



JH6 Overseas Truck

Operating Instruction

V2.0



FAW Jiefang Qingdao Automobile Co., Ltd.

Foreword

Welcome to use Jiefang JH6 overseas series truck

JH6, as a Jiefang upgrade product, adopts CA6DH1, CA6DL1, CA6DL2, CA6DL3, CA6DM2, CA6DM3, WP9, WP10, WP10H, WP10.5H, WP12, WP13 series engines; 8JS, IOTA, 12TA, C12JSD, C16JSD, ZF, Eaton, Allison series transmission; 435, 457, 498, LB hub reduction axle, 300 cast steel/cast bridge, 2.668, 3.083, 4.111, 4.444, 5.263, 5.921, 6.733 speed ratio; 0430 clutch; drum (disc) brake, comes standard with ABS, automatic adjusting arm, traveling data recorder with Beidou system; cab with flat and convex floor.

The three assemblies of engine, transmission and axle are optional in long oil change interval, which can save your maintenance cost and extend the maintenance period. Before you use the vehicle, please read this chapter carefully so that you can operate it proficiently and use it safely. For other parts, please refer to other chapters of this manual.

After you receive the new vehicle, please take the time to read carefully the Operating Instruction that comes with your vehicle. It can help you get acquainted with the vehicle as soon as possible and guide you to use it correctly. Please take good care of your vehicle, it will carry you across the country and serve you.

The illustrations of the vehicles in this manual may not completely match the model you purchased due to the large number of models and are only representative examples. The company reserves the right to modify the shape, configuration and technical characteristic of the vehicle at any time. Therefore, we will not accept any claims against the data, illustrations or text in this manual. All content of this manual is up to date at the time of printing. If there is any change, it will be revised in the second edition. And if there is any discrepancy between the manual and the product, please contact us in time, and we will serve you wholeheartedly.

Wish you happiness in driving.

December 2020

TABLE OF CONTENTS

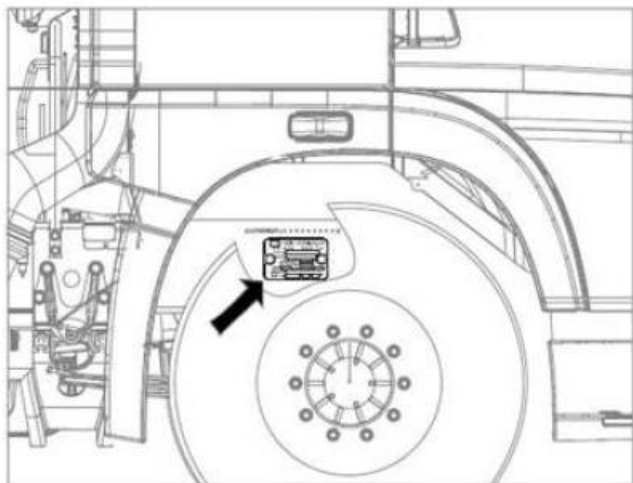
Instructions to Driver	1	Transmission shift lever (16-speed)	53
Nameplate and Vehicle Identification Number	1	Transmission shift lever (12-speed)	55
Engine nameplate and cylinder block number	2	Transmission shift lever(10-speed)	56
Vehicle inspection	6	Transmission shift lever (AMT)	57
New vehicle inspection	7	Steering wheel lock lever	59
New vehicle running-in	8	Parking brake valve (referred to as hand valve)	59
Safety Instructions	9	Brake valve of trailer	60
Correct Operations	10	Opening and closing the door	61
Meter/gauge and warning lights	10	Opening and closing the door	61
Switch, button, lever	29	Window regulator	62
Remote key	29	Seat and seat belt in the cab	63
Manual main power switch	30	Driver seat	63
Ignition switch	30	Vehicle Information Terminal and Traveling Data Recorder	68
Combination switch	31	TripREC	71
Cruise switch	38	Air conditioner (optional)	72
Multi-functional steering wheel switch (high configuration)	40	Ventilation of cab	72
Function switch	43	Use of air conditioner (heating, cooling)(optional 1)	73
24V power socket	45	Use of air conditioner (heating, cooling)(optional 2)	76
220V power socket (high configuration)	45	Independent air conditioner (for the south region)	79
Description of ECAS function switch	46	Air conditioning condenser cleaning method	80
ECAS remote control	46	Cab tilting mechanism	81
Use of ECAS functions	47	Cab tilting mechanism (for tractor, van)	81
Battery cover	49	Mini kitchen (glove box assembly)	87
Berth light switch	50	Function introduction	87
Independent heater switch (optional)	51	Recommended household supplies	88
OBD diagnostic connector	51	Use of household supplies	88
Spark extinguisher switch (dangerous chemical)	52	Body accessories	90
Cigarette lighter	52	Exterior, rear bottom-view mirror	90
Ashtray	52	Exterior rear-view mirror(electric)	90

Cowl outer panel	90	First maintenance items	110
Sun visor	91	Regular maintenance items	111
Hydraulic cylinder access hole	91	Simple inspection and maintenance	115
Correct driving	92	Air filter	115
Conventional starting of engine	92	Twin fuel filter	118
Engine cold start	92	Single fuel filter	119
Winter driving	93	Fuel fine filter	120
Vehicle driving	93	Compressed air filter	120
Driving on a slope	93	Rotary oil filter	121
Vehicle driving	94	Fan clutch	122
ECO driving	94	Exhaust SCR	122
Driving on a slope	94	Use and maintenance of SCR system	123
Braking method	95	Electronically-controlled silicon oil fan clutch	124
Vehicle driving	95	Inspection and adjustment of V-belt	125
Economical driving	96	Precautions for Use of Electronic Control System ...	125
Spare Tire	97	Clutch	126
Use of spare tire up-down regulator	97	Maintenance of CONMET hub	127
Layout and position of spare tire	98	Maintenance of FAG hub	128
Tractor	99	Suspension	128
Front towing hook	99	Shock absorber oil leakage fault determination	150
Tractor	100	Periodic tire rotation	150
Dumper	102	Front wheel maximum angle	151
Maintenance	103	Front wheel toe-in adjustment	151
Periodic maintenance	103	Steering wheel free play	151
Pre-departure inspection	103	Steering torque	152
Inspection during driving	104	Maintenance of air dryer	153
Off-running inspection	104	Maintenance of drum brake system	153
Coolant	105	Adjustment of brake clearance automatic adjusting arm	
AdBlue	108		153
Regular maintenance	110	Replacement of friction lining	154

Precautions for use of disc brake	154	Opening of tool box	184
Partial adjustment of wheel brakes	154	Common fault	185
Adjustment of brake clearance automatic adjusting arm (optional)	155	Front lower protection	194
Normal use of ABS	156	Description of parts not included in the vehicle overall size	195
Precautions for use of ABS	157	Glossary	196
Precautions for use of retarder	157		
Regular maintenance of retarder	157		
Maintenance and repair of saddle	158		
Battery	159		
Headlight adjustment	159		
Replace bulbs	159		
Fuse box	160		
Power distribution box	162		
Lubricating oil	166		
Replacement of lubricating oil	166		
Oil change interval for each assembly	166		
Replace engine lubricating oil	167		
Replacement of transmission oil	169		
Replacement of drive axle lubricating oil	173		
Change the steering system lubricating oil	175		
Lubrication Table	176		
Emergency management	179		
Tire inflation	179		
Tire replacement	179		
Precautions for using tires	181		
Appendix data	182		
On-board tools	182		
On-board tool list	182		
Storage of on-board tools	184		

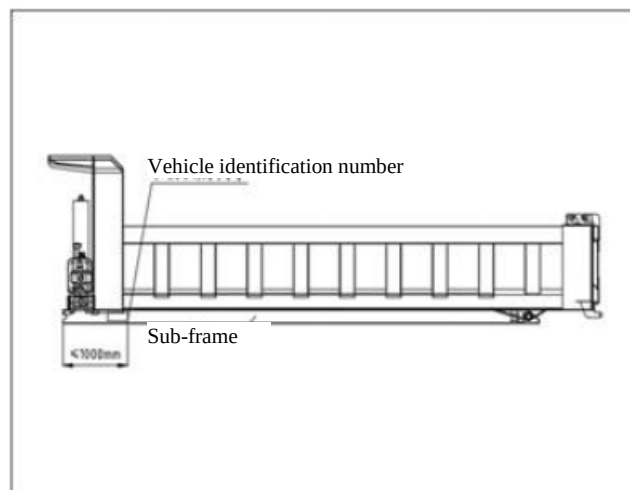
Nameplate and Vehicle Identification Number

Nameplate and Vehicle Identification Number

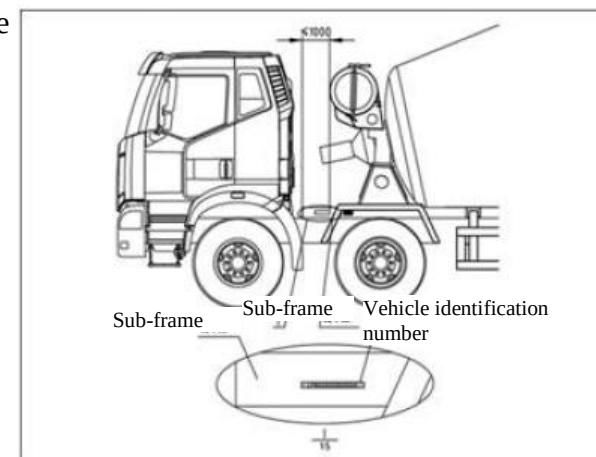


- ◆ The nameplate is located on the front outside of the right side member of the frame, near the front axle.
- ◆ The vehicle type, main weight parameters, engine model and vehicle identification number are recorded on the nameplate.
- ◆ The Vehicle Identification Number (VIN) is stamped on the front outside of the right side member of the frame, near the nameplate.
 - Please carefully check whether the VIN matches the certificate.
 - VIN is also stored in the engine control unit (ECU) and can be read by using the diagnostic tester.

Vehicle identification number on the superstructure



- ◆ There are two VINs for dropside trailer, box truck and dumper, which are located within the range of $\leq 1000\text{mm}$ from the front end of the sub-frame on the left and right sides, as shown in the figure above.



- ◆ There are two VINs for tank truck, which are located within the range of $\leq 1000\text{mm}$ from the front end of the sub-frame on the left and right sides, as shown in the figure above.

Engine nameplate and cylinder block number

- ◆ WP10H series engine nameplate is located on the cylinder head cover.



- ◆ WP10H series engine cylinder block number is in the middle of the lower right part.



- ◆ WP10H series engine cylinder block number is in the middle of the lower right Lower



- ◆ WP12/WP13 series engine cylinder block number is at the rear lower right part.



- ◆ The nameplate of the 6DL series engine is on the cylinder head cover.



- ◆ 6DL series engine cylinder block number is under the ECU on the left side of the cylinder.



- ◆ The nameplate of the 6DM series engine is located behind the turbocharger in the middle of the right side of the engine.



- ◆ 6DM series engine cylinder block number is at the rear lower right part.



- ◆ The nameplate of the 6DK series engine is on the cylinder head or at the rear lower right part.



◆The 6DK series engine cylinder block number is at the rear middle right part.

Vehicle inspection

To give full play to the performance of the vehicle and extend its service life, please carry out the following inspection.

- ◆ New vehicle inspection
 - Please check carefully after receiving the new car, and then put it into use so as to ensure safety.
- ◆ Pre-departure inspection
 - In order to always drive the vehicle safely and comfortably, the pre-departure inspection should be performed every time before starting off.
- ◆ Periodic maintenance
 - Periodic inspection, maintenance items are specified according to the mileage or service time. When using the vehicle under harsh conditions, the maintenance frequency should be increased.

