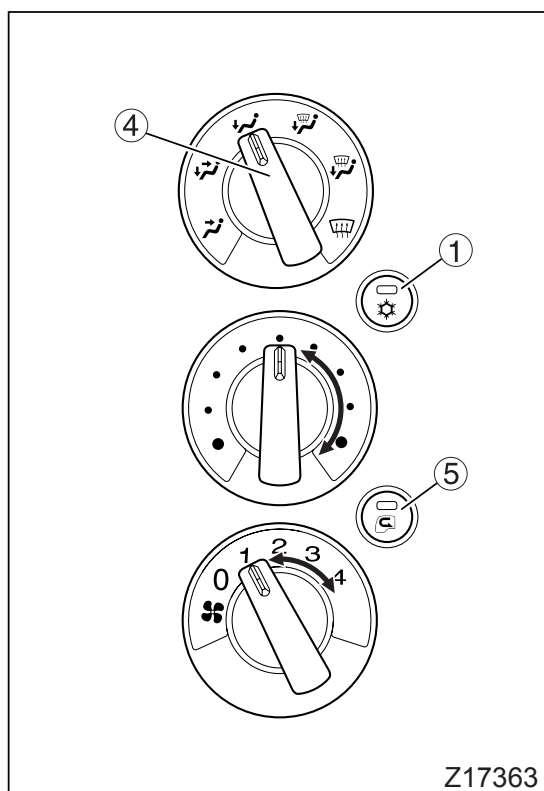
! WARNING

Never leave children alone in the cab especially when the air-conditioning is on. They will suffer from dangerously high interior temperatures should the air conditioning accidentally stop.




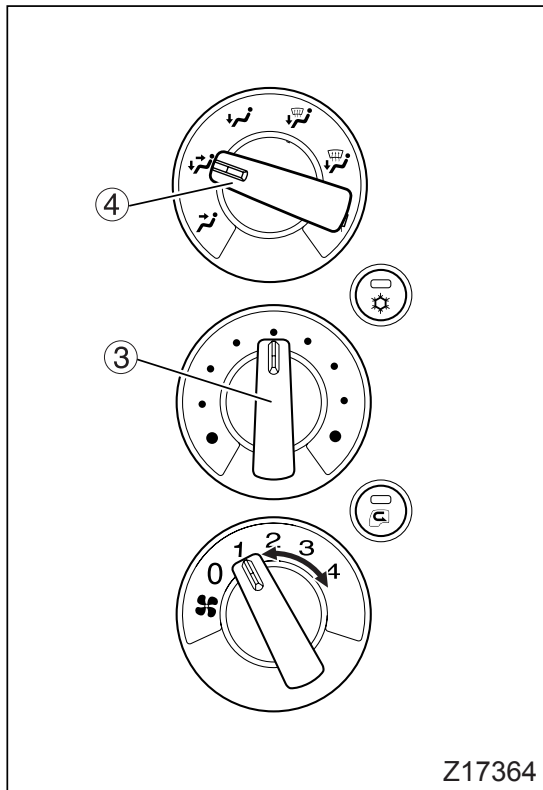
3 Dehumidifying

- If the air feels too humid due to rain etc., press the air conditioner switch ①. The interior air will be dehumidified.
- To dehumidify the interior quickly, press the air selector switch ⑤ to ON (the indicator comes on).



4 Heating

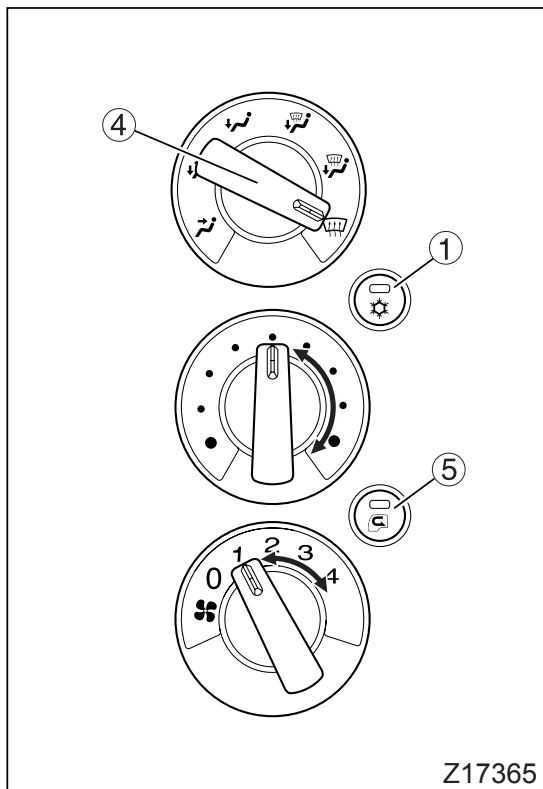
- Warm air is directed to your feet.
- If you want to heat the cab quickly or if the air outside is dusty or polluted, press the air selector switch ⑤ to ON (the indicator comes on).
- If the windshield and windows fog up, turn the mode selector dial ④ to the  position.
- To dehumidify the interior, press the air conditioner switch ① to ON.



Z17364


5 Bi-level heating

- Warmer air is directed toward the feet, while cooler air is directed toward the head.
- Place the temperature control dial ③ in the central position. Turning the dial right or left changes the temperature of the air from both outlets.



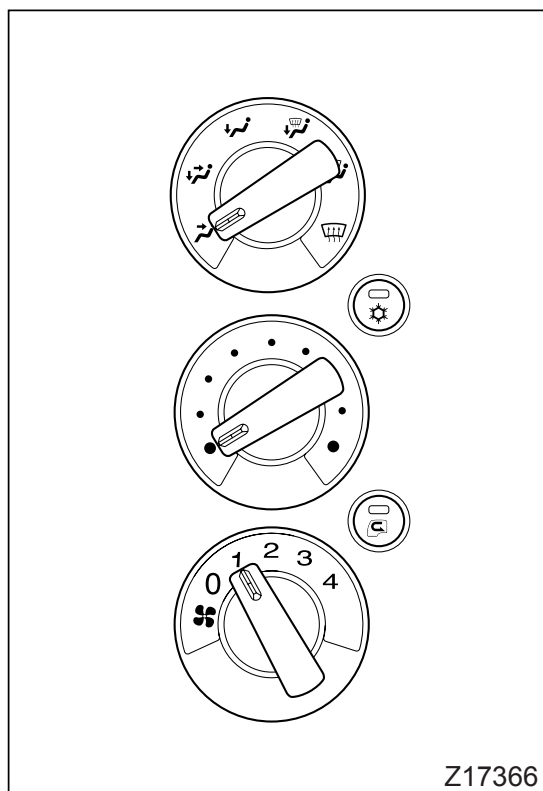
Z17365

6 Defrosting

- Warm air is directed toward the windshield and door windows. For quicker defrosting, press the air conditioner switch ① and select the highest fan speed.
- To remove frost or ice on the outside surface of the windshield glass, press the air selector switch ⑤ to ON (the indicator comes on).
- When the mode selector dial ④ is placed in the  position, warm air is directed toward your feet as well as toward the windshield and door windows.

7 Ventilation

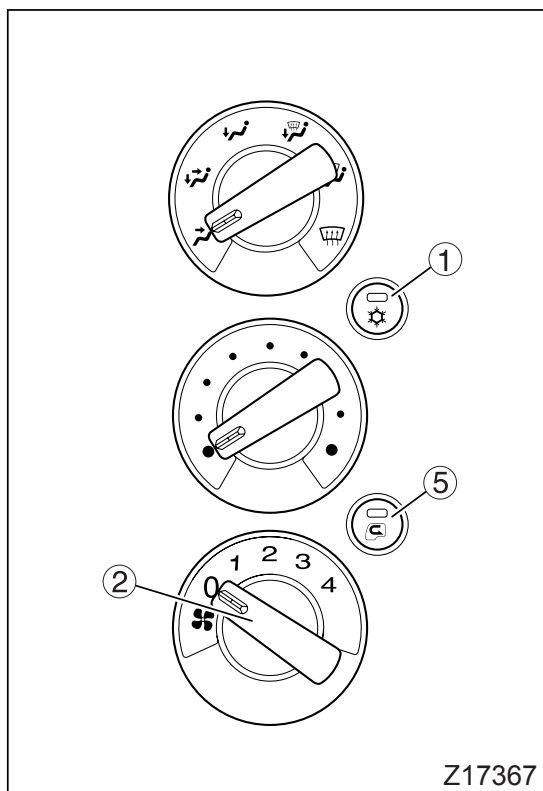
Outside air is directed to head.



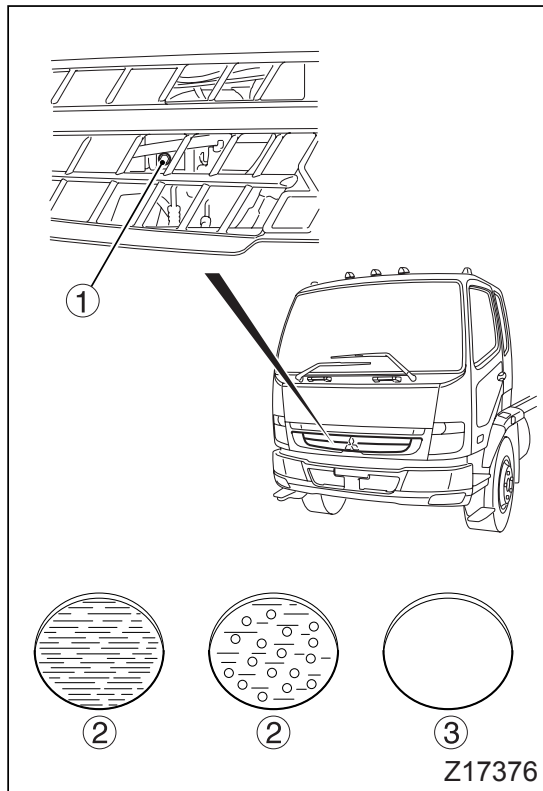
Z17366

8 Shutting off the system

- To turn off the air conditioner, press the air conditioner switch ①. Check that the indicator lamp in the switch goes out.
- When the heater is not used, turn the fan speed dial ② to the “0” position.
- Pressing the air selector switch ⑤ to ON (the indicator comes on) will prevent dust from entering the cab.



Z17367



9 Checking the refrigerant level

If refrigerant is insufficient, the cooling efficiency will be diminished. Therefore, check the refrigerant level from time to time. The refrigerant level can be checked by setting the air conditioner to maximum cooling (by placing the fan speed dial to the high speed position) and looking into the sight glass ① of the receiver. The refrigerant is sufficient if no bubbles are visible through the glass when the air conditioner is being operated. If bubbles are visible, the amount of refrigerant is insufficient. You can have your system charged at an authorized dealer.

- ②: Insufficient refrigerant
 ③: Sufficiently charged

! CAUTION

- **Running the air conditioner without refrigerant will damage the air conditioner compressor. Check the refrigerant level if the air conditioner stops working efficiently.**
- **To protect the environment, your vehicle's air conditioning system uses refrigerant HFC-134a which does not harm the ozone layer.**
Since charging the system with this refrigerant requires a method different from the conventional method, be sure to contact an authorized dealer if your system needs to be serviced.
- **Using any refrigerant other than the HFC-134a will cause a malfunction of the air conditioning system. Be sure to use only the HFC-134a.**

NOTE:

Do not release refrigerant gas into the atmosphere. When the air conditioning system requires servicing or when you discard the vehicle, ask your nearest dealer to do this so that they can collect the refrigerant gas.

10 Cleaning the air filter

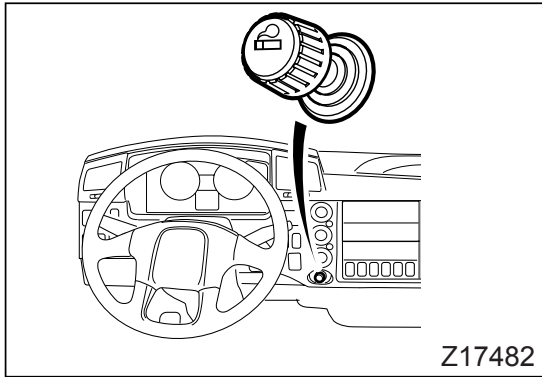
Clean the air filter every 6 months.

A dust clogged air filter may cause a poor air conditioning performance and blower motor malfunction.

⇒ P. 12-80

10. Interior equipment and accessories

Cigarette lighter	10-2
Ashtrays	10-3
Sun visors	10-3
Interior/personal lamp	10-4
Small article compartments	10-4
Using the radio	10-6
Accessories	10-7



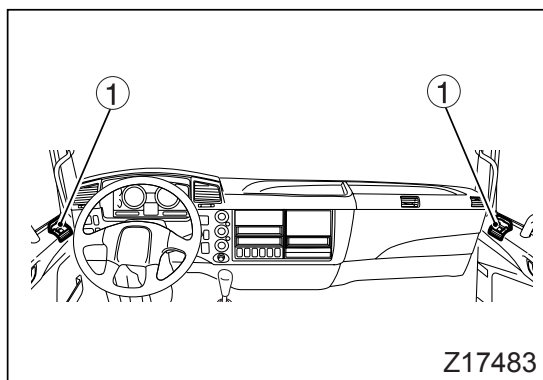
Cigarette lighter

The cigarette lighter can be used when the starter switch is in the "ON" or "ACC" position.

Push the cigarette lighter all the way in. It will soon pop back to the original position with its core red hot. Pull out and use.

WARNING

- Do not hold the cigarette lighter in the pushed-in position since the wiring could burn out and start a fire.
- Something is wrong with the lighter if it does not pop out within approx. 30 seconds. If this should happen, pull it out manually and have the lighter inspected by an authorized dealer. Leaving the lighter unremoved in the socket could cause a fire.
- Do not leave your vehicle with the cigarette lighter pushed in. Doing so could result in a fire.
- Do not allow a child to touch the cigarette lighter. The child could get burned.
- Do not touch the metallic parts of the cigarette lighter. You could get burned.
- The cigarette lighter is designed to operate on 12 V. Never use a lighter with a 24 V rating.
- If the cigarette lighter is dented or broken, it will not pop out properly. Replace the dented or broken lighter with a new one available at an authorized dealer. Do not use lighters other than genuine lighters.
- Do not use electrical devices designed to be plugged into the cigarette lighter socket, as this could overload the circuitry and overheat the wiring. This could also damage the inside of the cigarette lighter socket.
- If water gets into the cigarette lighter socket, it could cause a short circuit, resulting in a fire. Have the cigarette lighter socket cleaned by an authorized dealer.



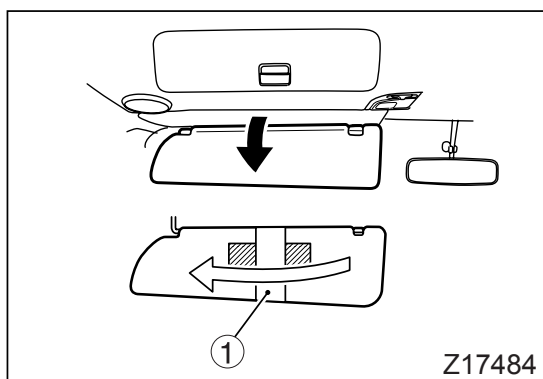
Ashtrays

Remove and empty the ashtrays when they become full.

Pull the ashtray upward and out by lid ①.

! WARNING

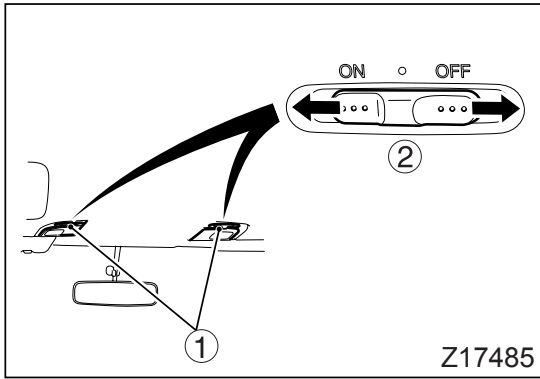
- **Be sure to put out cigarettes and matchsticks before putting them in the ashtrays. Close ashtrays completely.**
- **Put only cigarette stubs and matchsticks in the ashtray. Empty the ashtray before it becomes full completely as too many stubs crammed into the ashtray could catch fire.**
- **Do not throw cigarette ends out of the windows since this is environmentally irresponsible and could start a fire.**
- **When cleaning the ashtray, do not strike it with a hard object since it could break. If the ashtray breaks, stop using it and replace it with a new one. Using a broken ashtray could cause a fire.**



Sun visors

The sun visor screens your eyes from sunlight. Change its angle as needed. Unhook the inside edge of the sun visor and swing it sideways to reduce glare from the side.

On the reverse side of the driver's sun visor, there is a paper holder ① that can be used to hold a paper or card.



Interior/personal lamp

The interior/personal lamp ① operates independently of the position of the starter switch.

The lamp stays on while the lamp switch ② is in the "ON" position.

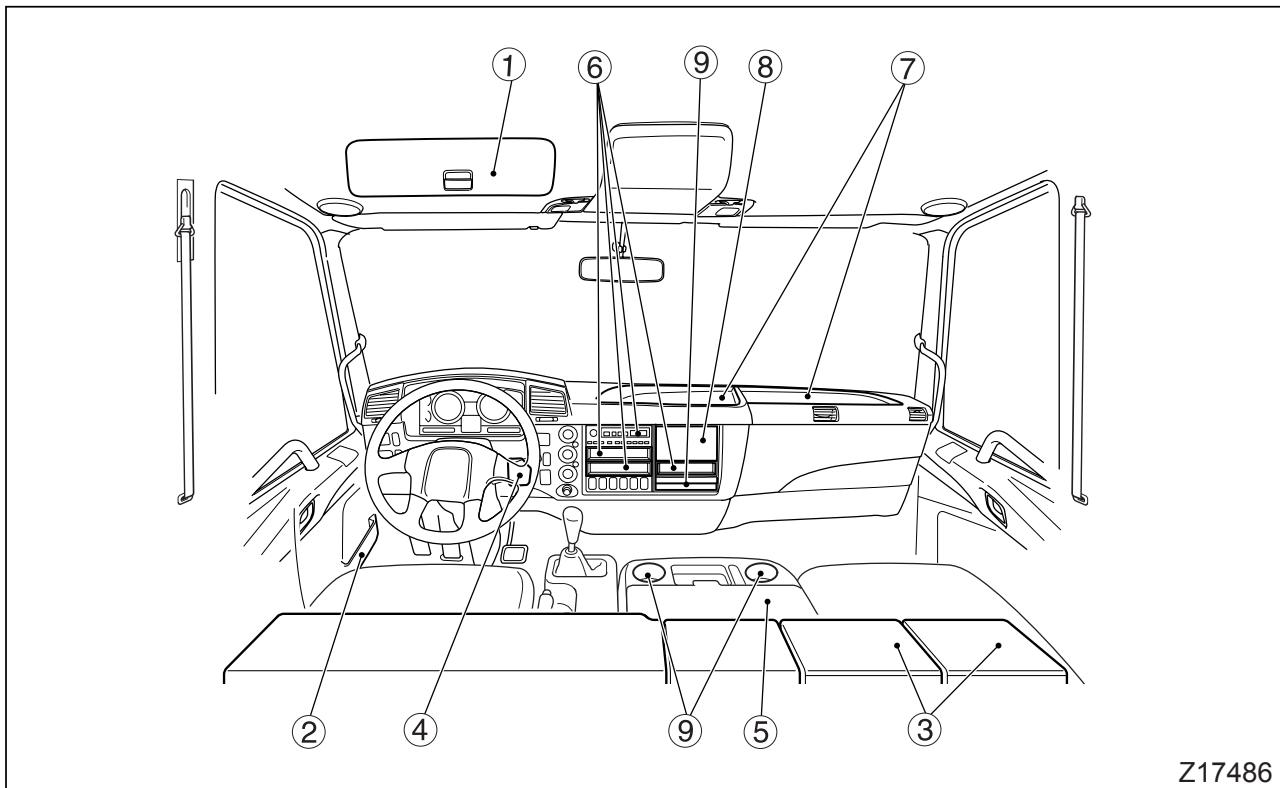
When the lamp switch ② is placed in the "•" position, the lamp comes on when a door is opened and goes out when all the doors are closed.

The lamp always stays off when the lamp switch ② is in the "OFF" position.

! CAUTION

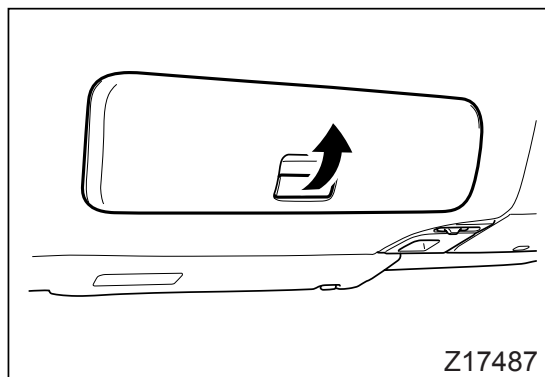
Leaving the interior/personal lamp on for an extended period with the engine off will cause the batteries to go flat and prevent the engine from starting.

Small article compartments



CAUTION

Do not keep any object that can roll easily in the pockets and on the trays. Otherwise, the object may fall down during acceleration and braking.



① Overhead console

WARNING

- Keep the lid closed and the knob locked while driving.
- Do not store things that are heavy or that tend to roll. The lid may open during driving and they may fall down, causing injury.

Pull knob toward you to open the lid.

② Door pocket

<Driver's side>

Use the door pocket to store cleaning rags, maps, and other small articles.

③ Under-bed box

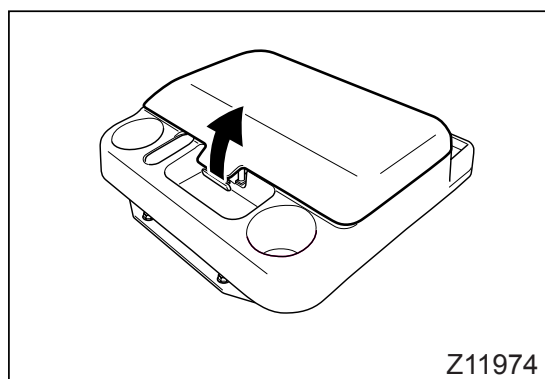
④ Card pocket

Use this for holding highway toll cards, etc.

⑤ Center console box

Open the lid by lifting the black knob with your finger.

After closing, press down lightly on the lid to lock it.



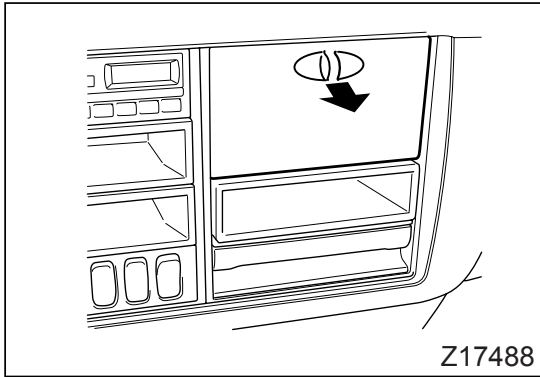
⑥ Pocket

Use this pocket to store small things.

CAUTION

Storing things that tend to roll in this pocket is not recommended because they could fall down during starts and stops.

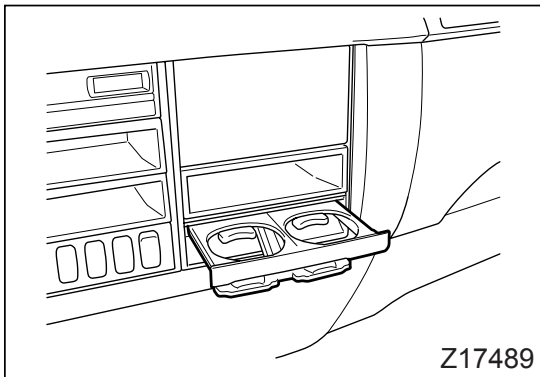
⑦ Tray



- ⑧ **Glove compartment**
Pull the knob to open.

! WARNING

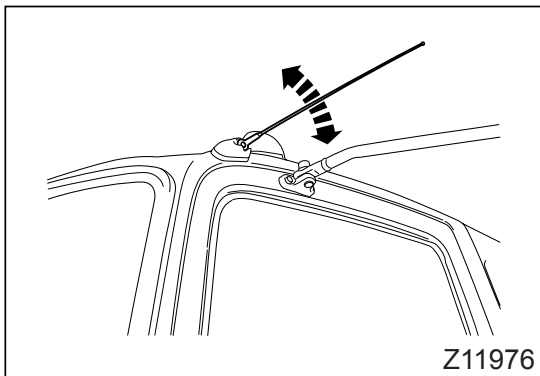
- Keep the lid closed while driving.
- Do not keep anything heavy or that can roll easily in the glove compartment. Otherwise, the object may open the lid and fall out while driving, possibly injuring you.



- ⑨ **Cup holder**
Pull out the cup holders to use them. Keep them pushed in when they are not being used.

! WARNING

The contents in a cup or can held in the cup holder may spill during movement of the vehicle. Be careful of scalding if they contain hot beverages.



Using the radio

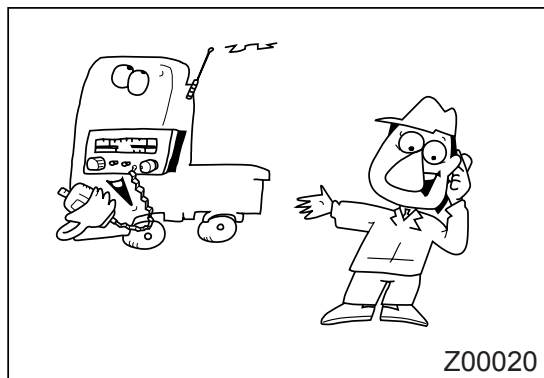
- The radio (optional) can be used with the starter switch in the "ON" position or "ACC" position.
- Raise the antenna before using the radio. Lower the antenna when it is likely to cause an obstruction, for example, when tilting the cab.

! WARNING

Adjust the speaker volume to a level at which you can still hear sounds outside the vehicle. If the speaker volume is too high, you will be unable to hear sounds that may indicate danger.

⚠ CAUTION

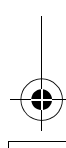
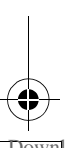
- To avoid draining the battery, do not use the radio and other electrical accessories for extended periods when the engine is not running.
- The audio system may emit noise when radio communication equipment or a mobile telephone is used in the cab. This noise does not indicate a fault. Use mobile telephones as far away from the audio system as possible.
- If a foreign object gets inside the audio system, water splashes on the audio system, or smoke or an abnormal smell is emitted by the audio system, immediately stop using the audio system and have it inspected by an authorized dealer.

**Accessories**

- See an authorized dealer if you are considering adding accessories to your vehicle.
- Your vehicle contains electronic devices. Even though these are protected against interference from electromagnetic emissions, you should refer to an authorized dealer before fitting equipment that emits strong signals, such as mobile telephones.

⚠ WARNING

To avoid the risk of overheating, fire or faulty operation, have electrical accessories connected by an authorized dealer. Never connect them yourself.



11. In cold weather

Coolant	11-2
Engine oil	11-2
Fuels	11-3
Other recommendations for cold weather operation	11-3
Installing tire chains	11-4



Z09270

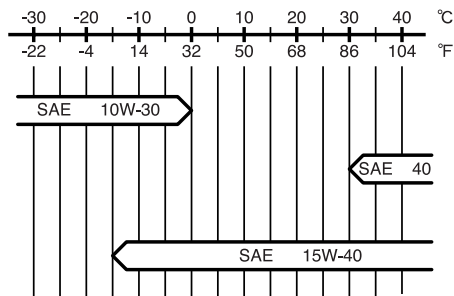
Coolant

- When vehicles are shipped from the factory, genuine FUSO DIESEL LONG LIFE COOLANT is added to the coolant in their cooling systems. This additive combines both antifreeze and anti-rust capabilities to sufficiently protect the cooling system from freezing up. However, for added safety, it is recommended that you have an authorized dealer check that the coolant has a proper concentration of the additive before winter begins.
- Be sure to use coolant added with an antifreeze or the FUSO DIESEL LONG LIFE COOLANT or equivalent to the recommended concentration.
⇒ P. 12-47

⚠ CAUTION

Never mix FUSO DIESEL LONG LIFE COOLANT with other brands of anti-freeze or anti-corrosion additives since these can detract from its performance. If a different coolant additive has been used and the FUSO DIESEL LONG LIFE COOLANT is to be used, be sure to thoroughly flush the cooling system.

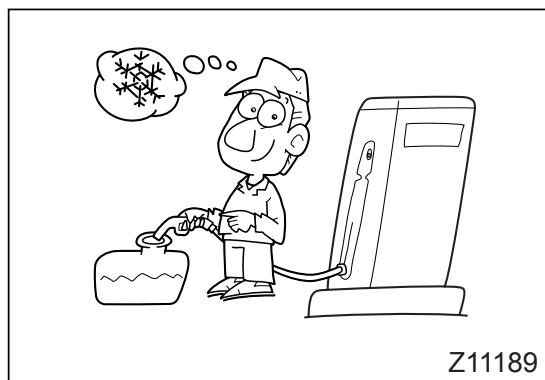
Atmospheric temperatures when engine is started.



Z17775

Engine oil

The viscosity of the engine oil increases in cold temperatures, sometimes making it hard to start the engine, especially early in the morning. Therefore, use an engine oil of a viscosity which suits the weather conditions.
⇒ P. 12-24



Fuels

Ordinary diesel fuel gels in freezing temperatures, making it impossible to start the engine.

If you are bound for a cold area, it is recommended that you fuel your vehicle so that it burns more than half the fuel by the time you reach your destination. This allows you to refuel with a grade of diesel fuel appropriate to the colder weather conditions.

⇒ P. 1-5

Other recommendations for cold weather operation

- If the engine fails to start, turn the starter switch back to the “ACC” position or “LOCK” position and wait for the battery to recover before trying to start the engine.
- As the temperature falls, battery performance decreases. Check the battery electrolyte level and its specific gravity. ⇒ P. 12-76
- In cold weather, use a windshield washer fluid additive that prevents freezing in low temperatures. Use the additive in the concentration indicated by the manufacturer’s instructions.

CAUTION

Do not use engine coolant or antifreeze since these would damage the vehicle’s paint.

- Occasionally check the undercarriage and fender wells, and if necessary remove snow and ice taking care not to damage vehicle parts as you do so.
- The brakes may be frozen up when the vehicle is driven on snow-laden roads or during parking in cold weather. Since frozen brakes are sluggish to function, drive your vehicle carefully while paying attention to vehicles behind as well as in front and checking normal function of the brakes from time to time by slightly depressing the brake pedal. If the brakes are sluggish, depress the brake pedal repeatedly while driving at a low speed until normal braking returns.
- When parking your vehicle, select a site not directly exposed to wind or snow and face it away from the wind.

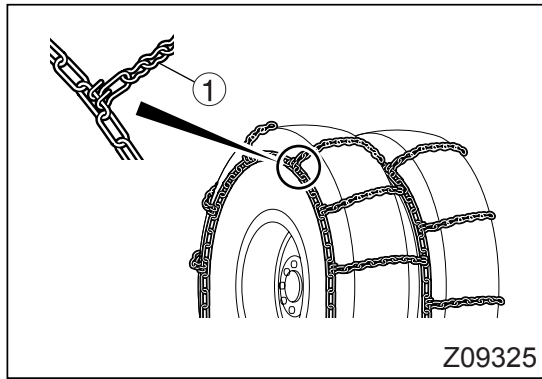
- Do not apply the parking brake in extremely cold conditions that could cause it to freeze up and become impossible to release. In such conditions, take the following steps:
 1. Set the parking brake. Never park on a slope.
 2. In a manual transmission vehicle, select first gear or reverse. In an automatic transmission vehicle, set the range selector lever in the "P" position <other than FM65F> or "N" position <FM65F>.
 3. Block the wheels securely with chocks and ensure that the vehicle cannot move.
 4. Release the parking brake lever.
- On vehicles with air conditioner, operate the air conditioner at least once a month to maintain its functions even during the cold season when it is not being used.

Installing tire chains

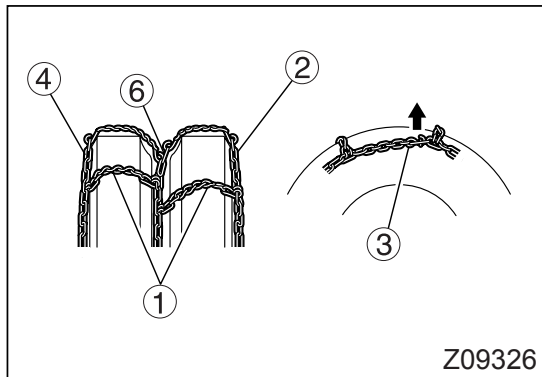
- Make sure that tire chains are installed properly so that they do not become loose and interfere with other vehicle parts while the vehicle is in motion.
- Use triple chains corresponding to tire size.

CAUTION

- **Do not put tire chains on the front wheels. Use of winter tires is recommended.**
- **Make sure that the chains and their spring bands are not excessively worn or otherwise damaged.**
- **If you hear an abnormal noise while driving, stop the vehicle in the nearest safe place and check the tire chains.**
- **Driving on a dry road with chains installed may damage the chains as well as the road surface. Avoid doing so as far as possible.**
- **When fitting tire chains, refer to the instructions supplied with them.**



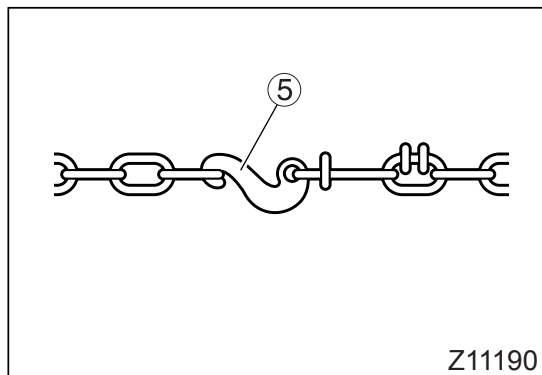
1. Place the chains over the tires with the hook ends of cross chains ① facing outward.



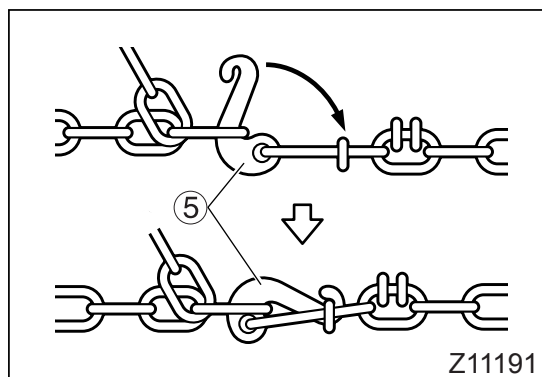
2. Connect the hook ③ of inside chain ②, leaving no excess links. Then, take up the slack in the inside chain by pulling cross chains ① for the inside tire outward.

NOTE:

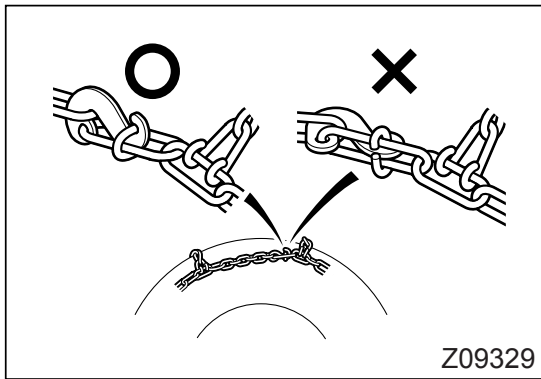
Pull the hook section outward to the possible maximum extent.



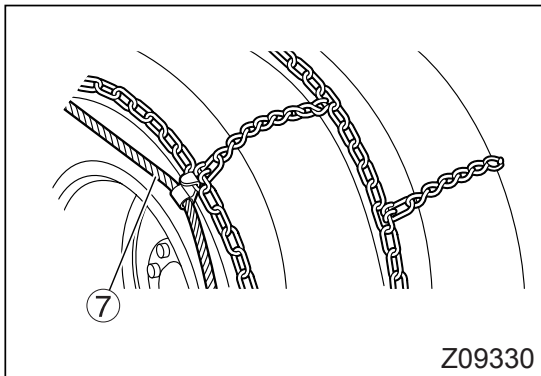
3. Temporarily connect hook ⑤ of outside chain ④ as shown.
4. Pull the middle chain ⑥ as far as possible and connect its hook.



5. Pull both ends of outside chain ④ to the possible maximum extent and connect hook ⑤.



6. Ensure that hooks ③ and ⑤ are flat on the tire sidewalls. Also make sure that the chains are not twisted.
7. Fasten extra chain links with a metal wire to prevent them from hitting against other vehicle parts.



8. Fit spring band ⑦. Attach the hooks of spring band on the chain at even intervals with the hook ends facing outward.
9. After driving the vehicle for 5 to 10 minutes, check the chains for looseness or disconnected hooks.

12. Simple inspection and service


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General precautions for servicing the vehicle


Please take the following precautions when servicing your vehicle:

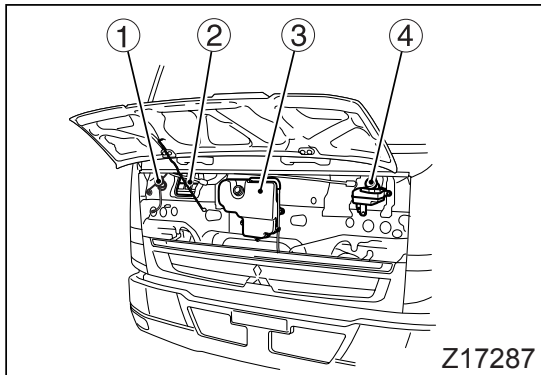
- Make sure the vehicle is on safe, level ground.
- Prevent the vehicle from moving by setting the parking brake and blocking the wheels with chocks.
- Remove the starter key unless you need to run the engine.
- Take off wristwatches, rings, and neckties, and wear clothing that will not obstruct movement or snag on parts of the vehicle.
- Wear all safety gear necessary for your task, for example, hard hat or goggles.
- Use the correct tools for your task.
- Do not make adjustments or repairs unless you know exactly what you are doing. For servicing that is difficult or not shown in this manual, take your vehicle to an authorized dealer.
- When servicing electrical equipment, disconnect the negative (–) terminal of the battery.

 **WARNING**

- Never run the engine in a poorly ventilated area. Exhaust emissions contain carbon monoxide, which can cause unconsciousness or death if breathed.
- Never smoke when servicing your vehicle since its fuel and the gases given off by its battery are highly flammable.
- When tilting the cab, carefully follow the instructions in this manual. Be sure to insert the safety pin in the cab stay hole to prevent the cab from dropping.
After letting the cab down, check that it is locked securely in position. →  P. 12-6
- The engine gets extremely hot when running and stays hot for some time after being turned off. To avoid being burned, do not touch the engine, exhaust manifold, radiator, exhaust pipe, or other engine-related parts until they have cooled down.
- Do not loosen the radiator cap while the engine is hot. Wait for the engine to cool down, then grip the cap with a cloth and turn it slowly to release the internal pressure before removing it completely.
- Never crawl under the vehicle when it is supported only by a hydraulic jack since the jack could slip out of position and cause the vehicle to crush you.
- The battery cables and starter cables carry extremely high voltages. Be careful not to short-circuit them, e.g., with a tool, since this could cause serious injury.
- Take great care when working near the fan and fan belt. Never touch them when they are moving.
- The oil cooling fan in a FM65F automatic transmission vehicle is electrically driven and switches on automatically when the engine is running. Keep your hands and tools clear of it. Also, the oil cooler is extremely hot just after driving, and could cause burns if you touch it before it has sufficiently cooled.
- Keep oily rags and other flammable items in a safe place.
- Put away all tools and rags after use. Items left in the engine bay could get hot and catch fire.

⚠ CAUTION

- Do not climb onto the engine. Stepping on engine pipes or accessories could cause damage and malfunctions.
- Always use genuine parts for replacements such as filters or filter elements. Also, oil and grease should be those recommended in this manual. ⇒  P. 14-3
Use of non-genuine parts, or oil and grease not recommended by Mitsubishi, may lead to failures.
- When replacing the oil or coolant, be sure to have a container suitable for catching drained fluid ready.
- Dispose of drained oil and coolant in the specified manner. Disposing of them irresponsibly could cause environmental harm.
- The DPF contains a catalytic converter. Do not kick or knock the DPF since the inside catalyst and ceramic filter could be damaged.
Water collecting in the DPF is slightly acidic and should not be touched. If you touch this water, rinse it off under a faucet.