New vehicle inspection

- ◆ After receiving the new vehicle, overall inspection must be conducted first.
- Check the connection and tightening of the parts.
- Check the running engine for abnormal noise. Check the installation of all accessories.
- Check the level in the engine oil, transmission fluid, rear axle oil, and steering fluid tanks.
- Check the filling of the lubricating points.
- Check the operations of the brake system and steering system.
- Check the electrical equipment.
- Check the free stroke of the clutch pedal.
- Check the tire pressure.
- Check whether the tools provided with the vehicle are complete. Check whether the tools provided with the vehicle are complete.

New vehicle running-in

- ◆ The running-in period of the new vehicle is set to 2500Km.
- ◆ Running-in requirements:
 - During the first 200km in the running-in period, the vehicle must be driven unloaded. The load within 1500km shall not exceed 70% of the rated load; and can be increased to 90% of the rated load within 1500-2500km.
 - The maximum engine speed shall not exceed 1500r/min within 1000km during the running-in period.
 - During the running-in period, pay special attention to the engine coolant temperature and oil pressure, which must be within the specified range.
 - During the running-in period of a new vehicle, the engine oil consumption is relatively high, and thus the oil level should be checked every day.
 - The following work should be done after running-in:
 - Change the engine oil (vehicles without long oil change interval).
 - Replace the oil filter (vehicles without long oil change interval).
 - Drain the diesel fuel coarse filter; check and tighten fuel tank band.
 - Change the transmission fluid (vehicles without long oil change interval).
 - Check and tighten propeller shaft fixing bolts.
 - Change the drive axle oil (vehicles without long oil change interval).
 - Change power steering fluid, check the steering gear fixing bolt.
 - Check the fixing bolts of the steering gear bracket.

- Check the bolts connecting the steering shaft and steering gear.
- Check the steering arm fixing nut.
- Check and tighten the wheel nuts.
- Check and tighten the leaf spring clevis bolt.
- Check the brake clearance and lining wear.

When replacing parts, use the parts with FAW logo, please go to FAW designated store or service station to purchase.

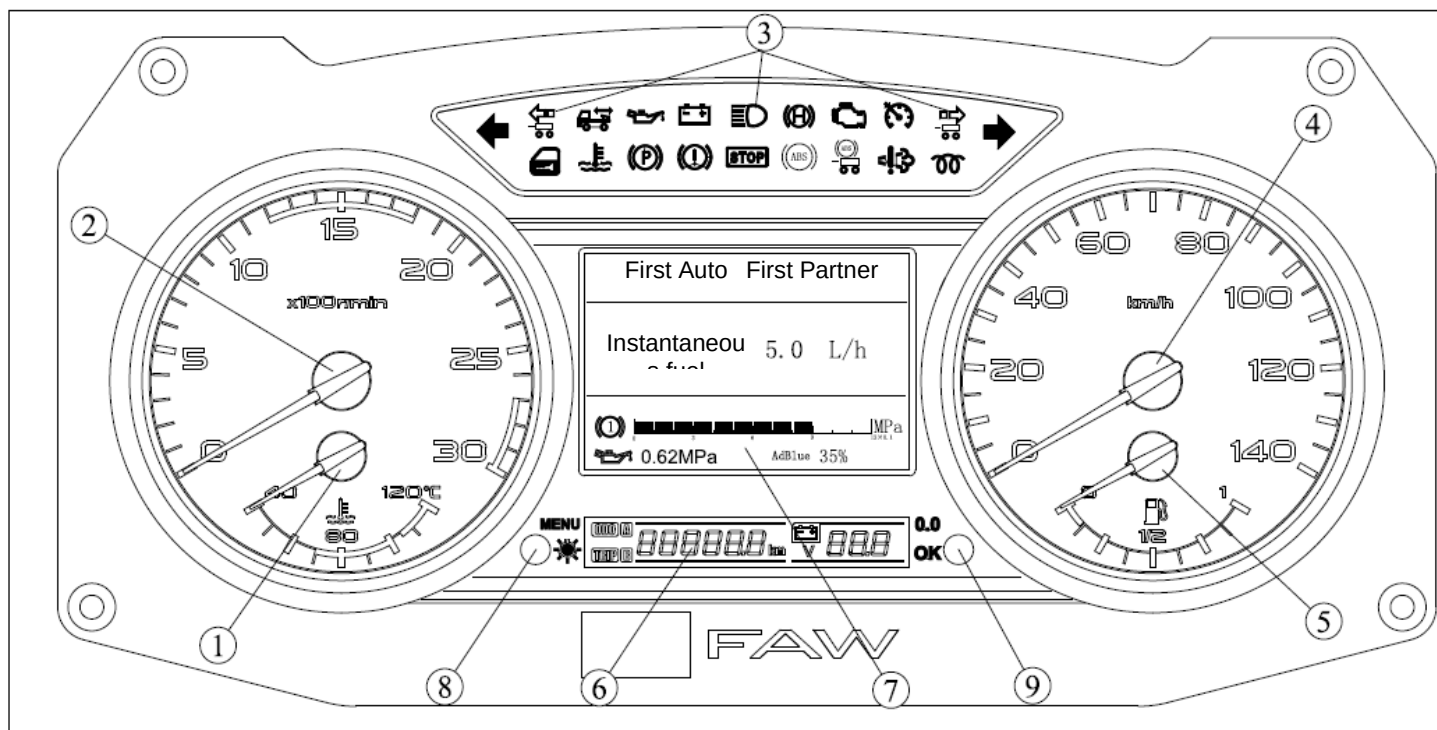
NOTICES

- ◆ It is recommended to go to the FAW service station for replacement.
- ◆ The greases and fluids recommended in this book must be used.

Safety Instructions

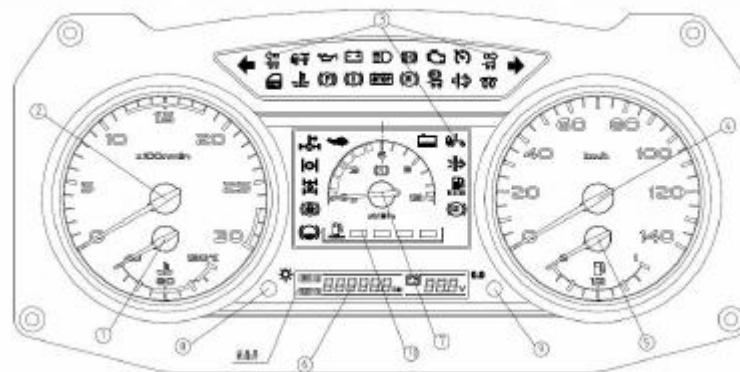
- ◆ Users should load the vehicle in strict accordance with the maximum permissible total mass. The vehicle is not allowed to be overloaded, which will cause vehicle failure, damage, and even personal injury.
- ◆ The driver seat must be adjusted in place at the time of parking, otherwise accidental movement may cause the vehicle to lose control, resulting into injury.
- ◆ The seat headrest should be adjusted to the eye height to support your head, thereby reducing the risk of head and neck injuries.
- ◆ The adjusted seat position should not make impact on the proper wearing of the seat belt.
- ◆ The seat belt may effectively protect the occupants, avoid and reduce the casualties of the occupants. Therefore, in the spirit of safety first, our company reminds you to wear a seat belt when driving.
- ◆ Position the seat belt as low as possible over the hips, rather than waist. Then pull the shoulder belt upwards to tension it.
- ◆ When the vehicle is driving, the seat backrest should not be excessively tilted, otherwise, the front passenger's body will fall out of the seat belt during emergency braking, causing the neck to be strangled and the cervical spine to break and other accidental serious injuries.
- ◆ In the event of a collision and the impact on the seat belt, the seat belt should be replaced even if no damage is found.
- ◆ When you fasten your seat belt, make sure it is not twisted. The area of the twisted part becomes smaller, so the local pressure on the body is too large and can be dangerous.

Meter/gauge and warning lights



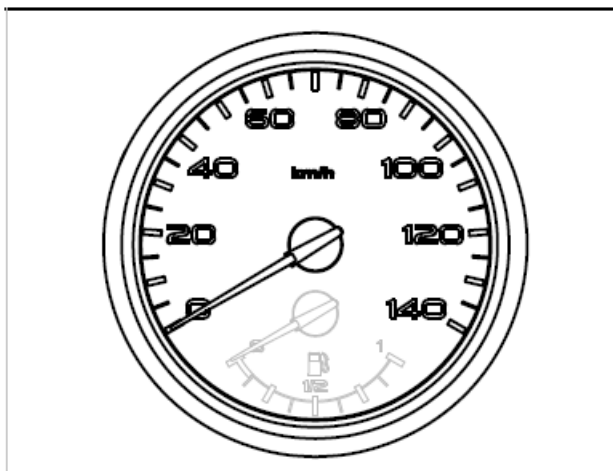
Meter/gauge for tractor and van: ①Water temperature gauge ②Engine tachometer ③Indicator and warning light (see P19 for details of warning lights and indicator lights) ④Speedometer ⑤Fuel meter (or gas meter)

⑥Sub LCD screen ⑦Main LCD screen ⑧Button 1 ⑨Button 2



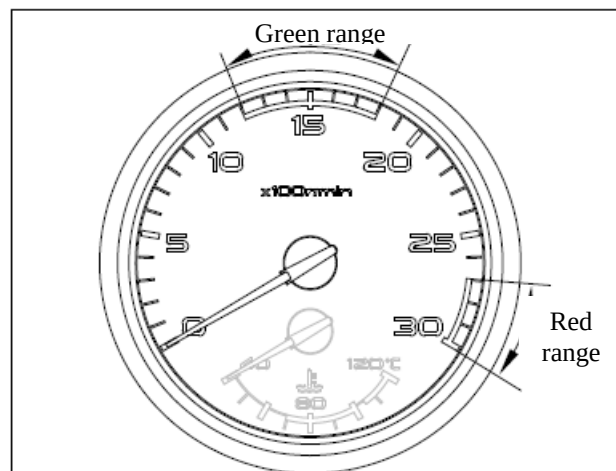
Meter/gauge for dumper: ①Water temperature gauge ②Engine tachometer ③Indicator and warning light (see P19 for details of warning lights and indicator lights) ④ Speedometer ⑤Fuel meter (or gas meter)

⑥Sub LCD screen ⑦Barometer ⑧Button 1 ⑨Button 2 ⑩Adblue meter



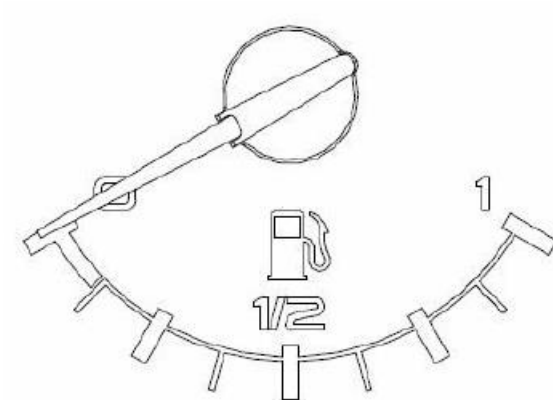
◆ Speedometer

- Displays the vehicle speed.
- The mileage is displayed on the sub LCD screen, please see P.



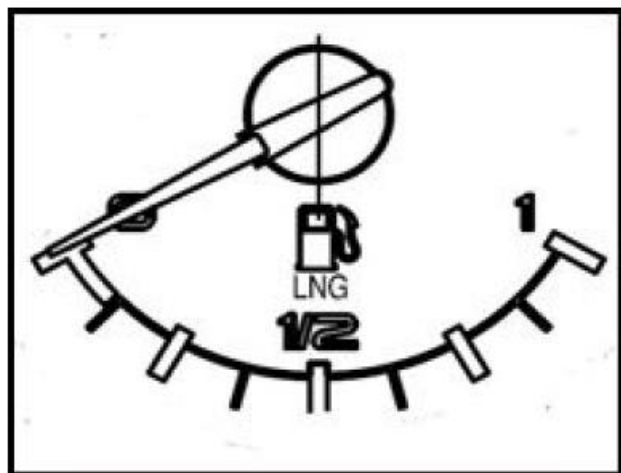
◆ Engine tachometer

- It is best to control the engine speed within the green range, within which the engine gets the optimal overall performance.
- If the engine speed is in the red zone, it means that the engine speed has exceeded the limit. Long-term over-speed running can cause engine damage.