Opening and closing the front panel

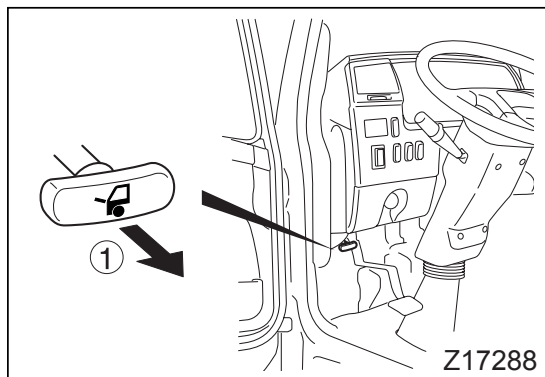
Open the front panel to gain access to the parts or equipment located at the vehicle's front on those occasions when you need them for performing inspections or for servicing the vehicle or again for the pre-operational checks.

- ① Windshield washer tank
- ② Air filter for heater and air conditioner
- ③ Coolant reservoir tank
- ④ Clutch fluid reservoir tank
<manual transmission vehicle>

After you have completed the inspections or checks and closed the front panel, make sure that the panel is securely locked.

! WARNING

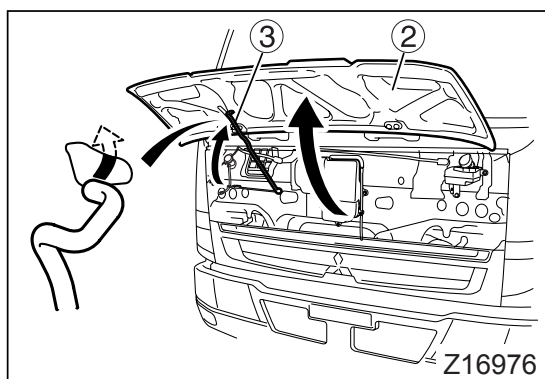
- Be careful when opening the front panel during high winds as the wind could force up the panel, blowing it off its stay.
- Never operate the wipers when the front panel is open; your hands or other items could become trapped in the wiper links.

**1 Opening**

1. If the wiper arms are raised, put them down.
2. Pull lock release knob ① from inside the cab to unlock the front panel.
3. Raise front panel ② and support it with stay ③.

! WARNING

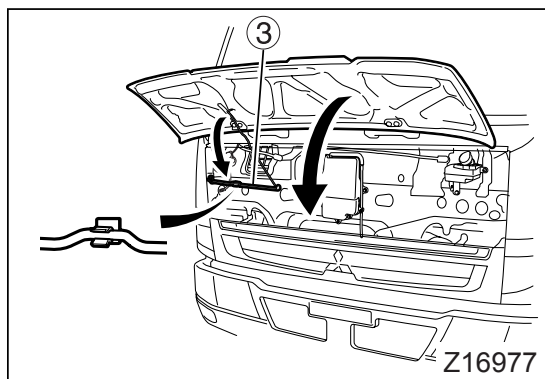
Fit the stay securely into the hole in the front panel ② to prevent the front panel from falling and possibly causing an injury.

**2 Closing**

1. Support front panel ② with your hand. Unhook stay ③ and bring it back to its original position.
2. Gently lower the front panel, and push it so it locks in place.

! WARNING

Make sure your hands are not behind the front panel when closing it since they could be crushed.



3. Check that the front panel is securely locked.

! WARNING

- Never pull up the lock release knob in the cab while driving. An unlocked front panel could open and obstruct your vision, which is very dangerous.
- Make sure that the front panel is locked completely after closing it. If locked incompletely, the front panel could open while driving.

 **CAUTION**

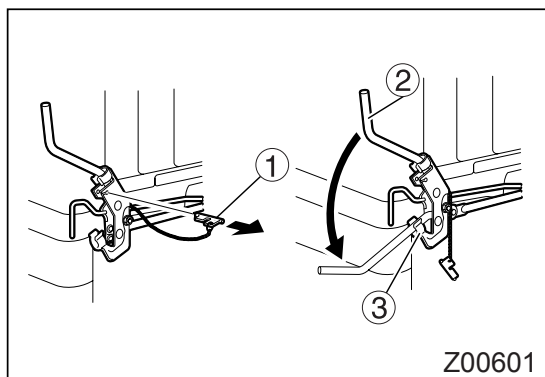
Closing the front panel by letting it drop or forcing it down could damage the panel.

Tilting the cab**1 Preparation**

- Park the vehicle on a flat and level surface and stop the engine.
Tilting the cab on a slope is dangerous since the cab could swing up unexpectedly. This could also damage the mechanism because of the huge, sudden stresses on it.
- Prevent the vehicle from moving by pulling the parking brake lever and blocking the wheels with chocks.
- In a manual transmission vehicle, put the gear-shift lever in the neutral position. In an automatic transmission vehicle other than FM65F, put the range selector lever in the “P” position. For FM65F, put the range selector lever in the “N” position.
- Remove water or other liquids from inside the cab before tilting.
- Loose items left in the cab could fall and break the windshield or other equipment. Take out or safely stow all loose items before tilting the cab.
- Close both doors completely.
- At least 1 m (1 yard) is needed both in front of and above the cab when the cab is tilted. If there are obstacles within these 1 m (1 yard) spaces, remove them.

! WARNING

- Before tilting or lowering the cab, make sure that the area around the cab is clear of people and obstructions.
- The cab will move too quickly under the effect of inertia if it is tilted on a slope, possibly causing damage to various vehicle components. Doing so is dangerous as the hook may not engage completely when the cab is lowered.
Never tilt the cab when the vehicle is on any kind of slope.
- Never tilt the cab with persons inside.
- The cab can drop suddenly if it has heavy objects inside or is fitted with a roof deck. You should be sufficiently aware of this for your safety.
- Do not operate the steering wheel, gear-shift lever, or any other controls in a tilted cab. Doing so could lead to an accident.

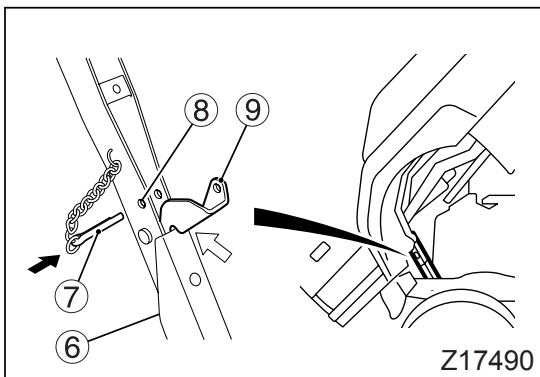
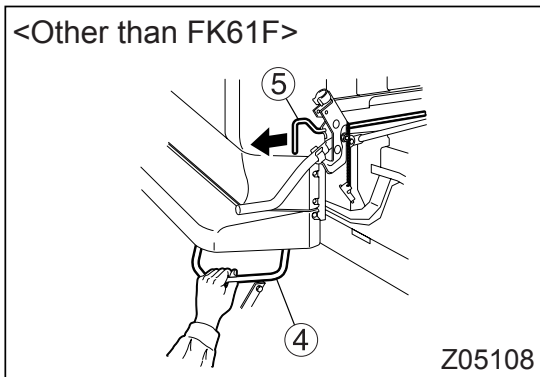
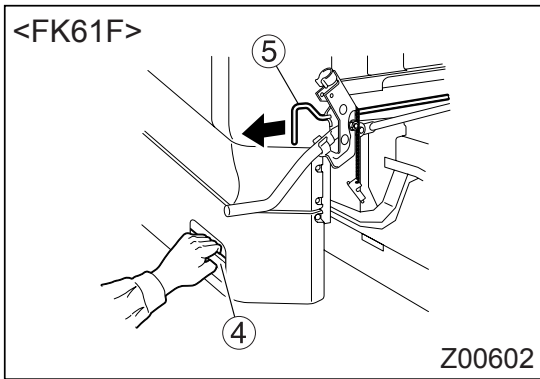


2 Tilting the cab

1. Remove lever key ①.
2. Pull lever ② down until it is fitted in stopper ③.

! WARNING

Be sure to push the lever ② fully into the stopper ③ and confirm that the stopper retains it properly. If the lever is improperly retained, the cab lock mechanism may be damaged when the cab is lowered and will fail to lock the cab in position. This condition is very dangerous as the cab could accidentally tilt up when the vehicle vibrates or receives shocks while driving, possibly leading to an accident.



3. Holding onto grip ④ on the cab, pull lever ⑤. This causes the cab to start rising.

! WARNING

Raise the cab only by holding the grip ④, not the lever ②. Otherwise, the cab lock mechanism may be damaged when the cab is lowered and will fail to lock the cab in position. This condition is very dangerous as the cab could accidentally tilt up when the vehicle vibrates or receives shocks while driving, possibly leading to an accident.

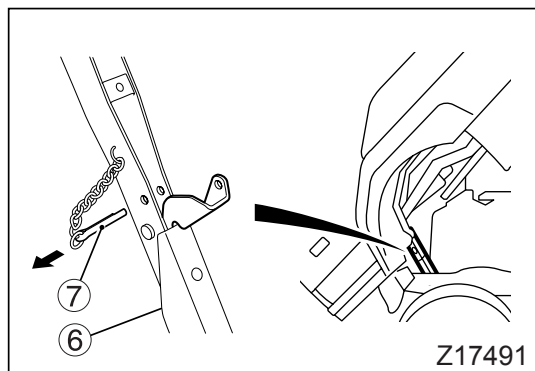
4. Hold the grip and push the cab up until it is stopped by cab stay ⑥.
5. Check that the end of the cab stay ⑥ is properly held in the cut (indicated by ⇔ in the illustration) in the lock lever ⑨ to confirm that the cab stay is locked in position, then insert the safety pin ⑦ into the hole ⑧ in the cab stay.

! CAUTION

- If lever ② is not pulled down completely, the hook may not be engaged when the cab is lowered.
- Raise the cab only gently.

! WARNING

To ensure safety, be sure to fit the safety pin in the cab stay hole. On no account climb under the cab before the pin is in the hole.

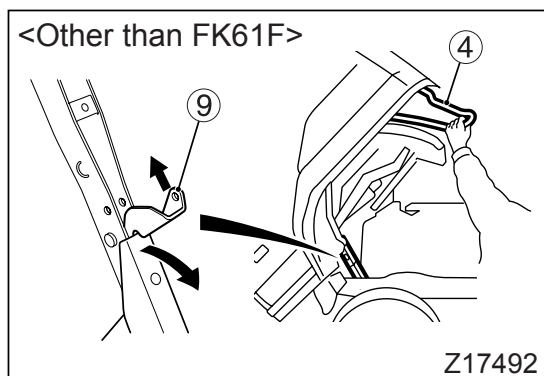
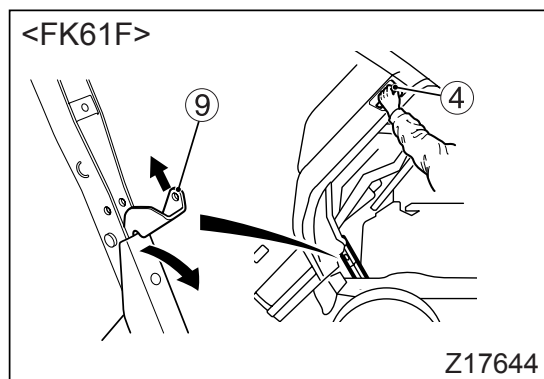


3 Lowering the cab

! WARNING

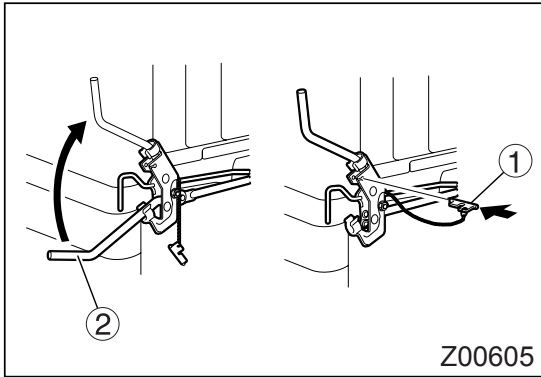
- Before lowering the cab, make sure that you have not left rags, tools, etc. in the engine compartment. Flammable objects left inside the engine compartment can cause fires.
- The cab could come down too quickly if there are heavy objects inside or on the roof deck. Always lower the cab slowly while supporting it.

1. Remove safety pin 7 from cab stay 6.
2. While supporting the cab by holding grip 4 push lever 9 down. This unlocks cab stay 6, allowing the stay to be folded and the cab to start lowering.



! WARNING

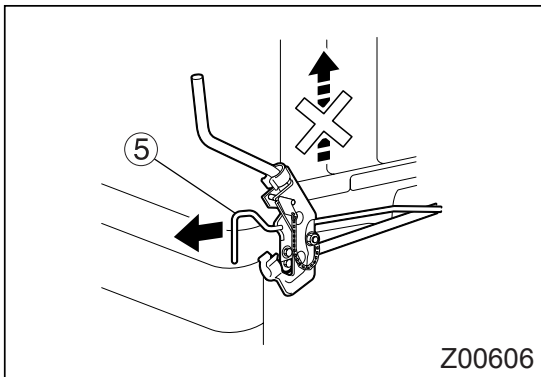
- When pushing the lever 9 and folding the cab stay, take care that your fingers do not get trapped.
- Lower the cab only by holding the grip 4, not the lever 2. Otherwise, the cab lock mechanism may be damaged and will fail to lock the cab in position. This condition is very dangerous as the cab could accidentally tilt up when the vehicle vibrates or receives shocks while driving, possibly leading to an accident.
- Be sure to lower the cab only slowly while supporting it by hand using the grip 4. It is dangerous to lower the cab quickly because parts of your body could be trapped under the lowering cab or the cab may not be locked completely.



3. Lower the cab until lever ⑤ is engaged.
4. Push lever ② all the way up. If you cannot push the lever ② up completely, raise the cab back, then perform the above steps again.
5. Install lever key ①.

! WARNING

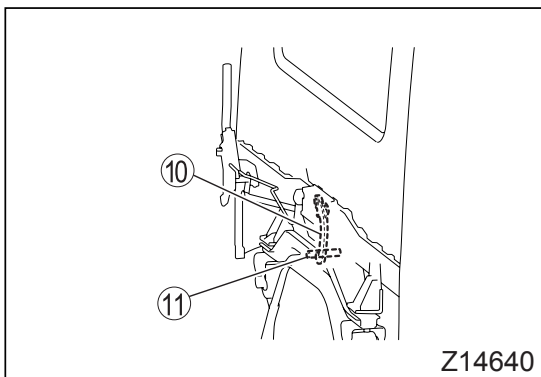
Ensure that the lever key ① is correctly installed. If the lever key is not in position, the cab may be unlocked and tilt up accidentally while driving, possibly leading to an accident.



6. Make sure that the cab does not rise even when lever ⑤ is pulled.

! WARNING

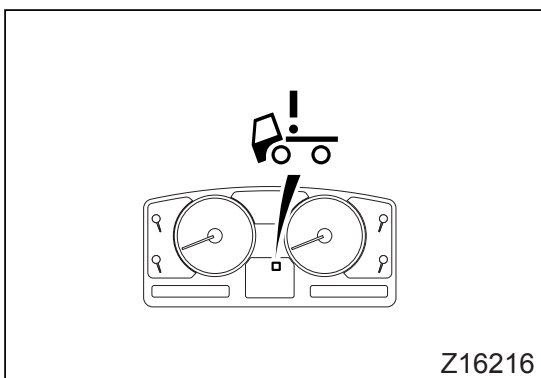
Always check that the cab does not rise. If the cab is not completely locked, it may tilt up while driving, possibly leading to an accident.





7. Visually check that the main hook ⑩ is engaged with the pin ⑪.

! WARNING

Always check the main hook's engagement with the pin. If the cab is not completely locked, it may tilt up while driving, possibly leading to an accident.



8. Turn the starter switch to the "ON" position and check that warning lamp  does not light up. If warning lamp  is illuminated, perform the cab tilting and lowering procedures over again.

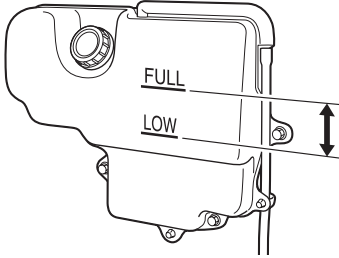
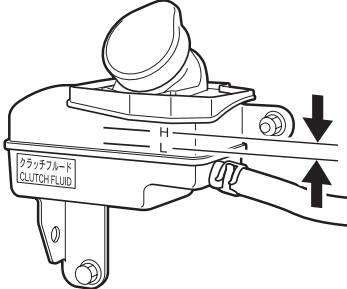
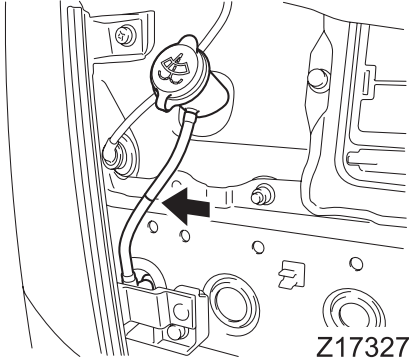
! CAUTION

Make sure that the intake air duct and its rubber boot are perfectly aligned.


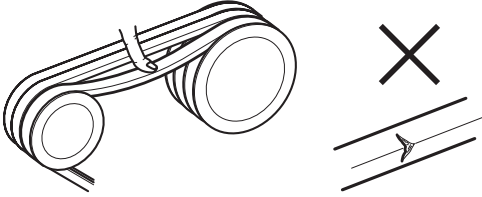
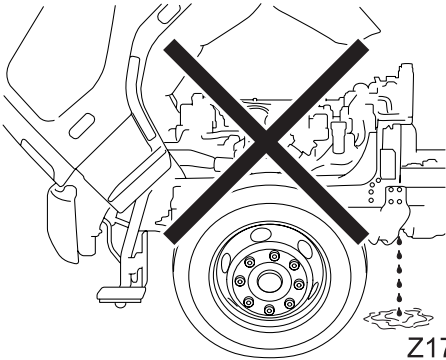
Pre-operational checks

Be sure to perform the pre-operational checks for the items listed below at the start of each day's operation in order to ensure safe and comfortable driving. If you find anything unusual, you should have your vehicle inspected at an authorized dealer before operating it.

1 Before starting the engine (Open the front panel.)

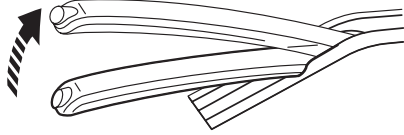
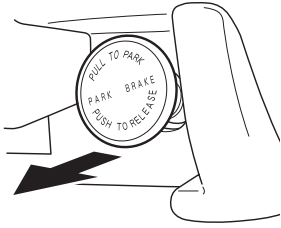
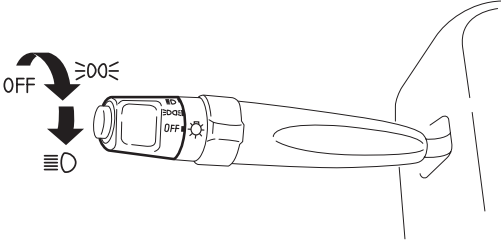
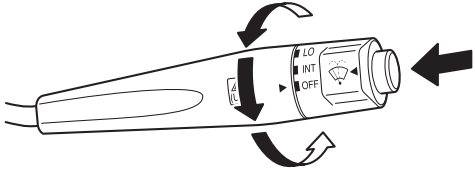
 <p>Z12011</p>	<p>Coolant level Check that the coolant level is between the "FULL" and "LOW" marks on the reservoir tank.</p> <p>⇒ P. 12-47</p>
 <p>Z12012</p>	<p>Clutch fluid level <Manual transmission vehicle> Check that the clutch fluid level is between the "H" and "L" marks on the reservoir tank.</p> <p>⇒ P. 12-33</p>
 <p>Z17327</p>	<p>Windshield washer fluid level Confirm that the windshield washer fluid level is visible within the transparent hose (see figure).</p> <p>⇒ P. 12-75</p>

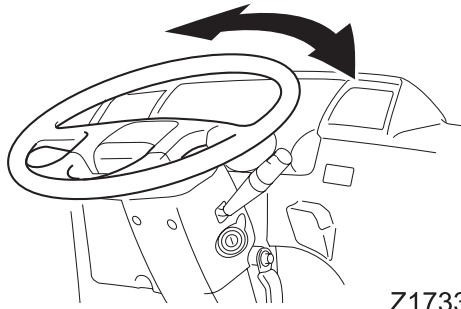
2 Before starting the engine (Tilt the cab.)

 <p>Z17328</p>	<p>Engine oil level Check that there is sufficient engine oil using the oil level gauge or the engine oil level check switch. Change the engine oil if its level is above the round hole on the oil level gauge. ⇒ P. 12-24</p>
 <p>Z17770</p>	<p>Belt tension and damage Check the fan belt tension by applying a force of 98 N (22 lbs., 10 kgf) to its center. Check that the belt is not nicked or otherwise damaged. ⇒ P. 12-54</p>
 <p>Z17329</p>	<p>Leaks of diesel fuel, oil, coolant and air Check the underneath of the vehicle for any sign of leakage.</p>

3 In the driver's seat

Start the engine and perform the following checks while allowing it to warm up.

 <p>Z12017</p>	<p>Parking brake lever stroke <FK61F> Parking brake lever stroke: 7 to 10 notches ⇒ P. 12-59</p>
 <p>Z12018</p>	<p>Parking brake operation <All models other than FK61F> Pull and place the parking control valve in the "PARKING" position and listen for the sound of air being released. ⇒ P. 12-59</p>
 <p>Z05251</p>	<p>Lighting system operation Make sure that each lamp lights up or flashes properly. Check lamp lenses for dirt and damage. ⇒ P. 5-24</p>
 <p>Z17330</p>	<p>Windshield wiper and washer operation Check the washer for proper fluid spray direction and the wipers for normal action. ⇒ P. 5-27</p>

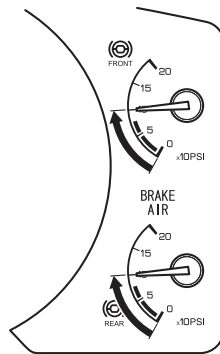


Z17331

Steering wheel play

Gently turning the steering wheel, check that the free play is in the range of 10 to 40 mm (0.39 to 1.57 in.).

⇒ P. 12-56



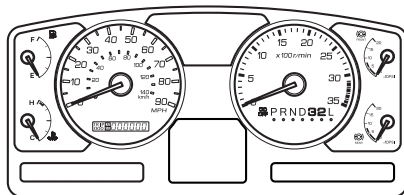
Z17332

Air pressure built up rage

0 to 100 psi pressure build up time:

- FK61F: Within 6 minutes
- Other than FK61F: Within 9 minutes

⇒ P. 12-58

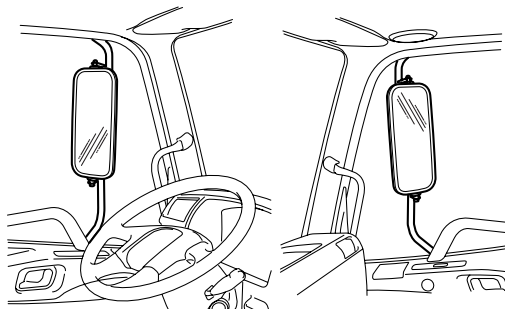


Z17333

Gauge and warning lamp operation

Check that gauges and warning/indicator lamps are working properly.

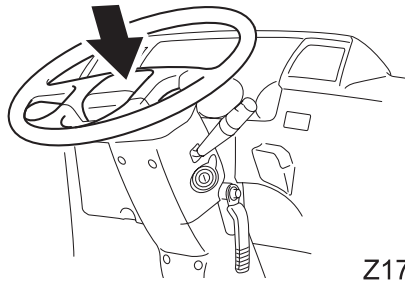
⇒ P. 6-4



Z17334

Rearview mirrors

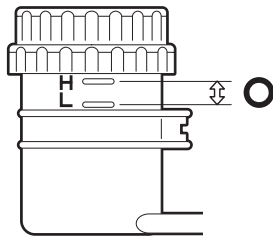
Seated in the driver's seat, adjust the angles for clear views of the sides and rear. Make sure the mirrors are clean.



Z17335

Horn operation

Press the horn button to check that the horn is working properly.

4 While walking around the vehicle

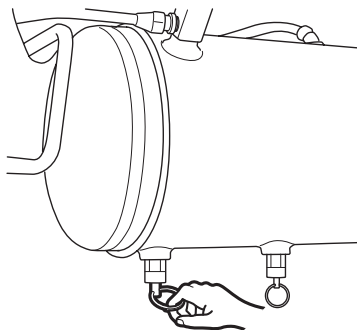
Z12024

Brake fluid level

<FK61F>

Check that the brake fluid level is between the "H" and "L" marks on the reservoir tank.

⇒ P. 12-33

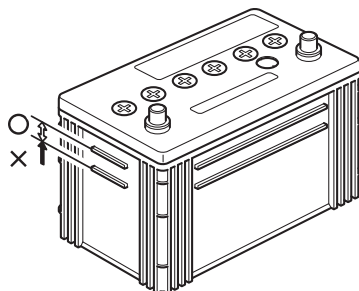


Z17634

Draining condensate from air tank

Pull the ring on the air tank drain cock to remove condensate from the air tank.

⇒ P. 12-62

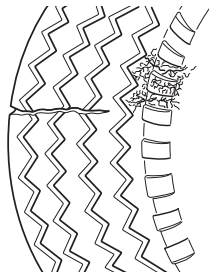


Z17518

Battery fluid level

Check that the battery fluid level is between the "UPPER" and "LOWER" level lines marked on the sides of the battery case.


⇒ P. 12-76

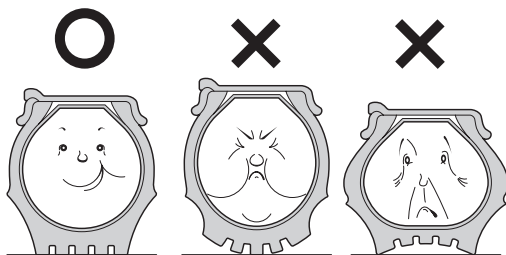


Z10805

Damage to tires

Check the tires for tread groove depth, foreign objects in tread, cracks and uneven wear.


⇒  P. 12-65

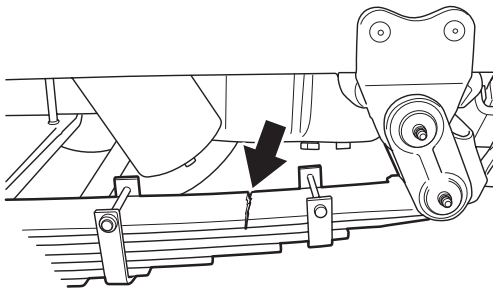


Z12426

Tire inflation pressure

Check that all tires are properly inflated.

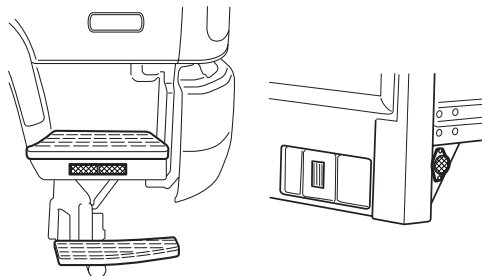
⇒  P. 12-63



Z12026

Broken suspension springs

Check for broken springs and tilt of vehicle body toward either side. Check also U-bolts and nuts for looseness.



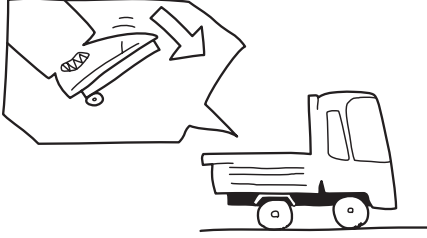

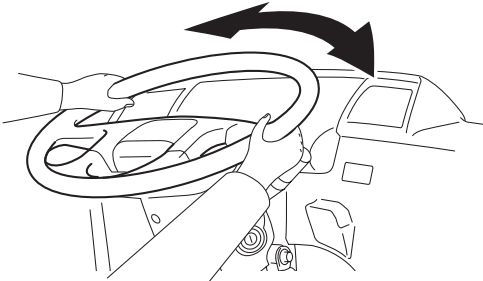

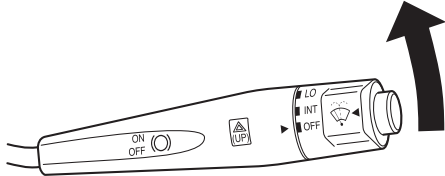
Z17336

Reflector condition

Make sure that the reflectors are clean, not damaged, and securely installed.


5 While driving at slow speeds


Perform the following checks while driving in a safe place at speeds lower than 20 km/h (12 MPH).

 <p>Z12028</p>	<p>Braking performance Depress the brake pedal and check that the brakes work effectively and evenly on all wheels.</p> <p>⇒  P. 12-58</p>
 <p>Z17337</p>	<p>Steering wheel operation Check that the steering wheel does not vibrate or pull to one side and that it is not unduly heavy. Also, make sure that the steering wheel returns to its neutral position smoothly.</p> <p>⇒  P. 12-56</p>
 <p>Z17338</p>	<p>Exhaust brake effectiveness Activate the exhaust brake and check that it works effectively.</p>

Lubrication

Application and replacement of lubricants at the specified intervals is vital to the vehicle's performance, longevity, and safety. Following the maintenance schedule will give optimum results.

⇒  P. 15-2

- If the vehicle is often used in demanding conditions, for example, on unpaved roads, near the coast, or in cold regions, lubricants should be applied and replaced more quickly than specified in the maintenance schedule. Consult an authorized dealer for lubricant application and replacement intervals most appropriate to your driving conditions.
- Use only the lubricants specified. ⇒  P. 14-3
- Special lubricants must be used if the vehicle is used at temperatures below -23°C (-10°F). For details, refer to an authorized dealer.

CAUTION

- **Apply and replace lubricants regularly. Use of lubricants beyond their designed service life could cause bearings or other components to seize up and cause an accident.**
- **Any checking, application, or replacement of lubricants should be carried out with the vehicle parked on level ground.**
- **Wipe all lubricant inspection windows and filling ports carefully to prevent the entry of mud, trash, water, or other contaminants.**
- **Never flush waste oil into the sewers or onto the ground. Take it to a gas station or authorized dealer.**

Greasing

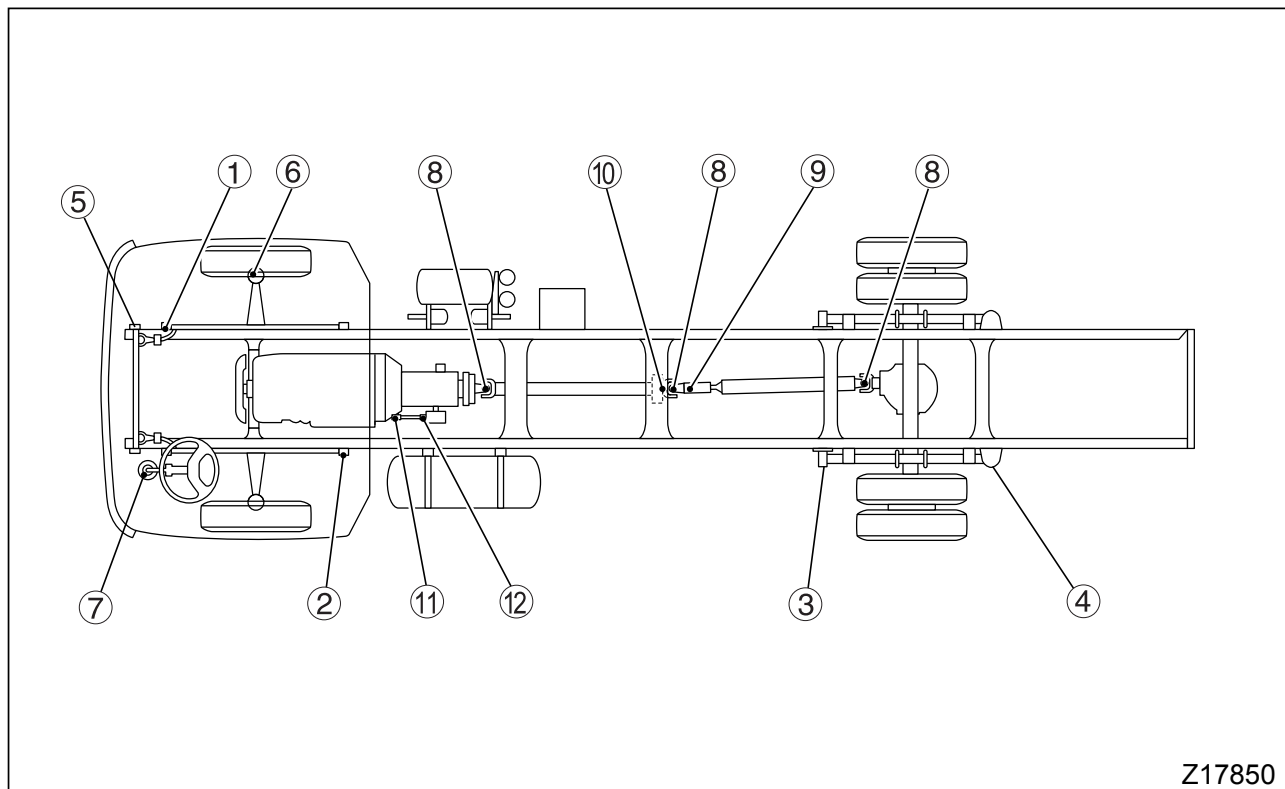
1 Grease fittings

Remove all dust and dirt from the grease fittings before using them. Always use the recommended grease.

! CAUTION

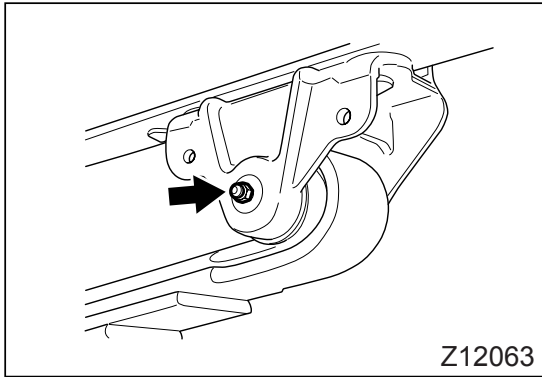
Wipe away any grease that sticks to wires or rubber hoses and any grease that overflows from the grease nipples.

Greasing intervals	Every 10,000 km (6,000 miles) Every 30,000 km (18,000 miles) for the greasing points marked ★.
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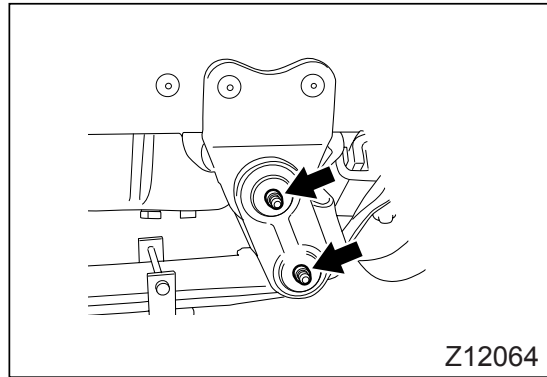


Z17850

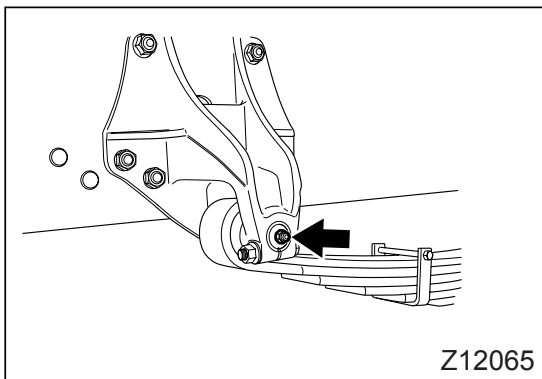
①



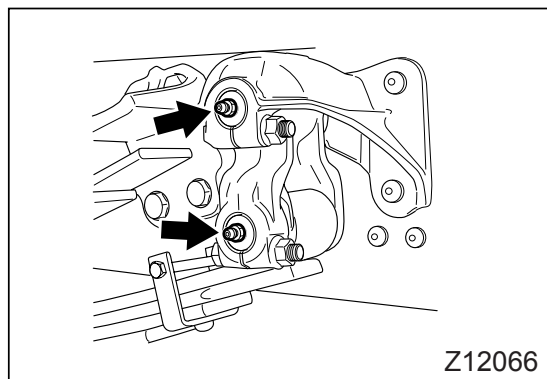
②



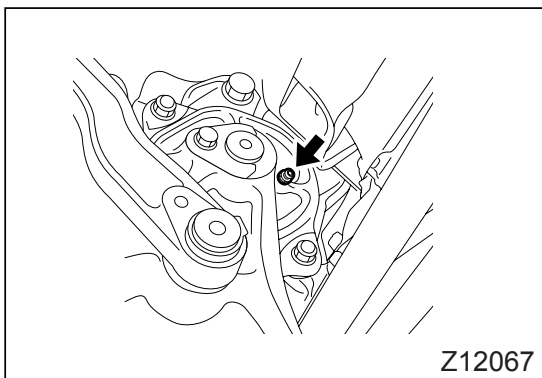
③



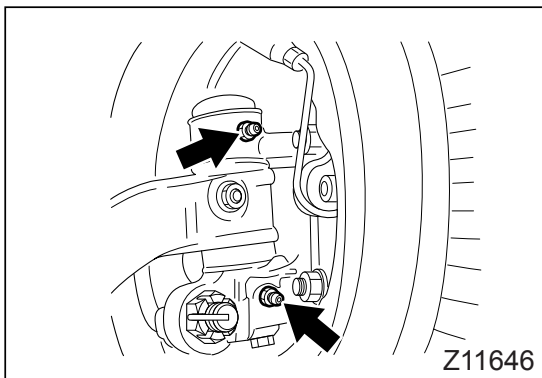
④



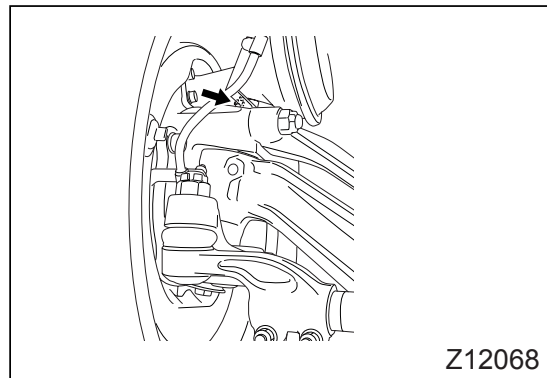
⑤



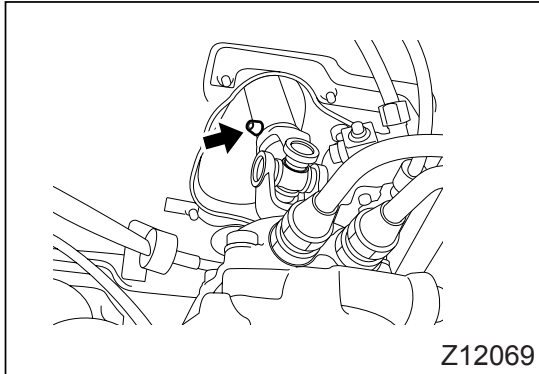
⑥ <Other than FM65F>



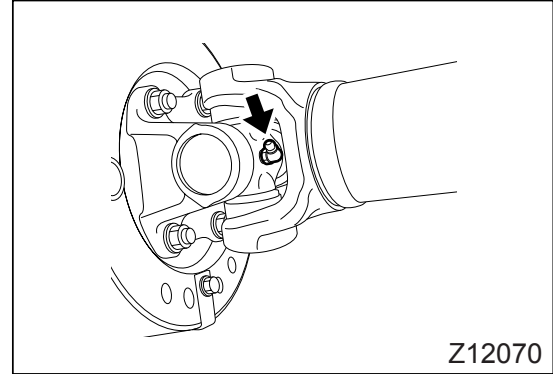
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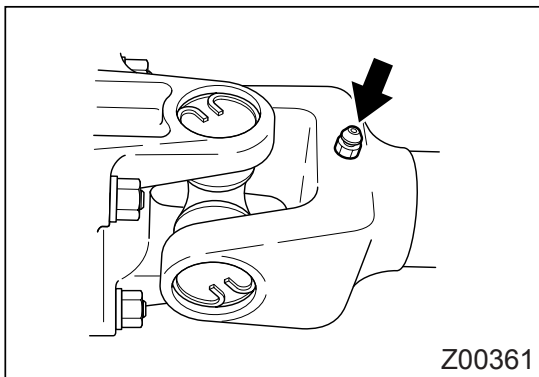
⑦



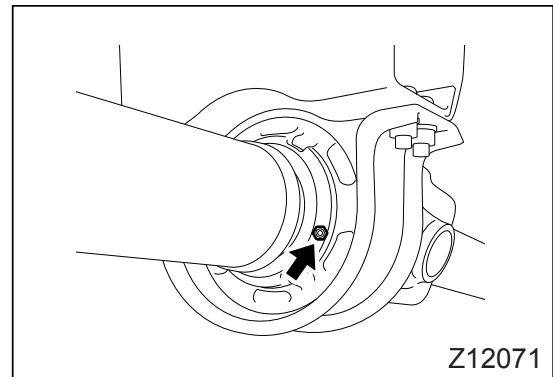
⑧



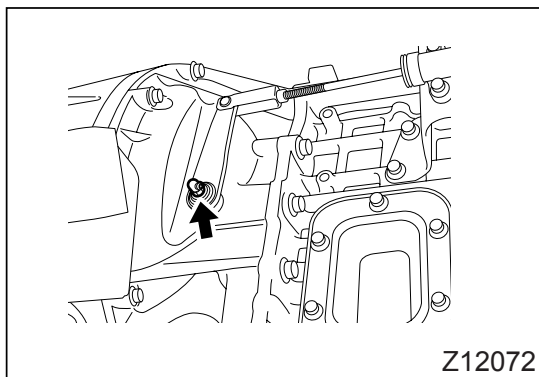
⑨



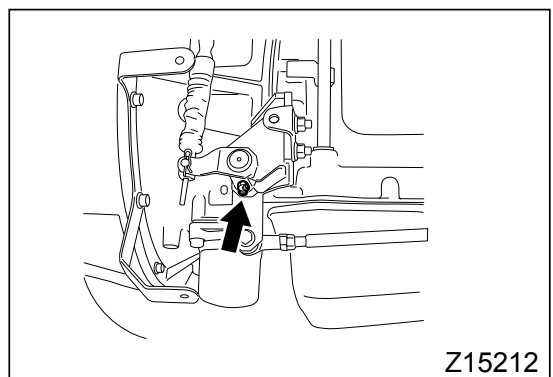
⑩



⑪ ★



⑫



Recommended lubricant:

Chassis grease

NLGI No. 1 (Li soap)

- ① Front spring, front end (two points each for left and right spring front ends)
- ② Front spring, rear end (two points each for left and right spring rear ends)
- ③ Rear spring, front end (two points each for left and right spring front ends)
- ④ Rear spring, rear end (two points each for left and right spring rear ends)
- ⑤ Cab hinge (two points each for left and right hinges)

- ⑫ Automatic transmission control
<Automatic transmission vehicles>

Recommended lubricant:
Wheel bearing grease
NLGI No. 2 (Li soap)

- ⑥ Kingpin top and bottom sections
(two points each for left and right kingpins)
- ⑦ Steering shaft
- ⑧ Propeller shaft universal joint
- ⑨ Propeller shaft slip joint
- ⑩ Propeller shaft center bearing
- ⑪ ★Clutch fork shaft
(two points each for left and right sides)
<Manual transmission vehicles>

The point marked ★ should be greased every 30,000 km (18,000 miles).