◆ Fuel gauge (for diesel models)

- Displays the quantity of fuel in the fuel tank.
- 0: Indicates that the fuel tank is empty.
- 1: Indicates that the fuel tank is full.

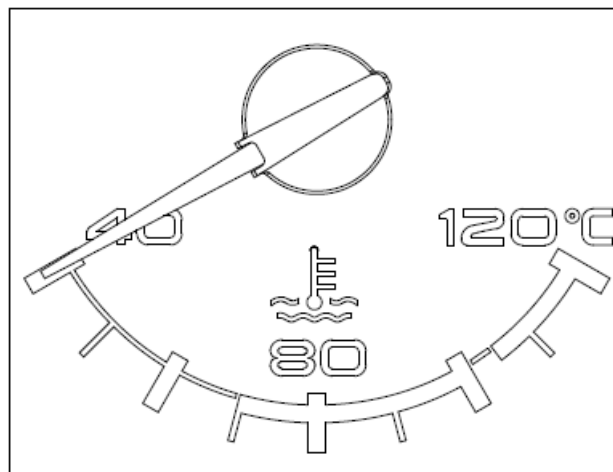


◆ Gas meter (for NG models)

- Indicates the amount of gas in the gas cylinder.
- 0: Indicates that the gas cylinder is empty.
- 1: Indicates that the gas cylinder is full.

⚠ NOTICES

When the pointer is close to the red zone, please add gas in time.



◆ Water temperature gauge

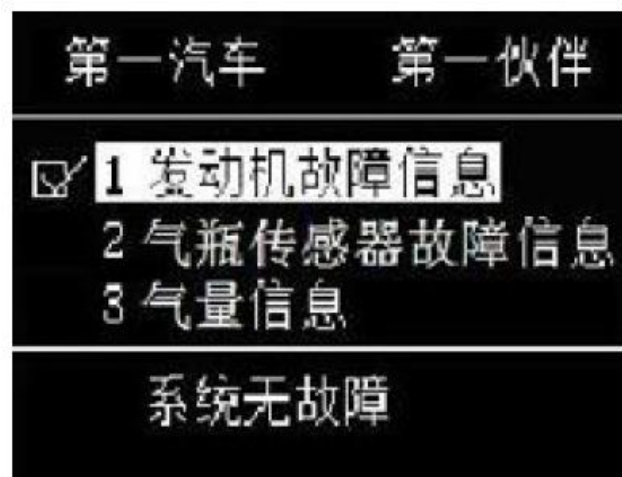
- The water temperature gauge is used to display the temperature of the engine coolant.
- After each cold start the engine should run at a low speed to warm up. And only when the coolant temperature reaches 60 °C or more can it start driving.
- The normal temperature range of the coolant is (80~90) °C during driving.
- If the pointer moves to a temperature exceeds 98 °C, the water temperature warning light is on, indicating that the engine is too hot. At this time, you should park the vehicle at a safe place as soon as possible and run it at a speed slightly higher than the idle speed to cool the engine.

➤ When the pointer returns to the normal working position, stop the engine and perform the following inspections:

- * Check for leaks in the radiator and its hoses.
- * Check the coolant level and add it when it is low.
- * Check whether there is any debris attached to the front end of radiator.

⚠ NOTICES

You should not stop the engine immediately after parking, failure to do so may cause damage to the engine due to a sharp rise in cylinder block temperature.



◆ Main LCD screen (for tractor, van)

- The main LCD screen interface is divided into upper, middle and lower areas.

* For upper part: it displays "First Auto, First Partner" in case of no alarm; a yellow alarm is displayed on the left and a red alarm is displayed on the right in case of an alarm.

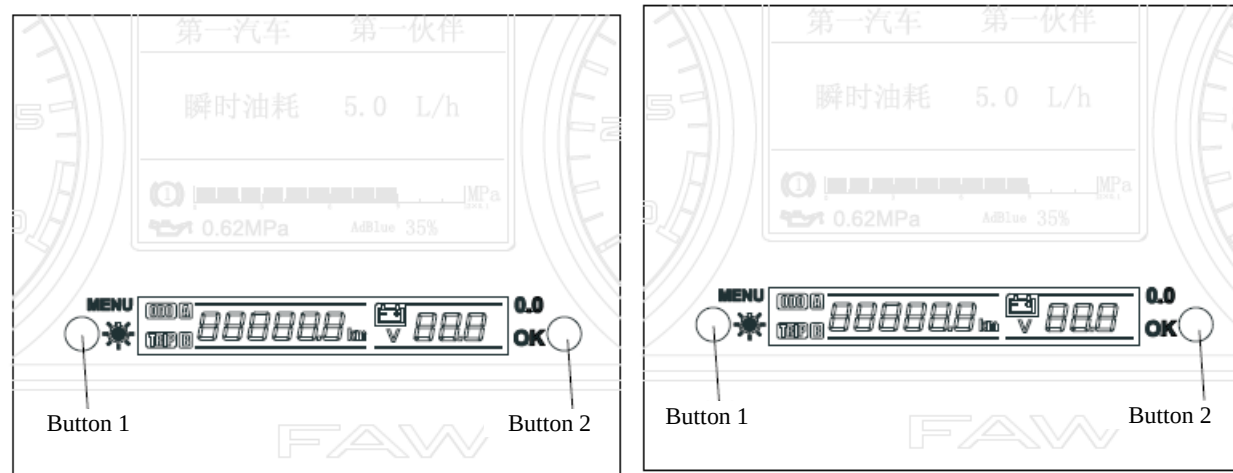
* For middle part: the left side displays the total gas volume; the right side displays the gas volume of single gas cylinder. By pressing button 1, the gas volume of a single cylinder can be switched in the following order: gas volume of gas cylinder 1 -> gas volume of gas cylinder 2 -> gas volume of gas cylinder 3 -> gas volume of gas cylinder 4 (If the message of cylinders 2-4 cannot be received, it will not be displayed)

* For lower part 1: The status bar displays the brake air pressure, and displays the air pressure in front brake circuit and the rear brake circuit, whichever is lower.



NOTICES

- ◆ The brake air pressure should be kept within the range of (0.7~ 0.9)MPa during driving.
- ◆ If it is lower than 0.55MPa (the brake system failure warning light in the LCD screen of the instrument illuminates), and the driver should stop and check the vehicle immediately.
- ◆ If the barometer has problem, please check whether the barometric sensor needs to be replaced.



* For lower part 2: The value indicates the working pressure of the lubricant in the main oil passage of the engine.

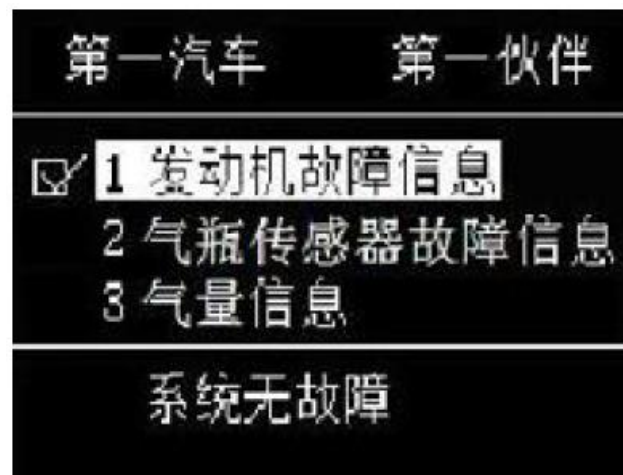
1. Pay attention to the oil pressure while driving. When the engine is running normally, the oil pressure varies within the range of (0.25~0.6)MPa.
2. If the pressure value is lower than 0.07MPa, turn off the engine immediately and find out the failure cause.

◆ Sub LCD screen

- The sub LCD screen is divided into two areas, left and right.
- Left side: displays trip and total mileage, and press button 2 to switch between them; press and hold the button 2 to reset the trip.
- Right side: displays the battery voltage. The reading range of the voltmeter is (16~32) V. The normal voltage should be between (24~28)V. If it is below 22V or above 30V, it indicates that the charging system is faulty and should be checked and repaired in time.

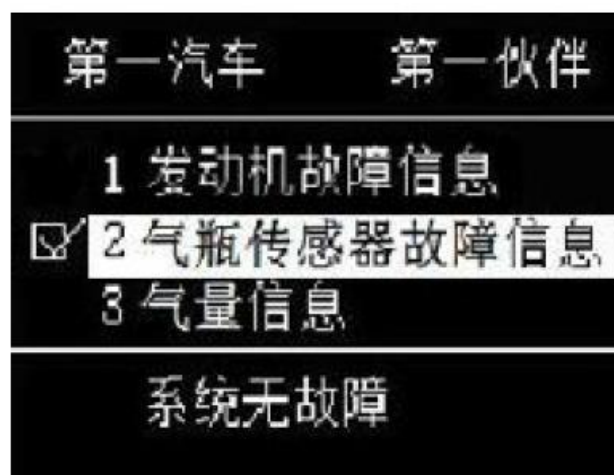
◆ Main menu

- The LCD menu can be operated only when the vehicle is parked. You may select the items on the LCD screen by using button 1 and button 2.
- Press and hold the button: for more than 1.5s;
- Press the button: for 50ms~1.5s.
- Press and hold the button 1 to enter the main menu interface, and press button 1 to make up and down selections, press button 2 to enter sub-menu or make selections.
- The main menu is divided into upper and lower areas. The upper is the menu item display area, and the lower is the auxiliary area.



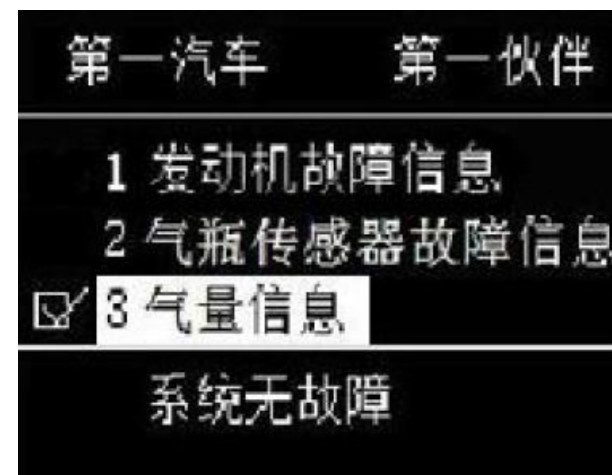
◆ Engine failure information

- Indicates the current fault information of the engine.
- If there is a fault, trouble code and its text information will be displayed.



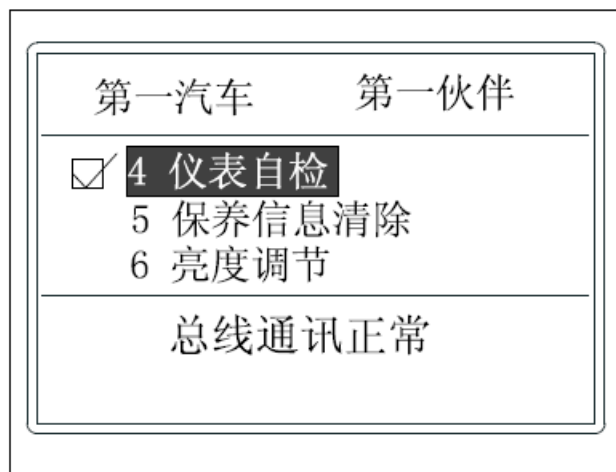
◆ Failure information of gas cylinder sensor

- Query the failure information of gas cylinder sensor through the menu

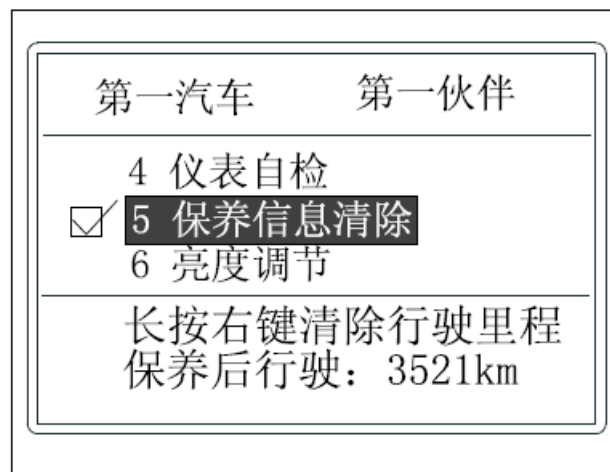


◆ Information on gas volume

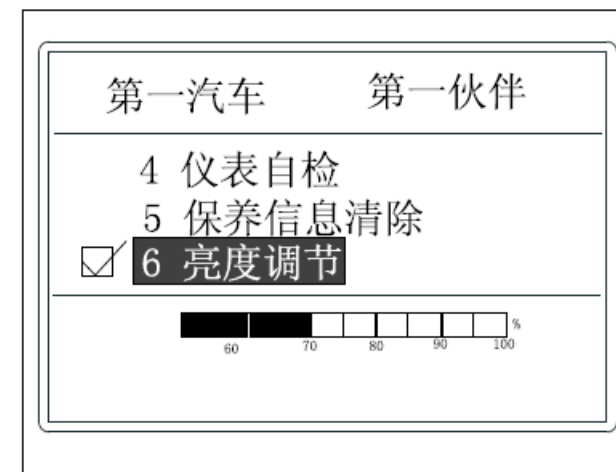
- By checking the gas volume information, the system displays the remaining gas percentage, the remaining total gas volume and the gas volume of a single cylinder.



- ◆ Instrument self-inspection
- Check the current network conditions.



- ◆ Clear maintenance information
- Clear the accumulated mileage after performing maintenance, and record the mileage to the next maintenance.



- ◆ Brightness adjustment
- Adjust the brightness of the LCD screen. And increase the brightness by pressing the right button, which automatically returns to the minimum brightness when the brightness reaches the maximum.

第一汽车	第一伙伴
☒ 7 仪表基本信息	
8 设置超速限值	
9 语言选择	
车速信号来源: 硬线	
特征系数: 4992	

◆ Basic instrument information

- To view the basic instrument information.

第一汽车	第一伙伴
7 仪表基本信息	
☒ 8 设置超速限值	
9 语言选择	
110km/h	

◆ Set the speed limit

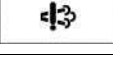
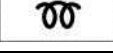
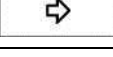
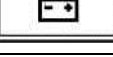
- When reaching the set speed limit, the instrument beeps to remind you.

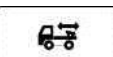
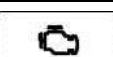
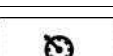
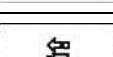
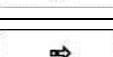
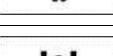
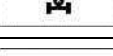
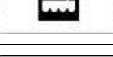
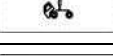
第一汽车	第一伙伴
7 仪表基本信息	
8 设置超速限值	
☒ 9 语言选择	
中	Eng.

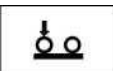
◆ Select language

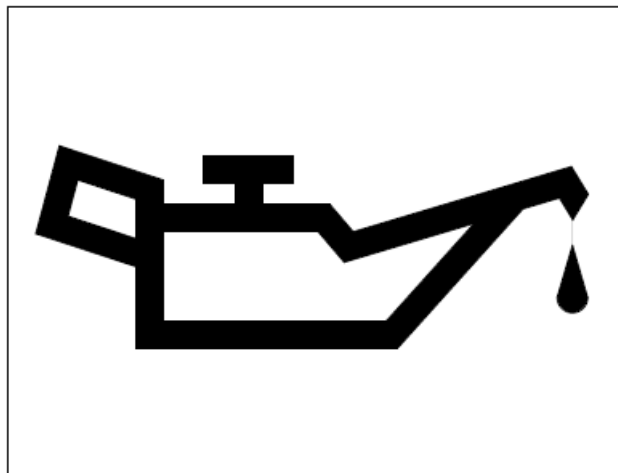
- Press the right button to switch between Chinese and English language.

Warning light and indicator

Icon	Color	Warning light and indicator name	Light ON
	Red	STOP failure warning light	When the coolant level, brake system, oil pressure, cab tilting, coolant temperature, etc. is faulty
	Red	Brake system malfunction warning light	When the air reservoir is at low pressure
	Red	Parking brake indicator lamp	When the parking brake is applied
	Yellow	Secondary brake indicator light	When the secondary brake is working
	Red	Coolant temperature warning light	When the engine is overheating
	Red	Door open warning light	When the door is not closed
	Yellow	ABS alarm lamp of tractor	When the ABS of tractor fails
	Yellow	ABS alarm lamp of trailer	When the trailer ABS is malfunctioning
	Yellow	Emission fault warning light	When the exhaust system is malfunctioning
	Yellow	Engine warm-up indicator lamp	When engine warming up unit works
	Blue	High beam indicator lamp	When high beam illuminates
	Green	Left turn indicator lamp	When turning left
	Green	Right turn indicator lamp	When turning right
	Red	Charging indicator lamp	When the battery system is malfunctioning

Icon	Color	Warning light and indicator name	Light ON
	Red	Oil pressure warning light	When the oil pressure is too low
	Red	Trailer coupling warning light	When the trailer is not coupled or locked
	Yellow	Engine MIL	When the engine EFI system is malfunctioning
	Green	Cruise system work indicator lamp	When CCS system is working
	Green	Left turn indicator lamp of trailer	When turning left
	Green	Right turn indicator lamp of trailer	When turning right
	Yellow	Inter-wheel differential lock indicator lamp	When the inter-wheel differential lock engages
	Yellow	Inter-axle differential lock indicator lamp	When the inter-axle differential lock engages
	Red	Coolant level warning light	When the coolant level is low
	Yellow	Lights failure warning light	When the brake light is broken
	Red	Cab tilt alarm lamp	When the cab is in the process of tilting or not locked properly
	Red	Brake fluid level warning light	When the brake fluid level is low
	Red	Air filter blocked alarm light	When the air filter is blocked
	White	ECAS height indication	When the vehicle is not at a normal height

Icon	Color	Warning light and indicator name	Light ON
	Red	ECAS failure warning	When the ECAS system is malfunctioning
	White	ECAS auxiliary axle indication	When air suspension is raised or lowered
	White	ECAS drive assist indication	When the auxiliary axle drive assist function is working
	White	ECAS auxiliary axle lifting indication	When the auxiliary axle is lifting



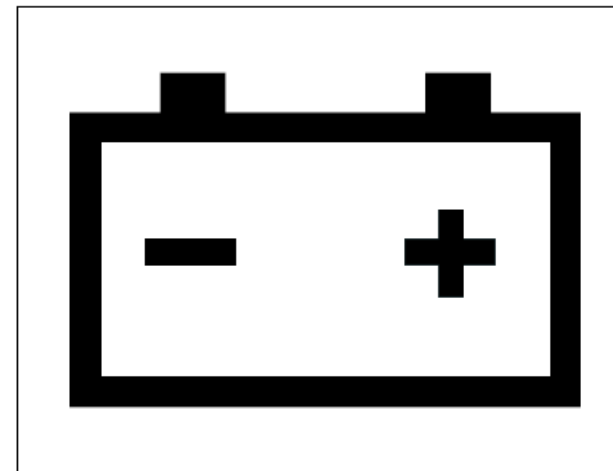
Oil pressure warning light

- ◆ When the key is turned to the ON position, the light illuminates; after the engine is started, the light goes out.
- ◆ If the light is on during driving, the vehicle should be stopped at a safe place as soon as possible and the following inspections should be carried out:
 - Check the oil level and add it when it is low.
 - Check all parts of the engine for oil leakage.
 - Check whether the oil filter is blocked. If so, please replace it in time.
 - If the oil level is normal and no oil leakage occurs, it indicates that the lubrication system is malfunctioning. Please contact the FAW service station nearby.



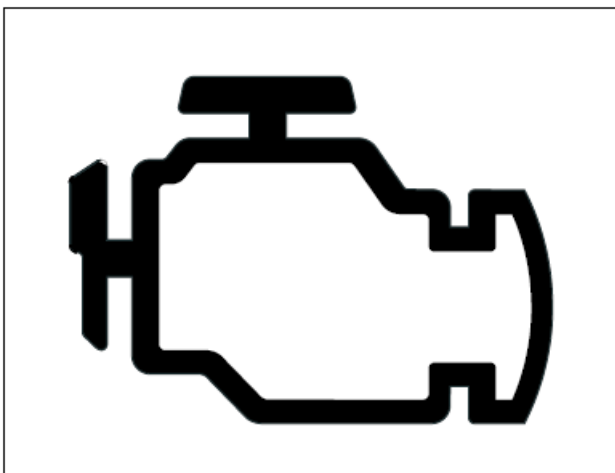
NOTICES

- ◆ Never continue driving when the warning light is on, otherwise the engine will be sintered.
- ◆ When it is cold, sometimes due to the increased viscosity of the oil, the warning light may temporarily turn on after the engine is started. And this is normal.



Charging indicator lamp

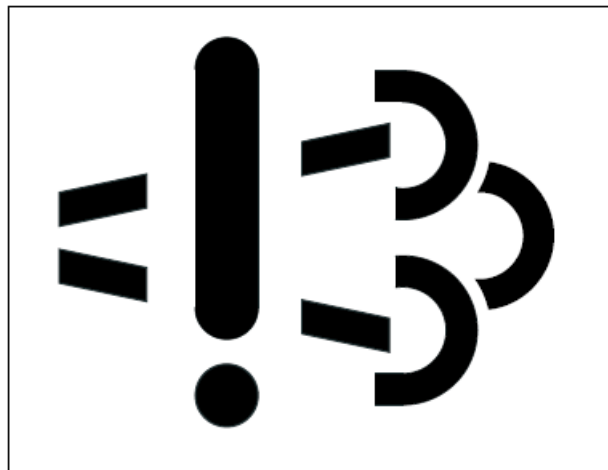
- ◆ Indicates the charging status of the generator. When the ignition switch is turned to the ON position, the light illuminates; After the engine is started, the light goes out.
- ◆ If the light is on during driving, the vehicle should be stopped at a safe place as soon as possible and the following inspections should be carried out:
 - Check whether the generator belt is damaged and whether the belt tension is normal.
 - Check the fuse (in the fuse box) in the charging circuit for blown.
 - Check whether the generator terminal cable is loose.
 - If there is no abnormality in the above inspections, it indicates that the charging system is faulty. Please contact the FAW service station nearby.

**Engine MIL**

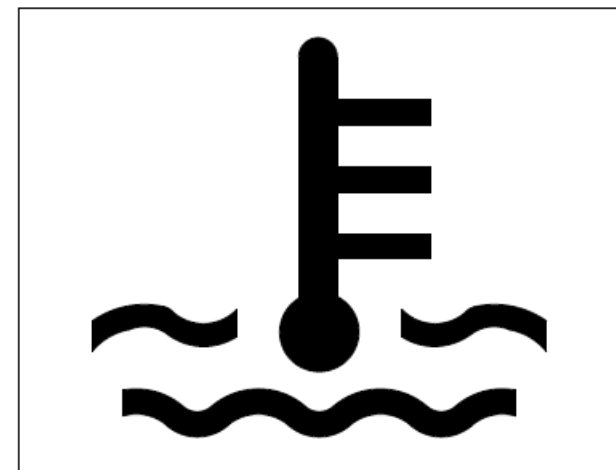
- ◆ It comes on when the engine electronic control component fails.