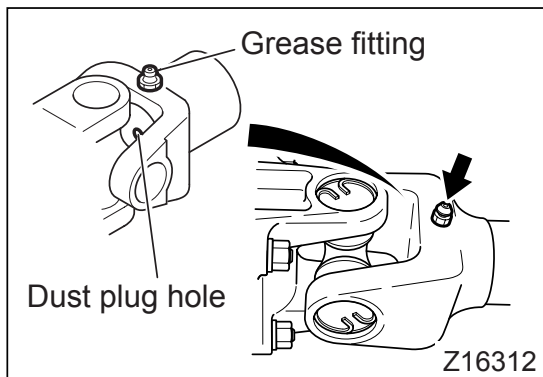
! CAUTION

Do not over-lubricate the clutch shifter. Excessive grease can make the clutch slip.

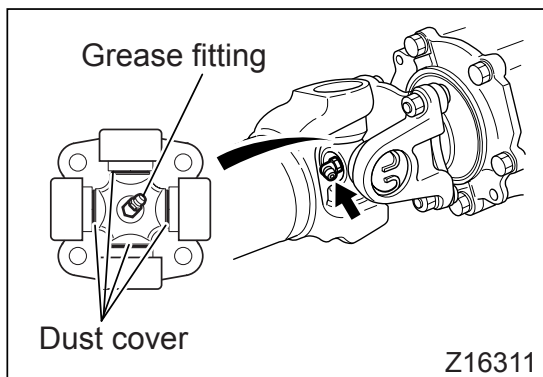
NOTE:

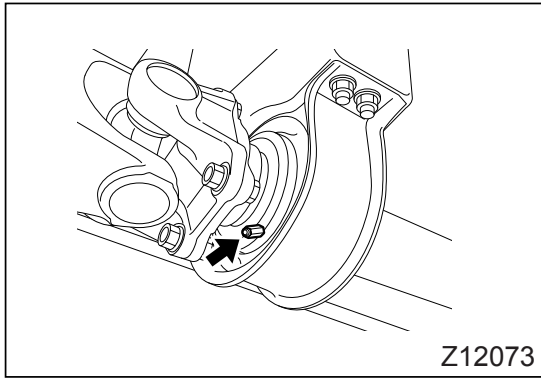
The greasing points for the propeller shaft varies depending on vehicle model.

- When greasing the propeller shaft slip joint, pump in grease until it comes out of the dust plug hole.

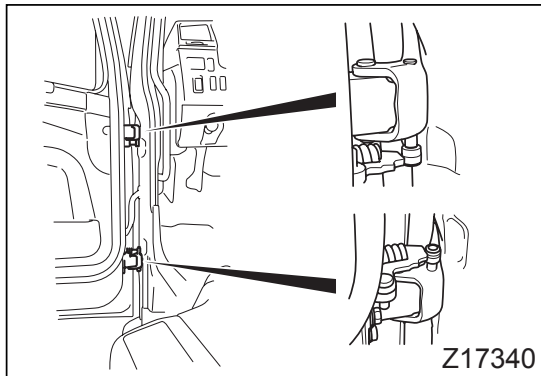


- When greasing the propeller shaft universal joint, pump in grease until it comes out of the dust covers (at 4 places).





- Pump grease into the propeller shaft center bearing until grease comes out of the escape valve that is located behind the grease nipple.

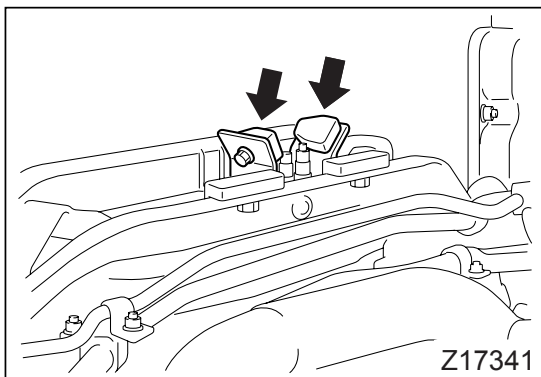


2 Door hinge (two points each for left and right hinges)

Apply to rotating and sliding sections.

Greasing intervals	Every 10,000 km (6,000 miles)
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Recommended lubricant:
Chassis grease
NLGI No. 1 (Li soap)

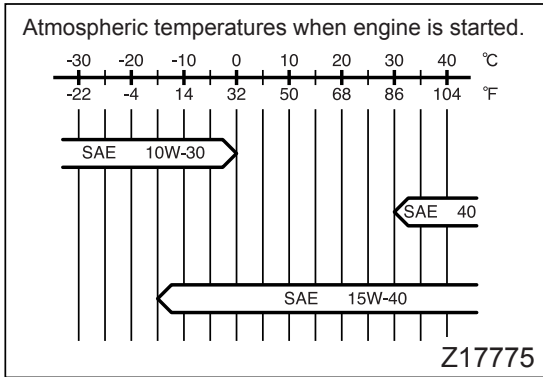


3 Cab rear mount cushion (two inside points each for left and right cushions)

Greasing intervals	Every 30,000 km (18,000 miles)
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Recommended lubricant:
Chassis grease
NLGI No. 1 (Li soap)

Oils and fluids



1 Engine oil

Performance, life, and startability of the engine depend to a large degree on the engine oil. Always use oil of the specified type and viscosity.

Inspection intervals	At the time of preoperational check
Replacement intervals	Every 10,000 km (6,000 miles)

The first engine oil replacement during the run-in period should be performed at the first 4,000 km (2,500 miles).

! CAUTION

Replace the engine oil earlier if the engine is frequently used at high speeds or under high loading.

Recommended oil:

- Engine oil
- API classification CJ-4
- SAE10W-30, 15W-40, 40

! CAUTION

- Use only the specified engine oil. Any other oils may contain substances that cause the ceramic filter inside the DPF to be loaded with particulate matter (PM) prematurely to the capacity and thus shorten the effectively functioning period of the DPF.
- Change the engine oil at the specified intervals. During the regeneration process of the DPF, part of the fuel may mix into the engine oil while the PM is being removed by oxidation. Unless changed at the specified intervals, engine oil may be excessively deteriorated by mixing of fuel which could cause engine failure.

Quantity required:

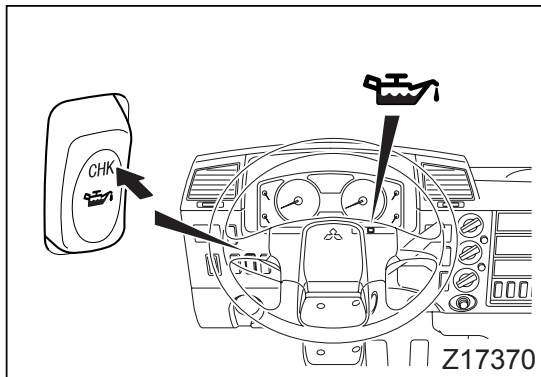
Liters (qts)






Oil pan	Approx. 11 (11.6)
Oil filter	Approx. 2.3 (2.4)

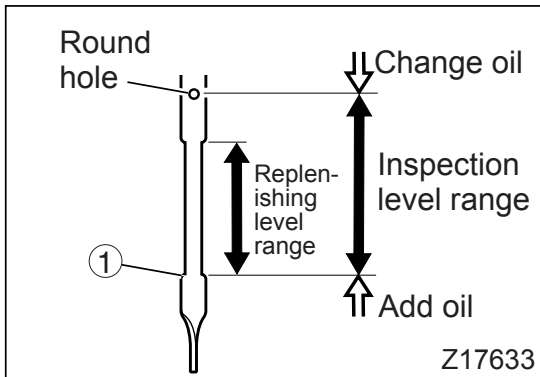
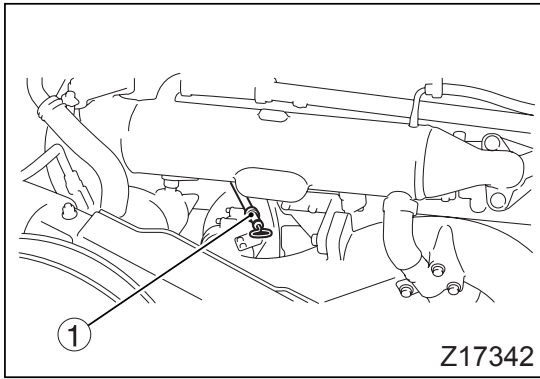
Use the oil level gauge to check the engine oil level. You can also use the oil level check switch. Although the oil check switch method is quick and simple, it does not provide an accurate measurement. Use the oil level gauge if you require an accurate measurement.

NOTE:

- Check the engine oil level with the vehicle parked on a level place and the engine stopped. A correct engine oil level cannot be determined when the vehicle is tilted, or if the engine is running or the time after stopping the engine is too short. Let the engine stand at least 30 minutes after stopping it before checking the oil level.
- The quantity of engine oil may increase due to the fuel that may have mixed with it when the DPF trapped PM is removed by oxidation. This does not indicate any abnormality. For the same reason, the engine oil can smell like fuel; this also does not indicate any abnormality.

**1.1 Engine oil level check using oil level check switch (simple method)**

1. Turn the starter switch to "ON".
2. Press the "CHK" side of the oil level check switch and keep it pressed.
The oil level is sufficient if the  warning lamp comes on and the  warning lamp goes out. If the  warning lamp does not come on and the  warning lamp remains illuminated, the engine oil level is lower than the normal level. After checking the level with the warning lamps, release the oil level check switch.
3. Add engine oil if the level is lower than the normal level. ⇒  P. 12-26



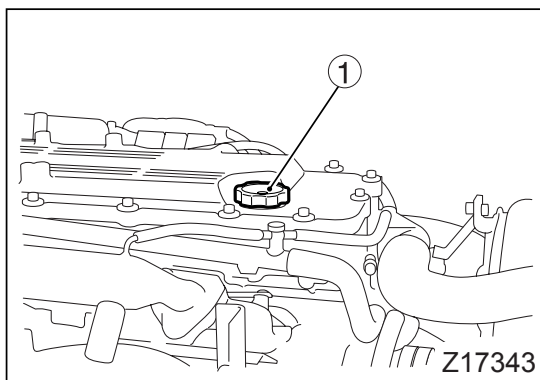
1.2 Engine oil level check using oil level gauge

1. Tilt the cab. ⇒ P. 12-6
2. Remove oil level gauge ① and wipe off oil with a cloth.
3. Fully insert the oil level gauge in the crankcase, and gently draw it out.
4. The oil level marked on the oil level gauge should be within the “inspection level range” indicated in the figure (between the lower notch and round hole).
5. If necessary, add engine oil to a level within the “replenishing level range” indicated in the figure. Change the oil if its level is above the round hole on the oil level gauge. The engine oil must also be changed if it is extremely dirty.

CAUTION

If the oil level is above the round hole on the oil level gauge, change the engine oil immediately. Because this is a sign of deteriorated engine oil performance, continued use of the same oil will cause engine failure and could even cause uncontrolled revving of the engine.

6. After the check, insert the oil level gauge into position and secure it properly.



1.3 Adding oil

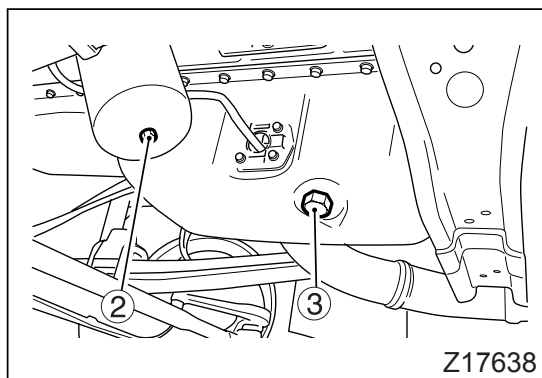
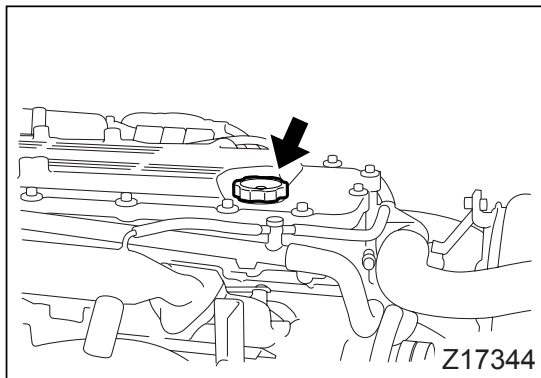
1. Tilt the cab. ⇒ P. 12-6
2. Clean the area around oil filler cap ① to prevent dust and dirt from entering the engine.
3. Remove the oil filler cap ① and add oil as necessary.
4. If you check the oil level immediately after adding oil, the reading may be lower than the actual level because all oil added may not have yet reached the oil pan. Wait for at least 6 minutes after adding oil.
In the case of overfilling, loosen the drain plug on the oil pan to allow the necessary amount of engine oil to drain out.
5. Install the oil filler cap ①.

! WARNING

Take care not to spill engine oil as engine oil on the exhaust manifold or other hot sections of engine could catch fire. Wipe clean the oil if spilt.

! CAUTION

- The added oil should be of the same grade and viscosity as the oil originally placed in the engine. Otherwise, engine malfunction may result.
- Take care not to add more than the specified quantity of oil.
- The engine can be severely damaged if the correct engine oil level is not maintained.

**1.4 Replacement**

1. Tilt the cab.

⇒ P. 12-6

! WARNING

If you remove oil immediately after operating the vehicle, it will be extremely hot. Take care to avoid being scalded.

2. Clean the surfaces around oil filler cap and remove the oil filler cap.
3. Place a receiver under the oil filter. Loosen oil filter drain plug ② to let the oil flow out of the filter.
4. Remove drain plug ③ from the oil pan to remove the oil.
5. Tighten the oil pan drain plug ③ and the oil filter drain plug ②.

Tightening torque	
Oil pan drain plug	69 N·m (51 ft.lbs., 7 kgf·m)
Oil filter drain plug	7.8 ± 2 N·m (5.8 ± 1.4 ft.lbs., 0.8 ± 0.2 kgf·m)

6. Carefully pour fresh engine oil through the oil filler.
7. Wait for more than 6 minutes, then check the oil level using the oil level gauge provided.
8. Crank the engine and then start it. ⇒ P. 5-8

9. Let the engine idle allowing oil to circulate throughout the engine parts. Then, stop the engine and wait for more than 30 minutes before checking the oil level again. Also, check for possible oil leaks.
10. After adding oil to the correct level, ensure that the drain plug, oil filler cap, and oil level gauge are securely installed.

! WARNING

Take care not to spill engine oil as engine oil on the exhaust manifold or other hot sections of engine could catch fire. Wipe clean the oil if spilt.

! CAUTION

- Take care not to add more than the specified quantity of oil. The engine can be severely damaged if the correct engine oil level is not maintained.
- If the engine is frequently run at high speeds or under heavy loads, the engine oil will deteriorate quickly and must be replaced sooner than specified.

2 Manual transmission gear oil

Inspection intervals	Every 10,000 km (6,000 miles)
Replacement intervals	Every 50,000 km (30,000 miles)

The first transmission gear oil replacement during the run-in period should be performed at first 4,000 km (2,500 miles).

Recommended oil:

Gear oil

API classification GL-3, SAE80 (general) or SAE90 (warm regions)

API classification GL-4, SAE90 (tropical regions)

Long period of high-speed driving: Engine oil API classification CC, CC/SF, SAE30, 40

Engine oil

API classification CD, SAE30, 40 or 50

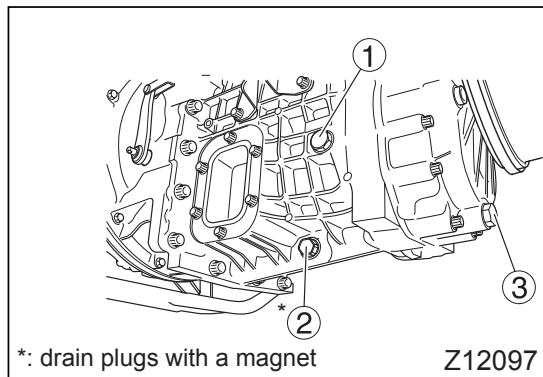
Quantity required:

Liters (qts)

Model	Quantity	
Other than FM65F	Approx. 6.7 (7.1)	Add approx. 0.5 (0.5) if vehicle has PTO
FM65F	Approx. 8.1 (8.6)	

! WARNING

Do not check or replace the gear oil immediately after operating the vehicle since the engine, transmission, exhaust pipe, and other components will be extremely hot.



2.1 Check

1. Remove inspection plug ① and make sure that oil is topped off.
2. If insufficient, add oil through the inspection plug hole until it is full to the brim.

! CAUTION

The added oil should be of the same grade and viscosity as the oil originally placed in the transmission. Otherwise, malfunction of the transmission will result.

3. Install the inspection plug.

Inspection plug tightening torque	69 ± 15 N·m (51 ± 11.7 ft.lbs., 7 ± 1.5 kgf·m)
--------------------------------------	--

2.2 Replacement

⚠ WARNING

The gear oil is extremely hot immediately after the vehicle has been operated. Take care to avoid being scalded when draining hot oil. Give the oil time to cool before draining it.

1. Remove the inspection plug ① and drain plugs ② and ③ to let the oil flow out.

NOTE:

Oil removal is quicker if performed not so long after the vehicle has been stopped and while the oil is still warm.

2. For a drain plug fitted with a magnet, wipe off any metal particles sticking to the magnet and install the drain plug.

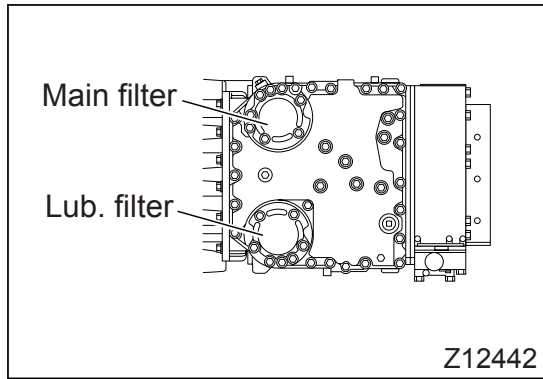
Drain plug tightening torque	69 ± 15 N·m (51 ± 11.7 ft.lbs., 7 ± 1.5 kgf·m)
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3. Add oil through the inspection plug hole until it reaches the bottom of the hole.
4. Install the inspection plug.

Inspection plug tightening torque	69 ± 15 N·m (51 ± 11.7 ft.lbs., 7 ± 1.5 kgf·m)
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3 Automatic transmission fluid

Inspection intervals		Every 10,000 km (6,000 miles)
Replacement intervals	Other than FM65F	Every 80,000 km (48,000 miles)
	FM65F	Every 40,000 km (24,000 miles)



Whenever replacing automatic transmission fluid, also replace the filters at the same time. On a new vehicle (excluding FM65F), only replace the filters at the first 8,000 km (5,000 miles). On a new vehicle (FM65F), only replace the main filter (continue to use the lube filter) at the first 8,000 km (5,000 miles).

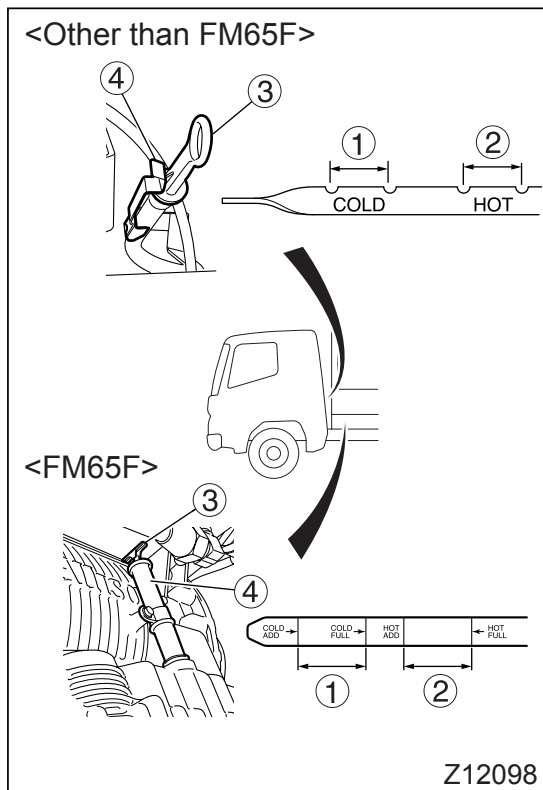
Recommended fluid:

Automatic transmission fluid DEXRON III type

Quantity required for replacement:

Liters (qts)

Model		Quantity
Other than FM65F	1000RDS	Approx. 7 (7.4)
	2200RDS	Approx. 10 (10.6)
FM65F	3000RDS	Approx. 18 (19)



3.1 Check and replacement

Refer to the separate Allison Automatic Transmission Operator's Manual. In the FM65F model, the automatic transmission fluid level can be checked using the range selector lever.

- ① COLD RUN band
- ② HOT RUN band

Check the automatic transmission fluid level. Add fluid, as required, through the dipstick tube.

4 Axle housing gear oil

Inspection intervals	Every 10,000 km (6,000 miles)
Replacement intervals	Every 60,000 km (36,000 miles) or every 12 months

The first axle housing oil replacement during the run-in period should be performed at first 4,000 km (2,500 miles).

Recommended oil:

Gear oil

API classification GL-5

Below 40°C: SAE90

Above 40°C: SAE140 or 85W-140

Use oil conforming to GL-5, SAE140 or SAE85W-140 if the vehicle is to be driven under heavy load conditions as for example driving up long uphill grades. Remember, however, that this oil is to be used only when the temperature is above 10°C (50°F).

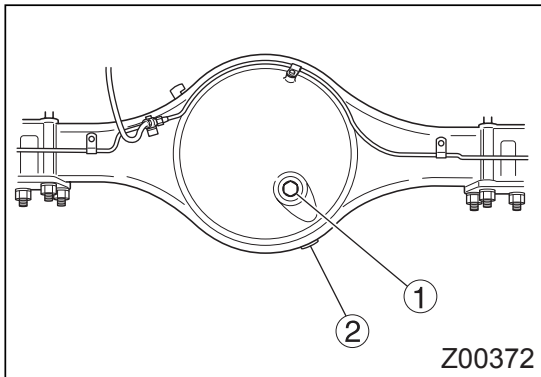
Quantity required (guideline):

Liters (qts)

Quantity	Approx. 6.5 (6.9)
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! WARNING

Do not check or replace the gear oil immediately after operating the vehicle since the real axle and gear oil will be extremely hot.



4.1 Check

1. Remove inspection plug ① and make sure that the oil is topped off.
2. If insufficient, add oil through the inspection plug hole until it is full to the brim.

! CAUTION

The added oil should be of the same grade and viscosity as the oil originally placed in the differential gears. Otherwise, malfunction of the rear axle will result.

3. Install the inspection plug.

Inspection plug tightening torque	98 to 115 N·m (72 to 87 ft.lbs., 10 to 12 kgf·m)
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4.2 Replacement

WARNING

The gear oil is extremely hot immediately after the vehicle has been operated. Take care to avoid being scalded when draining hot oil. Give the oil time to cool before draining it.

NOTE:

Oil removal is quicker if performed not so long after the vehicle has been stopped and while the oil is still warm.

1. Remove the inspection plug and drain plug ② to let the oil flow out.
2. After the oil has flown out completely, install drain plug ②.

Drain plug tightening torque	98 to 115 N·m (72 to 87 ft.lbs., 10 to 12 kgf·m)
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3. Add oil through the inspection plug hole until it reaches the bottom of the hole.
4. Install the inspection plug.

Inspection plug tightening torque	98 to 115 N·m (72 to 87 ft.lbs., 10 to 12 kgf·m)
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5 Brake fluid and clutch fluid

Fluid	Inspection intervals	Replacement intervals
Brake fluid	At the time of pre-operational check and every 10,000 km (6,000 miles)	Every 60,000km (36,000 miles) or every 12 months
Clutch fluid	At the time of pre-operational check and every 10,000 km (6,000 miles)	Every 60,000 km (36,000 miles) or every 12 months

Have the brake and clutch fluid replacement performed by an authorized dealer.

Recommended fluid:

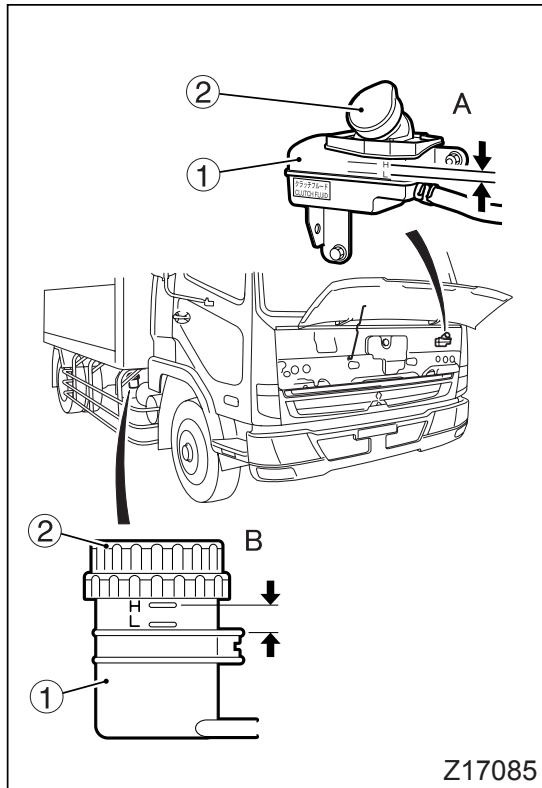
Brake fluid

SAE J1703, FMVSS No. 116, type DOT3

! WARNING

- **Be sure to use the recommended brake fluid.**
- **Use only one brand of recommended brake fluid. Mixing of different brands or types of fluid will change the properties of the fluid possibly resulting in a lower fluid boiling point and damaged brake components.**

If you wish to change the brand of brake fluid, replace all the existing fluid in the brake system with the new brand fluid.
- **Never allow engine oil, diesel fuel, gear oil, automatic transmission fluid, or any other mineral oil to mix with the brake fluid. When mixed with the brake fluid even very small in amounts, such oils will cause the rubber parts of the brake system to swell, and could cause brakes to become sluggish or to drag. Also, do not use containers which have been used for mineral oil for brake fluid.**
- **Because brake fluid is highly hygroscopic, it should be kept in a dry place both during refilling and storage. If brake fluid absorbs moisture, the boiling point is lowered, a condition which could result in vapor lock. This is very dangerous. Do not open the reservoir tank cap when checking the brake fluid.**
- **Brake fluid dissolves paint. If you spill the fluid, wipe it clean or flush it off with water. If not cleaned off, brake fluid can cause discoloration, corrosion, or cracks in the paintwork.**
- **If the brake fluid is used over long periods, its boiling point drops significantly due to the moisture it has absorbed, thereby increasing the likelihood of dangerous vapor lock. Be sure to replace the brake fluid every 60,000 km (36,000 miles) or 12 months, whichever is sooner.**



The reservoir tank design varies from model to model.

Your vehicle is equipped with either of the following reservoir tanks.

- Manual transmission models
Type "A" tank
This tank contains clutch fluid.
- FK61F
Type "B" tank
This tank contains brake fluid.

5.1 Check

The fluid level should be between the "H" and "L" lines on reservoir tank ①.

Also check the inside of the reservoir tank for foreign matter. If there is sediment in the reservoir tank, have an authorized dealer check and clean it.

⚠ CAUTION

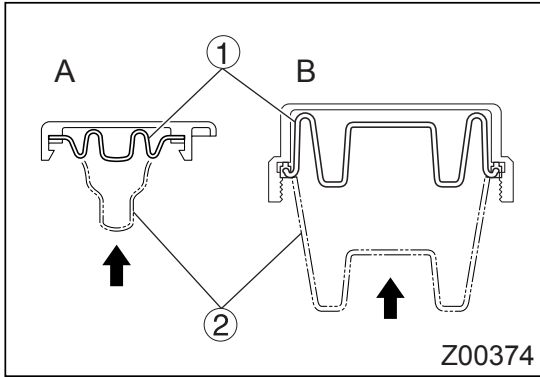
Do not open cap ② of reservoir tank for inspection purposes.

5.2 Adding fluid

1. If the fluid level is lower than the "L" line, clean the surfaces around cap of reservoir tank, open the cap, and add the recommended brake fluid up to the "H" line.
2. Close the cap firmly.

⚠ WARNING

- The container used for adding brake fluid should be a clean one free of moisture, mineral oil, and dust.
- If the fluid level is unusually low, there is a fluid leak in the brake line. In this case, have your vehicle inspected at an authorized dealer.
- Be extremely careful not to let dust and other foreign matter enter the reservoir tank, as foreign matter in the tank could cause a failure of the brake system. If you see foreign matter in the reservoir tank, have it checked and cleaned by an authorized dealer.
- Be careful not to exceed the "H" line when adding brake fluid.



! CAUTION

After the brake fluid has been added, push the inside rubber of the cap back as illustrated before refitting the cap.

- ①: After adding
- ②: Before adding

6 Power steering fluid

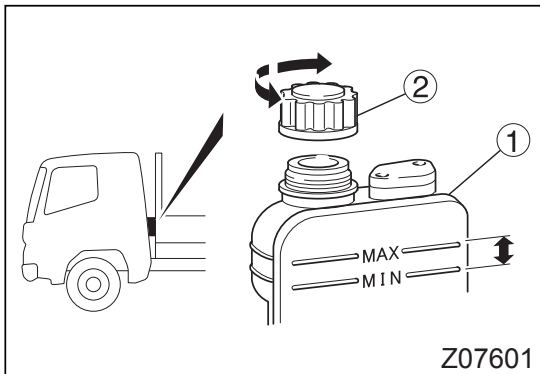
Inspection intervals	Every 10,000 km (6,000 miles)
Replacement intervals	Every 60,000 km (36,000 miles) or every 12 months

Have the power steering fluid replaced by an authorized dealer. At the time of fluid replacement, the filter in the power steering fluid tank must also be replaced.

Recommended fluid:
Automatic transmission fluid
DEXRON II, DEXRON III type

! CAUTION

When adding power steering fluid, be sure to use fluid of the same brand as the existing fluid. Mixing two or more different fluids will change their properties and could cause a failure.



6.1 Checking and adding fluid

1. Stop the engine with the front wheels in the straight-ahead position. Prevent the vehicle from moving by fully setting the parking brake and blocking the wheels with chocks.
2. Check the fluid level in power steering fluid tank ① located in the rear of the cab. The fluid level should be between the "MAX" and "MIN" lines. Also, check whether the power steering fluid is dirty. If it is dirty, have it replaced by an authorized dealer. If necessary, tilt the cab to make it easier to check the level and add power steering fluid.
3. If the fluid level is lower than the recommended range, clean the surfaces around fluid tank cap

- ②. Open the tank cap and add fluid as necessary.
4. Install the cap on the fluid tank.

WARNING

- Close the tank cap firmly; otherwise power steering fluid will leak and could catch fire. Also, wipe clean spilled fluid.
- If the fluid level is far below the specified range, fluid may be leaking. Have your vehicle inspected at an authorized dealer.

CAUTION

- Use a clean container when adding the power steering fluid. Foreign matter in the fluid could result in a failure.
- Avoid adding fluid to a level above the specified range.
- Insufficient oil can make the steering heavy or noisy and can damage power steering components.

Filter elements

1 Engine oil filter replacement


Replacement intervals	Every 20,000 km (12,000 miles)
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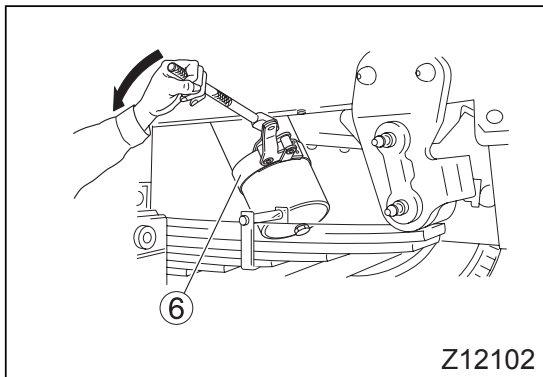
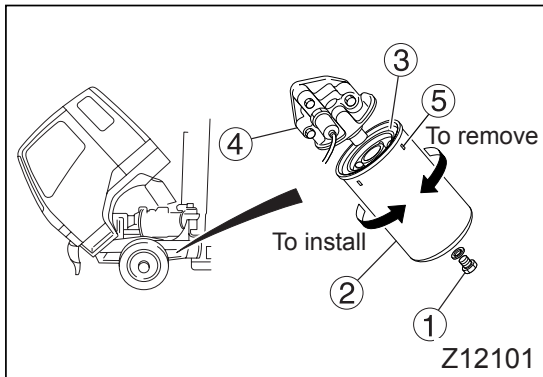
The first oil filter replacement during the run-in period should be performed at the initial 10,000 km (6,000 miles) point.

WARNING


- Do not replace the oil filter immediately after operating the vehicle since the engine, transmission, exhaust pipe, engine oil, and other items will be extremely hot. If you do not observe this instruction, you could get burned. Replace the oil filter only after waiting until all these parts have sufficiently cooled down.
- Spilled engine oil should be wiped off clean. Oil remaining on the engine surface could catch fire.

⚠ CAUTION

- Oil filter element must not be cleaned and reused.
- Replace the oil filter element once every two engine oil changes.
- When the  warning lamp lights up, the oil filter element is clogged. Replace the element immediately regardless of the scheduled replacement intervals. If the buzzer sounds simultaneously, engine oil pressure is excessively low.



Replace the oil filter element as follows:

1. Place a suitably sized pan under the oil filter, and loosen drain plug ① to let the oil in the filter flow out.
2. Turn filter element assembly ② in the direction of the arrow to remove it. If the assembly is hard to turn, use a filter wrench ⑥ (available from an authorized dealer).
3. Replace the filter element assembly with a new one. The replacement part should be a genuine part.
4. Install the filter element assembly using this procedure:
Apply a thin coat of engine oil to the gasket surface ③ of the filter element assembly. Turn the assembly clockwise by hand until the gasket contacts the sealing surface of the filter head ④. From this point, give the filter element assembly an additional 1-1/8 to 1-3/8 clockwise turns using the mark ⑤ on it as a reference.
5. When only the filter element is replaced without replacing engine oil, add approx. 2.3 liters (2.4 qts) of engine oil through the oil filler.
6. Crank the engine. ⇒  P. 5-8
7. Start the engine and check for oil leaks.
8. Stop the engine and, after letting it cool down for 30 minutes or more, check the oil level.

2 Fuel filter replacement

Replacement intervals	Every 30,000 km (18,000 miles) or every 6 months
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WARNING

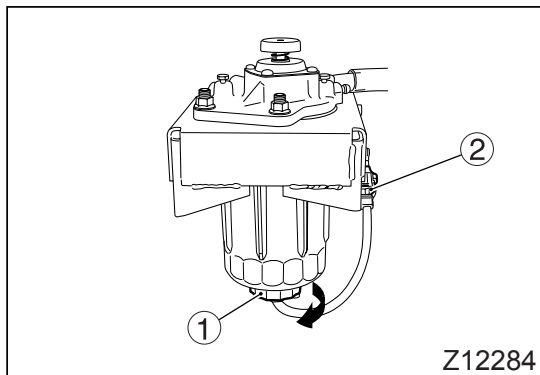
- Fuel is highly flammable and should be kept away from hot objects and open flames owing to the risk of fire or explosion. Wipe up any fuel that spills into the engine compartment.
- Keep cigarettes and other sources of heat away from the vehicle while replacing the fuel filter. They are dangerous because they could cause the fuel to ignite.
- After replacing the fuel filter, confirm that no fuel is leaking out. Leaking fuel could cause a fire or explosion.
- Use only the fuel filter specified for your vehicle. Use of other filters could cause fuel to leak and cause a fire or explosion.

CAUTION

Always replace with a new, genuine fuel filter element. Do not use the filter element beyond the recommended replacement intervals. Failure to observe these may damage the fuel injection parts.

The fuel filter is mounted on the left-hand side of the vehicle.

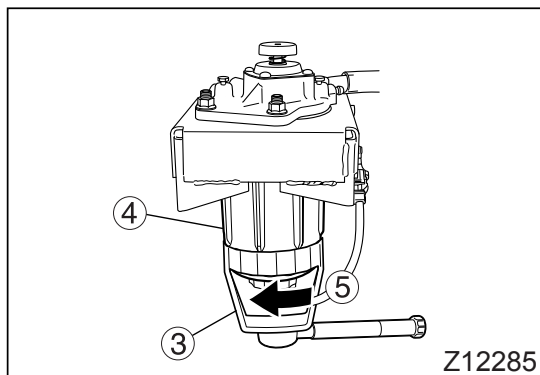
1. Apply the parking brake securely. Prevent the vehicle from moving by blocking the wheels with chocks.
2. Clean the fuel filter and the surrounding area to prevent dirt from entering the fuel system.
3. Place a can under the fuel filter to catch fuel.
4. Disconnect the connector ② of the sensor ①.
5. Loosen the sensor in the arrow direction shown in the drawing and drain the fuel from the case. After draining, retighten the sensor.