 NOTICES

When the engine MIL is normally on, the electronic control system will appropriately control the engine and vehicle speed depending on the damage degree of the failure. At this time, you should drive your vehicle to the nearest maintenance service station at low speed and have it repaired by the professional maintenance personnel.

**Emission fault warning light**

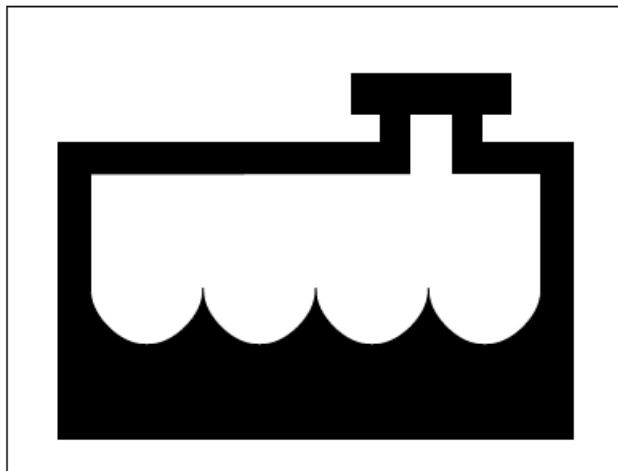
- ◆ The light is on when the OBD system detects that the exhaust system is faulty, and the exhaust system needs to be checked.

**Coolant temperature warning light**

- ◆ This light is on when the engine is overheated.
- ◆ When the light is on, you should stop the vehicle at a safe place for inspection.

 CAUTIONS

Run the engine at a speed slightly higher than the idle speed to cool it. Never turn off the engine to allow it to cool down naturally.



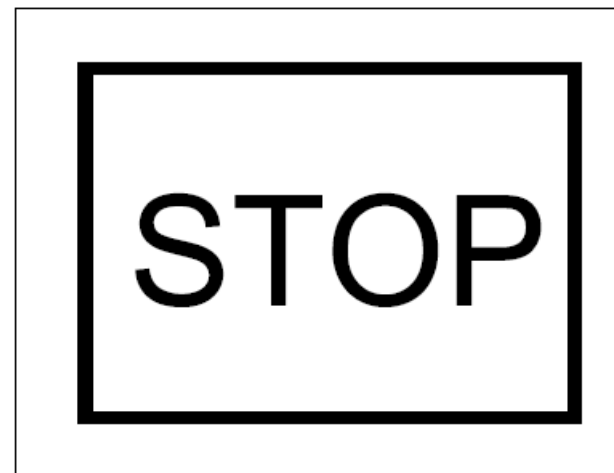
Coolant level warning light

- ◆ The warning light is on when the engine coolant level is low.
- ◆ When the light is on, you should stop the vehicle at a safe place for inspection and take measures:
 - Stop the engine and wait until the coolant temperature drops.
 - Check the radiator and its pipeline for water leakage.
 - If leaks, please contact the service station nearby.



CAUTIONS

You should not open the expansion tank pressure cap until the water temperature drops. To open the cap, you should cover it with a cloth, slowly loosen it, and then open it after the pressure is relieved to avoid scalding by sprayed hot water.



STOP malfunction indication lamp

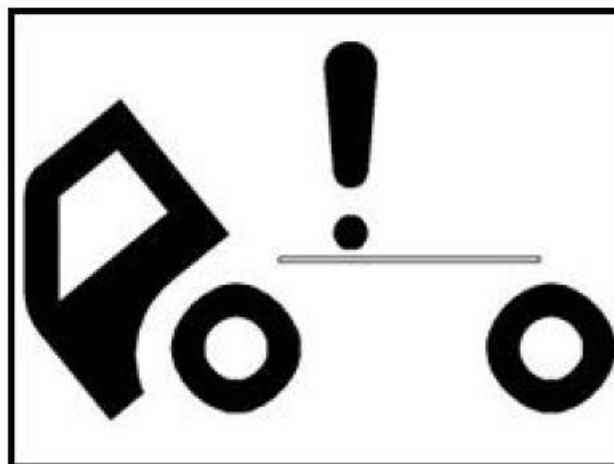
- ◆ This light is on when any of the coolant level, brake system, oil pressure, coolant temperature warning lights or indicator lamps fails. Reminds the driver to stop and check the vehicle according to prompt indicated by the above warning lights or indicator lights.

**Brake system malfunction warning light**

◆ This light is on when the air pressure is lower than 0.55MPa.

 CAUTIONS

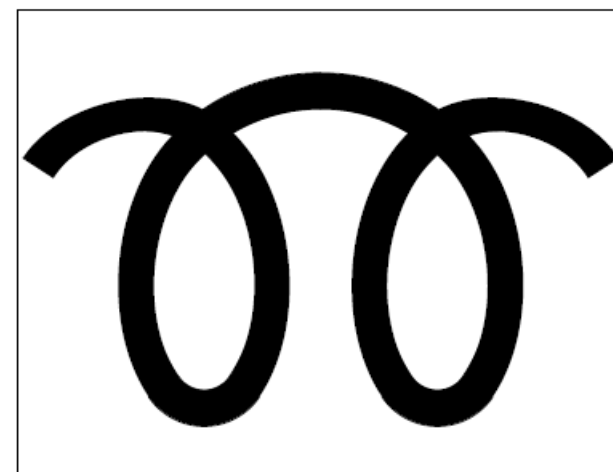
When the brake system malfunction warning light is on, the braking effect will be significantly reduced, and thus it is not allowed to continue driving.

**Cab tilt alarm lamp**

◆ The light is on if the cab is tilted forward or is not locked in place.

 NOTICES

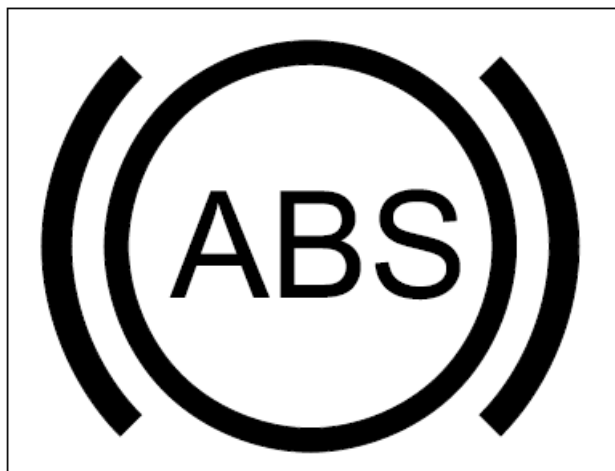
When returning back, be sure to check and make sure that the cab is locked in place, otherwise it will be dangerous.

**Engine warm-up indicator lamp**

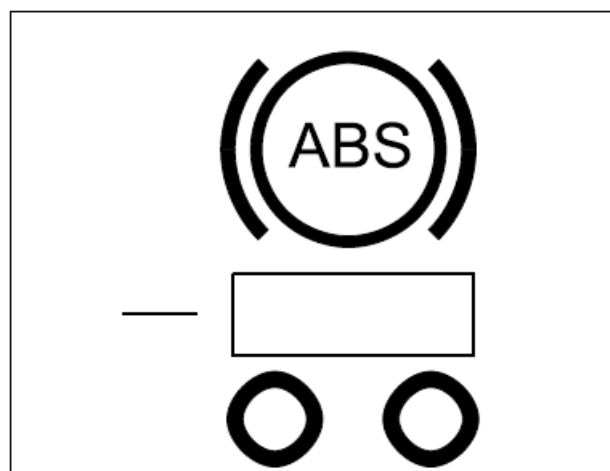
◆ The light is on when the engine is warming up.

 NOTICES

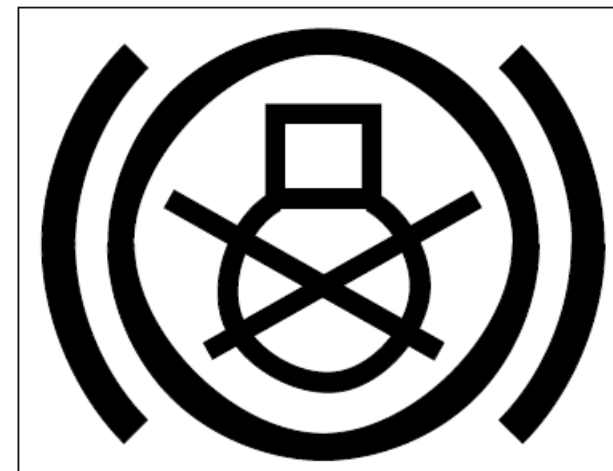
The electronically controlled engine warms up automatically, and the vehicle can be started only after the engine warm-up indicator light goes out.

**ABS alarm lamp**

- ◆ Turn on the ignition switch, the warning light is on, and the system performs self-inspection. If the system has no fault record, the indicator light will go out after about 3 seconds; and if there is a fault record in the ECU memory but the fault has been troubleshooted, the indicator light will go out when the vehicle speed reaches 7km/h.
- ◆ If the warning light is still on when the vehicle speed reaches 7km/h, it indicates that the ABS system is malfunctioning.
- ◆ When the light is on (red), it indicates that the ABS system of the tractor is malfunctioning.

**ABS alarm lamp of trailer**

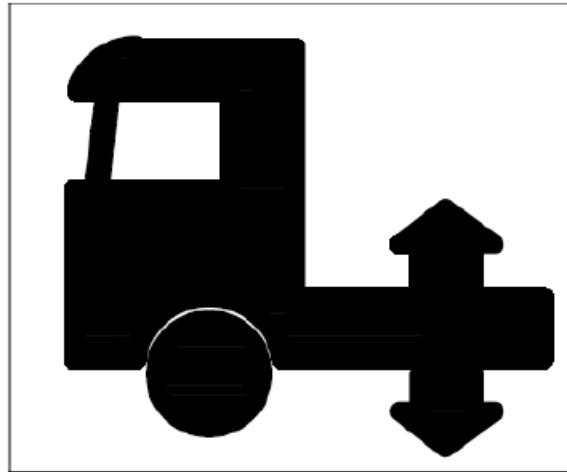
- ◆ When the light is on (yellow), it indicates that the ABS system of the trailer is malfunctioning.

**Lamp malfunction warning light**

- ◆ The light is on when the brake light is broken.

**Secondary brake indicator light**

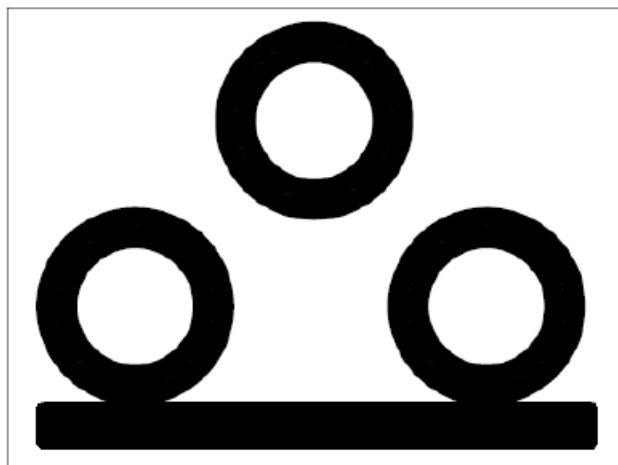
- ◆ The indicator light is on briefly when the system performs self-inspection.
- ◆ The light is on when the engine brake or exhaust brake system is working.

**ECAS height indicator**

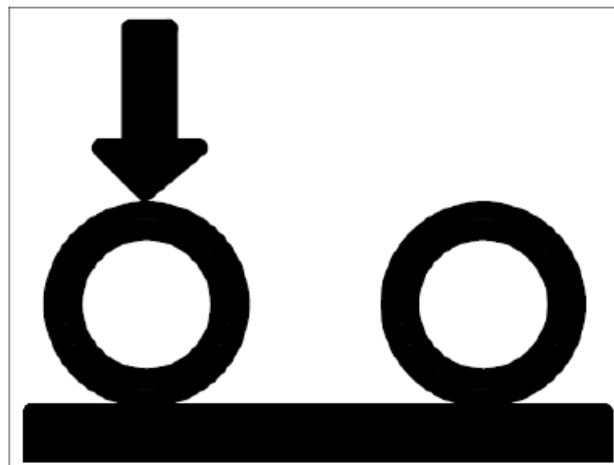
- ◆ When ECAS performs height adjustment operation, the light is on to remind the driver that the vehicle is not at its normal height.

**ECAS failure warning light**

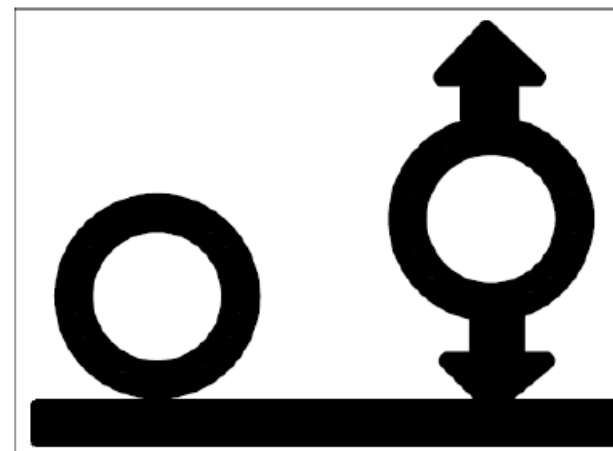
- ◆ When the light is on (red), it indicates that the ECAS system is malfunctioning.

**ECAS auxiliary axle indicator light**

◆ The indicator light is on when the air suspension is raised or lowered.

**ECAS drive assist indicator**

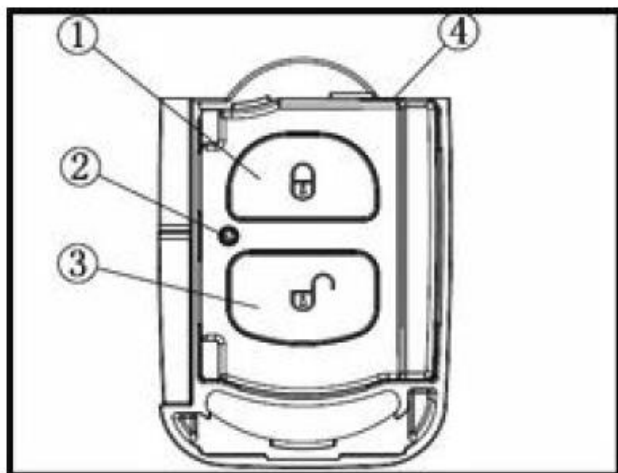
◆ The indicator is on when the auxiliary axle drive assist function is working.

**ECAS auxiliary axle lifting indicator light**

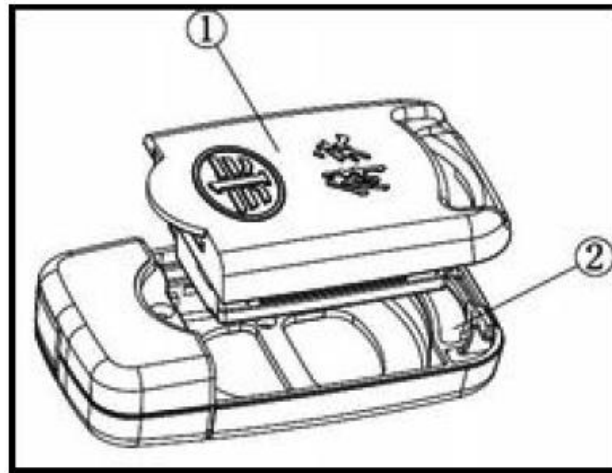
◆ The indicator light is on when the auxiliary axle is lifting.

Switch, button, lever

Remote key



- ◆ ① Remote control lock button
- ◆ ② Status indicator lamp
- ◆ ③ Remote control unlock button
- ◆ ④ For removing battery



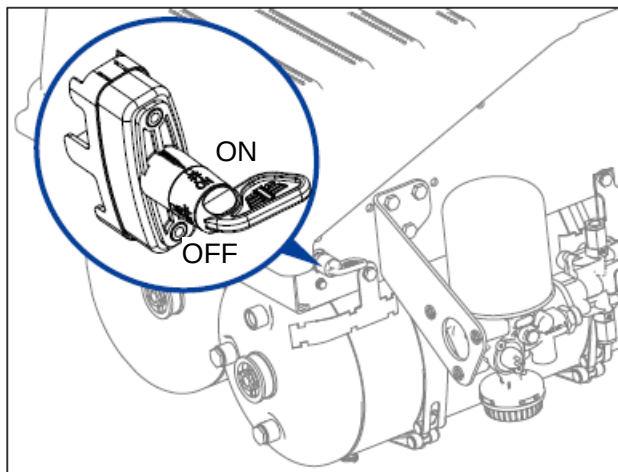
! NOTICES

- ◆ If the remote control key status indicator flashes or is not on, the remote control key battery needs to be replaced; and if the symptom remains the same after replacing the battery, the remote control key is invalid.
- ◆ The remote control key can be separated into two parts: the remote control assembly ① and the remote control key mechanical assembly ②.
- ◆ If the remote control key or the door controller fails, you need to separate the remote control key, replace the remote control assembly ① and the door controller as a whole, and then reassemble it with the mechanical assembly ②.

! NOTICES

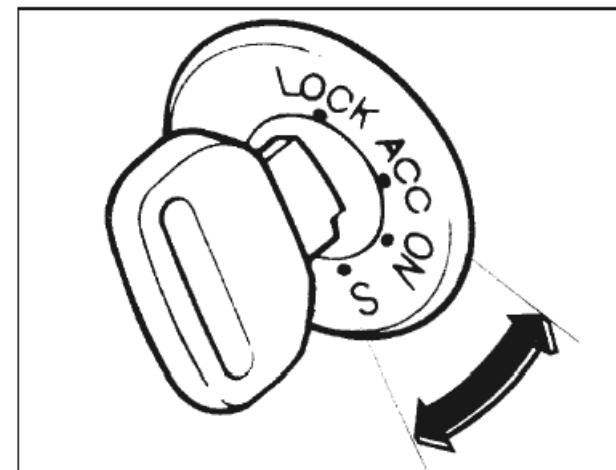
- ◆ If the mechanical assembly ② of the remote control key is lost or the electric lock body is replaced, the electric lock body and the mechanical assembly ② of the remote control key need to be replaced as a whole, and then re-assembled with the remote control assembly ①.
- ◆ If the remote control key is lost, you need to re-match the remote control key mechanical assembly ②, and replace the door controller assembly and the remote control assembly ① as a whole, and then re-assemble them.

Manual main power switch



- ◆ The manual main power switch is located near the battery frame.
- ◆ When the switch is turned on, the arrow points to "ON".
- ◆ When the switch is turned off, the arrow points to "OFF".

Ignition switch

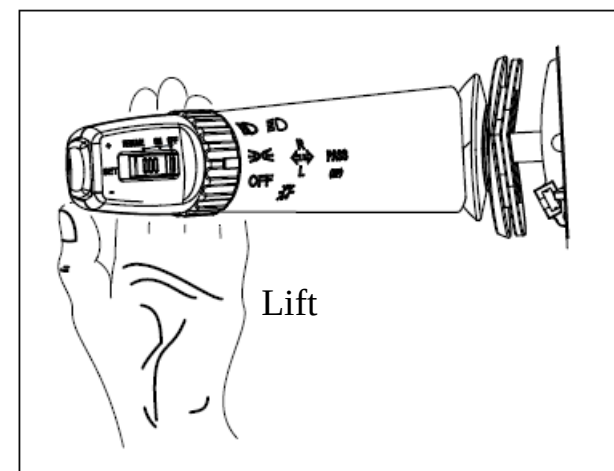
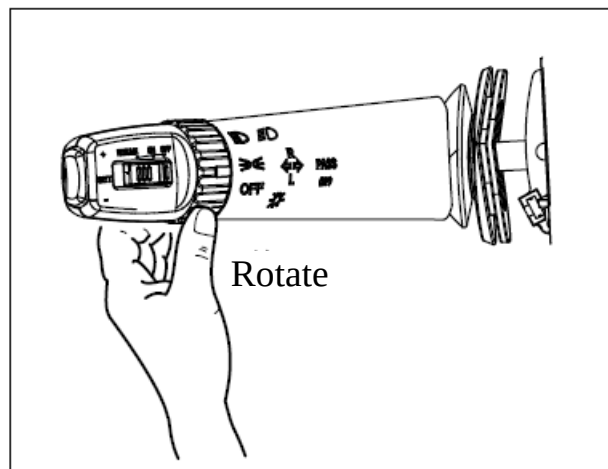
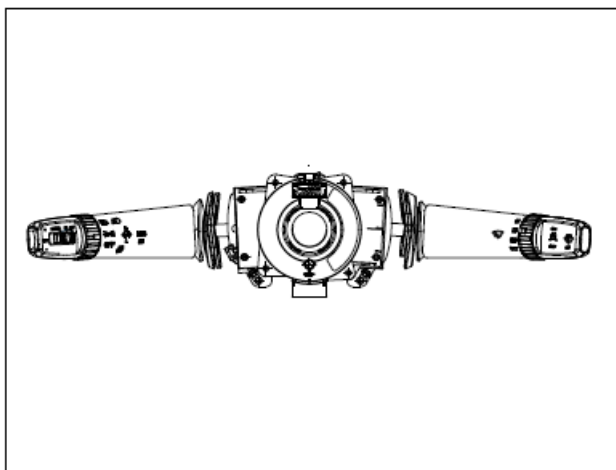


⚠ NOTICES

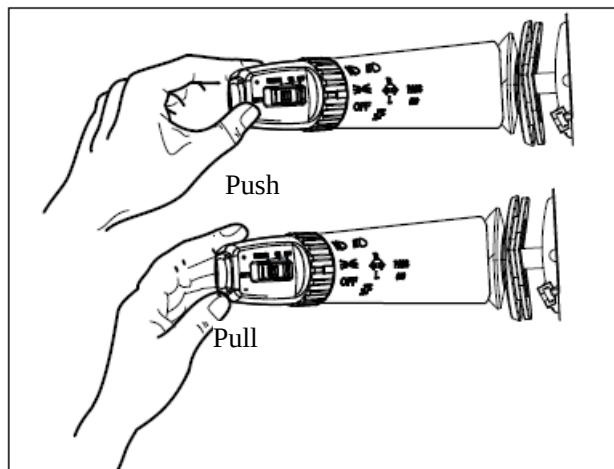
- ◆ When turning off the ignition switch and leaving the vehicle, please turn off the manual main power switch.
- ◆ When the engine is working, the manual main power switch cannot be turned off.
- ◆ To turn on or turn off the manual main power switch, firstly confirm that the key is in LOCK position.
- ◆ It is forbidden to refit wiring in the manual main power switch, which may cause fire.
- ◆ When washing the vehicle, please turn off the manual main power switch to avoid the spraying from the high-pressure water gun.