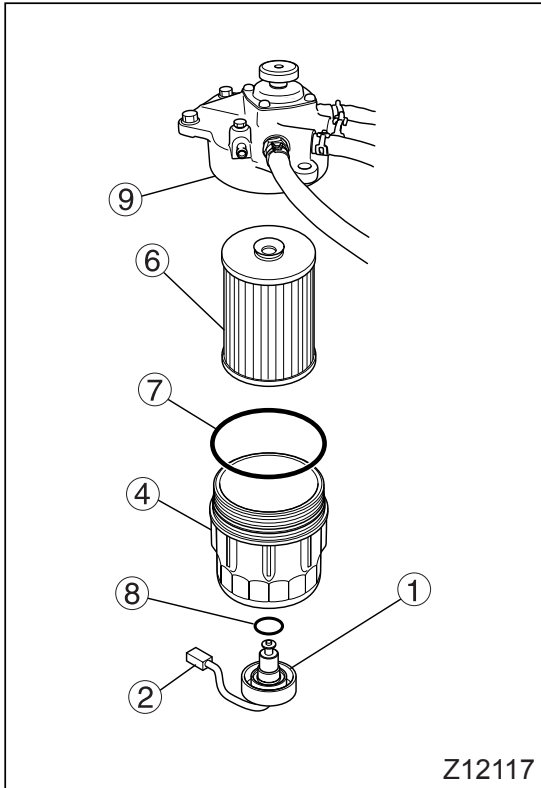
6. Put the connector and its harness in the special tool ③ (separately sold).

CAUTION

When replacing the fuel filter, be sure to use the special tool to avoid damaging the filter. If you do not have the special tool, please contact an authorized dealer.



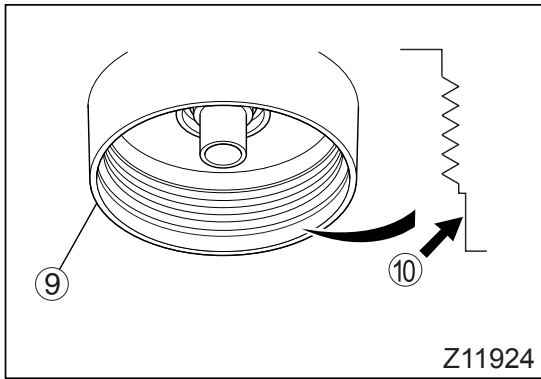
7. Remove the filter case ④ using the special tool, by turning it in the direction of the arrow ⑤.



8. Remove the element ⑥ and the sensor from the filter case.
9. Replace the O-ring ⑦ and O-ring ⑧ with new ones. Apply a thin coat of engine oil to each of the new O-rings and install the O-ring ⑦ on the filter case and the O-ring ⑧ on the sensor.

! CAUTION

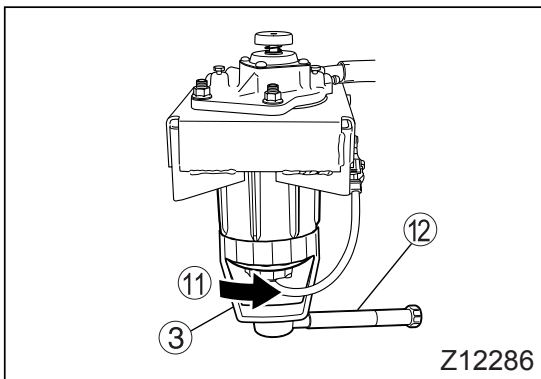
Use the O-rings that are supplied with the new replacement element.



10. Clean the surfaces ⑩ of the filter head ⑨ and filter case ④ that will come in contact with the O-ring ⑦.
11. Install the element with the hole of its end facing upward. Be sure to use a genuine replacement element.

! CAUTION

- When installing the filter case, be careful not to let the O-ring twist and be damaged.
- Do not reuse the element.



12. Install the filter case by turning it in the direction of the arrow ⑪. Tighten the filter case using the special tool and a torque wrench ⑫ to within the following torque range.

Tightening torque	30 ± 2 N·m (22 ± 1.5 ft.lbs., 3 ± 0.2 kgf·m)
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! WARNING

- If the fuel filter is tightened to an inappropriate torque, fuel could leak and the filter itself could become damaged, possibly resulting in a fire and/or explosion.
- Be careful not to damage the filter case, as this could cause fuel leakage. When tightening the fuel filter case, be sure to use the special tool to avoid damaging the case.

13. Install the sensor to the filter case.

Tightening torque	$5 \pm 1 \text{ N}\cdot\text{m}$ ($3.7 \pm 0.7 \text{ ft}\cdot\text{lbs.}$, $0.5 \pm 0.1 \text{ kgf}\cdot\text{m}$)
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14. Connect the connector to the sensor.

15. Bleed the fuel system. \Rightarrow  P. 13-26

16. Start the engine to test for fuel leakage.

3 Air cleaner check and replacement

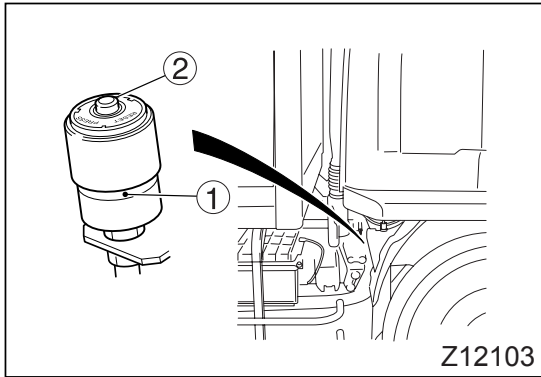
Inspection intervals	Every 10,000 km (6,000 miles)
Replacement intervals	Every 80,000 km (48,000 miles) or every 12 months

! CAUTION

Inspect the air cleaner and replace its element at the specified intervals.

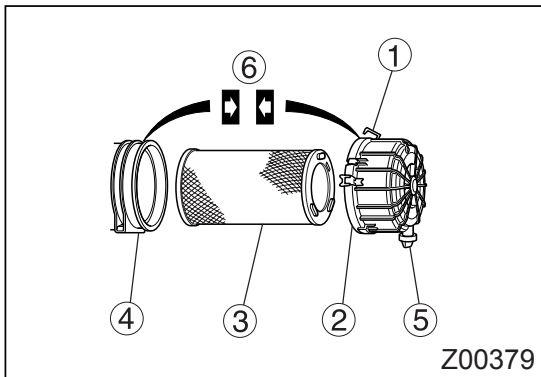
NOTE:

Even if the replacement interval has not elapsed, clean or replace the element if clogging of the element causes a decrease in engine output.



The air cleaner element does not need to be cleaned before the end of each replacement interval. However, clean it whenever the following regular check shows that cleaning is necessary.

Check the dust indicator once a week. If a red signal appears in the indicator's window ①, the air cleaner element must be cleaned immediately regardless of the scheduled cleaning interval. After cleaning, press the reset button ② to clear the red signal.



3.1 Removal and installation

1. Undo clamps ① and remove cover ②. Pull out straight outer element ③ to remove.
2. Install the element by reversing the order of removal. Fasten the clamps with makes ⑥ on the case and cover aligned.

! CAUTION

Install the element correctly.
If the packing is broken or the clamps are loose, the engine will suck in dust or other foreign matter and premature piston and cylinder liner wear could result.

3.2 Check

1. Remove the cover ② and check the case ④ for dust accumulated inside.
2. If much dust has accumulated inside the case, remove the element ③ and wipe clean the inside of the case with a cloth.
3. If there is very little dust, reinstall the cover without doing anything.

! CAUTION

When dust has accumulated inside the case, simply remove the dust with a cloth; you do not need to clean the element.

3.3 Cleaning

If the air cleaner element becomes clogged before the end of the element replacement interval, a red signal will appear in the dust indicator's window. In this case, clean the element immediately.

! WARNING

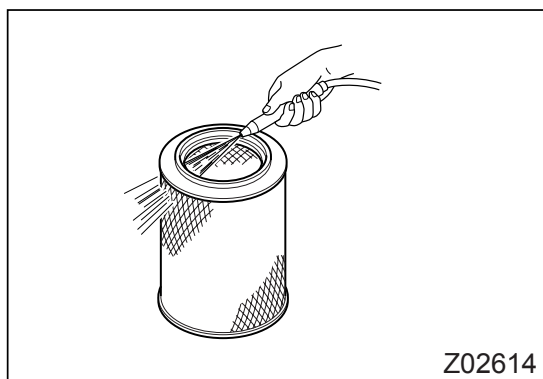
When cleaning air cleaner element, wear goggles and a mask to protect your eyes and respiratory organs from dust.

And, use a dust collector to prevent dust from dispersing into the surroundings.

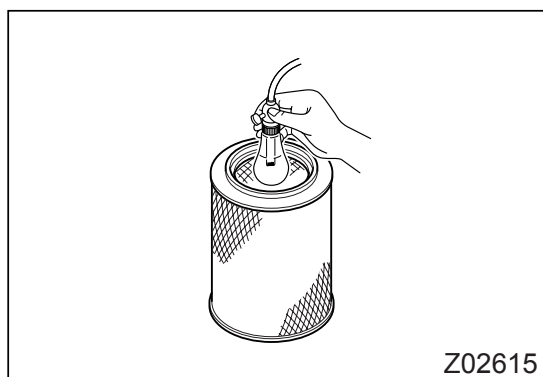
! CAUTION

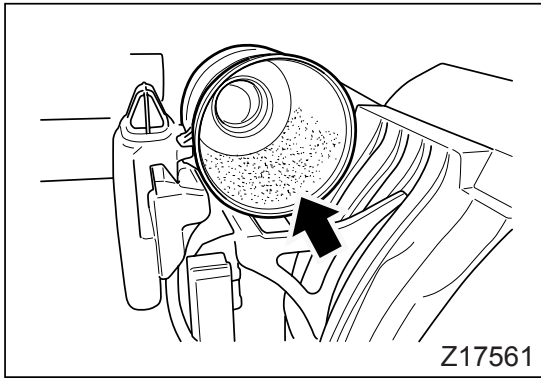
- Cleaning the element too often may damage it and cause the engine to take in dust and other foreign matter.
- Keep the air pressure under 700 kPa (100 psi, 7 kgf/cm²).
- Do not blow compressed air into the air cleaner case. This may cause premature wear of pistons and cylinder liners due to dust and other foreign matter carried inside the engine by compressed air.
- Do not strike the element or hit it against another object.
- If the element is contaminated with oily soot or dust, replace it regardless of the scheduled replacement time.

1. From the inside of the element, blow compressed air evenly up and down along the pleats of the filter paper.



2. Place a light in the element and check the filter paper for damage or places where it has worn thin. Also check the packing for damage.





3. Clean the inside of cover ② and case ④ with a rag.
4. Check that vacuator valve ⑤ is not plugged with dust. Clean it if necessary.

3.4 Replacement

Replace the element every 80,000 km (48,000 miles) or 12 months, whichever comes first. Use only the genuine Mitsubishi element as a replacement air cleaner element.

CAUTION

Do not use a wet air cleaner element or safety element, as this will adversely affect the exhaust emission control system.

4 Replacement of PCV (Positive Crank-case Ventilation) valve element

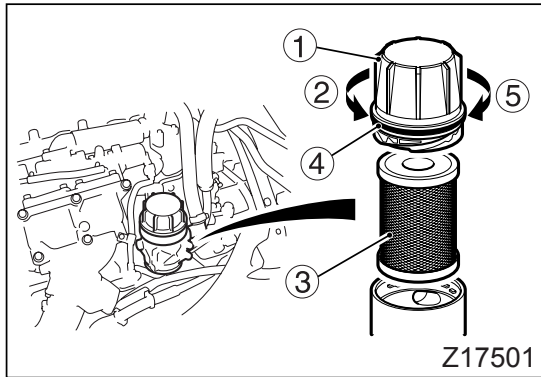
Replacement intervals	Every 10,000 km (6,000 miles)
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WARNING

Do not try to replace the PCV valve element immediately after the engine has stopped as it is extremely hot and can cause burns. Allow the engine to cool down sufficiently before beginning replacement.

CAUTION

The valve element is not designed for washing and reuse.



1. Apply the parking brake firmly.
Chock the wheels to prevent the vehicle from moving.
2. Tilt the cab. ⇒ P. 12-6
3. Wipe sand, dust and other impurities from the cap ① to prevent them from entering the system when the cap is removed.
4. Turn the cap in the direction of the arrow ② as illustrated and remove it.
5. Pull the valve element ③ straight up and remove it.
6. Replace the O-ring ④ on the cap with a new one. Lightly coat the new O-ring with engine oil before installing it onto the cap.

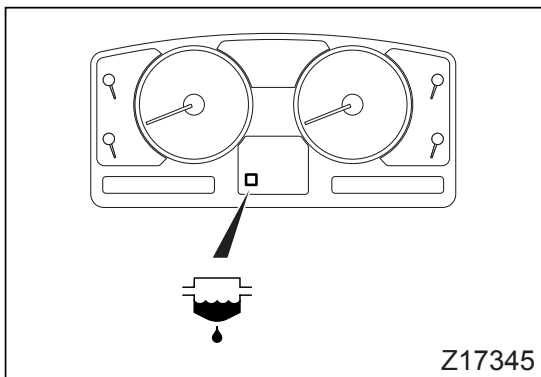
⚠ CAUTION

Be sure to use the O-ring supplied with the new valve element.


7. Install the new valve element. Always use a genuine part.
8. Install the cap, turning it by hand in the direction of the arrow ⑤. Continue to turn the cap until it slightly lifts up and comes to a stop.

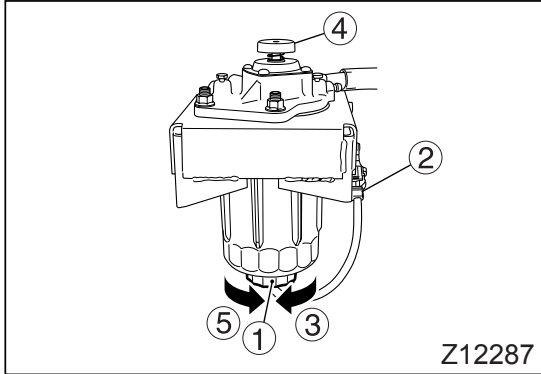
⚠ CAUTION

Install the cap carefully so that the O-ring will not be twisted and damaged.



Draining water from fuel filter

If the  warning lamp lights up, there is water in the fuel filter in an amount exceeding the limit. Drain the water as follows:



! WARNING

- Fuel is highly flammable and should be kept away from hot objects and open flames owing to the risk of fire or explosion. Wipe up any spilt fuel.
- Keep cigarettes and other sources of heat away from the vehicle while draining water from the fuel filter. They are dangerous because they could set fire to the fuel.
- Be careful not to injure yourself on the edges of nearby components while draining water from the fuel filter.

1. Prepare a receiver for water.
2. Disconnect the connector ② from the sensor ①, and turn the sensor in the direction of the arrow ③ to loosen it; the water will flow from the pipe at the end of the sensor.
Operating priming pump ④ helps quicken the draining.
3. When fuel begins to flow out, tighten the sensor in the direction of the arrow ⑤.
After tightening the sensor, connect the connector.

Tightening torque	$5 \pm 1 \text{ N}\cdot\text{m}$ ($3.7 \pm 0.7 \text{ ft}\cdot\text{lbs.}$), $0.5 \pm 0.1 \text{ kgf}\cdot\text{m}$
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4. Bleed the fuel system. ⇒ P. 13-26
5. Start the engine and check that fuel does not leak.

! WARNING

- The drain contains not only water but also fuel.
Be sure to wipe clean the surfaces around the fuel filter to remove all splashed fuel. Fuel remaining on the surfaces could cause a fire.
- Make sure fuel does not leak from the filter or from related parts. Any fuel leakage could cause a fire.

Engine coolant – check and replacement

Inspection intervals	At the time of preoperational check
Replacement intervals	Every 24 months

If the coolant becomes very dirty, replace it immediately regardless of the specified replacement intervals.

1 Recommended coolant

Use a coolant containing the FUSO DIESEL LONGLIFE COOLANT additive and soft water in the specified proportions.

Having both corrosion preventive and anti-freezing properties, the additive protects the cooling system all year around.

Replace and top off the coolant only with water containing FUSO DIESEL LONGLIFE COOLANT or an equivalent.

2 Water used with coolant

Use soft water with the properties shown in the following table. Do not use hard water from wells and rivers as it is liable to form scales and cause corrosion.

Total hardness	300 ppm or less
Sulfate SO_4^-	100 ppm or less
Chloride Cl^-	100 ppm or less
Total dissolved solids	500 ppm or less
pH	6 to 8

3 Coolant additives

To prevent the cooling system freezing up and minimize corrosion, use FUSO DIESEL LONGLIFE COOLANT or an equivalent. FUSO DIESEL LONGLIFE COOLANT is an ethylene-glycol-based antifreeze (SAE J814-C) with both anti-freeze and anti-corrosion properties. Dilute it with soft water to the specified concentration.



Z09270

 **DANGER**

- FUSO DIESEL LONGLIFE COOLANT IS TOXIC. IF A PERSON HAS ACCIDENTALLY SWALLOWED IT, FORCE HIM/HER TO VOMIT AND CONSULT A DOCTOR IMMEDIATELY. IF IT SPLASHES IN THE EYES, IMMEDIATELY FLUSH THE EYES WITH WATER FOR MORE THAN 15 MINUTES, AND SEEK MEDICAL ATTENTION.
- SHOULD FUSO DIESEL LONGLIFE COOLANT COME IN CONTACT WITH YOUR SKIN, IMMEDIATELY WIPE IT OFF, AND THEN THOROUGHLY WASH YOUR SKIN WITH LOTS OF CLEAN WATER AND SOAP. IF YOU FEEL UNWELL OR PAIN ON YOUR SKIN, IMMEDIATELY SEEK MEDICAL ATTENTION.
IN THE EVENT OF CONTACT WITH YOUR CLOTHES, IMMEDIATELY FLUSH FUSO LONGLIFE COOLANT WITH WATER AND SOAP.
- DO NOT USE FUSO DIESEL LONGLIFE COOLANT IN A CLOSED OR POORLY VENTILATED SPACE. SHOULD YOU INHALE A LARGE AMOUNT OF GAS OF FUSO DIESEL LONGLIFE COOLANT, MOVE TO A PLACE WITH FRESH AIR AND KEEP YOURSELF WARM AND AT REST. IF YOU FEEL NAUSEOUS OR OTHERWISE ABNORMAL, IMMEDIATELY SEEK MEDICAL ATTENTION.
- CLOSE THE CAP OF THE FUSO DIESEL LONGLIFE COOLANT CONTAINER IMMEDIATELY AFTER USING THE PRODUCT.
- DO NOT STORE FUSO DIESEL LONGLIFE COOLANT WHERE CHILDREN COULD REACH AND ACCIDENTALLY DRINK IT.
- FUSO DIESEL LONGLIFE COOLANT IS FLAMMABLE; AVOID EXPOSING IT TO OPEN FLAME.
- WHEN HANDLING FUSO DIESEL LONGLIFE COOLANT, WEAR AN ORGANIC GAS MASK, PROTECTION GOGGLES, OIL-RESISTANT GLOVES, AND/OR PROTECTIVE APRON AS NECESSARY.

CAUTION

Do not use methanol-based or methoxypropanol-based antifreeze products since these can severely damage the engine. If a different additive has been used and the FUSO DIESEL LONGLIFE COOLANT is to be used, be sure to thoroughly flush the cooling system.

Use the following table to determine the correct concentration of FUSO DIESEL LONGLIFE COOLANT according to the lowest temperature at which your vehicle is to be operated.

FUSO DIESEL LONGLIFE COOLANT concentration (in volume percentage)

Lowest temperature °C (°F)	-10 (14) or higher	-15 (5)	-20 (-4)	-25 (-13)	-30 (-22)	-35 (-31)	-40 (-40)
Concentration (%)	50	50	50	50	50	55	60

See the instructions on adding coolant.

⇒  P. 12-50

Liters (qts)

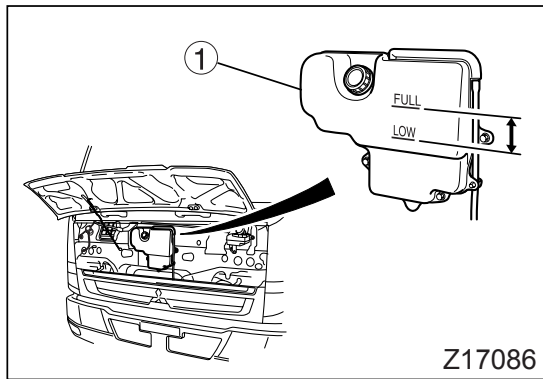
Model		Coolant quantity
Manual transmission vehicles		Approx. 25.5 (26.8)
Automatic transmission vehicles	FM65F	
	Other than FM65F	Approx. 28.5 (30.0)

NOTE:

Vehicles are shipped with a 50% concentration of FUSO DIESEL LONGLIFE COOLANT and can therefore be used at temperatures down to -30°C (-22°F).

CAUTION

Use FUSO DIESEL LONGLIFE COOLANT at a concentration of between 50% and 60%. The proper concentration under normal temperatures is 50%. At a concentration below 30%, this additive performs poorly as an anticorrosive, while at a concentration exceeding 60%, it performs poorly as an antifreeze.



4 Check

NOTE:


- Always check the coolant level before starting the engine when the coolant temperature is low. If checked when hot, the coolant level will be high due to expansion.
- Deposition may occur in the reserve tank but this will not cause any problem.

1. Open the front panel. ⇒ P. 12-4
2. The coolant level in reservoir tank ① should be between the “FULL” and “LOW” lines. If the level is below the “LOW” line, you must add coolant. See the next page for the method.
3. Check for coolant leaks from the radiator and radiator hoses.

If you find water on the ground from which your vehicle has been moved after parking, coolant is probably leaking.

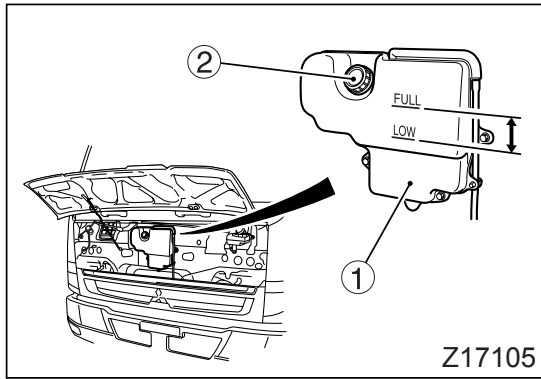
If the coolant level is abnormally low and quickly drops again when coolant has been added, coolant may be leaking from the cooling system. Have the vehicle inspected by an authorized dealer.
4. Close the front panel. ⇒ P. 12-4

5 Adding coolant

Coolant should normally be added into the reservoir tank. Illumination of the  warning lamp indicates insufficient coolant or engine overheating. If the warning lamp indicates insufficient coolant, you must add coolant into the radiator as well.

CAUTION

- When adding coolant, use new coolant additive of the same brand and concentration as the additive that is already in the vehicle.
- Adding water only reduces the concentration of the FUSO LONGLIFE COOLANT, degrading both the additive’s antifreezing and corrosion-preventive capacities. Any additional coolant should contain the FUSO LONGLIFE COOLANT at the same concentration as the original coolant.

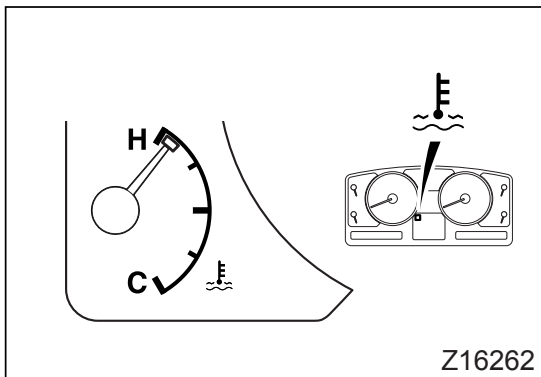


5.1 Ordinary refilling (to reservoir tank)

! CAUTION

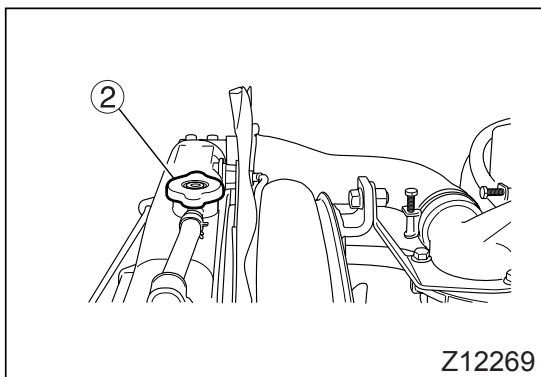
Add coolant only through the reservoir tank. Do not open the radiator cap at the top of the radiator to add coolant.

1. If the coolant level in the reservoir tank ① is lower than the "LOW" line as a result of the above check, remove cap ② from reservoir tank and add coolant up to the "FULL" line.
2. Refit cap securely after adding coolant.



5.2 Refilling when warning lamp illuminates (Adding coolant into radiator)

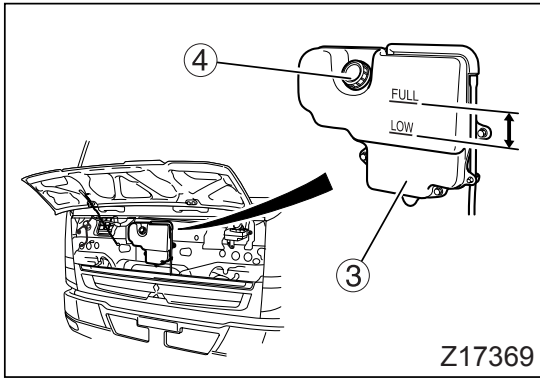
1. Check the water temperature gauge. If the needle points in the red zone, the engine has overheated. Let the engine run slightly faster than the normal idling speed to cool down the engine. ⇒ P. 13-9
Stop the engine when the needle moves to near the center of the scale. If the needle is elsewhere other than in the red zone, it indicates insufficient coolant. Stop the engine and proceed to the next step.
2. Tilt up the cab. ⇒ P. 12-6
3. Check whether coolant is leaking from the radiator, radiator hose, and any other parts. Also check the fan belt for breakage and slackness. ⇒ P. 12-54
4. Open the radiator cap ② and add coolant into the radiator until coolant reaches the base of the filler port.



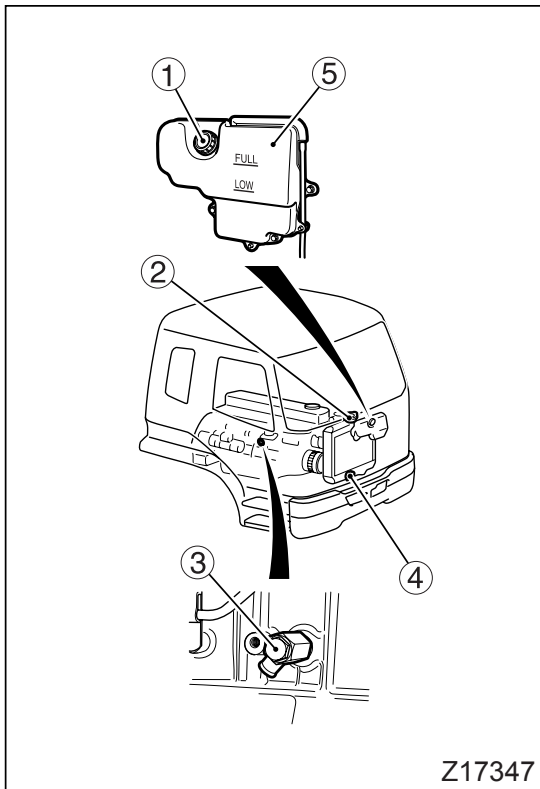
! WARNING

Make sure that the engine has cooled thoroughly before removing the radiator cap. Put a cloth on the cap and hold the cap over the cloth to slowly open the cap. Doing otherwise is dangerous as you could be scalded by extremely hot coolant or steam.

5. Make sure that the coolant level does not drop and then refit the radiator cap firmly.
6. Lower the cab.



7. Open the front panel. Remove the cap ④ from the reservoir tank ③ and add coolant up to the "FULL" line.
8. Refit the cap securely after adding coolant.



6 Replacement

Be sure to flush the cooling system when replacing the coolant.

! WARNING

- Do not replace the coolant immediately after operating the vehicle since the engine, radiator, coolant, and other items will be extremely hot.
- The coolant you are replacing may be extremely hot. Be very careful not to burn yourself.
- Before removing the radiator cap, grip it in a cloth and loosen it slowly to release the pressure. Do not remove the radiator pressure cap when the coolant is hot since coolant may gush out and scald you.

1. Open the front panel and remove reservoir tank cap ①.
2. Tilt the cab and remove radiator cap ②.
3. Open engine drain cock ③ and radiator drain cock ④ to drain the coolant. Also drain the coolant in reservoir tank ⑤.
4. After the coolant has been completely drained, close both engine and radiator drain cocks.

Engine drain cock
tightening torque

7 N·m (5 ft.lbs., 0.7 kgf·m)

5. Flush the cooling system.
Pour soft water (preferably after heating moderately) through the radiator cap opening and start the engine.
Run the engine at a medium range RPM until the water temperature exceeds 85°C (185°F), and continue running the engine for about 10

minutes more from that point. Stop the engine and discharge the water. Remember that the water is very hot.

Repeat the above procedure until the water is free of dirt.

CAUTION

If the radiator tubing is blocked or coolant is more contaminated than usual, have your vehicle inspected at an authorized dealer.

6. Pour coolant (soft water plus additives) into the radiator up to a level slightly lower than the filler opening. If coolant is poured to the top of the opening, it will overflow as it becomes warm and expands during engine operation.
7. With radiator cap left removed, run the engine for a while in order to remove air from the cooling system.
8. Stop the engine, and add more coolant if necessary.


CAUTION

If air is not completely removed from the cooling system, this may lead to reduced cooling efficiency and engine parts failure. After replacing the coolant, drive the vehicle and then check the coolant level in the radiator.

9. Screw the radiator cap down tightly.
10. Lower the cab.
11. Fill the reservoir tank with the coolant (additives plus soft water) to the "FULL" line, then replace the cap.
12. Briefly run the engine to make sure that there are no coolant leaks.
13. Make sure that the coolant level in the reservoir tank is between the "FULL" and "LOW" lines. Add coolant if necessary.
14. Close the front panel. Make sure that the panel is locked.

7 Clean the radiator core and intercooler

If the front of the radiator core or intercooler is plugged with mud or dust, cooling efficiency will be reduced and the parts will be rusted. Clean the radiator core at regular intervals.

⇒  P. 12-81

Belt – check and adjustment

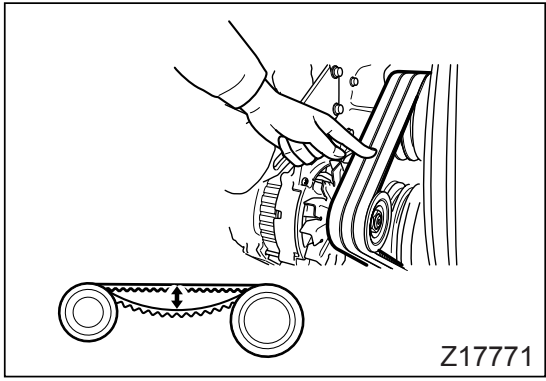
An excessively loose or tight belt could cause an improperly charged battery, malfunction of the alternator or air compressor. Always keep belts adjusted to the proper tension.

Inspection intervals	At the time of pre-operational check and every 10,000 km (6,000 miles)
----------------------	--

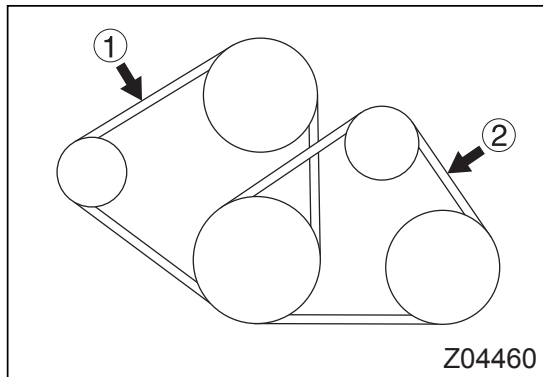
! WARNING
 Always stop the engine before inspecting or adjusting belts. Ensure that the engine cannot be started while you are performing checks or adjustments.

! CAUTION

- Prevent the belt from any contact with oil or grease during check and adjustment. If soiled with oil or grease, the belts will slip and this will shorten their service life.
- If a belt needs to be replaced owing to damage, replace both belts at the same time.



- 1 Check**
1. Fully set the parking brake and block the wheels with chocks to prevent the vehicle from moving. Then tilt the cab. ⇒ P. 12-6
 2. Press the belt with an approximately 98 N (22 lbs., 10 kgf) force at the point midway between the pulleys, and measure the amount of deflection.
 3. If the deflection is not as specified below, the tension of the belt must be adjusted.



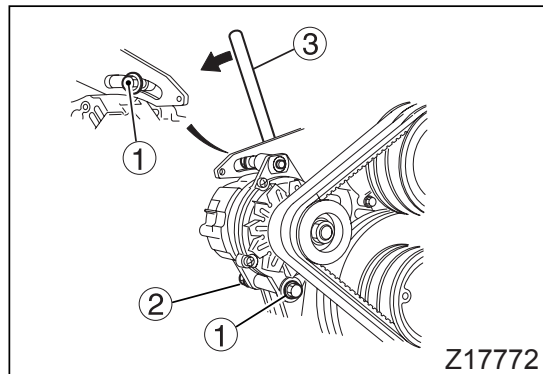
Belt tension [Amount of deflection when the belt is pressed with a 98 N (22 lbs., 10 kgf) force at the point midway between the pulleys]		
①	Fan belt	10 to 15 mm (0.39 to 0.59 in.)
②	Air conditioner compressor belt	7 to 10 mm (0.28 to 0.39 in.)

4. Also, check the belts for damage.

2 Adjustment

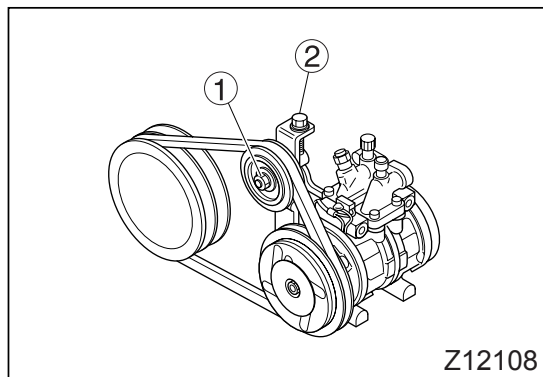
2.1 Fan belt

1. Loosen both the upper and lower alternator mounting bolts ① and nut ②.
2. Using an iron bar ③ or similar tool, pry the alternator outward to adjust the tension of the belt.
3. After the belt has been adjusted to the proper tension, tighten the mounting bolts and nut.



2.2 Air conditioner compressor belt

After slightly loosening pulley mounting nut ①, turn adjusting bolt ② to adjust tension. Turn it clockwise to increase tension. After performing the adjustment, fully tighten the pulley mounting nut.

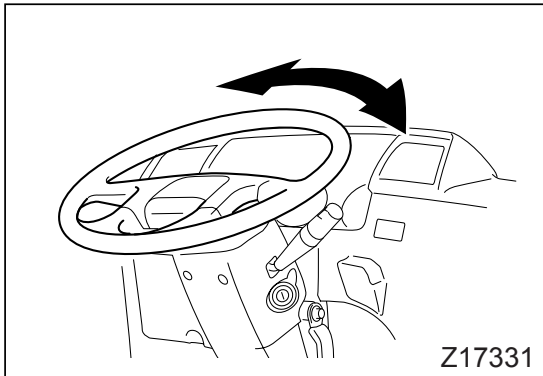


Steering wheel – check

The steering wheel is a safety-critical part of the vehicle. If an inspection reveals any abnormality, contact an authorized dealer and have the abnormality rectified before you again drive the vehicle. Driving the vehicle with the abnormality unrectified could result in a serious accident.

Inspection intervals	At the time of pre-operational check and every 10,000 km (6,000 miles)
----------------------	--

! WARNING
 Perform the checks in a safe place that provides good visibility all around. During the checks, be sufficiently attentive to surrounding traffic conditions.



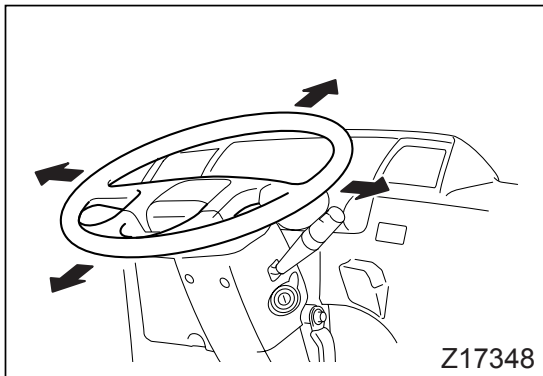
1 Steering wheel play

1. Place the steering wheel in its straight-ahead (neutral) position.
2. Turn the steering wheel clockwise and counter-clockwise to the point where a resistance is first felt for each direction, and measure the amount of the steering wheel movement between these points (steering wheel play).

NOTE:
 The above check must be performed with the engine running.

Steering wheel play	10 to 40 mm (0.39 to 1.57 in.)
---------------------	--------------------------------

3. If the amount of play is not within the range indicated above, have your vehicle inspected by an authorized dealer.



2 Steering wheel looseness

Move steering wheel up and down and also right and left to check for excessive looseness. If anything abnormal is found during the check, have your vehicle inspected by an authorized dealer.

3 Steering wheel operation

- While driving slowly [approx. 10 km/h (6 MPH)] in a safe place, make sure that the steering wheel is neither too heavy nor too light to turn. Also check for abnormal sound or irregular resistance during operation.
- If any abnormal condition is encountered during the above check, call an authorized dealer for inspection.

Service brakes – check

The service brakes are safety-critical parts of the vehicle. If an inspection reveals any abnormality, contact an authorized dealer and have the abnormality rectified before you again drive the vehicle. Driving the vehicle with the abnormality unrectified could result in a serious accident.

1 Checking sound of air discharged from the brake valve

Inspection intervals	Every 10,000 km (6,000 miles)
----------------------	----------------------------------

Fully depress brake pedal and then release it. The pedal should return all the way, and simultaneously the sound of discharged air should be heard from the brake valve.

If anything abnormal is detected during the above check, call an authorized dealer.

2 Brake pedal play

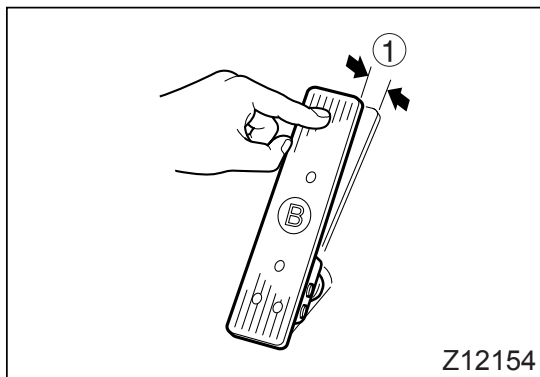
Inspection intervals	Every 10,000 km (6,000 miles)
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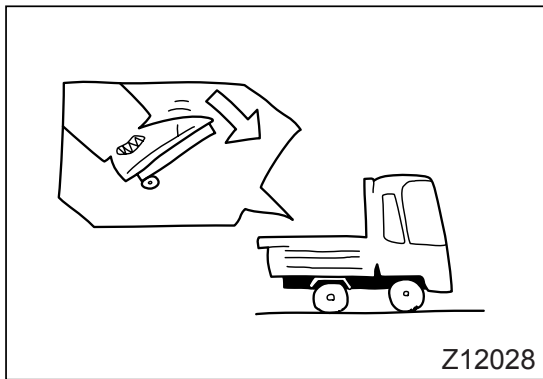
Brake pedal play ①	10.0 to 15.5 mm (0.39 to 0.61 in.)
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To check the pedal play, use your finger to press the brake pedal to the point where resistance is felt and measure the distance that the pedal has moved. If the pedal play is not as specified, have the brake system inspected by an authorized dealer.