- ◆ LOCK: the electrical system power supply is turned off.
- ◆ ACC: Turn the key clockwise to the ACC position to turn on the accessory power supply. It can be used for the cigarette lighter when the car stops.
- ◆ ON: Continue to turn the key clockwise to the ON position to turn on the electrical system power supply.
- ◆ S: Continue to turn the key to the end to start the engine, and the key will automatically return back to the ON position after releasing it.

Combination switch

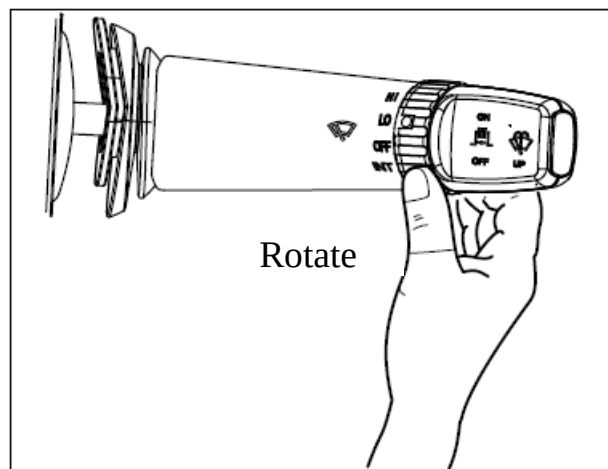


- ◆ Combination switch has left and right handles.
 - The left lever has the functions of the light switch, dimmer switch, turn signal switch and cruise control switch.
 - The right lever has the functions of the wiper switch, washer switch, secondary brake switch.
- ◆ Light switch
 - When the left lever is in the OFF position, all lights turn off.
 - Turn the slip ring of left lever to to turn on the marker light (front and rear), instrument lights and rear license plate light.
 - Turn the slip ring of left lever to to turn on the headlights.
- ◆ Dimmer switch
 - In any case, lift the left lever up to turn the high beams on. To remind the vehicle ahead or oncoming traffic. Release the lever and it returns back the the original position automatically to turn the high beams off.
 - With the left lever at , lift the lever up to turn the high beams on; lift it again to turn the low beams on. Repeat the above operations to give an overtaking signal of alternating high and low beams.



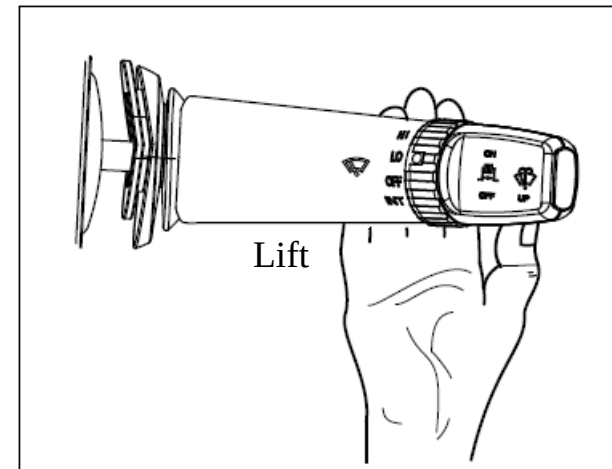
◆ Turn signal switch

- With the left lever at the neutral position, the turn signal lights turn off.
- Push the left lever away from you to turn the right turn signal on.
- Pull the left lever towards you to turn the left turn signal on.



◆ Wiper switch

- With the slip ring of the right lever in neutral position (OFF), the wiper does not work.
- With the slip ring of the right lever in "LO" position, the wiper works at low speed.
- With the slip ring of the right lever in "HI" position, the wiper works at high speed.
- With the slip ring of the right lever in "INT" position, the wiper works intermittently.



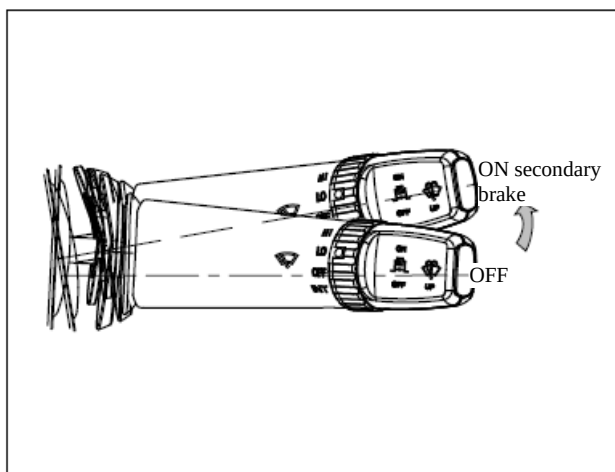
◆ Front windshield washer switch

- Lift the lever up and the washer liquid will be sprayed on the windshield; release it to stop spraying.
- With the wiper switch in "OFF", operate the washer switch, and the wiper will automatically work twice.

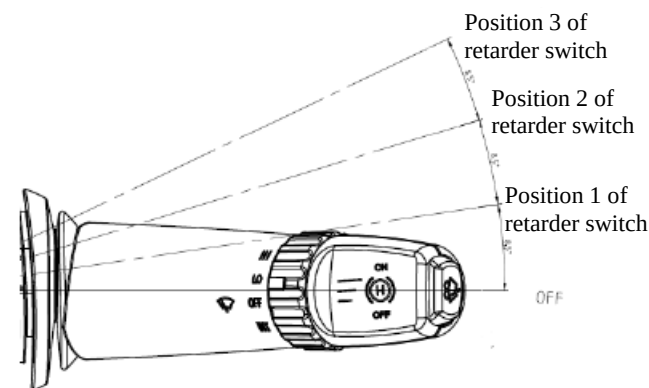


NOTICES

- ◆ If the motor continues to rotate without washer liquid, the motor will be damaged.
- ◆ You should add the washer liquid to the liquid tank before it becomes empty.



- ◆ Secondary brake switch
 - It is used to absorb the energy from the engine to assist the braking system to reduce the vehicle speed, which can reduce the wear of the braking system, especially when the vehicle is driving downhill. The secondary braking system is independent from the normal braking system.
 - Push the lever away from you to the ON position, the secondary brake works, and the secondary brake indicator light  comes on.
 - Pull it towards you to the OFF position, the secondary brake function is deactivated, and the secondary brake indicator light  goes out.
- ◆ Activate the secondary brake function
 - When the engine speed is higher than 1000r/min and the transmission is in gear, the driver can activate the secondary brake function by using the following operation methods:
 - * Turn the secondary brake switch to the ON position;
 - * Release the clutch pedal;
 - * Release the accelerator pedal;
 - When the above conditions are all met, the electronic control system will activate the secondary brake function, and the secondary brake indicator light  will come on, and the engine stops injecting fuel.
- ◆ Deactivate secondary brake function
 - The driver may use any of the following methods to deactivate the secondary brake:
 - * Turn the secondary brake switch to the OFF position;
 - * Depress the clutch pedal;
 - * Depress the accelerator pedal;
 - * The engine speed is less than 1000r/min.
 - The secondary brake indicator light  goes out when the secondary brake function is deactivated, and the engine injects fuel again.



NOTICES

- ◆ When using the secondary brake, select the corresponding low gear position according to the slope and vehicle speed, so that the engine speed is controlled within the recommended area as much as possible to maximize the effect of secondary brake, please see the table below. *When the transmission is in neutral, the secondary brake is invalid.*
- ◆ *When the engine speed is lower than 1500r/min, the secondary braking power is small and the effect is not obvious, so it is not recommended.*

CA6DL2 engine	(2000~2400)r/min
CA6DM2 engine	(1800~2200)r/min

CAUTIONS

- ◆ When the engine brake is working, it is strictly prohibited not to depress the clutch when shifting gears.
- ◆ When the secondary brake function is not in use, please turn the secondary brake ON/OFF switch to the OFF position to turn off the secondary brake function and prevent the secondary brake function from being accidentally activated.
- ◆ Do not use the secondary brake function when in neutral during driving.
- ◆ The engine brake is a secondary braking device of a vehicle and cannot replace the service brake system.

◆ Retarder switch (optional)

- The retarder lever is located on the right lever of the combination switch.
- There are three positions for the retarder, which is turned off when the lever is at the rearmost position.
- Push the retarder forward by one position, which is the constant speed position of the retarder.
- Continue to push it forward once to the second and third positions of the retarder, with the braking force 50% and 100% of the maximum braking force respectively.
- When the retarder works, the kinetic energy of the vehicle is converted into heat energy and is taken away by the engine circulating coolant. When the engine cooling temperature and retarder oil temperature exceed the set value, the retarder will alert the driver in the form of an alarm and slowly exit.

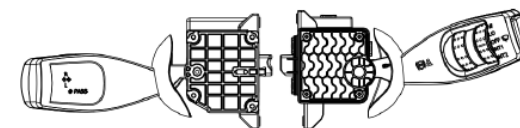
NOTICES

- ◆ The accelerator pedal must be released before activating the retarder.
- ◆ If the ambient temperature is low and the retarder is used for the first time after the vehicle starts, the braking effect will lag.
- ◆ In order to better use and play the role of the hydraulic retarder, the downhill vehicle speed and engine speed can be reasonably selected according to factors such as vehicle weight, slope, and slope length in actual use, so that the retarder does not alarm, and does not exit; specifically, if the vehicle is heavy and the slope length is steep, the transmission needs to be shifted to a low gear at this time to maintain the engine speed above 1500 rpm to increase the cooling system's heat dissipation and maximize the braking force of the retarder.
- ◆ For models equipped with the retarder, when the retarder is used, the expansion tank may be exhausted. And if the coolant level is found to drop, you need to add coolant.
- ◆ In order to better play the role of the retarder and increase its service life, the engine cooling medium adopts antifreeze.

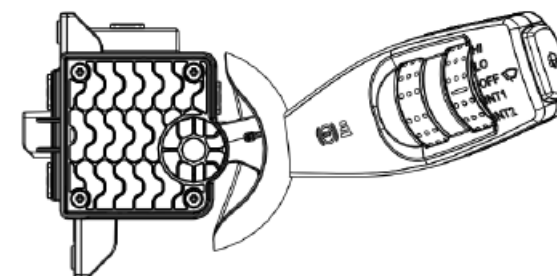
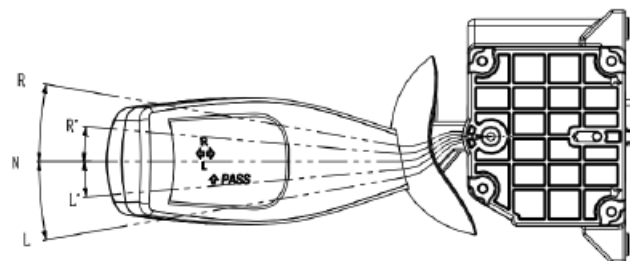
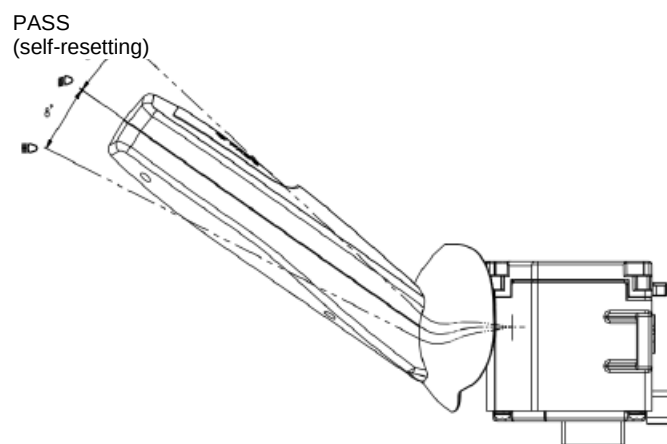
CAUTIONS

- ◆ When the retarder lever is in any working position, the transmission must be in a proper forward gear (retarder is not allowed to be used in neutral gear) so that the engine cooling system can take away the energy generated by braking.
- ◆ Retarder should be used when the road is safe in a timely manner. It is prohibited to use retarder when the road is covered with snow, ice, sand, or a lot of water.
- ◆ When the vehicle is unloaded, the retarder should be used reasonably, and the retarder brake lever should be pulled out step by step to prevent excessive braking from affecting the driving safety.
- ◆ When the tractor is driving in sharp bends, the retarder is prohibited.
- ◆ The retarder cannot be used as a parking brake.
- ◆ If the vehicle cannot be running at "constant speed" but becomes faster, the service brake must be used.