CAUTION

Set the parking brake firmly and block wheels with chocks for added safety.



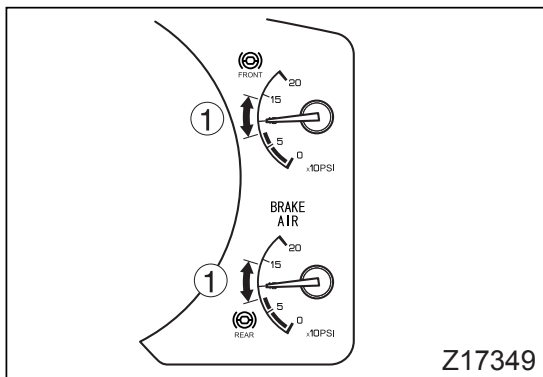


3 Braking performance

Inspection intervals	At the time of pre-operational check and every 10,000 km (6,000 miles)
----------------------	--

! WARNING
 Perform brake tests in a safe place that allows for good visibility all around. During the tests, be attentive to surrounding traffic conditions.

Perform braking tests in a safe place. After checking that warning lamp BRAKE AIR or BRAKE FLUID is not illuminated, drive the vehicle at a low speed to make sure that braking power is sufficient and even. If braking seems in any way abnormal, operating the vehicle could be dangerous. Ask an authorized dealer for a more thorough inspection.



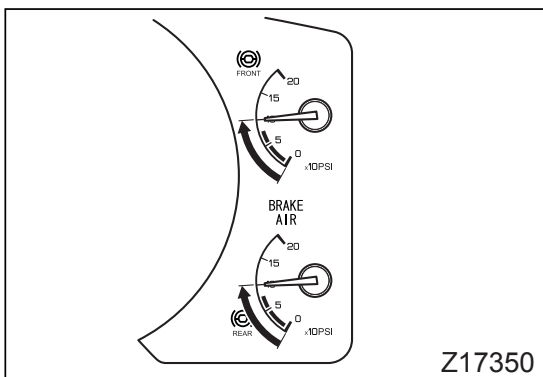
Air pressure – check

Inspection intervals	At the time of pre-operational check
----------------------	--------------------------------------

Use the air pressure gauge to check compressed air pressure. The gauge should indicate a pressure in range ①.

Also, make sure that the air pressure builds up at the proper rate. This can be checked as follows:

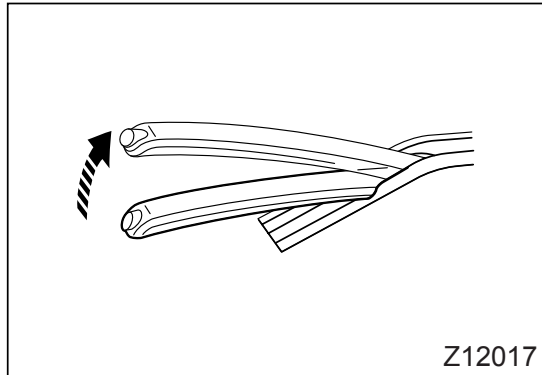
1. Set the parking brake and stop the engine.
2. Open the drain cock to release all compressed air from the air tank.
3. Start the engine and run it at idling speed while timing how long it takes for the pressure to reach 100 psi. The time should be as indicated below.



Air pressure buildup time [until 100 psi is reached from 0 psi]	
FK61F	Within 6 minutes
Other than FK61F	Within 9 minutes

CAUTION

Never operate the vehicle when the air pressure gauge needle is in the red zone. Doing so is dangerous as braking power is insufficient.



Parking brake – check

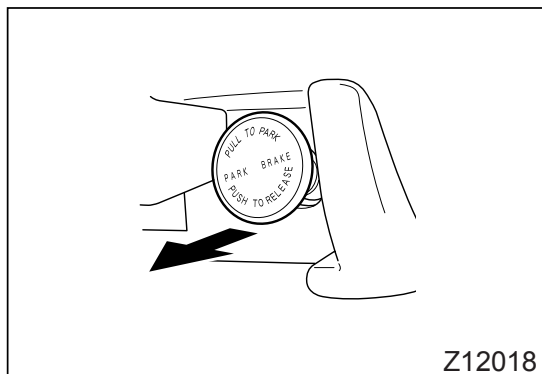
1 Parking brake lever stroke check

<FK61F>

Inspection intervals	At the time of pre-operational check and every 10,000 km (6,000 miles)
----------------------	--

1. Depress the brake pedal firmly so that the vehicle cannot move.
2. Gently pull up parking brake lever from the fully returned position while counting the clicks until it cannot be moved any more with a 300 N (66 lbs., 30 kgf) force (click are generated by notches).
3. The lever stroke is normal if the number of clicks is from 7 to 10.
4. Make sure that the lever is locked securely in the pulled up position.

Parking brake lever stroke	7 to 10 notches
----------------------------	-----------------



2 Parking brake operation

<Other than FK61F>

Inspection intervals	At the time of pre-operational check and every 10,000 km (6,000 miles)
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Pull and place the parking control valve in the “PARKING” position and listen for the sound of air being released.

3 Parking brake effectiveness

Inspection intervals	Every 10,000 km (6,000 miles)
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Stop the vehicle on a dry downgrade, set the parking brake and check to see if the parking brake can hold the vehicle. If an appropriate downgrade is not available, drive the vehicle at 8 km/h (5 mph), then apply the parking brake and make sure that it works satisfactorily.

If parking brake performance is in any way abnormal, vehicle operation could be dangerous. Contact an authorized dealer.

! WARNING

Perform brake tests in a safe place that allows for good visibility all around. During the tests, be attentive to surrounding traffic conditions.

Clutch – check

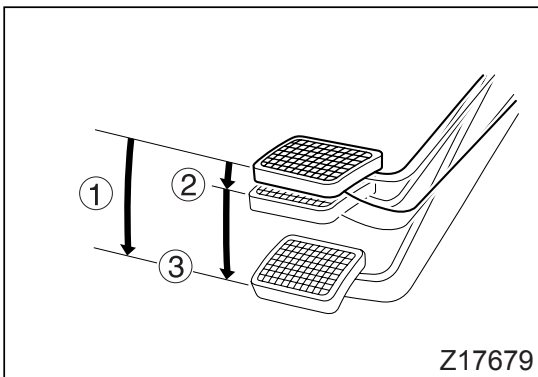
<Manual transmission vehicles>

Inspection intervals	Every 10,000 km (6,000 miles)
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Before performing the following inspections, make sure that warning lamp ^{BRAKE}AIR is not illuminated.

1 Clutch pedal play

Clutch pedal play	32 to 44 mm (1.26 to 1.73 in.)
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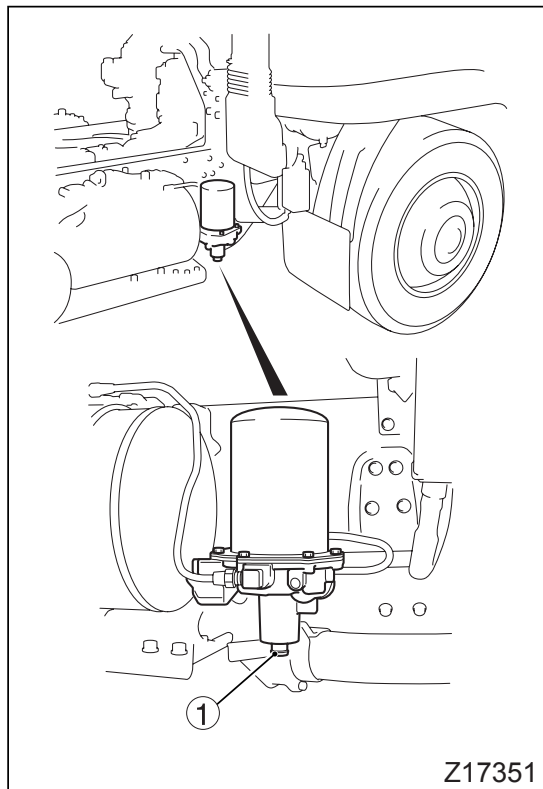
1. Check that the engine is not running.
2. Check that the parking brake is firmly set.
3. Press the clutch pedal by hand. You may feel a distinctive resistance twice. The pedal movement ③ from the point you feel the first resistance to the point you feel the second resistance is the clutch pedal play ①. If the clutch pedal play is not within the specified range or there is no free movement ② to the first resistance point, have the vehicle inspected by an authorized dealer.

NOTE:

Clutch pedal play increases as the clutch disc wear. Unless adjustments are made, the clutch will eventually start slipping and render the vehicle undrivable.

2 Clutch operation

Make sure that the clutch pedal operates without unusual noise or excessive resistance. Check also that depressing the clutch pedal allows you to move the gearshift lever easily to the various gear positions, and that the clutch engages smoothly without slipping when the clutch pedal is released slowly.

**Air drier – check**

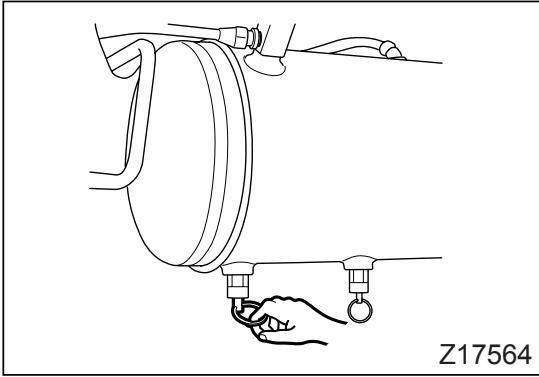
Inspection intervals	Every 10,000 km (6,000 miles)
Replacement intervals	Every 60,000 km (36,000 miles) or every 12 months

The air drier contains a desiccant that removes moisture from compressed air.

As part of pre-operational checks, open the drain cock of the air tank. If a large amount of condensate drains out, the desiccant has become ineffective and must be replaced.

If the condensate coming out from the exhaust port ① of the air drier contains an abnormal quantity of oil, have the vehicle inspected by an authorized dealer.

Replacing the desiccant involves some disassembly. This operation should be performed by an authorized dealer.



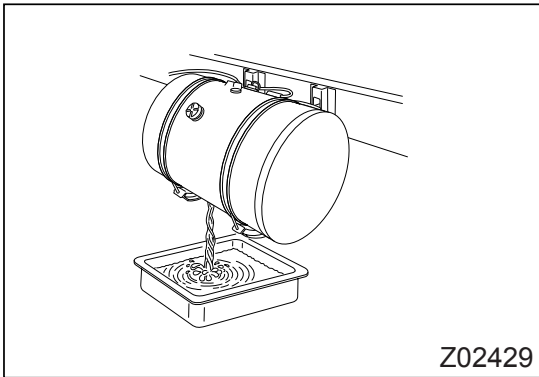
Air tank – check

Inspection intervals	At the time of pre-operational check
----------------------	--------------------------------------

Pull ring on the drain cock to discharge any condensate from the air tank.

! CAUTION

Under ordinary conditions, almost no condensate should be discharged; however, a small amount of water may be discharged if the air tank undergoes a temperature drop of more than 16°C (28.8°F). (This can happen when you open the drain cock in the early morning after you have stopped and parked the vehicle during the day time on the preceding day.)



Draining sediment from fuel tank

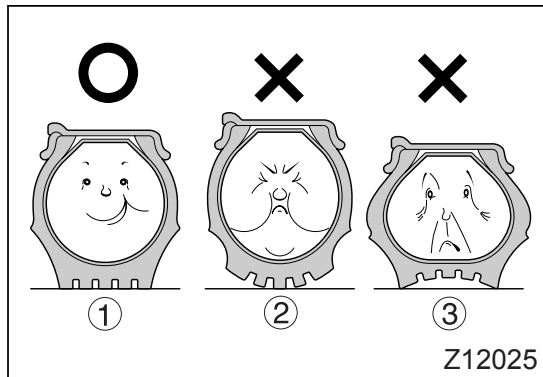
Sediment draining interval	Every 24 months
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Remove the drain plug from the fuel tank to let sediment including water and foreign substances flow out of the tank.

Tires – check

Inspection intervals

At the time of pre-operational check and every 10,000 km (6,000 miles)

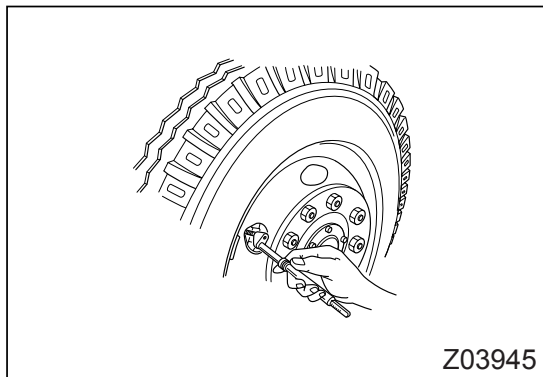


1 Checking inflation pressure

- Check the inflation pressure when the tires are cold before starting driving. Make sure that the tire air valve caps are securely fitted.
- You can roughly judge the air pressure from the form of the tire tread, but need to use an air gauge for precise measurement. An FK model vehicle uses low-profile tires whose air pressure must be checked using an air gauge.

- ① Properly inflated
- ② Excessively inflated
- ③ Insufficiently inflated

Standard tire inflation pressure



Tire size	Model	Pressure kPa (psi, kgf/cm ²)
225/70R 19.5	FK61F	Front: 660 (95, 6.75) Rear: 660 (95, 6.75)
10R22.5 – 14PR	FK62F FK65F	Front: 790 (115, 8.20) Rear: 790 (115, 8.20)
11R22.5 – 14PR	FM	Front: 720 (105, 7.50) Rear: 720 (105, 7.50)

If the tires appear incorrectly inflated, make any air pressure adjustments necessary before driving.

! WARNING

- Excessively high or low tire pressures not only give a poor ride but can also cause damage to the cargo or, more dangerously, to the tires themselves. Note that if the tire pressure is too low, the tires will overheat and could burst dangerously.
- It is not necessary to increase tire pressures for high-speed driving.
- The inner and outer tires on dual wheels should be inflated to the same pressure.
- Tires should be handled with care due to their high internal air pressure.

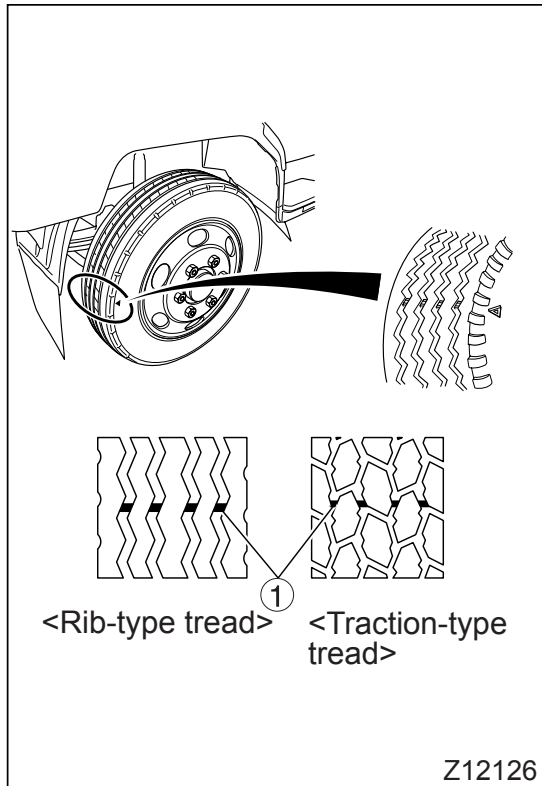
- There is a plate affixed to the driver's door indicating the standard inflation pressures.

CAUTION

- **Your vehicle's tires will heat up during use, with a corresponding increase in air pressure. This is normal; do not release air from the tires when they are hot. Always check tire pressures before driving, when the tires are cold.**
- **Pay particularly close attention to the air pressure in new tires. New tires tend to stretch slightly as they settle, with a corresponding decrease in air pressure.**
- **Never fail to install tire valve caps after checking or adjusting the air pressure. Unless the valve caps are replaced, foreign bodies may interfere with the valves and cause air to leak out.**

NOTE:

- *The tire inflation pressures will be higher just after vehicle operation than before vehicle operation. The increases in pressure are not abnormal; they occur because the air in the tires expands as the tires get hot while the vehicle is moving. Do not release air from the tires at this time. The pressures will return to normal as the tires cool down.*
- *Tire pressure drops naturally as time passes. You should therefore check the tire pressure regularly at least once a month using an air gauge.*



2 Checking tread depth

Check that the tread is sufficiently deep around its entire circumference.

Tire groove depth	Normal roads: 1.6 mm (2/32 in.)
	Freeways: 3.2 mm (4/32 in.)

Tire tread depth should be checked with a gauge. However, tread wear indicators on the tires also enable the tread depth to be checked.

When the tread wears down, wear indicator ① (interrupted sections of the grooves) appear across the tire at the locations corresponding to the △ marks.

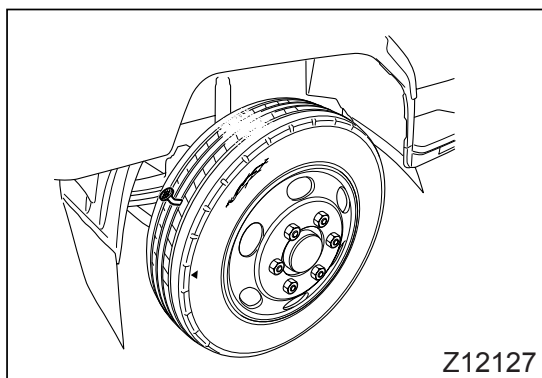
Replace the tire as soon as the wear indicator show up as continued use is dangerous.

! WARNING

Tires with insufficient tread depth can skid on slippery road surfaces and can hydroplane when used on wet road surfaces at high speeds. Worn tires should be replaced as soon as possible.

NOTE:

Hydroplaning can occur when driving on a wet roads at high speeds. When a vehicle hydroplanes, tires ride up on and slide over a film of water, causing the driver to lose control of both steering and braking.

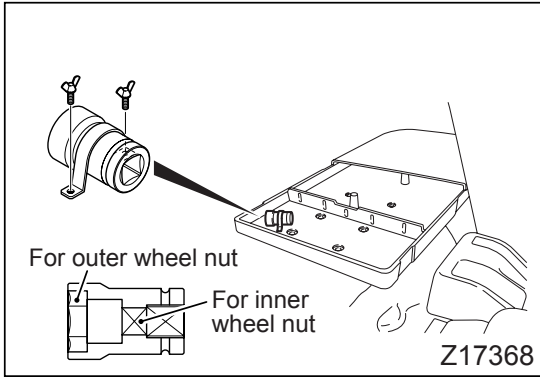


3 Checking for cracks, damage, and objects embedded in tread

Check both the tread and the sides of each tire for cracks, damage, and excessive or unusual wear. Check also for metal pieces, nails, and stones that might be embedded in the tread or caught between the tires of dual wheels.

! WARNING

Severely damaged or worn tires are susceptible to puncture during use and should be replaced as soon as possible.



Tires – replacement

1 Preparation of tire replacement

1. Park the vehicle on a flat, hard surface. Firmly set the parking brake. In a manual transmission vehicle, put the gearshift lever in the neutral position. In an automatic transmission vehicle, put the range selector lever in the “P” position <other than FM65F> or “N” position <FM65F>.
2. If you get a flat tire while on the road and need to change it on the spot, pull up your vehicle in a safe place where it will not block traffic, and activate your hazard warning lamps to flash and use a red or white flag or cloth to give warning passing vehicles.
3. Have all passengers get out of the vehicle.
4. Block the tire with a chock diagonally opposite to the tire to be replaced.

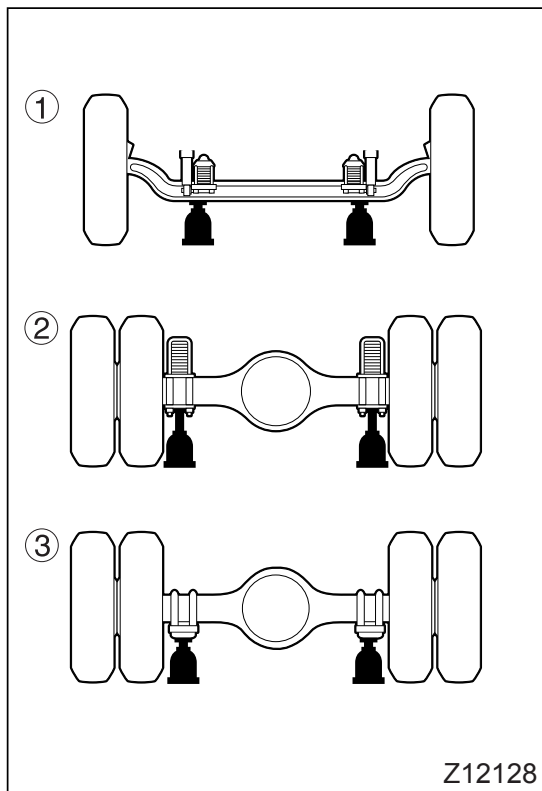
Example:

Block the left front tire if the right rear tire is to be replaced.

5. Prepare a replacement tire.

NOTE:

- *Your vehicle is not provided with a replacement tire as standard equipment.*
 - *Specified tire types*
FK61F: 225/70R 19.5
FK62F, FK65F: 10R22.5 – 14PR
FM: 11R 22.5 – 14PR
6. A socket wrench for removing and replacing wheel nuts is stored in the box under the bed.



2 Tire removal

1. Set the jack below the jacking point nearest the tire to be removed. Jack up the vehicle until the tire is just about in contact with the ground.

Front wheel jacking point

- ① Below the front axle.

Rear wheel jacking point

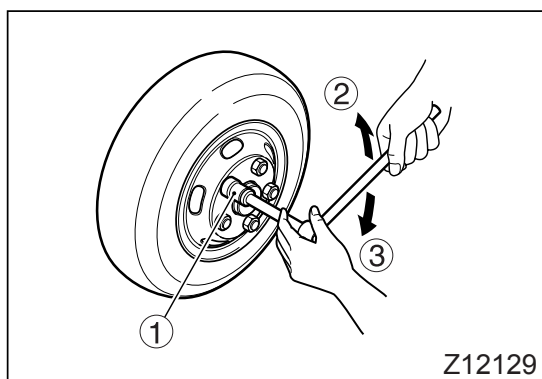
- ② Rear leaf spring models: Below the rear axle housing
- ③ Rear air suspension models: Below the rear leaf springs

! WARNING

- Apply the jack only to designated jacking points. Applying the jack elsewhere could damage the vehicle and cause the jack to slip out of position.
- Never rock or climb below the vehicle when it is jacked up since movement of the jack could result in a serious injury or in damage to the vehicle. Never start the engine when the vehicle is jacked up.
- It is dangerous to leave the vehicle jacked up for long periods. If you need to raise the vehicle for an extended period, support it with bricks or wooden beams.

NOTE:

A socket wrench turning tool for use in jacking up the vehicle or loosening/tightening the wheel nuts is not included in the onboard tools.

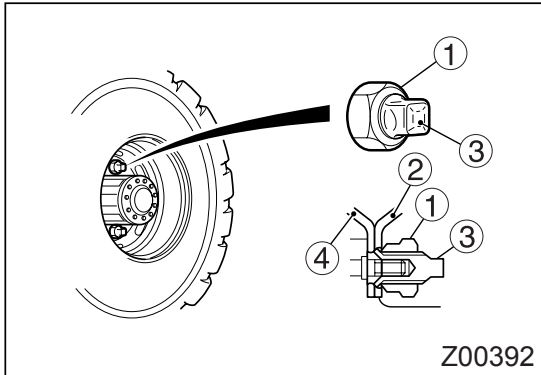


2. Using socket wrench ① included in the onboard tool set, slightly loosen the wheel nuts. Do not remove the nuts.

On the right-hand side of the vehicle, turn the wheel nuts in the direction of arrow ②. On the left-hand side of the vehicle, turn the wheel nuts in the direction of arrow ③.

! WARNING

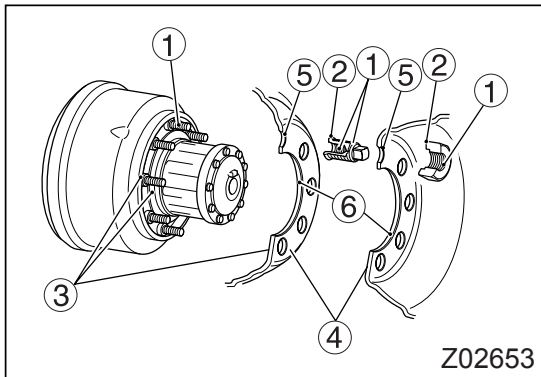
Fit the socket wrench securely on the wheel nut. If fitted improperly, the wrench will slip off the nut, and could cause injury.



NOTE:

The wheel nuts on the right-hand wheel are marked with "R" and have right-hand threads. Those on the left-hand wheel are marked with "L" and have left-hand threads.

3. Jack up the vehicle until the tire is just clear of the ground.
4. Remove the wheel nuts and then the tire.
5. To remove the rear dual wheel tires, first loosen the outer wheel nuts ① and remove outer tire ②; then, lower the jack, loosen inner wheel nuts ③, and jack up the vehicle again to remove inner tire ④.



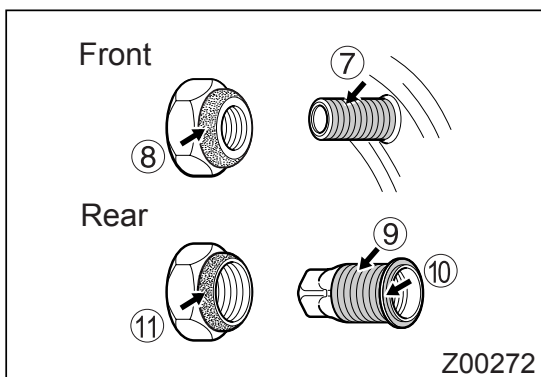
3 Mounting the tire

1. Clean the following sections before mounting the wheel. If they are dirty, the wheel nuts could become loose during driving.

- ① Threads on wheel bolts and nuts
- ② Spherical surface of wheel nuts
- ③ Disc wheel mounting surface
- ④ Disc wheel mating surface
- ⑤ Wheel nut contact surface on disc wheel
- ⑥ Disc wheel inside surface

! WARNING

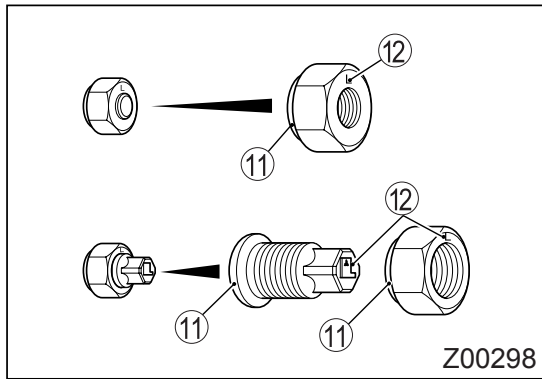
If wheel bolt or nut threads are damaged or the disc wheel is cracked or otherwise damaged, replace the wheel with a new genuine part. A damaged wheel could work loose and cause a serious accident while the vehicle is in motion.



2. Apply a thin coat of chassis grease or wheel bearing grease to threads ⑦ on wheel bolts and nuts and to the spherical surfaces ⑧ of the nuts. On dual wheels, also apply grease to the external threads ⑨ of the inner wheel nuts, the spherical surfaces ⑩ of the inner wheel nuts, and the spherical surfaces ⑪ of the outer wheel nuts.

! WARNING

Never use a grease that contains molybdenum disulfide.

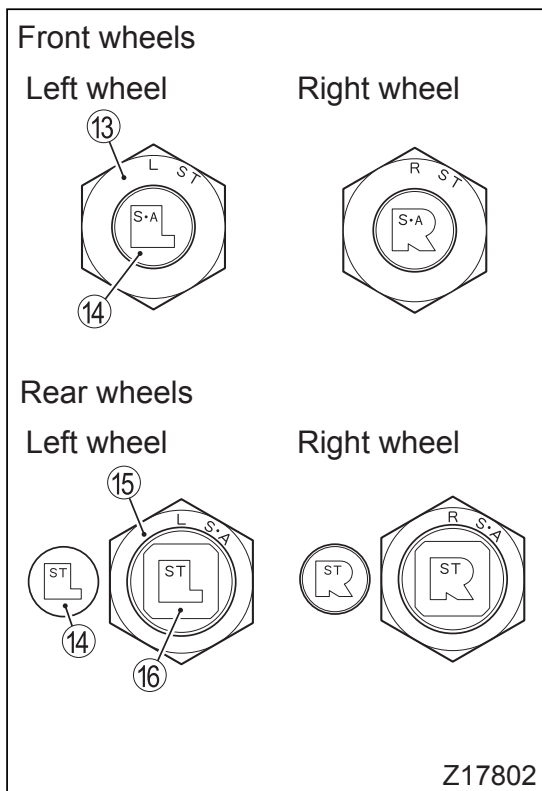


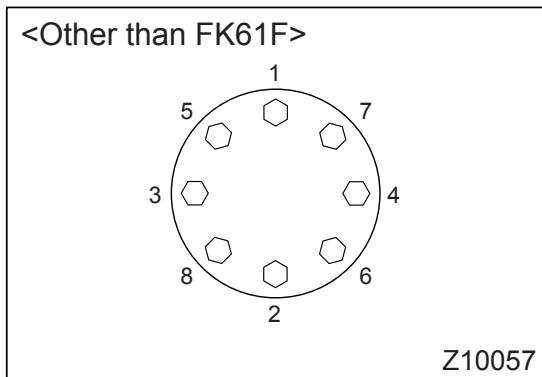
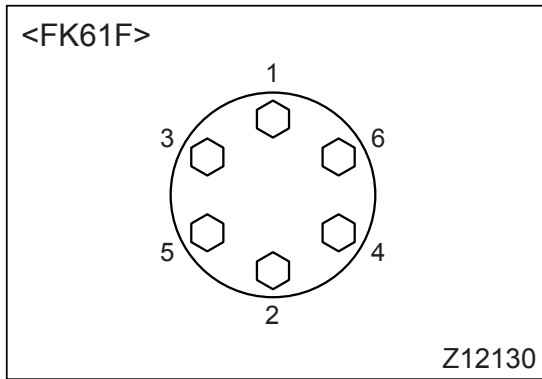
3. Mount the wheel so that the wheel bolts line up with the bolt holes in the disc wheel. Then, tighten the wheel nuts to hold the disc wheel in position. The spherical end ⑪ of the wheel nut should be directed toward the disc wheel.

! WARNING
 When mounting the wheel, take care not to damage the threads of the wheel bolts and inner wheel nuts.

NOTE:

- The wheel bolts and nuts on the right-hand wheels have right-hand threads, and those on the left-hand wheels have left-hand threads. The bolts and nuts have stamped marks ⑫ for easy identification; an “R” mark for right-hand wheels and an “L” mark for left-hand wheels.
- Wheel nuts ⑬, wheel bolts ⑭, outer wheel nuts ⑮ and inner wheel nuts ⑯ are marked with “ST” or “S·A”. The “ST” mark indicates that these fasteners are for steel wheels and the “S·A” mark that they are for both steel and aluminum wheels.





4. Lower the vehicle gently until the tire makes contact with the ground.
5. Tighten the wheel nuts in the order shown in the illustration, repeating the tightening cycle 2 to 3 times. Finally, tighten the nuts to the following torque.

Wheel nut tightening torque	
FK61F	370 to 410 N·m (275 to 304 ft.lbs., 38 to 42 kgf·m)
Other than FK61F	540 to 590 N·m (395 to 430 ft.lbs., 55 to 60 kgf·m)

! WARNING

Do not jump or jerk on the wrench handle when tightening the nut by using your own weight. Doing so can overtighten the nut. Overtightening the nuts could overstrain the bolts or deform the disc wheel's surface.

! WARNING

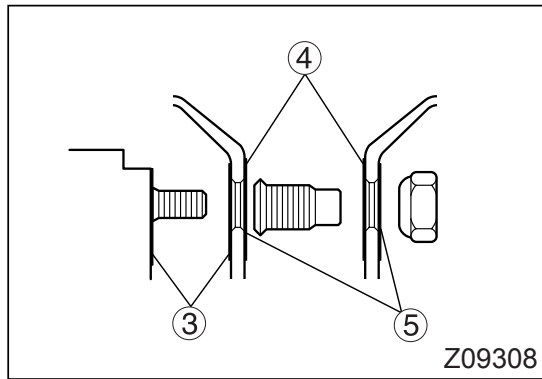
The wheel nuts must be tightened to the specified torque. Unless the nuts are tightened correctly, the wheel may work loose while the vehicle is in motion, resulting in a serious accident.

6. In the case of the rear dual wheels, first mount the inner wheel, then raise the vehicle again to mount the outer wheel in the same way.

NOTE:

When installing dual wheels, make sure that the air valve of the inner wheel is not lined up with the air valve of the outer wheel.

7. If only the outer wheel of the dual wheels is replaced, retighten the inner wheel nuts to the specified torque before mounting the outer wheel.



! WARNING

- As the vehicle is driven after a wheel has been replaced, the wheel nuts loosen up somewhat during the early stages of driving due to “wear-in”. Therefore, it is necessary to retighten the wheel nuts to the specified torque after driving 50 to 100 km (30 to 60 miles). Thereafter, retighten the nuts at regular intervals.
- Do not paint disc wheel mounting surfaces ③, dual wheel mating surfaces ④, wheel nut seating surfaces ⑤, and wheel hub mounting surfaces as resulting thicker paint film could cause the wheel nuts to loosen up.

Wheel nuts – check and retightening

Inspection intervals	Every 10,000 km (6,000 miles)
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With a new vehicle, perform out the first inspection after 4,000 km (2,500 miles).

! WARNING

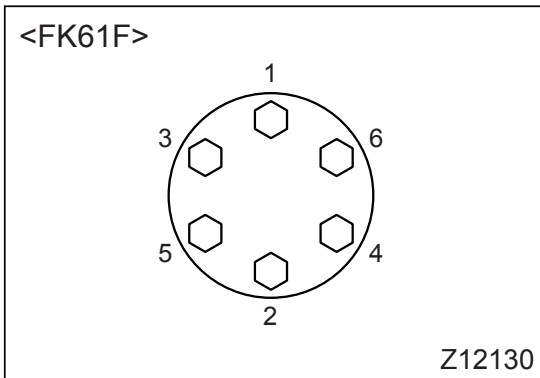
After changing a tire, the wheel nuts will loosen somewhat during the initial stages of driving due to “wear-in”. Therefore, retighten the wheel nuts to specification after you have driven 50 to 100 km (30 to 60 miles).

Using a torque wrench, check for loose wheel nuts and tighten as necessary.

Wheel nut tightening torque	
FK61F	370 to 410 N·m (275 to 304 ft.lbs., 38 to 42 kgf·m)
Other than FK61F	540 to 590 N·m (395 to 430 ft.lbs., 55 to 60 kgf·m)

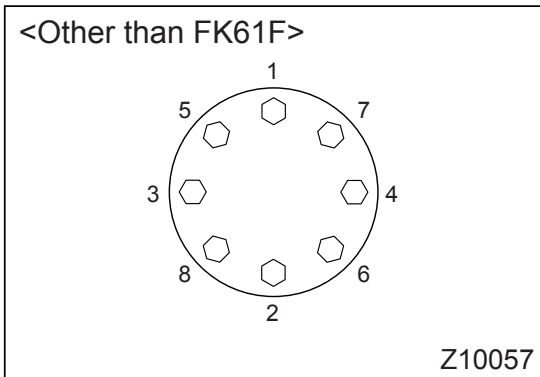
! WARNING

Wheel nuts that are tightened loosely or too tightly could lead to broken or elongated wheel bolts, cracked disc wheels, and/or worn or cracked wheel hubs, causing wheels to come off the axles. Since this could cause a serious accident and render the vehicle undriveable, be sure to check the wheel nuts regularly.



Single wheels

Tighten the wheel nuts to the specified torque. Follow the diagonal tightening sequence indicated in the figure.



Dual wheels

Retighten the wheel nuts using the following 2-process procedure.

1st process

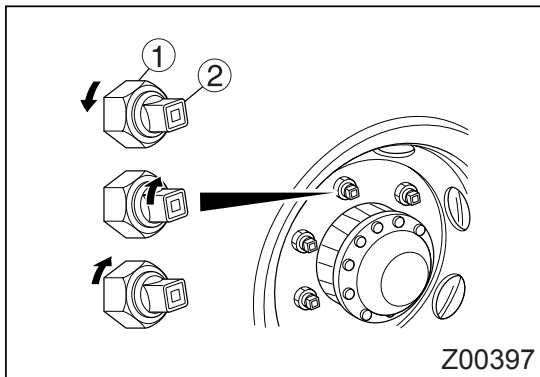
1. Loosen the outer wheel nuts ① as follows:
 6-bolt type: Loosen the nuts numbered 1 - 4 - 5 or 2 - 3 - 6 in the figure in this order.
 8-bolt type: Loosen the nuts numbered 1 - 2 - 3 - 4 or 5 - 6 - 7 - 8 in the figure in this order.

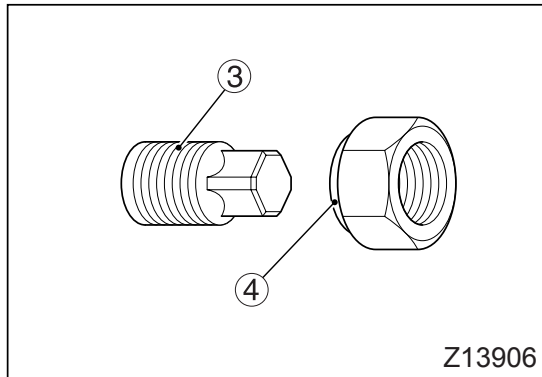
2. Tighten the inner wheel nuts ② corresponding to the loosened outer wheel nuts to the specified torque.

3. Apply a thin coat of chassis grease, wheel bearing grease or engine oil to the external threads ③ of inner wheel nuts and the spherical surfaces ④ of outer wheel nuts. Tighten the outer wheel nuts to the specified torque.

2nd process

4. Perform the above steps 1 through 3 for the remaining outer wheel nuts and inner wheel nuts.





! WARNING

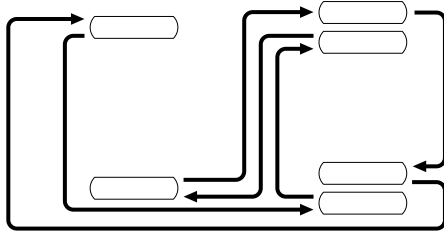
In the case of dual wheels, one often retightens outer wheel nuts while forgetting to retighten inner wheel nuts. Always follow the above procedure to tighten all the nuts.

Tire rotation

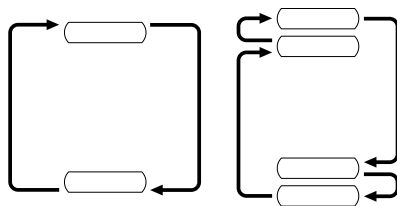
The amount of wear on a tire depends on its position on the vehicle. To equalize wear and extend life as much as possible, rotate the tires at regular intervals.

Tire rotation intervals	Every 10,000 km (6,000 miles)
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Same tread pattern on all tires



Different tread patterns on front and rear tires



Tire rotation pattern

- Plan the rotation pattern of tires so that their rotating directions are reversed.
- Use a tire of the same type on a single axle. If different type tires are mounted on an axle, the vehicle tends to pull to one side during braking, and could cause you to lose directional control of the vehicle.
- Be sure to use the following type of tires.
FK61F: 225/70R 19.5
FK62F, FK65F: 10R 22.5 – 14PR
FM: 11R 22.5 – 14PR

! WARNING

- Be sure to use the specified type of tires. Mixing bias and radial tires results in poor steering and should be avoided at all costs.
- As the vehicle is driven after a wheel has been replaced, the wheel nuts loosen up somewhat during the early stages of driving due to “wear-in”. Therefore, it is necessary to retighten the wheel nuts to the specified torque after driving 50 to 100 km (30 to 60 miles) Thereafter, retighten the nuts at regular intervals.

! CAUTION

- Break in new tires by driving 200 km (125 miles) or longer at 60 km/h (37 MPH) or slower. After the break-in driving period, check the tire pressure of each of the new tires.
- If using different tread patterns on the front and rear wheels, select tires with a ribbed tread for the front wheels and tires with a traction-type tread for the rear wheels.

NOTE:

When tires are new, they tend to generate heat and wear more quickly.

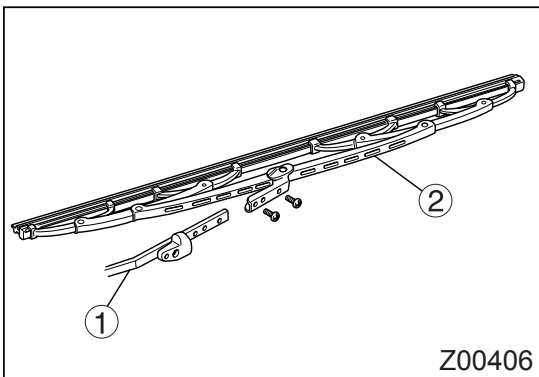
Wiper blade – replacement

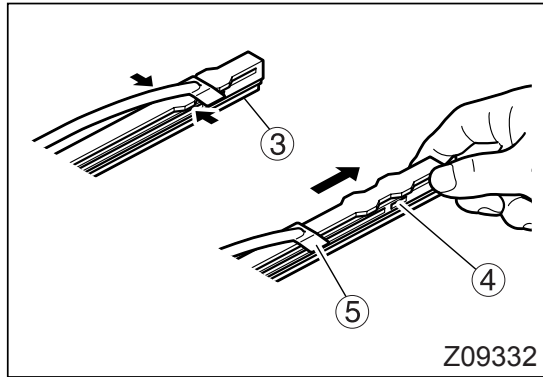
1 Replacing wiper blade

Raise wiper arm ① and then loosen the two screws. Replace wiper blade ② with a new genuine wiper blade.

! CAUTION

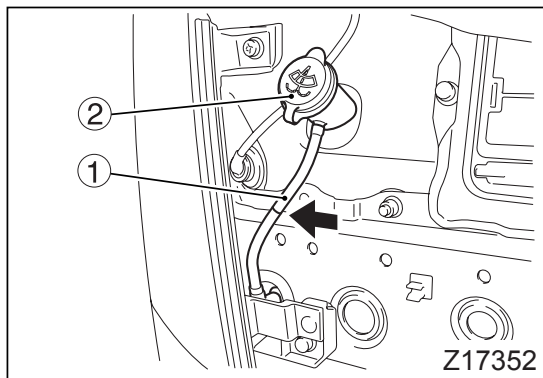
- Do not bring the wiper arms back into position or operate the wipers without wiper blades, as this could scratch the windshield.
- Never operate the wipers and washer with the wiper arms raised. The arms could be damaged.





2 Replacing blade rubber only

1. Raise the wiper arm.
Pinch both sides (indicated by arrows) of blade rubber ③ with your fingers and then pull the blade rubber so that claws ⑤ are unhooked from grooves ④ in the blade rubber.
2. Slide out the blade rubber.
3. Replace the old blade rubber with a new genuine wiper blade rubber.
To install, reverse the removal procedure. Make sure that the claws fit into the grooves in blade rubber.



Windshield washer – fluid level check and refilling

Inspection intervals

At the time of pre-operational check and every 10,000 km (6,000 miles)

1 Fluid level check

1. Open the front panel. ⇒ P. 12-4
2. Check the amount of remaining washer fluid using fluid level check hose ①.
3. If the fluid level has dropped to the lower part of the hose or is not visible at all, add washer fluid.

2 Refilling

1. Open tank cap ② and add fluid until the level nears the upper part of the hose.
2. Close the tank cap.
3. Close the front panel. ⇒ P. 12-4

⚠ CAUTION

Substituting soapy water for washer fluid could result in clogged washer nozzles or spots on painted surfaces.

NOTE:

When it is very cold, the ratio of windshield washer fluid to water should be increased in order to prevent the mixture from freezing up.

Washer fluid tank capacity

Approx. 5.5 liters (5.8 qts)

Battery – check and cleaning

DANGER

- BATTERY POSTS, TERMINALS AND RELATED ACCESSORIES CONTAIN LEAD AND LEAD COMPOUNDS. WASH HANDS AFTER HANDLING.
- NEVER TOUCH THE BATTERY FLUID. BATTERY FLUID IS DILUTE SULFURIC ACID AND CAN HARM MOST THINGS IT TOUCHES, INCLUDING HUMAN SKIN AND CLOTHING. IF YOU GET IT ON YOUR SKIN OR CLOTHING, FLUSH IT OFF WITH SOAP AND WATER.
- IF YOU GET BATTERY FLUID IN YOUR EYES, QUICKLY FLUSH IT OUT WITH PLENTY OF WATER AND SEEK MEDICAL ATTENTION.

WARNING

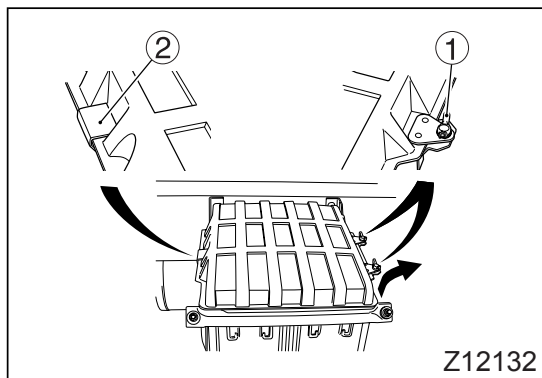
- The battery generates flammable hydrogen gas and should be kept away from open flame and spark.
- When removing the battery, always disconnect the negative (-) terminal first and reconnect it last. A spark can occur if a tool touches the positive (+) terminal and frame with the negative (-) terminal connected.
- When handling the battery, wear safety goggles to protect your eyes.
- Perform all battery checks with the engine turned off.

CAUTION

- Whenever fluid has been added, either charge the battery or run the vehicle for a while. It is especially important in cold weather as the battery can freeze up and be damaged.
- If you do not use the vehicle for an extended period, remove the battery.
- Before disconnecting the battery, place the starter switch in the “LOCK” position and wait for at least 30 seconds. Never disconnect the battery with the starter switch in the

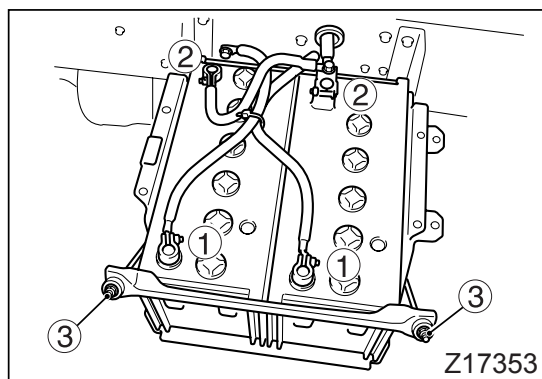
“ON” position. If you disconnect the battery with the starter switch in the “ON” position or without waiting for at least 30 seconds after placing the switch in the “LOCK” position, data during engine running time will not be stored correctly in the engine control computer. This could disrupt the engine control system and other related systems.

Inspection intervals	At the time of pre-operational check and every 20,000 km (12,000 miles)
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1 Removal and installation of battery cover

1. Remove the wing bolts ① that hold the battery cover and then raise the cover slightly.
2. Slide the cover toward the front of the vehicle until it disengages from the stopper ② to remove the cover.
3. Follow the removal procedure in reverse to reinstall the battery cover. Make sure that the cover is held in position securely.



2 Removal/installation of battery

Follow the instructions below when removing and installing the battery for charging or replacing with a new one.

! WARNING

When disconnecting the battery cables, disconnect the (-) cable first. When connecting the battery cables, connect the (-) cable last. If you accidentally touched the (+) terminal and the vehicle body with a tool with the (-) cable connected to the battery, a dangerous short circuit could occur.

1. Remove the battery cover.
2. Loosen the connector nut on the negative (-) terminal ① and disconnect the cable. In the same way, disconnect the cable from the positive (+) terminal ②.
3. Undo the battery holding screws ③ to remove the battery.

- When reinstalling the battery, carry out these steps in reverse, connecting the negative (-) cable last.

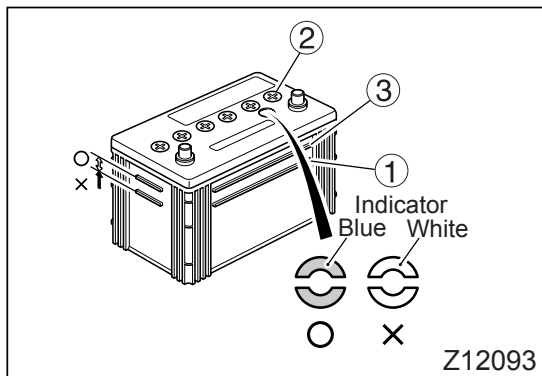
! WARNING

Be sure to observe the following instructions when storing a battery.

- Select a storage place where the battery fluid will not freeze.
- The storage place must be free of any heat source and well ventilated.
- The battery must be kept out of reach of children.
- The battery must be placed with the terminals facing upward. Do not place the battery on its side. Doing so could cause battery fluid leakage and a fire.

! CAUTION

Install the battery securely in position. If it is left loose, shocks and vibrations from road surface could damage the battery case and electrode plates, shortening battery life.



3 Inspecting the battery

The battery's charge level is indicated by color of the indicator on the top surface.

The battery is correctly charged when the indicator is blue. If the indicator is white, the battery is not correctly charged and the battery fluid level should be checked as follows:

1. If the battery fluid level is below the "LOWER LEVEL" line ①, remove the 6 vent plugs ② and add distilled water via the vent plug holes until the battery fluid level is between the "UPPER LEVEL" ③ and "LOWER LEVEL" ① lines. Replace the vent plugs and then charge the battery.
2. If the battery fluid level is correct, or between the "UPPER LEVEL" and "LOWER LEVEL" lines, simply recharge the battery.

Replace the battery if the indicator does not turn blue after charging.

 **WARNING**

Do not use the battery with the fluid below the “LOWER LEVEL” line. The battery would deteriorate rapidly, and it could overheat or explode.

 **CAUTION**

Do not add distilled water above the “UPPER LEVEL” line. Too much fluid will overflow from the battery and contact external parts.

4 Cleaning the terminals


Clean the battery terminals if they become dirty or corroded.

Use warm water and sodium bicarbonate (baking soda) to remove any white powder caused by corrosion.

If a terminal is seriously corroded, remove the battery cable and clean the terminal with a wire brush or sandpaper.

After cleaning, apply a thin coat of grease to the terminals.

NOTE:

Follow the correct procedure when jump starting a vehicle with a dead battery by connecting it to a live battery using a booster cable. ⇒  P. 13-24

Ashes of DPF – cleaning

Your vehicle is equipped with a diesel particulate filter (DPF) system. This device collects particulate matter (PM) contained in diesel engine exhaust with a ceramic filter and continuously regenerates the filter by the effect of the inside oxidation catalyst (this process is called oxidation removal of PM).

Although the collected PM is removed by combustion during the DPF regeneration process, the ashes resulting from the combustion continue to accumulate inside the filter unless removed manually.

In order to maintain the necessary level of system performance, you need to bring your vehicle periodically to an authorized dealer to have the DPF cleaned of ashes through the use of special cleaning equipment.

Ash removal intervals	First 320,000 km/200,000 miles Every 240,000 km/150,000 miles thereafter
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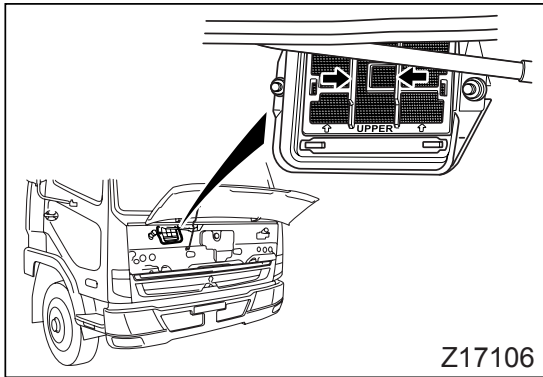
NOTE:
If the DPF is replaced, the first ash cleaning must be performed at 320,000 km/200,000 miles from that time and the second and subsequent cleaning must be performed every 240,000 km/150,000 miles.

Air filters – cleaning

Remove and clean the air filters with water or compressed air to eliminate dust and dirt at regular intervals (6 months or so). Clogged filters may cause inefficient heating or air-conditioning, and even malfunction of the blower motor.

! WARNING
When cleaning the air filters, wear a dust mask to avoid inhaling dust. Dust inhalation can have adverse health effects.

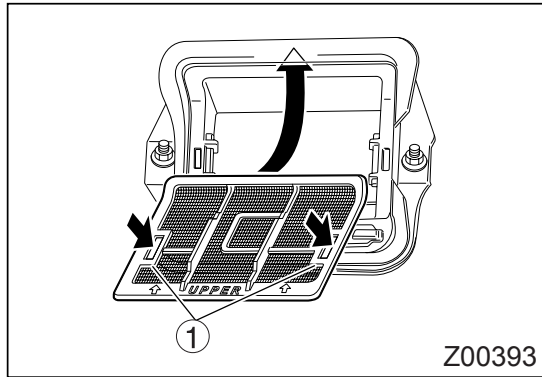
! CAUTION
Clean the air filters at shorter intervals if your vehicle is used frequently in dusty areas.



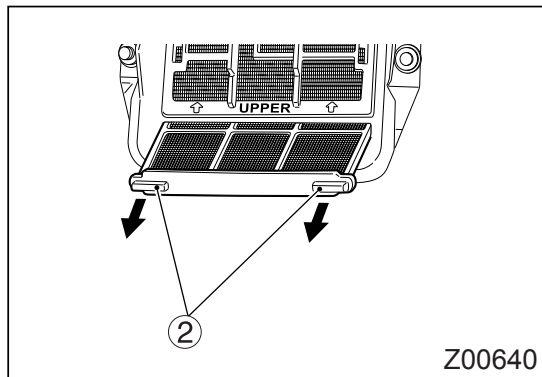
1 Outside air filter

1. Remove the air filter by bending its frame inward to disengage the lugs and pulling the filter downward.

Z17106

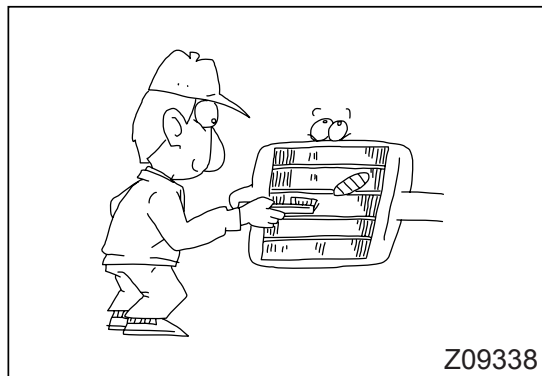


- To install the air filter, fit the top end into position, then press lugs ① into the catches.



2 Inside air filter

Pull tabs ② to slide out the air filter. To install, press the air filter all the way into position.

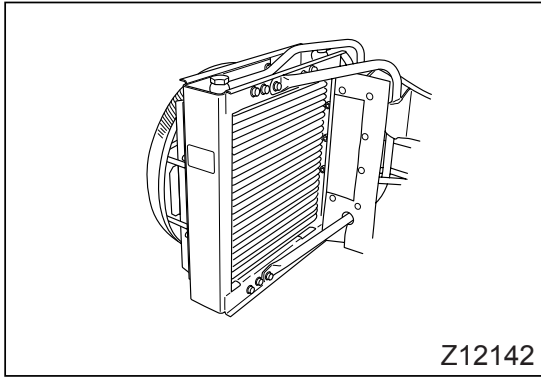


Intercooler – cleaning

If the front of the intercooler is heavily clogged with dust or mud, the engine performance may be affected. Clean it from time to time by using a soft brush or something also appropriate.

CAUTION

The intercooler could be damaged if a bristle brush or an object with a sharp point is used for its cleaning.



Transmission oil cooler – cleaning

<FM65F automatic transmission vehicles>

If a large amount of dirt or mud adheres to the front of the oil cooler, it will reduce the oil cooler's cooling performance and cause rust.

Form time to time, wash with water the front of the oil cooler and the cover that's attached to it.

The oil coolers are located on both sides of the vehicle.

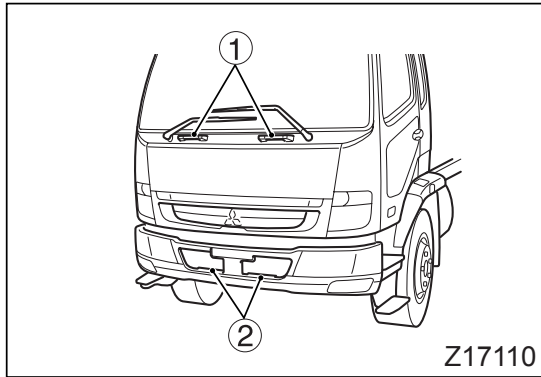
CAUTION

- Do not use a hard brush or sharp implement for cleaning. Doing so could result in damage to the oil cooler.
- Try not to splash water on the motor of the oil cooler's electric cooling fan.
- Do not use a high-pressure cleaning equipment. Damage to the oil cooler may result.

Cleaning your vehicle

WARNING

- Some cleaning fluids are poisonous or flammable. Carefully follow the safety precautions shown on the container.
- Use solvent-based cleaning materials only in a well ventilated area. Open the windows when using solvent-based cleaning materials in the cab.
- The following materials could injure you or damage the vehicle, and should not be used: Acetone, lacquer thinner, enamel thinner, nail enamel remover, and other volatile solvents; laundry soap, bleach, deoxidant, and other detergents; carbon tetrachloride, gasoline, benzene, naphtha, and other petrochemicals.



1 Exterior cleaning

1.1 Cleaning glass surfaces

- Keep the vehicle's windows and windshield clean at all times. Use glass cleaner and wipe it off with a sponge or soft cloth.
- When cleaning the windshield or other items on the front of the vehicle, hold the hand grips ① securely and stand on the front bumper steps ②.

! WARNING

The front bumper steps may be slippery when wet. Take great care when washing the vehicle and in rainy or snowy conditions.

! CAUTION

Never apply rubbing compound to glass since it leaves scratches.

1.2 Washing the vehicle

Washing is necessary not only to keep your vehicle looking its best, but also to help minimize corrosion. You must wash the vehicle whenever it has experienced any of the following:

- Been driven on coastal roads
- Been driven on roads where road chemicals have been applied
- Become contaminated by coal tar, smoke, soot, powder dust, iron powder, lime powder, sap, bird droppings, etc.
- Adhesion of dust and/or mud

Using a hose, wash the mud and dirt off the body surfaces. Wash not only the surfaces around the cab, but also the wheel housings and the underside of the chassis.

Especially, after you have driven in a coastal area or on salted road in the winter, your vehicle should be given a thorough washing.

! WARNING

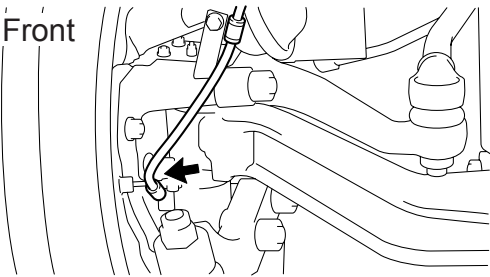
When washing the underside of the vehicle, be careful not to hurt yourself on the edges of panels and other parts.

CAUTION

- Wash the vehicle with luke-warm or cold water. Do not use very hot water.
- Avoid leaving the vehicle in direct sunlight.
- Avoid splashing water on the air intake port or the area where it connects to the engine. Especially when the vehicle is washed with the cab tilted, avoid allowing water to enter the engine through the air intake port.
- Do not use concentrated soap or synthetic detergents.
- Rinse the detergent off with water. Take care that none remains on the paintwork since it could discolor the paint.
- Cleaning plastic parts with thinner or gasoline could result in cracking or discoloration.
- Do not use a vehicle-cleaning brush to clean the plastic lenses of the turn-signal lamps and parking lamps. A brush could scratch the lenses. Wash the lenses with water, then wipe them with a soft cloth.
- In cold weather, the key holes and rubber parts of the door sometimes freeze, making it hard to open the door. After washing, remove moisture on and around the doors. Applying silicone with antifreeze capabilities is one solution to this problem.
- Do not clean the interior by splashing water on it as this could damage relays, the computer, and other electrical devices.
- Thoroughly wash the vehicle, especially the wheelhouses and underside of the chassis after driving on coastal roads or roads where road chemicals have been applied. Thorough washing is also important if your vehicle is frequently used to transport marine products or lime because seawater will affect the vehicle and lime will severely damage the vehicle's paintwork. Road chemicals, if left deposited for a long time on vehicle parts, will set hard and be difficult to remove by ordinary washing. Wash out road chemicals using a high-pressure cleaning machine if necessary so that they do not remain on the vehicle. Road chemicals in large amounts as well as salt will easily cause rusting.

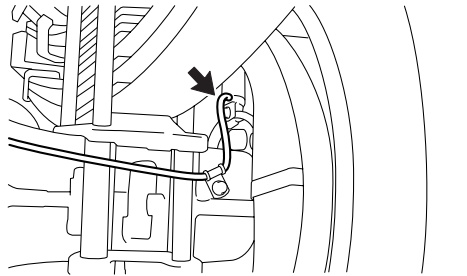
ABS parts and harnesses

Front



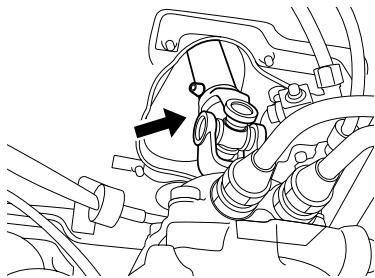
Z17372

Rear



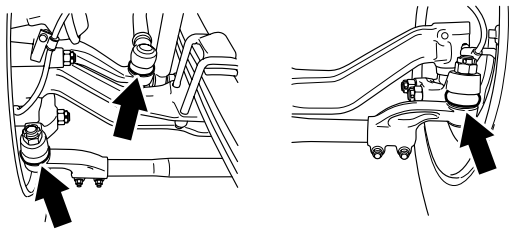
Z17373

Steering shaft



Z12148

Dust covers on steering system parts



Z12149

1.3 Precautions when using a high-pressure cleaner

When washing the inside of the engine compartment or underside of the vehicle, be careful not to direct water or steam from a high-pressure cleaner toward the following parts. Doing so could cause a malfunction and damage to components.

- Connectors on the alternator, starter, and other electrical components and connectors of electrical wiring to them
- ABS devices behind tires and electric wiring to them
- Steering shaft
- Dust covers on steering system parts
- Transmission oil cooler
<FM65F automatic transmission vehicles>

1.4 Waxing

Wax the vehicle once or twice a month or whenever the wax on the vehicle ceases to repel water. Apply wax out of direct sunlight and only when the vehicle's paintwork is cooler than human body temperature.

1.5 Dirt caked on paintwork

The following contaminants can cause corrosion, discoloration, or staining of the vehicle if not washed off: calcium chloride and other salts; road chemicals, oil; tar; tree sap; bird droppings; and industrial soot.

If you cannot easily clean off these contaminants, use a synthetic cleaner that does not scratch or otherwise damage painted surfaces.

1.6 Small chips and scratches

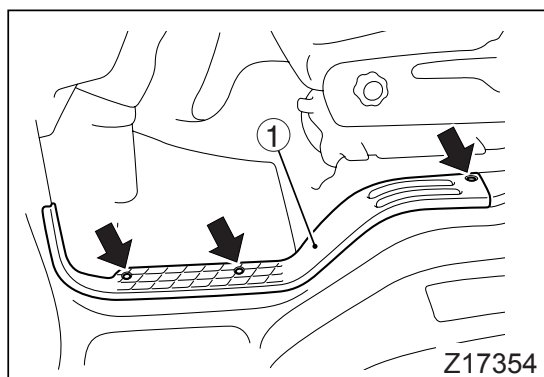
Chips, cracks, and scratches caused by grit thrown up off the road should be fixed as soon as possible. If the body metal is visible, corrosion will quickly set in and require expensive treatment. Your dealer can supply touch-up paint for small chips and scratches.

2 Rust and corrosion

- Rust and corrosion developing on the underside and/or undercarriage of the vehicle could cause an unexpected failure and even lead to an accident. Check these areas occasionally (such as after washing) for rust/corrosion and resulting holes. If rust is found, remove it using a wire brush and coat the affected area with a touchup paint or rust-preventive material. If you find a hole, have your vehicle repaired by an authorized dealer as soon as possible.
- To help keep your vehicle running reliably for a long time, you should conduct a detailed check for rust/corrosion at least once a year, and if necessary, apply touchup paint or rust-preventive material.

3 Interior cleaning

- Do not use any organic solvent (for example, thinner or gasoline) or any acidic or alkaline solvent. It could cause discoloration and/or stains.
- Dirt can leave marks or stains and should be cleaned off as soon as possible.
- Clean the interior of the vehicle with a sponge or soft cloth. Remove stubborn dirt with a soft brush.
- Use the appropriate cleaning technique for each interior item to avoid discoloration and stains.



- Do not water-wash the floor with the floor mat left in place as this could cause the floor to rust and could also damage the relays and computer.
- If you wish to wash the floor mat, remove it from the vehicle. After washing, allow the felt lining on the back to dry completely. The floor mat can be removed by removing the scuff plates ①.

! WARNING

When refitting the floor mat after cleaning, make sure it does not interfere with the accelerator and brake pedals.

3.1 Cleaning interior trim

Keep the vehicle's interior trim clean at all times.

1. Clean out all dust on the trim with a vacuum cleaner or soft brush.
2. Wipe vinyl trim areas carefully with cloth dampened with water.
3. Wipe dirt and marks off the trim with a commercially available cleaner.

3.2 General dirt

A multi-purpose powder-type cleaner is recommended for cleaning general dirt. Soapsuds are also usable.

1. Clean out all loose dust with a vacuum cleaner or soft brush.
2. Dilute the cleaner in water to the specified concentration. The best results can usually be obtained with a thinner solution. When soapsuds are used, apply them with a sponge or soft cloth.
3. Wipe up any remaining cleaner with a towel or other absorbent cloth.
4. Finish cleaning by gently wiping the surface with a dry soft cloth to polish it.

3.3 Grease and oil

Use this method to remove contamination by grease, oil, butter, margarine, shoe polish, white coffee, chewing gum, beauty cream, vegetable oil, wax, crayon, tar, and asphalt.

- Wipe off the contamination, then apply a fabric cleaning solution.
- Shoe polish, wax, crayon, tar, and asphalt can stain the trim if not cleaned off quickly. Carefully use cleaner because it dissolves these contaminants and can cause a smudge.

3.4 Organic contaminants

Use this method to remove marks resulting from tomato ketchup, black coffee, egg, fruit, fruit juice, milk, cold drinks, wine, vomit, urine, and blood.

1. Wipe off the smudge, then wipe the area again with a damp sponge.
2. If the area is stained, apply a multi-purpose foam-type cleaner.
3. If the smell of vomit or urine lingers, dissolve 5 ml (0.17 fl oz.) of baking soda in 250 ml (8.5 fl oz.) of luke-warm water and use the solution to clean the affected area.
4. If necessary, lightly wipe the area with a fabric cleaning solvent.

3.5 Other contaminants

Use this method to remove contamination by candy, ice cream, mayonnaise, and chili sauce.

1. Carefully clean off the contamination, then wash the area with water and dry it.
2. If any spot remains, clean with a fabric cleaning solvent.

3.6 Cleaning vinyl surfaces

- Vinyl can usually be cleaned with warm water and mild soap, e.g., saddle soap.
- Apply a little soapy water and leave it for several minutes. Then, rub the area hard with a cloth wet in water. Repeat this process until the area is completely clean.
- Tar, asphalt, and shoe polish can leave stains if not cleaned off quickly.
With a clean cloth impregnated with vinyl cleaner, wipe the area clean.

3.7 Cleaning seat belts

- Keep your vehicle's seat belts clean and dry at all times. Clean them with mild soap and luke-warm water. Never use gasoline, thinner, or other flammable liquids since these will weaken the webbing.
- Do not bleach or re-dye the webbing since this would seriously weaken it.

13. Useful advice for emergencies

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Possible failures, causes and remedies

Performing daily checks and good maintenance are keys to preventing mechanical failures and the resultant accidents. Be sure to check and service your vehicle regularly.

Should your vehicle suffer a mechanical failure or malfunction, the measures needed to correct the problem can be found using the following chart.

If you are unable to correct the problem yourself or the problem persists after you have attempted to repair it, contact an authorized dealer for technical assistance.

The engine does not start.

The starter does not turn over or turns over too slowly.

Possible cause	Remedy	Ref. page
The starter switch fuse or high-current fuse is blown.	Replace the blown fuse or high-current fuse with a new one of the specified amperage.	13-10
Battery has run down.	Charge or replace the battery.	12-76
Battery cable is disconnected, loose or corroded.	Remove corrosion and connect the cable correctly.	13-24
Connection to ground terminal is open.	Connect securely.	—
Engine oil viscosity is too high.	Replace the oil with an oil of proper viscosity.	12-24
The starter is malfunctioning.	Have an authorized dealer perform necessary inspection.	—

The starter turns over normally.

Possible cause	Remedy	Ref. page
Fuel has run out.	Refuel and bleed the system.	13-26
Air is present in the fuel system.	Bleed the system.	13-26
The fuel filter is clogged.	Replace the filter element.	12-38
Fuel is frozen.	Heat the fuel pipe with hot water [60°C (140°F) or lower].	—
The air cleaner is clogged.	Clean or replace the element.	12-41
The engine preheating time is insufficient.	Follow the preheating instructions.	5-5
The engine preheating circuit fuse is blown.	Replace the fuse.	13-10
There is malfunction in any of the fuel injection system components.	Have an authorized dealer perform necessary inspection.	—

The engine starts but stalls immediately.

Possible cause	Remedy	Ref. page
Idling speed setting is too low.	Have an authorized dealer perform necessary inspection.	–
The fuel filter is clogged.	Replace the filter element.	12-38
The air cleaner is clogged.	Clean or replace the air cleaner element.	12-41
The DPF is blocked.	Have an authorized dealer perform necessary inspection.	–

The engine does not stop.

Possible cause	Remedy	Ref. page
The starter switch is faulty.	Have an authorized dealer perform necessary inspection.	–
There is a fault in the fuel injection system.	Have an authorized dealer perform necessary inspection.	–

Black or white exhaust gas

Possible cause	Remedy	Ref. page
The DPF system is malfunctioning.	Have an authorized dealer perform necessary inspection.	–

The engine overheats.

Possible cause	Remedy	Ref. page
The front of the intercooler or radiator is plugged with dust and dirt.	Clean.	12-81
The coolant level is too low.	Add coolant.	12-47
The radiator cap is not closed completely.	Install the cap firmly.	–
The fan belt is loose.	Adjust the belt tension.	12-54
The coolant is contaminated.	Flush the cooling system and replace the coolant.	12-47

Engine oil pressure does not build up.

Possible cause	Remedy	Ref. page
Insufficient quantity of engine oil.	Add engine oil.	12-24
Engine oil viscosity is not adequate.	Replace the engine oil with one of a proper viscosity.	12-24

Fuel consumption is excessive.

Possible cause	Remedy	Ref. page
There is a fuel leak.	Check the fuel system and retighten connections as necessary.	–
The air cleaner is clogged.	Clean or replace the air cleaner element.	12-41
Tire pressure is too low.	Adjust to the adequate inflation pressure.	12-63
The clutch is slipping. <Manual transmission vehicles>	Adjust the play.	12-60

Engine oil consumption is excessive.

Possible cause	Remedy	Ref. page
The wrong oil is being used.	Replace the engine oil with a proper one.	12-24
There is too much oil.	Adjust the quantity to the proper level.	12-24
There is an oil leak.	Check the oil circuit and retighten connections as necessary.	–
Engine oil replacement intervals are too long.	Change the engine oil at prescribed intervals.	12-24
The oil filter is clogged.	Replace the filter element.	12-37

Drive power is insufficient.

Possible cause	Remedy	Ref. page
The parking brake is activated.	Release the parking brake completely.	5-22
The air cleaner is clogged.	Clean or replace the air cleaner element.	12-41
The fuel filter is clogged.	Replace the filter element.	12-38
The clutch is slipping. <Manual transmission vehicles>	Adjust play.	12-60
Air is present in the fuel system.	Bleed the fuel system.	13-26
The front of the intercooler or radiator is plugged with dust and dirt.	Clean.	12-81
The DPF is blocked.	Have an authorized dealer perform necessary inspection.	—

The clutch disengages incompletely. <Manual transmission vehicles>

Possible cause	Remedy	Ref. page
Clutch fluid is insufficient.	Add clutch fluid.	12-33
Clutch pedal play is excessive.	Have an authorized dealer perform necessary inspection.	12-60
Air pressure is insufficient.	Increase the engine speed to boost air pressure.	—

Braking is sluggish.

Possible cause	Remedy	Ref. page
Air pressure is insufficient.	Increase the engine speed to boost air pressure.	12-58
Brake fluid is insufficient <FK61F>.	Add brake fluid.	12-33
There is an air leak.	Check the air circuit and retighten connections as necessary.	—
Brake linings are excessively worn.	Have an authorized dealer perform necessary inspection.	—

The vehicle pulls to one side during braking.

Possible cause	Remedy	Ref. page
Tires are not uniformly inflated.	Inflate tires properly.	12-63
Tires wear unevenly.	Change the tires.	12-63
Cargo is heavier on one side than the other.	Load cargo evenly.	7-15

Steering is difficult.

Possible cause	Remedy	Ref. page
Cargo is over-loaded on the front side.	Load cargo evenly.	7-15
Power steering fluid is insufficient.	Add power steering fluid.	12-36
Front tire pressure is insufficient.	Inflate tires to recommended pressures.	12-4

The steering wheel vibrates.

Possible cause	Remedy	Ref. page
Wheel nuts are loose.	Tighten the wheel nuts to specification.	12-71
Tires are not uniformly inflated.	Inflate tires properly.	12-63
Tires wear unevenly.	Replace tires.	12-66
Wheels are not balanced properly.	Have an authorized dealer perform necessary inspection.	–
Left and right braking forces are uneven.	Have an authorized dealer perform necessary inspection.	–

The steering wheel does not return to the straight ahead position smoothly.

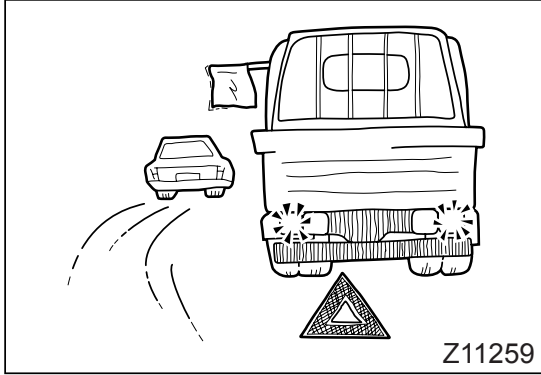
Possible cause	Remedy	Ref. page
Parts are insufficiently greased.	Grease parts.	12-18

The lamp does not light up.

Possible cause	Remedy	Ref. page
The bulb is burnt out.	Replace the bulb.	13-17
The fuse is blown.	Replace the fuse with one of the correct amperage.	13-10
There are open wiring and/or poor connection to ground.	Have an authorized dealer perform necessary inspection.	—

The battery frequently runs down.

Possible cause	Remedy	Ref. page
The battery terminals are loose or corroded.	Scrape off corrosion and tighten down terminals.	12-76
The drive belt is loose.	Adjust the belt tension.	12-54
The battery is short of electrolyte.	Add battery electrolyte.	12-76
The life of the battery has expired.	Replace the battery.	12-76
Idling speed setting is too low.	Have an authorized dealer perform necessary inspection.	—
Vehicle is used only at nighttime.	Charge the battery.	12-76
Switches are left on.	Be sure to turn off the switches.	—
The alternator is faulty.	Have an authorized dealer perform necessary inspection.	—



Stopping your vehicle in an emergency

Should a mechanical failure occur, do not panic. Simply slow your vehicle while paying attention to the vehicles behind you, and pull off the road at a place where you do not hinder the flow of traffic.

WARNING

- Stopping your vehicle in a tunnel could be dangerous. Wherever possible, drive out of the tunnel before stopping the vehicle.
- Be sure to block the wheels with chocks after stopping the vehicle as mechanical failure may render the parking brake inoperative.

NOTE:

If the engine stops, it is not possible to move the vehicle using only the starter.

1 Marking your vehicle

After you have pulled off the road, alert other drivers as follows so that they do not run into your vehicle.

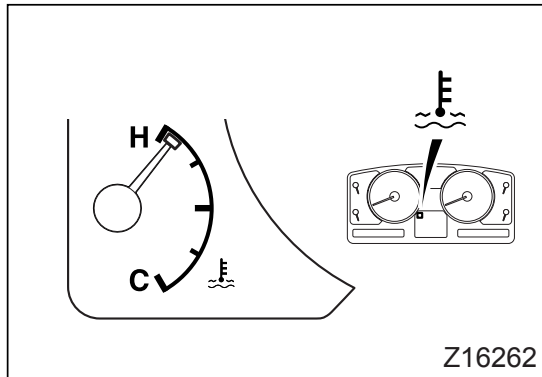
- Flash the hazard warning lamps.
- If your vehicle carries reflective triangles, erect them by the side of the road behind the vehicle.

2 Repair



Check the mechanical failure and if you judge it readily repairable, fix it while paying attention to the traffic. If you are unable to repair it, call an authorized dealer for help.

WARNING

Never attempt to perform repairs in a tunnel or on a freeway as doing so is very dangerous.




If the engine overheats

Your vehicle's engine is overheating if the  warning lamp is illuminated and the needle of the water temperature gauge is in the red zone. If this happens, follow the steps indicated below. If the warning lamp is on but the water temperature gauge is not in the red zone, there is probably insufficient coolant. Check the coolant level and, if necessary, add coolant.  P. 12-50

WARNING

Driving with an overheated engine can damage the engine or even cause a fire.



NOTE:

When the  warning lamp comes on, a buzzer sounds. The buzzer stops sounding when you stop the vehicle and apply the parking brake.

1. Pull off the road and stop the vehicle at a safe place, and use the accelerator pedal to keep the engine running slightly faster than the normal idling speed so that the engine will cool down.

CAUTION

Be sure to stop the engine only after letting it run at a speed slightly above the idling RPM until the coolant cools down. Turning off the engine immediately after stopping will cause the coolant temperature to rise quickly and may cause the engine to seize up.


2. When the gauge's needle stays near the center of the scale, stop the engine and wait until the coolant temperature has dropped further.
3. Check the radiator piping for coolant leakage. If there is any leakage, contact an authorized dealer for assistance.
4. Check the fan belt for breakage and slackness.  P. 12-54
5. Check the coolant level. If necessary, add coolant into both the radiator and reservoir tank.  P. 12-50

 **WARNING**

Open the radiator cap only after the coolant temperature has dropped sufficiently. If the cap is opened while the engine is still hot, boiling coolant could gush out, burning you severely.

To open the radiator cap, hold it with a cloth and turn it slowly.

 **CAUTION**

Quickly adding cold water when the engine has overheated could cause the engine block to crack. Add water little by little. ⇒  P. 12-81

6. Check for dust and any other matter on the front surfaces of the radiator and intercooler. Remove them if present and clean the surfaces.

NOTE:

If the engine overheats frequently during normal driving, contact an authorized dealer for assistance.

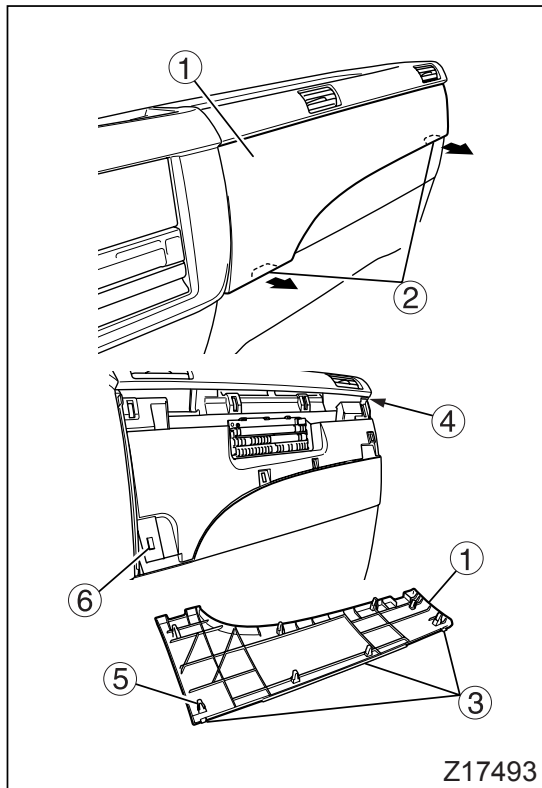
When a fuse has blown

- If a lamp fails to illuminate or electrical equipment does not function, a fuse may have blown. Check and replace fuses as necessary.
- Before checking or replacing fuses, turn the starter switch to the “LOCK” position and push all switches to the “OFF” position.

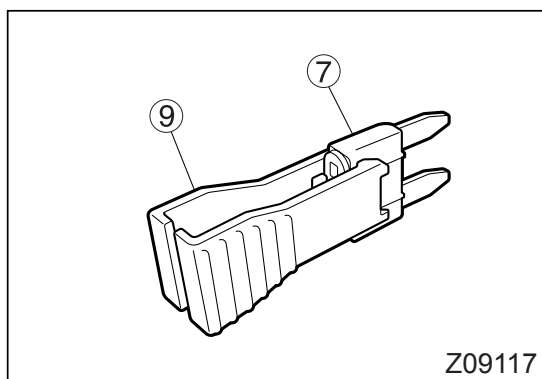
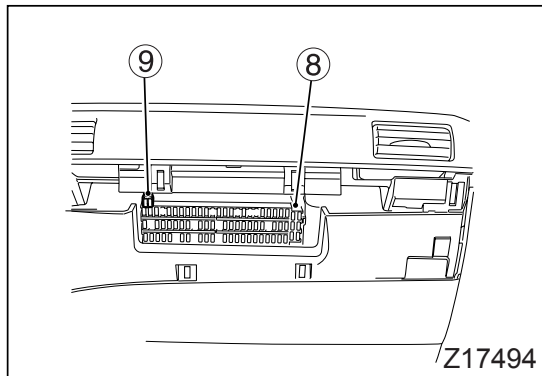
1 Replacing fuses

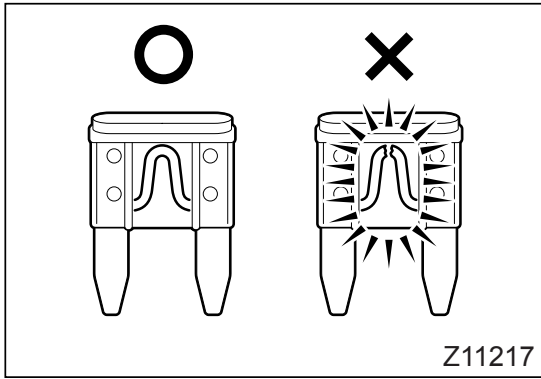
1. To access the fuses, hook your fingers in the recesses ② formed behind the panel ① and pull the panel toward you to remove it.

When reinstalling the panel, align the lugs ③ on the panel with the cuts ④ in the dashboard, insert the pins ⑤ (in 8 places) in the holes ⑥, and push the panel into position by hand.



2. To remove a blown fuse ⑦, use fuse puller ⑨ located in the fuse box ⑧. Pinch and pull fuse with the fuse puller. The circuit protected by each fuse and its amperage (A) are indicated on the reverse side of the panel.





3. When a fuse is blown, be sure to replace it with a spare fuse of the specified amperage (A).

NOTE:

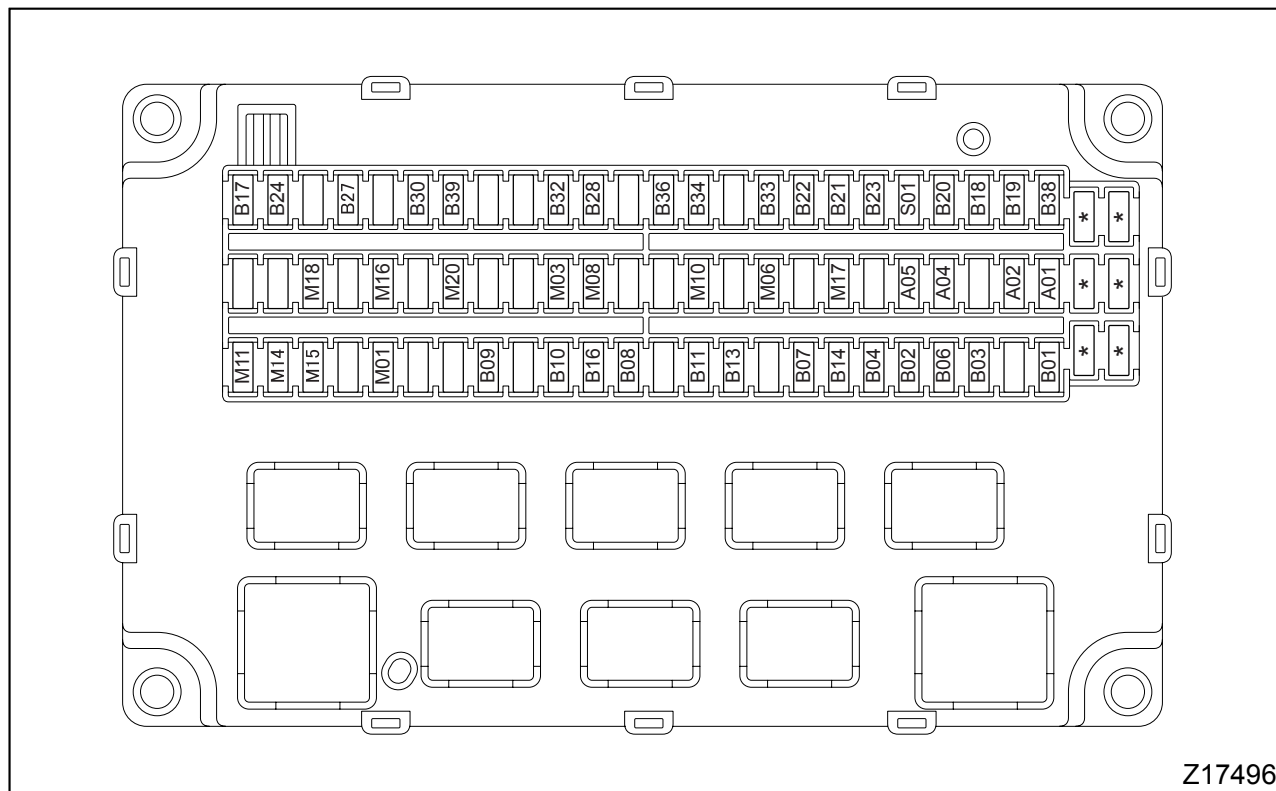
After using a spare fuse, replenish it as soon as possible.

! WARNING

Use genuine fuses of the specified amperages. A fire could result if a fuse of incorrect amperage is used.

! CAUTION

- If the cause of a blown fuse cannot be determined or the same fuse blows frequently, have your vehicle inspected at an authorized dealer.
- Use care not to splash water on or around the glove compartment. Should water be splashed over the glove compartment, check the inside of the compartment for water.

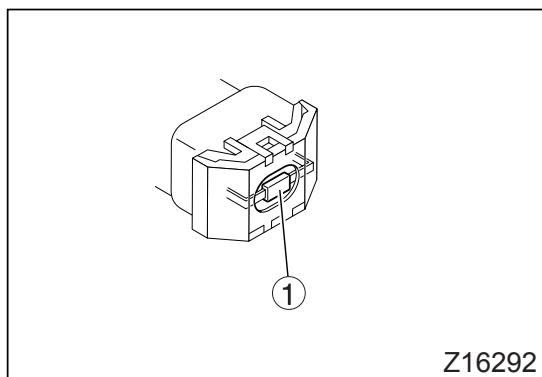
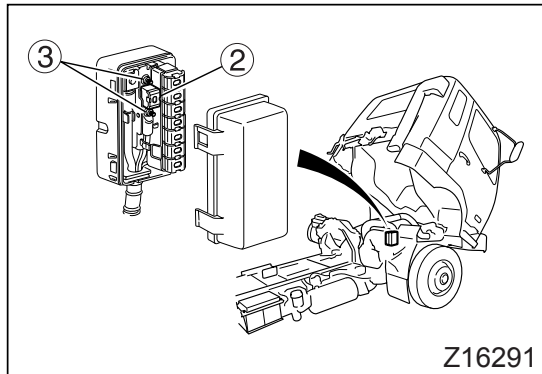


Z17496

Fuse No.	Amperage	Protected circuit
A01	10A	Audio system
A02	15A	Cigarette lighter
A04	10A	Key interlock
A05	10A	Air suspension
B01	10A	Meter cluster
B02	10A	MVCU
B03	20A	Engine EDU
B04	20A	Engine ECU
B06	30A	ABS
B07	10A	Stop lamps
B08	15A	Low beam headlamp, LH
B09	15A	High beam headlamps
B10	15A	Low beam headlamp, RH
B11	20A	Tail lamps
B13	20A	Accessory power supply (optional socket circuit)
B14	5A	Tail lamp relay

Fuse No.	Amperage	Protected circuit
B16	15A	Turn signal lamps
B17	30A	Blower fan of air conditioner/heater
B18	25A	Power window, driver's door
B19	20A	Power window, assistant driver's door
B20	20A	Air conditioner
B21	5A	High beam indicator lamp
B22	10A	Audio system
B23	10A	Interior lamp
B24	10A	Accessory power supply (battery circuit)
B27	15A	Horn
B28	5A	Daytime running light system
B30	15A	Automatic transmission
B32	15A	Tester
B33	10A	Accessory power supply (ACC circuit)
B34	10A	Heated mirrors
B36	15A	Van body lamp
B38	30A	Automatic transmission cooler fan, LH
B39	30A	Automatic transmission cooler fan, RH
M01	10A	MVCU
M03	10A	MUTIC/RELAY CONT.
M06	10A	Power windows
M08	10A	Accessory power supply (starter switch M circuit)
M10	5A	Engine ECU
M11	15A	Engine ECU
M14	15A	Air drier

Fuse No.	Amperage	Protected circuit
M15	10A	Meter cluster/daytime running light system
M16	10A	Backup lamps
M17	20A	Wipers
M18	10A	Automatic transmission
M20	5A	ABS
S01	10A	Starter
*	5A	Spare fuses
	10A	
	15A	
	20A	
	25A	
	30A	



2 High-current fuse – Replacement

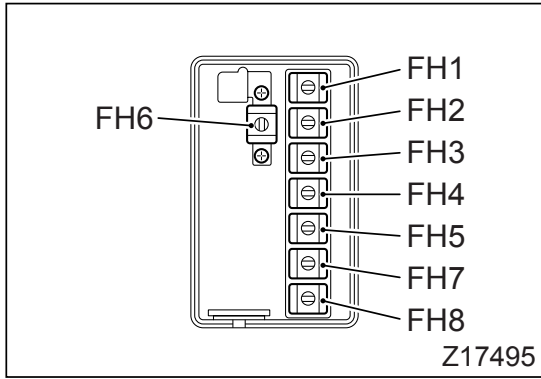
- There are high-current fuses (50 A, 60 A, 140 A) between the battery and fuse box, and between the battery and alternator. These protect circuits in the same way that ordinary fuses do. If a high-current fuse is blown, most of the vehicle's electrical circuits become inoperative.
- Check for a blown high-current fuse by looking into the inside through inspection window ①. If it is blown, immediately call an authorized dealer and have them check your vehicle.
- For high current fuses ②, first remove their mounting nuts ③ and then remove the fuses. For other fuses, simply pull them off.

! WARNING

Replacement high-current fuses should always be genuine ones and of appropriate amperage. Using a high-current fuse of incorrect amperage could cause a fire.

! CAUTION

Close the cover completely to prevent rain water from entering the fuse box.



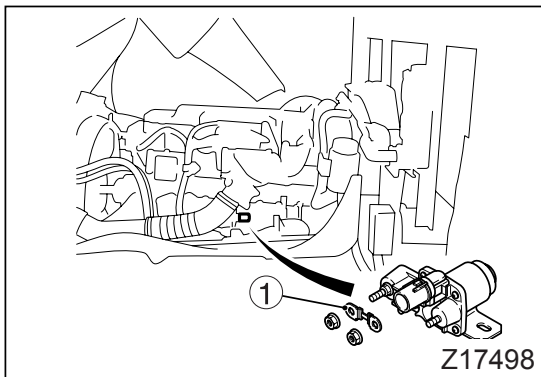
No.	Amperage (casing color)	Protected circuit
FH1	60A (yellow)	Fuse box (A01 – A05, M01 – M20, S01)
FH2	60A (yellow)	Fuse box (B01 – B06)
FH3	60A (yellow)	Fuse box (B07 – B16)
FH4	60A (yellow)	Fuse box (B17 – B27)
FH5	50A (red)	Glow
FH6	140A (russet)	Alternator
FH7	60A (yellow)	Fuse box (B27 – B37)
FH8	60A (yellow)	Fuse box (B38 – B39)

! WARNING

Replacement high-current fuses should always be of the specified amperage. Using a high-current fuse of incorrect amperage could cause a fire.

! CAUTION

Close the cover completely to prevent rain water from entering the fuse box.



3 Replacing engine preheating circuit fuse

If the ∞ indicator lamp does not light up in cold weather, check whether glow relay fuse ① is blown or not.

If the fuse is blown, first disconnect the negative cable from the battery and then replace the fuse with a genuine one (127A).

 **WARNING**

- Electricity is always present at one end of the glow relay. To be safe, always disconnect the negative cable from the battery before replacing the fuse.
- Use genuine fuses of the specified amperages. A fire could result if a fuse of incorrect amperage is used.

 **CAUTION**

Use only a genuine fuse of the specified amperage.

When a lamp has burned out

Whenever replacing a lamp, be sure to place the starter switch in the "LOCK" position and all other switches in the "OFF" position.

 **WARNING**

Use a lamp of the specified voltage and wattage shown in the following table. If a wrong lamp is used, an excess of current flowing through the wiring could blow a fuse or cause the wiring to overheat and could possibly cause a fire.

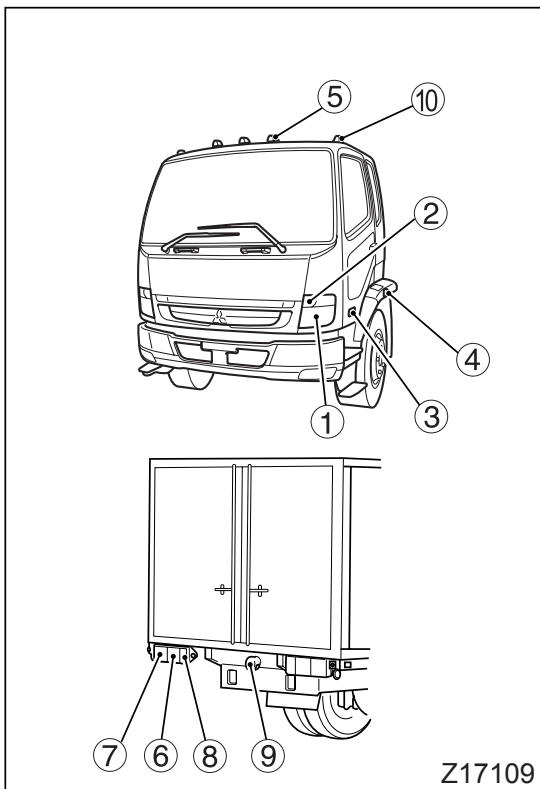
 **CAUTION**

- Do not directly touch the glass part of a halogen bulb with your fingers. Any oil and other substances contaminating the glass surface could shorten the bulb's service life.
- The turn signal lamps have plastic lenses. Do not clean these lenses with alcohol or thinner. Also, be careful not to splash clutch fluid on them when adding it to the clutch system. Contact with such a substance could discolor or crack the lenses. If such a substance gets on a plastic lens, immediately wipe it off or rinse it off with water.
- Burnt bulbs should be replaced as soon as possible.

- Do not replace any lamp bulb immediately after it has gone out. The bulb is very hot then and could burn you. Be sure to wait long enough for the bulb to cool down before replacing it.
- Do not drop a lamp bulb. Flying fragments of glass could hurt you. Be especially careful when handling a halogen lamp bulb as its high inner pressure increases chance of injury.

NOTE:

Inside lenses in lamps such as headlamps temporarily fog during driving in the rain or vehicle wash. Just as in the case of window glass fogging in the rain, fogging is formed by difference of the temperature between inside and outside of the lamp. No functional problem develops and fogging will disappear by itself.

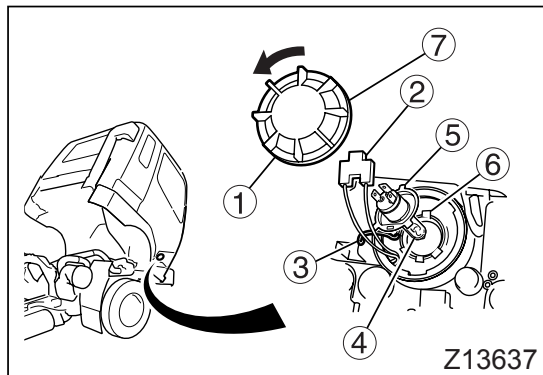


Ref. No.	Lamp	Bulb wattage (bulb type)	Q'ty
①	Headlamp	12V-60/55W (HB2)	2
	Parking lamp	12V-5W (W5W)	2
②	Front turn signal lamp (front)	12V-21W (P21W)	2

Ref. No.	Lamp	Bulb wattage (bulb type)	Q'ty
③	Front side turn signal lamp <FK61F>	12V-10W (R10W)	2
④	Front side turn signal lamp <Other than FK61F>		
⑤	Identification lamp	12V-7.5W (#89)	3
⑥	Stop/tail lamp	12V-21/5W (P21/5W)	2
⑦	Rear turn signal lamp	12V-21W (P21W)	2
⑧	Backup lamp	12V-21W (P21W)	2
⑨	License plate lamp	12V-7.5W (#89)	1
⑩	Clearance and side marker lamp	12V-7.5W (#89)	2
—	Interior lamp/personal lamp	12V-10W	2

⚠ CAUTION

Blown bulbs should be replaced as soon as possible.



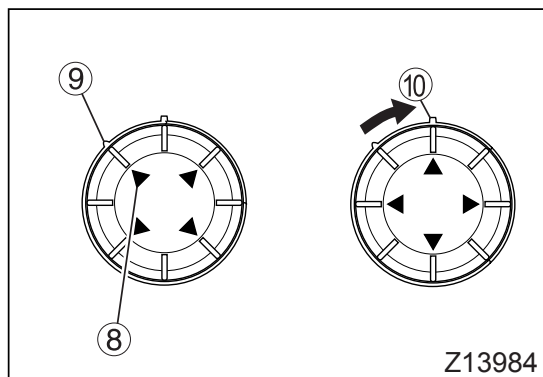
1 Replacing headlamp

• Removal

1. Tilt the cab.
2. Remove the cover ① by turning it counterclockwise until it stops.
3. Remove the connector ②.
4. Remove the spring ③ and then pull out the bulb ④.

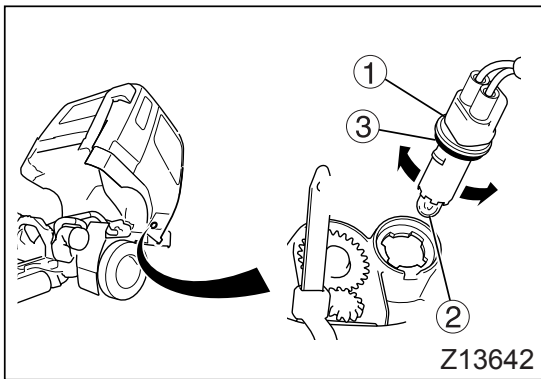
• Installation

1. Install the bulb while aligning its bosses ⑤ with the cuts ⑥ in the headlamp body, and then install the spring to hold the bulb in place.
2. Install the connector.
3. Clean the packing ⑦ if dirty.
Check the packing for twisting and correct it if necessary.
4. Fit the cover while aligning its ▲ mark ⑧ with the boss (removal position index) ⑨ on the headlamp body, then rotate the cover clockwise until the ▲ mark points at the other boss (lock position index) ⑩.
5. Lower the cab back to its original position.



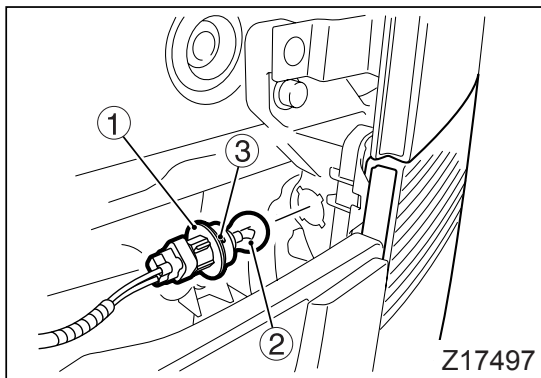
⚠ CAUTION

- If you replace the headlamps yourself, have an authorized dealer perform aiming adjustments as soon as possible.
- Do not disturb the settings of the aiming adjustment screws. Doing so alters the directional focus of the headlamps and this could be hazardous to approaching motorists.



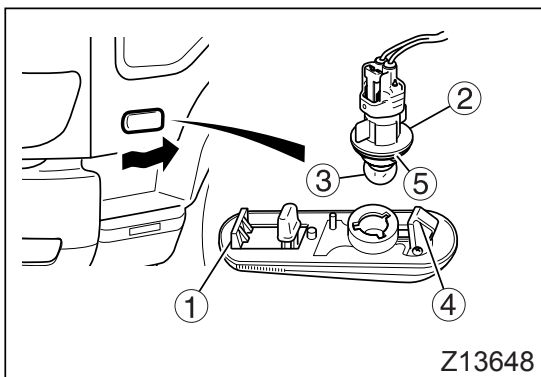
2 Replacing of parking lamp

1. Tilt the cab.
2. Remove the socket ① by turning it counterclockwise.
3. Remove the bulb ② by pulling it out.
4. Install the lamp by following the above steps in reverse.
5. Clean the packing ③ if dirty.



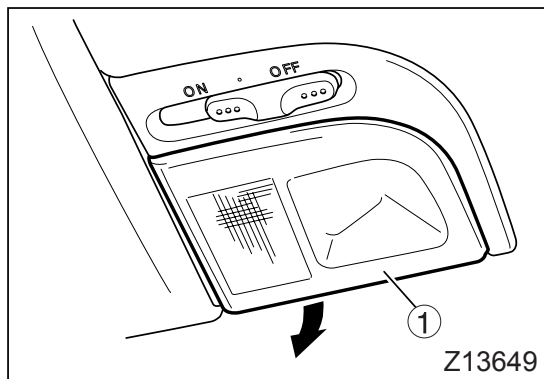
3 Replacing front turn signal lamp

1. Open the front panel. ⇨ P. 12-4
2. Remove socket ① by turning it counterclockwise.
3. Push bulb ② and turn counterclockwise to remove it.
4. Install the lamp by reversing the order of removal.
5. If the packing ③ is dirty, clean it.



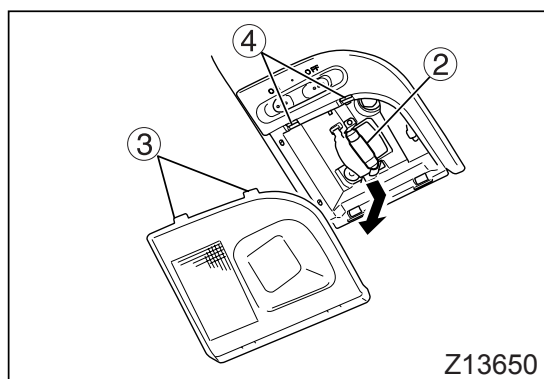
4 Replacing front side turn signal lamp <FK61F>

1. Push the bottom of the lamp rearward to release the tab ①. Then remove the lamp unit.
2. Turn the socket ② counterclockwise and remove it.
3. Remove the bulb ③ by pressing it and turning it counterclockwise. Then, fit a new bulb.
4. Refit the lamp unit in the vehicle body by fitting the clip ④ first and then pressing lightly the tab into place.
After installation, make sure that the lamp unit is securely retained.
5. If the packing ⑤ is dirty, clean it.



5 Replacing the interior/personal lamp

1. Remove the lens ① by pulling the bottom of it toward you.



2. Remove the bulb ② while pushing it down.
3. Install the new bulb by pushing it into position.
4. Install the lens by first fitting the lugs ③ at its top into the holes ④ in the lamp body and then pushing the bottom of the lens into position.

6 Replacing other lamps

1. Loosen the screw that secures the lens then remove the lens.
2. Turn the bulb counterclockwise while pressing it and remove it.
3. Insert a new bulb and turn it clockwise.
4. Fit the lens, ensuring that the packing is correctly positioned. If the packing is incorrectly installed or twisted, water can enter the lamp and shorten its life.

When braking is sluggish

Depress the brake pedal harder than usual, down-shift to use engine braking and activate exhaust braking to stop the vehicle. Apply the parking brake when necessary. After the vehicle has been brought into a stop, check parts, then call an authorized dealer.

WARNING

- **Activating the parking brake while driving could cause the vehicle to topple over.**
- **The brake system is of a dual circuit design, one circuit for the front wheels and the other for the rear wheels. Even if one circuit fails, you can stop the vehicle with the other intact circuit. However, under these circumstances, braking power is very much reduced. Never continue driving with one circuit inoperative, as it is very dangerous.**

If parking brake cannot be released normally

<Other than FK61F>

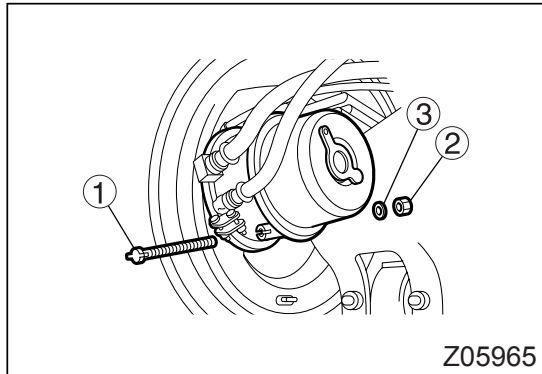
In the event of a fault in the brake lines, the resulting drop in air pressure may make it impossible to release the parking brake using the parking control valve. If this occurs, you can release the parking brake using the following method to prepare the vehicle for towing by a professional towing service.

WARNING

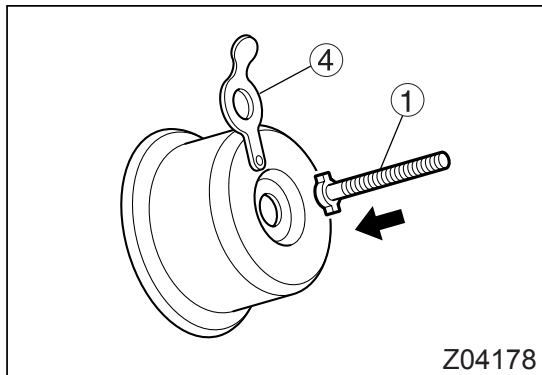
- **Remember that the service brakes do not function. Be sure to chock all the wheels before releasing the parking brake to prevent any movement of the vehicle which could be dangerous.**
- **Avoid releasing the parking brake unless the vehicle is on level ground.**

CAUTION

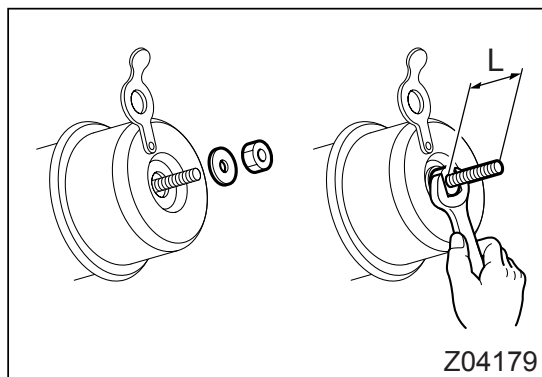
A vehicle with its parking brake released by this emergency procedure must be towed by only a tow vehicle specially designed for the purpose.



1. Remove the release bolt ①, nut ②, and washer ③ from the rear brake chamber.



2. Remove the plastic cap ④ from the brake chamber.
3. Insert the release bolt head-first into the hole in the brake chamber. Push the release bolt until it stops.
4. Give the release bolt 1/4 of a turn clockwise, then check that it cannot be pulled out.



5. Fit the washer and nut onto the release bolt. Then, turn the nut down the bolt using a wrench with a face-to-face dimension of 19 mm (3/4 in.). The parking brake will be completely released when the distance L from the nut's top surface to the bolt's free end is equal to the following value.

Model	Distance L
FK62F, FK65F	76 mm (2.99 in.)
FM65F	79 mm (3.11 in.)

CAUTION

To avoid damaging the brake chamber, do not turn the nut further than the indicated distance L from the bolt's free end.

If the engine stalls while the vehicle is in motion

The vehicle will be set into the following very dangerous condition. Pull the vehicle over when safe to do so and try to start the engine.

- The brake booster becomes inoperative because no compressed air is supplied, and braking power is significantly reduced.
- The power assistance then becomes unavailable, making steering extremely difficult. Additional force must be used when turning the steering wheel.

WARNING

The brakes completely cease to function as soon as the available compressed air is used up.

If a tire goes flat while the vehicle is in motion

Avoid sudden braking. Hold the steering wheel firmly, and gradually slow down before pulling over at a safe place.

To replace the tire, select a flat surface where your vehicle will not hinder traffic.

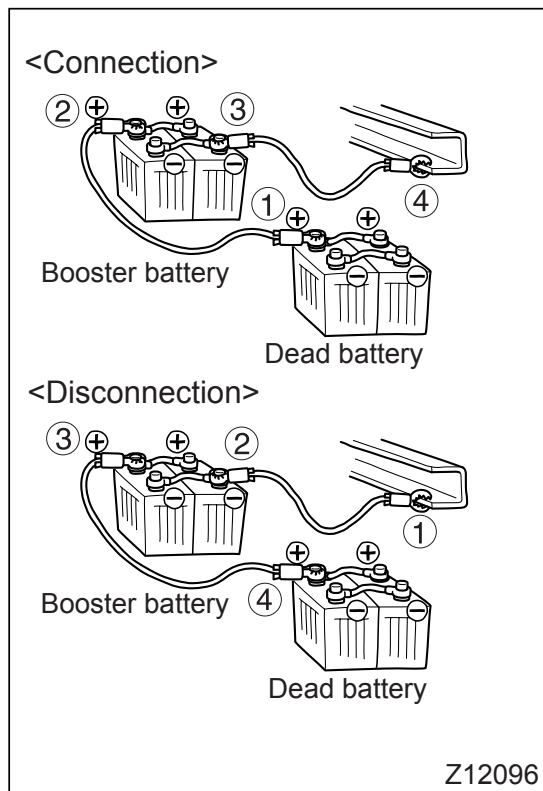
When the battery has run down

Perform the following procedure to start your engine by connecting your battery to the well charged battery of another vehicle with booster cables.

CAUTION

- **Use booster cables able to handle large currents.**
- **Use a booster battery of the same voltage as your vehicle's battery.**

Your vehicle's electrical system operates on a 12 V power supply. Confirm that the vehicle giving the boost also has a battery or batteries connected for 12 V power supply.



1. Stop the engine of the vehicle giving the boost.
2. Connect one end of the red booster cable to the positive (+) terminal ① of the dead battery. Connect the other end of the red booster cable to the positive (+) terminal ② of the booster battery.
3. Connect one end of the black booster cable to the negative (-) terminal ③ of the booster battery and connect the other end of the black booster cable to a section of frame ④ on the vehicle with the dead battery at a point as far away as possible from the battery.

! WARNING

- Check the battery's fluid level before connecting booster cables. If the fluid is below the "LOWER LEVEL" line, add battery fluid or distilled water. If the battery was charged with an excessively low fluid level, it would deteriorate rapidly and could overheat or explode.
- Be careful not to connect the booster cables in the wrong sequence. Sparks are often produced when you connect the booster cable to the vehicle's frame. Therefore, if the cable is connected to a section of the frame near the battery, the spark could set off the hydrogen given off by the battery to cause an explosion. Be sure to connect the cable end to a point as far away as possible from the battery. Also, keep cigarettes and open flames well away from the battery.
- Avoid getting the engine started by towing or pushing the vehicle unless absolutely necessary as doing so is quite dangerous. Note that it is not possible to push-start an automatic transmission vehicle.

4. After the above connections have been completed, start the engine of the vehicle with the booster battery and let it run at an RPM slightly higher than idling speed. Then, attempt to start the engine of the vehicle with the dead battery. If the engine starts with difficulty because of cold weather or a dead battery, let it draw a charge for several minutes from the vehicle from which you are receiving the boost before attempting to turn over the engine.

5. After the engine of the vehicle with the dead battery has been started, disconnect the booster cables by reversing the order of connection.

When the fuel has run out (Bleeding the fuel system)

When the vehicle runs out of fuel and the engine stalls, when the fuel filter element has been replaced, or when the water in the fuel filter has drained, air that has entered the fuel system prevents the engine from being started even after the engine is refueled.

In these cases, bleed the fuel system by performing the following steps.

! WARNING

A fire could result if there is a fuel leak or if spilt fuel is not removed. Always wipe off spilt fuel after air bleeding. Also be sure to check for fuel leakage.

! CAUTION

The fuel injection system may fail if the engine stops due to lack of fuel.

1. Loosen one of the air bleeder plugs ① of the fuel filter.

NOTE:

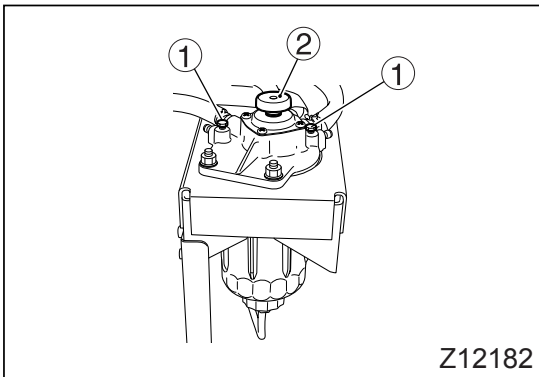
Use whichever of the two air bleeder plugs is the most convenient; both plugs provide the same effect.

2. Cover the pipe portion of the loosened air bleeder plug with a cloth and operate the priming pump ② to pump out fuel.

NOTE:

Alternatively, connect a hose with an inside diameter of 8 mm (0.31 in.) to the pipe portion of the air bleeder plug in order to prevent fuel from splashing. Use a transparent hose so you can easily check for air bubbles in the fuel.

3. Fuel containing air bubbles will flow out of the pipe portion. Continue pumping until the fuel no longer contains any air bubbles. (You will need to operate the priming pump approximately 60 to 80 times.)



Z12182

4. After making sure that there are no air bubbles in the fuel emerging from the air bleeder plug, fasten the plug tightly. Operate the priming pump again several times until you feel an increase in resistance. Be sure to operate the pump several times, even if the resistance does not increase because the fuel is cold.

Bleeder plug tightening torque	$10 \pm 2.0 \text{ N}\cdot\text{m}$ ($7.2 \pm 1.4 \text{ ft}\cdot\text{lbs.}$, $1 \pm 0.2 \text{ kgf}\cdot\text{m}$)
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5. Wipe thoroughly the spilled fuel and then start the engine.
6. Check for any fuel leakage.

Towing

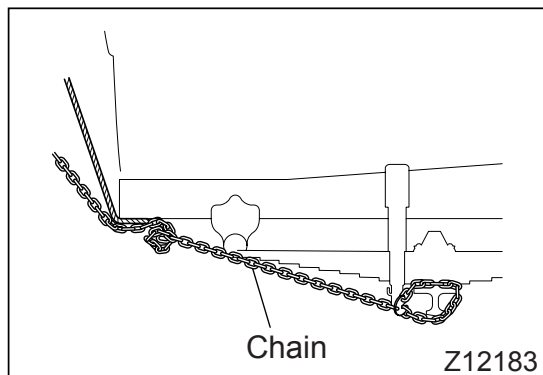
If you are forced to tow the vehicle, take the following precautions:

- Disconnect either the propeller shaft or the rear axle shaft, whichever is easier. If you disconnect the rear axle shaft, cover the opening to prevent oil and grease from escaping.


! CAUTION

Before towing an automatic transmission vehicle, disconnect the propeller shaft or rear axle shaft. Alternatively, tow the vehicle with its rear wheels off the ground. Towing the vehicle without taking these precautions would damage the automatic transmission.

- Before raising the front wheels for towing, remove the bumper and air scoop to prevent them from damaging.
- Attach the towing chain securely to the front axle.



 **CAUTION**

- Do not attach the chain to the bumper since the bumper would be damaged upon raising the front wheels or towing.
- Before raising the front wheels or towing, confirm that the chain will not damage any parts of the vehicle. Remove the parts that may be damaged.
- Tow the vehicle only with a specially designed towing truck.
- If you disconnect the rear axle shaft to tow the vehicle, the axle housing gear oil may be depleted. Check the axle housing gear oil and add more if necessary. →  P. 12-32

14. Service data

Recommended lubricants/hydraulic fluids and quantities 14-2
Service data 14-4

Recommended lubricants/hydraulic fluids and quantities

1 Quantities of lubricants/hydraulic fluids

Units: liters (qts)

Item		Quantity	
Engine	Oil pan	Approx. 11 (11.6)	
	Oil filter	Approx. 2.3 (2.4)	
Manual transmission	Other than FM65F	Approx. 6.7 (7.1)	Add approx. 0.5 (0.5) if vehicle has PTO
	FM65F	Approx. 8.1 (8.6)	
Automatic transmission	Other than FM65F	1000RDS	Approx. 7.0 (7.4)
		2200RDS	Approx. 10.0 (10.6)
	FM65F	3000RDS	Approx. 18.0 (19.0)
Rear axle housing	Other than FM65F		Approx. 6.5 (6.9)
	FM65F		Approx. 10.0 (10.6)
Power steering			As required
Brake/clutch fluid			As required

NOTE:

For more details including oil viscosity, see the "Recommended lubricants/hydraulic fluids" table.

⚠ CAUTION

The indicated oil and fluid quantities should be used only as a guide at the time of replacement. To ensure correct oil and fluid levels, use the oil level gauge, inspection plug holes, and level lines as appropriate.

2 Recommended lubricants/hydraulic fluids

Be sure to use the specified lubricants.

Parts	Category	Classification	Viscosity	
			Atmospheric temperature	SAE viscosity number
Engine	Engine oil	API CJ-4	Below 0°C (32°F)	10W-30
			Above -15°C (5°F)	15W-40
			Above 30°C (86°F)	40
Manual transmission	Gear oil	API GL-3	General	80
			Warm region	90
		API GL-4	Tropical region	90
	Engine oil	API CC or CC/SF	Long period of high-speed driving	30 or 40
Automatic transmission	Automatic transmission fluid	DEXRON III	-	-
Rear axel	Gear oil	API GL-5	Below 40°C (104°F)	90
			Above 40°C (104°F) Use oil conforming to GL-5, SAE140 or SAE85W-140 if the vehicle is to be driven under heavy load conditions as for example driving up long uphill grades. Remember, however, that this oil is be used only when the temperature is above 10°C (50°F)	140 or 85W-140
Power steering	Automatic transmission fluid	DEXRON II, DEXRON III type	-	-
Brake, Clutch	Brake fluid	SAE J1703, FMVSS No. 116 (Grade DOT3)	-	-
Chassis grease fittings	Chassis grease	NLGI No. 1 (Li soap) Consistency 310 to 340 (at 25°C or 77°F) Dropping point 130°C (266°F) or higher	-	-
Cab rear mount cushion				
Door hinge				
Kingpin, steering shaft, wheel hub bearing, propeller shaft, clutch fork shaft, clutch shifter	Wheel bearing grease (Multipurpose type grease)	NLGI No. 2 (Li soap) Consistency 265 to 295 (at 25°C or 77°F) Dropping point 185°C (365°F) or higher	-	-

Service data

Description			Standard value
Engine idling speed			600 rpm
Belt tension [amount of deflection under a 98 N (22 lbs., 10 kgf) pressure at the point midway between pulleys]	Fan belt		10 to 15 mm (0.39 to 0.59 in.)
	Air conditioner compressor belt		7 to 10 mm (0.28 to 0.39 in.)
Coolant quantity	Manual transmission vehicles		Approx. 25.5 liters (26.8 qts)
	Automatic transmission vehicles	FM65F	Approx. 28.5 liters (30.0 qts)
Other than FM65F			
Clutch pedal play <Manual transmission vehicles>			32 to 44 mm (1.26 to 1.73 in.)
Brake pedal play			10.0 to 15.5 mm (0.39 to 0.61 in.)
Air pressure buildup time [from 0 to 100 psi with the engine idling]	FK61F		Within 6 minutes
	Other than FK61F		Within 9 minutes
Parking brake lever stroke <FK61F> [when pulled with a 295 N (66 lbs., 30 kgf) force]			7 to 10 notches
Wheel nut tightening torque	FK61F		370 to 410 N·m (275 to 304 ft.lbs., 38 to 42 kgf·m)
	Other than FK61F		540 to 590 N·m (395 to 430 ft.lbs., 55 to 60 kgf·m)
Tire tread groove depth	Normal roads		1.6 mm (2/32 in.) minimum
	Freeways		3.2 mm (4/32 in.) minimum
Steering wheel play			10 to 40 mm (0.39 to 1.57 in.)
Standard tire inflation pressure	225/70R 19.5 <FK61F>	Front	660 kPa (95 psi, 6.75 kgf/cm ²)
		Rear	660 kPa (95 psi, 6.75 kgf/cm ²)
	10R 22.5 – 14 PR <FK62F, FK65F>	Front	790 kPa (115 psi, 8.20 kgf/cm ²)
		Rear	790 kPa (115 psi, 8.20 kgf/cm ²)
	11R 22.5 – 14 PR <FM>	Front	720 kPa (105 psi, 7.50 kgf/cm ²)
		Rear	720 kPa (105 psi, 7.50 kgf/cm ²)

15. Maintenance schedule

Maintenance schedule 15-2
Lubrication schedule 15-11

Regular maintenance is vital to maximizing your vehicle's performance, service life, and safety.

Following the maintenance schedule will give optimum results.

The preceding sections describe simple maintenance checks and procedures that can be carried out by the owner. If you have difficulty or your vehicle needs maintenance work that is not shown in this manual, please take the vehicle to an authorized dealer.

Symbols used

- I : Inspect, and correct or replace as necessary.
- A : Adjust.
- C : Clean.
- R : Replace or change.
- T : Tighten.
- L : Lubricate.
- : No inspection is necessary.

1 Maintenance schedule

For the replacement intervals of lubricants and fluids, see the section entitled "Lubrication schedule".

*1: 30,000 km/18,000 miles or 6 months, whichever occurs first

*2: 60,000 km/36,000 miles or 12 months, whichever occurs first

*3: FK61F, FK62F, FK65F

*4: FK62F, FK65F, FM65F

*5: FK65F

*6: FK61F

Ⓔ: Exhaust emission items

Ⓖ: Noise control items

Item	Time of inspection and maintenance					Working procedures	Ref. page
	Pre-operational checks	New vehicle at 4,000 km/ 2,500 miles	Inspection interval				
			Every 10,000 km/ 6,000 miles	Every 30,000 km/ 18,000 miles *1	Every 60,000 km/ 36,000 miles *2		
ENGINE							
Air, fuel, oil or coolant leaks from engine	I	•	I	•	•	Check engine for air, fuel, oil and coolant leaks.	—
ⒺⒼ Engine starting performance, speed, noise and exhaust gas conditions	•	•	I	•	•	Check for engine starting performance, idling speed, abnormal engine noise, black smoke or other abnormal exhaust gas during idling and acceleration. Check engine speed on tachometer.	—

Item	Time of inspection and maintenance					Working procedures	Ref. page
	Pre-operational checks	New vehicle at 4,000 km/ 2,500 miles	Inspection interval				
			Every 10,000 km/ 6,000 miles	Every 30,000 km/ 18,000 miles *1	Every 60,000 km/ 36,000 miles *2		
Retightening, inlet and exhaust manifold bolts	•	•	•	•	T	Retighten. Checking of the tightening torque is unnecessary.	–
Ⓔ Valve clearance	•	•	•	•	I	Check valve clearance with thickness gauge.	–
Ⓔ Oil filter replacement	•	•	Every 20,000 km/ 12,000 miles On new vehicle, also replace at the first 10,000 km/ 6,000 miles.			Replace element.	12-37
Ⓔ Fuel filter replacement	•	•	•	R	•	Replace element.	12-38
Ⓔ Draining water and sediment in fuel tank	•	•	Every 24 months			Remove fuel tank drain plug and remove water and sediment.	12-62
Retightening the fuel tank bracket bolts	•	•	T	•	•	Check the bolts for looseness and retighten to a torque of 69 to 93 Nm (51 to 68 lb.ft, 7.0 to 9.5 kgm).	–
Ⓔ Check fuel line outside the engine compartment	•	•	Every 24 months			Check fuel line outside the engine compartment. Replace if necessary.	–
ⒺⓃ Belt tension and damage	I	•	I	•	•	Press midpoint of belt firmly with finger to measure deflection and check for belt damage.	12-54
Coolant level and leaks from cooling system	I	•	•	•	•	Check coolant level and if level is low, check for coolant leaks.	12-47
Coolant replacement	•	•	Every 24 months			Replace with new coolant.	12-47
Radiator cap condition	•	•	I	•	•	Check radiator cap for sealing and mounting condition.	–
Ⓔ Cooling system hose clamp position and clamping condition.	•	•	I	•	•	Check clamp position and clamping condition of cooling system hose.	–
Ⓔ Turbocharger rotor play	•	•	Every 250,000 km/ 150,000 miles			Check rotor for excessive end play by using a dial indicator.	–

Item	Time of inspection and maintenance					Working procedures	Ref. page
	Pre-operational checks	New vehicle at 4,000 km/ 2,500 miles	Inspection interval				
			Every 10,000 km/ 6,000 miles	Every 30,000 km/ 18,000 miles *1	Every 60,000 km/ 36,000 miles *2		
ⒺⓃ Check the air cleaner element	•	•	I	•	•	Check the air cleaner case for dust accumulated inside.	12-41
ⒺⓃ Air cleaner element replacement	•	•	Every 80,000 km/ 48,000 miles or 12 months			Replace element.	12-41
ⒺⓃ Damage of air intake system, looseness of clamp and loss of parts	•	•	I	•	•	Check air intake system for damage and inspect all parts for installation.	–
ⒺⓃ Exhaust system	•	•	I	•	•	Check the exhaust system for damage, corrosion and loose connection causing leakage.	–
Ⓔ PCV (Positive Crankcase Ventilation) valve element replacement	•	•	R	•	•	Replace element.	12-44
Ⓔ DPF pressure sensor hose replacement	•	•	Every 24 months			Replace DPF pressure sensor hose.	–
Starter function	•	•	•	•	I	Operate starter switch and check the switch for proper function.	–
Alternator function	•	•	•	•	I	Check for function with a circuit tester.	–
Ⓔ DPF	•	•	Every 10,000 km/ 6,000 miles or 12 months			Check DPF for blocking.	–
			First 320,000 km/200,000 miles Every 240,000 km/150,000 miles thereafter			DPF Ash Cleaning	12-79
POWER TRAIN							
Air or oil leaks from power train	•	•	I	•	•	Check power train for air and oil leaks.	–
Clutch pedal play	•	•	I	•	•	Press clutch pedal lightly and check that its play is adequate.	12-60

Item	Time of inspection and maintenance					Working procedures	Ref. page
	Pre-operational checks	New vehicle at 4,000 km/ 2,500 miles	Inspection interval				
			Every 10,000 km/ 6,000 miles	Every 30,000 km/ 18,000 miles *1	Every 60,000 km/ 36,000 miles *2		
Clutch function	•	•		•	•	<ul style="list-style-type: none"> Press the clutch pedal to check for unusual noise or stiffness. Also check if gear engages quietly. Check that clutch does not slip and engages smoothly. 	12-60
Manual transmission gearshift control looseness	•	•	•		•	In neutral position, check gearshift lever for looseness. With gearshift lever in each gear position, check all gears engage smoothly without excessive looseness. Also check that control cable is not damaged.	–
Automatic transmission range selector linkage condition *3	•	•	•		•	Shifting to each position must be correct and secure.	–
Propeller shaft couplings and bearings looseness	•	T	T	•	•	Check flange yoke bolts and center bearing bolts for looseness.	–
		•		•	•	<ul style="list-style-type: none"> Turn propeller shaft manually to check for loose spline coupling. Check for looseness between spider and needle roller bearing. 	
FRONT AND REAR AXLES							
Axle shaft torsion and cracks	•	•	•	•		Remove axle shaft and check for torsion, bend, and cracks.	–
Front wheel hub bearing looseness	•	•	•		•	With front axle jacked up, move wheel up and down by holding tire's top and bottom to check for bearing looseness.	–
Rear wheel hub bearing damage	•	•	•	•		Disassemble rear wheel and check for hub bearing wear and damage.	–
Retightening wheel nuts	•	T	T	•	•	Check wheel nuts for looseness.	12-71
Disc wheel damage	•	•		•	•	Check disc wheel for corrosion, deformation and cracks.	–

Item	Time of inspection and maintenance					Working procedures	Ref. page
	Pre-operational checks	New vehicle at 4,000 km/ 2,500 miles	Inspection interval				
			Every 10,000 km/ 6,000 miles	Every 30,000 km/ 18,000 miles *1	Every 60,000 km/ 36,000 miles *2		
Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.	T	•	T	•	•	Measure inflation pressure with a tire pressure gauge.	12-63
	I	•	I	•	•	<ul style="list-style-type: none"> Check that tire tread groove is deep enough. Check tire tread and side walls for cracks, damage, uneven, ridgy, and other abnormal wear. 	12-63
Tire rotation	•	•	R	•	•	Rotate all tires.	12-73
SUSPENSION SYSTEM							
Looseness, play and damage of suspension system	•	•	•	I	•	Check suspension system for looseness, play and damage.	–
Damage and looseness of leaf springs	I	•	•	I	•	Check leaf springs for damage and looseness.	12-16
Retightening U-bolts	•	I	•	I	•	Check U-bolts for looseness.	–
Air leak and damage of air spring *5	•	•	I	•	•	Check air spring for air leak and damage of diaphragm. Check the air spring height.	–
Air spring diaphragm replacement *5	•	•	Every 36 months			Check diaphragm and replace if necessary.	–
Oil leaks and damage of shock absorbers	•	•	•	I	•	Check for oil leaks from and damage of cylinders and other parts.	–
BRAKING SYSTEM							
Air pressure and its charging speed	I	•	•	•	•	After discharging air from air tank, start and run the engine at idle and measure time taken to charge air to specified pressure in air tank.	12-58
Air and fluid leaks from braking system	•	•	I	•	•	Check braking system for air and fluid leaks.	–
Looseness, play and damage of braking system parts	•	•	I	•	•	Check braking system parts for looseness, play and damage.	–
Condensation in air tank	I	•	•	•	•	Open drain cock, and check for presence of condensation in air tank.	12-62

Item	Time of inspection and maintenance					Working procedures	Ref. page
	Pre-operational checks	New vehicle at 4,000 km/ 2,500 miles	Inspection interval				
			Every 10,000 km/ 6,000 miles	Every 30,000 km/ 18,000 miles *1	Every 60,000 km/ 36,000 miles *2		
Operation of brake pedal	•	•		•	•	Depress the brake pedal and release it, checking for the sound of air being released from the brake valve and to ensure that the pedal returns normally without catching. Press the brake pedal with a finger to the point where resistance is felt and measure the distance (play) over which the pedal has moved.	12-57
Foot brake effectiveness		•		•	•	While driving the vehicle at low speed, check braking effect and check for uneven braking.	12-57
Operation of exhaust brake		•		•	•	Check for exhaust brake operation.	–
Exhaust brake control cylinder packing replacement	•	•	Every 12 months			Check exhaust brake control cylinder packing, replace if necessary.	–
Operation of air drier	•	•		•	•	Open drain cock of air tank and make sure there is no drainage.	12-61
Check drain from air drier exhaust port	•	•		•	•	Check to see that oil is not discharged abnormally from exhaust port of air drier.	12-61
Replacement of drying agent in air drier	•	•	Every 60,000 km/ 36,000 miles or 12 months			Disassemble air drier and replace drying agent and rubber parts.	12-61
Brake shoe clearance	•	•	•	A	•	Measure clearance with thickness gauge.	–
Brake lining wear	•	•	•		•	Check for lining wear.	–
Brake drum wear	•	•	•	•		Disassemble and check drum for wear, cracks and damage.	–
Parking brake effectiveness	•	•		•	•	On a slope, check that vehicle can be held stationary.	12-59
Parking brake operation *4		•		•	•	<ul style="list-style-type: none"> • Check for operation of parking brake control valve. • Check operation when brake line air pressure is reduced. 	12-59

Item	Time of inspection and maintenance					Working procedures	Ref. page
	Pre-operational checks	New vehicle at 4,000 km/ 2,500 miles	Inspection interval				
			Every 10,000 km/ 6,000 miles	Every 30,000 km/ 18,000 miles *1	Every 60,000 km/ 36,000 miles *2		
Parking brake lever stroke *6		•		•	•	With lever full pulled, check that lever is locked completely and that there is allowance in pulling stroke.	12-59
Parking brake drum and lining wear *6	•	•	•	•		Disassemble and check drum for wear, cracks and damage and lining for wear.	—
Damage on boot of brake chamber expander *4	•	•	•	•		Check boot at expander for damage.	—
Wheel cylinder piston cup and dust seal replacement *6	•	•	Every 12 months			Check wheel cylinder piston cup and dust seal; replace if necessary.	—
Brake booster packing, cup and rubber parts replacement *6	•	•	Every 12 months			Check brake booster packing, cup and rubber parts; replace if necessary.	—
Brake hose replacement	•	•	Every 12 months			Check brake hose; replace if necessary.	—
Check valve packing and rubber parts replacement	•	•	Every 12 months			Check check valve packing and rubber parts; replace if necessary.	—
Brake valve packing and rubber parts replacement	•	•	Every 12 months			Check brake valve packing and rubber parts; replace if necessary.	—
Air compressor to air drier hose replacement	•	•	Every 12 months			Replace the hose connecting the air compressor to the air drier.	—
Brake booster power cylinder packing replacement *6	•	•	Every 24 months			Replace brake booster power cylinder packing.	—
Brake fluid reservoir tank tube replacement *6	•	•	Every 24 months			Check and replace brake fluid reservoir tank tube.	—
Brake chamber packing and rubber parts replacement *4	•	•	Every 24 months			Replace brake chamber packing and rubber parts.	—

Item	Time of inspection and maintenance					Working procedures	Ref. page
	Pre-operational checks	New vehicle at 4,000 km/ 2,500 miles	Inspection interval				
			Every 10,000 km/ 6,000 miles	Every 30,000 km/ 18,000 miles *1	Every 60,000 km/ 36,000 miles *2		
Replacement of rubber parts at brake chamber's wheel parking brake spring and expander *4	•	•	Every 36 months			Replace rubber parts at brake chamber's wheel parking brake spring and expander.	–
STEERING SYSTEM							
Fluid leaks from steering system	•	•		•	•	Check steering system for fluid leaks.	–
Steering wheel play		•		•	•	Turn steering wheel right and left to measure play at steering wheel rim. Measure while engine is running.	12-55
Steering operating condition		•		•	•	Check steering wheel to see if it vibrates, pulls to one side or requires unusual steering effort.	12-55
Looseness and play of steering system (including hoses and pipes)	•	•		•	•	<ul style="list-style-type: none"> • Check steering system for looseness and play. • Check power steering hoses and pipes for looseness. 	–
Wheel alignment	•	•	•	•		Measure toe-in, camber, caster and kingpin inclination angles.	–
Right and left turning angles and power steering function	•	•	•	•		<ul style="list-style-type: none"> • Check that stopper bolt is sufficiently tight without damage and that steering linkage operates smoothly until blocked by stopper bolt. • Check that steering wheel does not contact other parts. 	–
Power steering booster and oil pump internal rubber parts replacement	•	•	Every 48 months			Replace internal rubber parts.	–
Power steering hose replacement	•	•	Every 48 months			Replace power steering hose.	–
Drag link ball joint dust boots	•	•		•	•	Check the ball joint dust boots for cracks and wear.	–

Item	Time of inspection and maintenance					Working procedures	Ref. page
	Pre-operational checks	New vehicle at 4,000 km/ 2,500 miles	Inspection interval				
			Every 10,000 km/ 6,000 miles	Every 30,000 km/ 18,000 miles *1	Every 60,000 km/ 36,000 miles *2		
CAB AND FRAME							
Looseness and damage of chassis and body	•	•		•	•	<ul style="list-style-type: none"> • Check frame, crossmembers and other parts for cracks and damage and check for loose rivets. • Also, check for body damage and loose mounting bolts. 	–
Heater and defroster operation	•	•		•	•	Check operation and installation of defroster.	–
Condition of rearview mirrors and reflectors		•	•	•	•	Check reflecting condition, stains and damage.	12-14
Door lock function	•	•		•	•	Check door lock mechanism for proper functioning.	–
Seat belt mounting condition	•	•		•	•	Check seat belt for damage, buckle and retracting function and mounting condition.	–
ELECTRICAL SYSTEM							
Looseness and damage of electrical wiring and connections	•	•		•	•	Check wiring, connectors and battery terminals for looseness and corrosion.	–
Battery electrolyte level and specific gravity	•	•	Every 20,000 km/ 12,000 miles			<ul style="list-style-type: none"> • Check electrolyte level. • Measure electrolyte specific gravity with hydrometer. 	12-76
Operation and damage of lighting system and turn signal lamps		•		•	•	Check operation, damage and installation of an lighting units. Also check turn signal lamps operated by turn signal switch.	12-13
Operation of horn		•		•	•	Check operation, damage and mounting condition.	12-15
Operation and fluid level of windshield wiper and washer		•		•	•	Check operation, damage and mounting condition. Check fluid level in washer tank.	5-27, 12-13
Gauge and warning/indicator lamp function		•		•	•	Check function of gauges and warning/indicator lamps.	12-14
Switch function	•	•	•	•		Check operation, damage and installation of every switch.	–
Battery		•	•	•	•	Check the battery fluid level.	12-78

Item	Time of inspection and maintenance					Working procedures	Ref. page
	Pre-operational checks	New vehicle at 4,000 km/ 2,500 miles	Inspection interval				
			Every 10,000 km/ 6,000 miles	Every 30,000 km/ 18,000 miles *1	Every 60,000 km/ 36,000 miles *2		
OTHERS							
Road test of vehicle	•	•		•	•	Drive the vehicle to check for vehicle general operating condition.	–

2 Lubrication schedule

*1: 30,000 km/18,000 miles or 6 months, whichever occurs first

*2: 60,000 km/36,000 miles or 12 months, whichever occurs first

*3: FK61F

Ⓔ: Exhaust emission items

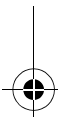
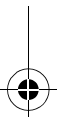
Item	Time of inspection and maintenance					Ref. page
	Pre-operational checks	New vehicle at 4,000 km/ 2,500 miles	Inspection interval			
			Every 10,000 km/ 6,000 miles	Every 30,000 km/ 18,000 miles *1	Every 60,000 km/ 36,000 miles *2	
Ⓔ Engine oil contamination and oil level		•	•	•	•	12-24
Ⓔ Engine oil replacement	•	R	R	•	•	
Clutch reservoir tank fluid level		•		•	•	12-33
Clutch reservoir tank fluid replacement	•	•	•	•	R	–
Lubrication of clutch fork shaft	•	•	•	L	•	12-18
Manual transmission oil level	•	•		•	•	12-28
Manual transmission oil replacement	•	R	Every 50,000 km/ 30,000 miles			

Item	Time of inspection and maintenance					Ref. page
	Pre-operational checks	New vehicle at 4,000 km/ 2,500 miles	Inspection interval			
			Every 10,000 km/ 6,000 miles	Every 30,000 km/ 18,000 miles *1	Every 60,000 km/ 36,000 miles *2	
Automatic transmission fluid level	•	•	I	•	•	12-30
Automatic transmission fluid replacement (Filter should also be replaced.)	•	•	Other than FM65F: Every 80,000 km (48,000 miles) FM65F: Every 40,000 km (24,000 miles)			
			At initial 8,000 km (5,000 miles), only the fluid filter should be replaced. On FM65F, only the main filter should be replaced. (Do not replace the lub. filter.)			
Axle housing gear oil level	•	•	I	•	•	12-32
Axle housing gear oil replacement	•	R	•	•	R	
Hub bearing grease and oil seal replacement	•	•	•	•	R	–
Brake reservoir tank fluid level *3	I	•	I	•	•	12-33
Brake reservoir tank fluid replacement *3	•	•	•	•	R	–
Power steering fluid level	•	•	I	•	•	12-36
Power steering fluid replacement	•	•	•	•	R	–
Lubrication of propeller shaft (universal joint, slip joint, center bearing)	•	•	L	•	•	12-18
Lubrication of cab rear mount cushion	•	•	•	L	•	12-23
Lubrication of king pins	•	•	L	•	•	12-18
Lubrication of chassis parts	•	•	L	•	•	

16. Alphabetical index

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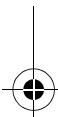
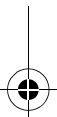
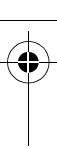
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17. MAINTENANCE RECORD

NOTE:

The symbols (E) and (N) prefixed to some check items stand for Exhaust Emission Control item and Noise Control item respectively.



**4,000 km / 2,500 miles
SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

**4,000 km / 2,500 miles
SERVICE OPERATIONS**

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- Ⓔ Engine oil replacement
- Manual transmission oil replacement
- Axle housing gear oil replacement

Inspection and maintenance

Power train

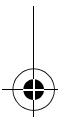
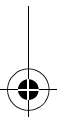
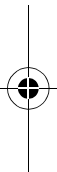
- Propeller shaft flange yoke bolts and center bearing bolts looseness

Front and rear axle

- Retightening wheel nuts

Suspension system

- Retightening U-bolts



**10,000 km / 6,000 miles
SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

**10,000 km / 6,000 miles
SERVICE OPERATIONS**

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Manual transmission oil level
- Automatic transmission filter replacement
[Replace at initial 8,000 km (5,000 miles). On FM65F, do not replace the lub. filter.]
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

20,000 km / 12,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

20,000 km / 12,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Oil filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

30,000 km / 18,000 miles
or 6 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

30,000 km / 18,000 miles
or 6 months

SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Lubrication of clutch fork shaft
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of cab rear mounting pads
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Fuel filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Manual transmission gearshift control looseness
- Automatic transmission range selector linkage condition
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Front wheel hub bearing looseness
- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Looseness, play and damage of suspension system
- Damage and looseness of leaf springs
- Retightening U-bolts
- Air leak and damage of air spring
- Oil leaks and damage of shock absorbers

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Brake shoe clearance
- Brake lining wear
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

40,000 km / 24,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

40,000 km / 24,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Manual transmission oil level
- Automatic transmission fluid and filter replacement <FM65>
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft (universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Oil filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

50,000 km / 30,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

50,000 km / 30,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Manual transmission oil replacement
- Automatic transmission fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

60,000 km / 36,000 miles
or 12 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

60,000 km / 36,000 miles
or 12 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid replacement
- Lubrication of clutch fork shaft
- Transmission oil/fluid level
- Axle housing gear oil replacement
- Hub bearing grease and oil seal replacement
- Brake reservoir tank fluid replacement
- Power steering fluid replacement
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of cab rear mounting pads
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening intake and exhaust manifold bolts
- (E) Valve clearance
- (E) Oil filter replacement
- (E) Fuel filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)
- Starter function
- Alternator function

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Manual transmission gearshift control looseness
- Automatic transmission range selector linkage condition
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Axle shaft torsion and cracks
- Front wheel hub bearing looseness
- Rear wheel hub bearing damage
- Retightening wheel nuts

- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Looseness, play and damage of suspension system
- Damage and looseness of leaf springs
- Retightening U-bolts
- Air leak and damage of air spring
- Oil leaks and damage of shock absorbers

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Exhaust brake control cylinder packing replacement
- Replacement of drying agent in air drier (or 12 months)
- Brake shoe clearance
- Brake lining wear
- Brake drum wear
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke
- Parking brake drum and lining wear
- Damage on boot of brake chamber expander
- Wheel cylinder piston cup and dust seal replacement
- Air compressor to air drier hose replacement
- Brake booster packing, cup and rubber parts replacement
- Brake hose replacement
- Check valve packing and rubber parts replacement
- Brake valve packing and rubber parts replacement

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots
- Wheel alignment
- Right and left turning angles and power steering function

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function
- Switch function

Others

- Road test of vehicle

70,000 km / 42,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

70,000 km / 42,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

80,000 km / 48,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

80,000 km / 48,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Manual transmission oil level
- Automatic transmission fluid and filter replacement
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft (universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Oil filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Air cleaner element replacement (or 12 months)
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function

- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

90,000 km / 54,000 miles
or 18 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

90,000 km / 54,000 miles
or 18 months

SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Lubrication of clutch fork shaft
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of cab rear mounting pads
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Fuel filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Manual transmission gearshift control looseness
- Automatic transmission range selector linkage condition
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Front wheel hub bearing looseness
- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Looseness, play and damage of suspension system
- Damage and looseness of leaf springs
- Retightening U-bolts
- Air leak and damage of air spring
- Oil leaks and damage of shock absorbers

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Brake shoe clearance
- Brake lining wear
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system
(including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

**100,000 km / 60,000 miles
SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

**100,000 km / 60,000 miles
SERVICE OPERATIONS**

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Manual transmission oil replacement
- Automatic transmission fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Oil filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

110,000 km / 66,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

110,000 km / 66,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage

- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

120,000 km / 72,000 miles
or 24 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

120,000 km / 72,000 miles
or 24 months

SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid replacement
- Lubrication of clutch fork shaft
- Manual transmission oil level
- Automatic transmission fluid and filter replacement <FM65F>
- Axle housing gear oil replacement
- Hub bearing grease and oil seal replacement
- Brake reservoir tank fluid replacement
- Power steering fluid replacement
- Lubrication of propeller shaft (universal joint, slip joint, center bearing)
- Lubrication of cab rear mounting pads
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening intake and exhaust manifold bolts
- (E) Valve clearance
- (E) Oil filter replacement
- (E) Fuel filter replacement
- (E) Draining water and sediment in fuel tank
- Retightening the fuel tank bracket bolts
- (E) Check fuel line outside the engine compartment
- (E)(N) Belt tension and damage
- Coolant replacement (Every 24 months)
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) DPF pressure sensor hose replacement (Every 24 months)
- (E) Check DPF for blocking (or 12 months)
- Starter function
- Alternator function

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Manual transmission gearshift control looseness
- Automatic transmission range selector linkage condition
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Axle shaft torsion and cracks
- Front wheel hub bearing looseness
- Rear wheel hub bearing damage
- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Looseness, play and damage of suspension system
- Damage and looseness of leaf springs
- Retightening U-bolts
- Air leak and damage of air spring
- Oil leaks and damage of shock absorbers

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Exhaust brake control cylinder packing replacement
- Replacement of drying agent in air drier (or 12 months)
- Brake shoe clearance
- Brake lining wear
- Brake drum wear
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke
- Parking brake drum and lining wear
- Damage on boot of brake chamber expander
- Wheel cylinder piston cup and dust seal replacement
- Brake booster packing, cup and rubber parts replacement
- Brake hose replacement
- Check valve packing and rubber parts replacement
- Brake valve packing and rubber parts replacement
- Air compressor to air drier hose replacement
- Brake booster power cylinder packing replacement
- Brake fluid reservoir tank tube replacement
- Brake chamber's packing and rubber parts replacement

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots
- Wheel alignment
- Right and left turning angles and power steering function
- Power steering booster and oil pump internal rubber parts replacement
- Power steering hose replacement

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function
- Switch function

Others

- Road test of vehicle

130,000 km / 78,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

130,000 km / 78,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage

- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

140,000 km / 84,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

140,000 km / 84,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Oil filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

150,000 km / 90,000 miles
or 30 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

150,000 km / 90,000 miles
or 30 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Lubrication of clutch fork shaft
- Manual transmission oil replacement
- Automatic transmission fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of cab rear mounting pads
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Fuel filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Manual transmission gearshift control looseness
- Automatic transmission range selector linkage condition
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Front wheel hub bearing looseness
- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Looseness, play and damage of suspension system
- Damage and looseness of leaf springs
- Retightening U-bolts
- Air leak and damage of air spring
- Oil leaks and damage of shock absorbers

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Brake shoe clearance
- Brake lining wear
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

160,000 km / 96,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

160,000 km / 96,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- Ⓔ Engine oil replacement
- Clutch reservoir tank fluid level
- Manual transmission oil level
- Automatic transmission fluid and filter replacement
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- ⒺⓃ Engine starting performance, speed, noise and exhaust gas conditions
- Ⓔ Oil filter replacement
- Retightening the fuel tank bracket bolts
- ⒺⓃ Belt tension and damage
- Radiator cap condition
- Ⓔ Cooling system hose clamp position and clamping condition
- ⒺⓃ Air cleaner element replacement
(or 12 months)
- ⒺⓃ Damage of air intake system, looseness of clamp and loss of parts
- ⒺⓃ Exhaust system
- Ⓔ PCV valve element replacement
- Ⓔ Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function

- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

170,000 km / 102,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

170,000 km / 102,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage

- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

180,000 km / 108,000 miles
or 36 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

180,000 km / 108,000 miles
or 36 months

SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid replacement
- Lubrication of clutch fork shaft
- Transmission oil/fluid level
- Axle housing gear oil replacement
- Hub bearing grease and oil seal replacement
- Brake reservoir tank fluid replacement
- Power steering fluid replacement
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of cab rear mounting pads
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening of intake and exhaust manifold bolts
- (E) Valve clearance
- (E) Oil filter replacement
- (E) Fuel filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)
- Starter function
- Alternator function

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Manual transmission gearshift control looseness
- Automatic transmission range selector linkage condition
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Axle shaft torsion and cracks
- Front wheel hub bearing looseness
- Rear wheel hub bearing damage
- Retightening wheel nuts

- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Looseness, play and damage of suspension system
- Damage and looseness of leaf springs
- Retightening U-bolts
- Air leak and damage of air spring
- Air spring diaphragm replacement
- Oil leaks and damage of shock absorbers

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Exhaust brake control cylinder packing replacement
- Replacement of drying agent in air drier (or 12 months)
- Brake shoe clearance
- Brake lining wear
- Brake drum wear
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke
- Parking brake drum and lining wear
- Damage on boot of brake chamber expander
- Wheel cylinder piston cup and dust seal replacement
- Air compressor to air drier hose replacement
- Brake booster packing, cup and rubber parts replacement
- Brake hose replacement
- Check valve packing and rubber parts replacement
- Brake valve packing and rubber parts replacement
- Replacement of rubber parts at brake chamber's wheel parking brake spring and expander

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots
- Wheel alignment
- Right and left turning angles and power steering function

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function
- Switch function

Others

- Road test of vehicle

190,000 km / 114,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

190,000 km / 114,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage

- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

200,000 km / 120,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

200,000 km / 120,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Manual transmission oil replacement
- Automatic transmission fluid and filter replacement <FM65F>
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft (universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Oil filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

210,000 km / 126,000 miles
or 42 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

210,000 km / 126,000 miles
or 42 months

SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Lubrication of clutch fork shaft
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of cab rear mounting pads
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Fuel filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Manual transmission gearshift control looseness
- Automatic transmission range selector linkage condition
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Front wheel hub bearing looseness
- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Looseness, play and damage of suspension system
- Damage and looseness of leaf springs
- Retightening U-bolts
- Air leak and damage of air spring
- Oil leaks and damage of shock absorbers

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Brake shoe clearance
- Brake lining wear
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

220,000 km / 132,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

220,000 km / 132,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Oil filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

230,000 km / 138,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

230,000 km / 138,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage

- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

240,000 km / 144,000 miles
or 48 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

240,000 km / 144,000 miles
or 48 months

SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid replacement
- Lubrication of clutch fork shaft
- Manual transmission oil level
- Automatic transmission fluid and filter replacement
- Axle housing gear oil replacement
- Hub bearing grease and oil seal replacement
- Brake reservoir tank fluid replacement
- Power steering fluid replacement
- Lubrication of propeller shaft (universal joint, slip joint, center bearing)
- Lubrication of cab rear mounting pads
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening intake and exhaust manifold bolts
- (E) Valve clearance
- (E) Oil filter replacement
- (E) Fuel filter replacement
- (E) Draining water and sediment in fuel tank
- Retightening the fuel tank bracket bolts
- (E) Check fuel line outside the engine compartment
- (E)(N) Belt tension and damage
- Coolant replacement (Every 24 months)
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Air cleaner element replacement (or 12 months)
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) DPF pressure sensor hose replacement (Every 24 months)
- (E) Check DPF for blocking (or 12 months)
- Starter function
- Alternator function

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Manual transmission gearshift control looseness
- Automatic transmission range selector linkage condition
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Axle shaft torsion and cracks
- Front wheel hub bearing looseness
- Rear wheel hub bearing damage
- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Looseness, play and damage of suspension system
- Damage and looseness of leaf springs
- Retightening U-bolts
- Air leak and damage of air spring
- Oil leaks and damage of shock absorbers

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Exhaust brake control cylinder packing replacement
- Replacement of drying agent in air drier (or 12 months)
- Brake shoe clearance
- Brake lining wear
- Brake drum wear
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke
- Parking brake drum and lining wear
- Damage on boot of brake chamber expander
- Wheel cylinder piston cup and dust seal replacement
- Brake booster packing, cup and rubber parts replacement
- Brake hose replacement
- Check valve packing and rubber parts replacement
- Brake valve packing and rubber parts replacement
- Air compressor to air drier hose replacement
- Brake booster power cylinder packing replacement
- Brake fluid reservoir tank tube replacement
- Brake chamber's packing and rubber parts replacement

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots
- Wheel alignment
- Right and left turning angles and power steering function
- Power steering booster and oil pump internal rubber parts replacement
- Power steering hose replacement

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function
- Switch function

Others

- Road test of vehicle

250,000 km / 150,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

250,000 km / 150,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Manual transmission oil replacement
- Automatic transmission fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E) Turbocharger rotor play
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

260,000 km / 156,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

260,000 km / 156,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Oil filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

270,000 km / 162,000 miles
or 54 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

270,000 km / 162,000 miles
or 54 months

SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- Ⓔ Engine oil replacement
- Clutch reservoir tank fluid level
- Lubrication of clutch fork shaft
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of cab rear mounting pads
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- ⒺⓃ Engine starting performance, speed, noise and exhaust gas conditions
- Ⓔ Fuel filter replacement
- Retightening the fuel tank bracket bolts
- ⒺⓃ Belt tension and damage
- Radiator cap condition
- Ⓔ Cooling system hose clamp position and clamping condition
- ⒺⓃ Check the air cleaner element
- ⒺⓃ Damage of air intake system, looseness of clamp and loss of parts
- ⒺⓃ Exhaust system
- Ⓔ PCV valve element replacement
- Ⓔ Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Manual transmission gearshift control looseness
- Automatic transmission range selector linkage condition
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Front wheel hub bearing looseness
- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Looseness, play and damage of suspension system
- Damage and loose installation of leaf springs
- Retightening U-bolts
- Air leak and damage of air spring
- Oil leaks and damage of shock absorbers

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Brake shoe clearance
- Brake lining wear
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

280,000 km / 168,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

280,000 km / 168,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Manual transmission oil level
- Automatic transmission fluid and filter replacement <FM65F>
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft (universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Oil filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

290,000 km / 174,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

290,000 km / 174,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage

- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

300,000 km / 180,000 miles
or 60 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

300,000 km / 180,000 miles
or 60 months

SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid replacement
- Lubrication of clutch fork shaft
- Manual transmission oil replacement
- Automatic transmission fluid level
- Axle housing gear oil replacement
- Hub bearing grease and oil seal replacement
- Brake reservoir tank fluid replacement
- Power steering fluid replacement
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of cab rear mounting pads
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening intake and exhaust manifold bolts
- (E) Valve clearance
- (E) Oil filter replacement
- (E) Fuel filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)
- Starter function
- Alternator function

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Manual transmission gearshift control looseness
- Automatic transmission range selector linkage condition
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Axle shaft torsion and cracks
- Front wheel hub bearing looseness
- Rear wheel hub bearing damage
- Retightening wheel nuts
- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Looseness, play and damage of suspension system
- Damage and looseness of leaf springs
- Retightening U-bolts
- Air leak and damage of air spring
- Oil leaks and damage of shock absorbers

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Exhaust brake control cylinder packing replacement
- Replacement of drying agent in air drier (or 12 months)
- Brake shoe clearance
- Brake lining wear
- Brake drum wear
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke
- Parking brake drum and lining wear
- Damage on boot of brake chamber expander
- Wheel cylinder piston cup and dust seal replacement
- Air compressor to air drier hose replacement
- Brake booster packing, cup and rubber parts replacement
- Brake hose replacement
- Check valve packing and rubber parts replacement
- Brake valve packing and rubber parts replacement

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots
- Wheel alignment
- Right and left turning angles and power steering function

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function
- Switch function

Others

- Road test of vehicle

310,000 km / 186,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

310,000 km / 186,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Check the air cleaner element
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Front wheel hub bearing looseness
- Retightening wheel nuts

- Disc wheel damage
- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle

320,000 km / 192,000 miles
SERVICE OPERATIONS

Owner's name: _____

Date: _____

Address: _____

Total mileage: _____

Servicing dealer's name: _____

Address: _____

Signature: _____

320,000 km / 192,000 miles
SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

Lubrication

- (E) Engine oil replacement
- Clutch reservoir tank fluid level
- Transmission oil/fluid level
- Automatic transmission fluid and filter replacement
- Axle housing gear oil level
- Brake reservoir tank fluid level
- Power steering fluid level
- Lubrication of propeller shaft
(universal joint, slip joint, center bearing)
- Lubrication of king pins
- Lubrication of chassis parts

Inspection and maintenance

Engine

- Air, fuel, oil or coolant leaks from engine
- (E)(N) Engine starting performance, speed, noise and exhaust gas conditions
- (E) Oil filter replacement
- Retightening the fuel tank bracket bolts
- (E)(N) Belt tension and damage
- Radiator cap condition
- (E) Cooling system hose clamp position and clamping condition
- (E)(N) Air cleaner element replacement
(or 12 months)
- (E)(N) Damage of air intake system, looseness of clamp and loss of parts
- (E)(N) Exhaust system
- (E) PCV valve element replacement
- (E) Check DPF for blocking (or 12 months)
- (E) DPF Ash cleaning (first 320,000 km/200,000 miles. Every 240,000 km/150,000 miles thereafter)

Power train

- Air or oil leaks from power train
- Clutch pedal play
- Clutch function
- Propeller shaft couplings and bearings looseness

Front and rear axles

- Retightening wheel nuts
- Disc wheel damage

- Tire inflation pressure, cracking, tread groove depth, abnormal wear, etc.
- Tire rotation

Suspension system

- Air leak and damage of air spring

Braking system

- Air and fluid leaks from braking system
- Looseness, play and damage of braking system parts
- Operation of brake pedal
- Foot brake effectiveness
- Operation of exhaust brake
- Operation of air drier
- Check drain from air drier exhaust port
- Parking brake operation
- Parking brake effectiveness
- Parking brake lever stroke

Steering system

- Fluid leaks from steering system
- Steering wheel play
- Steering operating condition
- Looseness and play of steering system (including hoses and pipes)
- Drag link ball joint dust boots

Cab and frame

- Looseness and damage of chassis and body
- Heater and defroster operation
- Door lock function
- Seat belt mounting condition

Electrical system

- Looseness and damage of electrical wiring and connections
- Battery electrolyte level and specific gravity
- Operation and damage of lighting system
- Operation of horn and turn signal lamps
- Operation and fluid level of windshield wiper and washer
- Gauge and warning/indicator lamp function

Others

- Road test of vehicle