Combination switch (optional)



- ◆ Combination switch includes: dimmer switch, turn signal switch; wiper switch, washer switch and secondary brake switch.
- ◆ The left lever has the functions of the dimmer switch, and turn signal switch.



◆ Dimmer switch

- In any case, lift the left lever up to turn the high beams on. To remind the vehicle ahead or oncoming traffic. Release the lever and it returns back the the original position automatically to turn the high beams off. Repeat the above operations to give an overtaking signal of alternating high and low beams.
- With the light control switch at the high beam position, press the lever down to turn on the high beam. At this time, if the lever is lifted up, it will become the low beam.

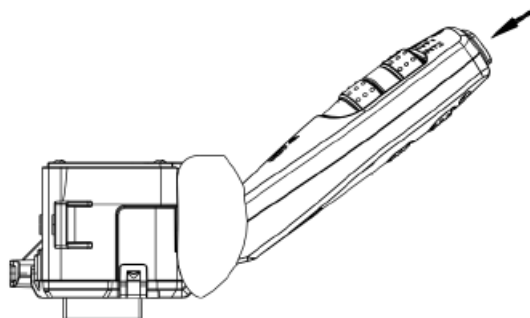
◆ Turn signal, lane change switch

- With the left lever at the neutral position, the turn signal lights are off.
- Push the left lever away from you for 5°, and it automatically returns when you let it go. At this time, the right turn signal flashes for 5 times to change lanes; push it away from you for 10°, the right turn signal comes on.
- Pull the left lever towards you for 5°, and it automatically returns when you let it go. At this time, the left turn signal flashes for 5 times to change lanes; pull it towards you for 10°, the left turn signal comes on.

- ◆ The right lever has the functions of the wiper switch, washer switch, secondary brake switch.

◆ Wiper switch:

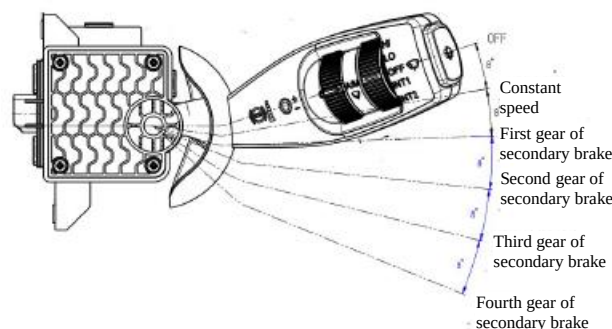
- With the slip ring of the right lever in neutral position (OFF), the wiper does not work.
- With the slip ring of the right lever in "LO" position, the wiper works at low speed.
- With the slip ring of the right lever in "HI" position, the wiper works at high speed.
- With the slip ring of the right lever in "INT1" or "INT2" position, the wiper works intermittently. "INT2" is shorter than "INT1", the higher the vehicle speed is, the shorter the wiping interval time is.



- ◆ Front windshield washer switch
- Press the button at the end of the lever, and the washer liquid will be sprayed on the windshield; release it to stop spraying.
- After pressing for a period of time, the wiper starts to work. And after letting it go, the wiper automatically works for three times and then stops.

NOTICES

- ◆ If the washer continuously sprays for more than 20 seconds or the motor continues to rotate without washer liquid, the motor will be damaged.
- ◆ You should add the washer liquid to the liquid tank before it becomes empty.

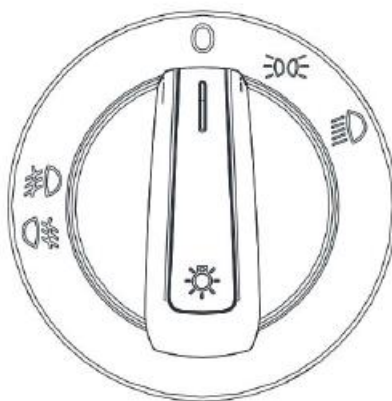


- ◆ Secondary brake switch
- It is used to absorb the energy from the engine to assist the braking system to reduce the vehicle speed, which can reduce the wear of the braking system, especially when the vehicle is driving downhill. The secondary braking system is independent from the normal braking system.
- The control switch has five gear positions. The initial position of the lever is OFF. Press it down once to be in the constant speed gear, at which the braking force is automatically adjusted according to road conditions. Each time you continue to press the lever down, the secondary brake increases by one gear, at which the braking force is 25%, 50%, 75% and 100% of the maximum braking force.
- ◆ Activate the secondary brake function
- When the engine speed is higher than (1000~1500) rpm (the speed is different for different models), the driver can activate the secondary brake function by using the following operation methods:

- Turn the secondary brake switch to the ON position;
- Release the clutch pedal;
- Release the accelerator pedal;
- When the above conditions are all met, the electronic control system will activate the secondary brake function, and the secondary brake indicator light will come on.
- ◆ Deactivate secondary brake function
- The driver may use any of the following methods to deactivate the secondary brake:
 - Depress the accelerator pedal;
 - The engine speed is lower than (1000~1500) rpm (the speed is different for different models);
 - Turn the secondary brake switch to the OFF position;
- The secondary brake indicator light goes out when the secondary brake function is deactivated.

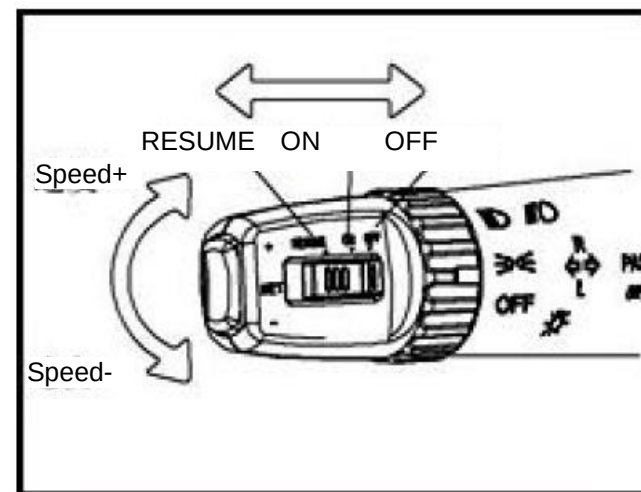
NOTICES

- ◆ When using the secondary brake, select the corresponding low gear according to the slope and vehicle speed, so that the engine speed is controlled at (1800~2200) r/min as far as possible to maximize the effectiveness of secondary brake.
- ◆ When the engine brake is working, it is strictly prohibited not to depress the clutch when shifting gears.
- ◆ When the secondary brake function is not in use, please turn the secondary brake switch to the OFF position to turn off the secondary brake function and prevent the secondary brake function from being accidentally activated.
- ◆ Do not use the secondary brake function when in neutral during driving.



- ◆ Rotate clockwise to turn on the position light and headlight in turn. With the position light and headlight on, lift the lever to turn on the front and rear fog lights in turn.
- ◆ Please turn on the front and rear fog lights when it is foggy or cloudy.

Cruise switch



Cruise control switch

The cruise control function is used to make the engine work within a reasonable speed range while allowing the vehicle to automatically maintain the speed and running at a fixed speed, during which the driver does not need to operate the accelerator pedal.

NOTICES

The cruise control function can be used only when the vehicle speed is above 35km/h. The maximum allowable cruising speed is 105km/h. When the vehicle speed drops below 30km/h, the system will automatically deactivate the cruise function.

◆ Activate the cruise function

- Release the clutch pedal and brake pedal, turn off the exhaust brake switch, and turn the cruise main switch to ON position.

◆ Set cruise speed

- By pressing the cruise speed set switch and releasing it immediately, and at the same time releasing the accelerator pedal, the cruise function is activated, and the current vehicle speed is set as the cruise speed.

◆ Increase/decrease cruise speed

- By pressing the cruise speed set switch (+)/(-) and releasing it immediately, the current vehicle speed will increase or decrease by 2km/h. Each time you press the switch, the vehicle speed will increase/decrease by 2km/h, and the increased/decreased vehicle speed will be automatically set as the cruise speed.

- By pressing and holding the cruise speed set switch (+)/(-), the current vehicle speed will continuously increase or decrease until the switch is released, and then the changed vehicle speed will be automatically set as the cruise speed.

⚠ NOTICES

When cruising, if the accelerator pedal is depressed, only the current vehicle speed increases, but the cruise speed does not increase; and when the accelerator pedal is released, the vehicle speed returns to the original set cruise speed.

◆ Deactivate the cruise function

- You may deactivate the cruise function by using any of the following methods

- * Depress the clutch pedal.
- * Depress the brake pedal.
- * Place the exhaust brake switch at ON position.
- * Place the main switch at OFF position (the cruise function is also turned off at the same time).

⚠ NOTICES

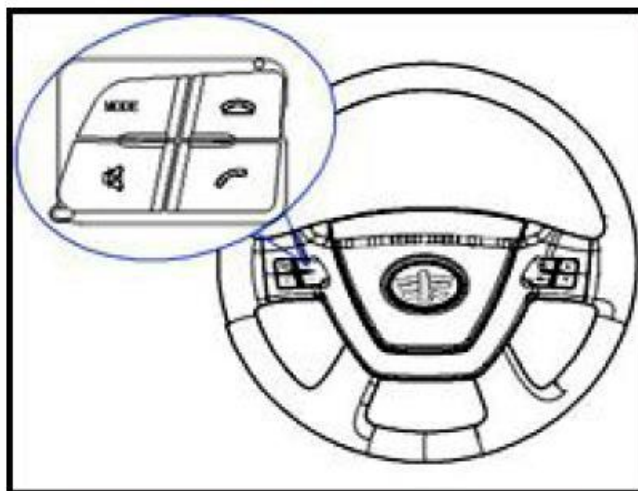
When the user does not use the cruise function, please turn the cruise main switch to the OFF position to turn off the cruise function. If the cruise main switch is at the ON position, the cruise function is likely to be accidentally activated, which is very dangerous.

◆ Resume the cruise function and cruise speed

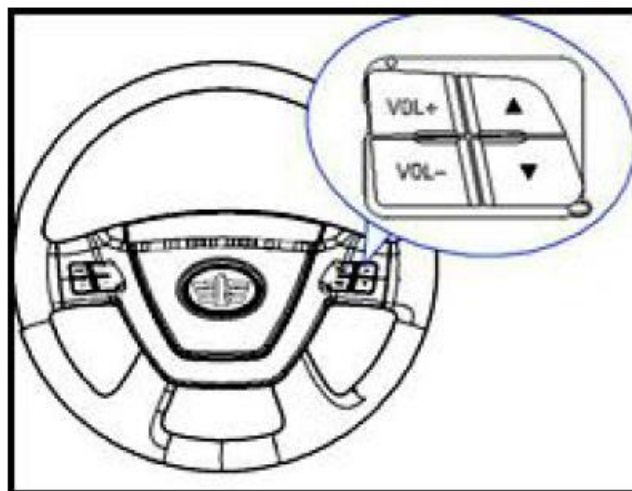
- If a method other than the cruise main switch is used to cancel the cruise function (i.e depress the clutch pedal or brake pedal or turn the exhaust brake switch to the ON position), and the cruise main switch is still at the ON position, press the RES switch and then release it when the vehicle speed reaches 30km/h or above, the cruise function will be reactivated, and the cruise speed will be resumed to the cruise speed set before the cruise function is deactivated.

⚠ NOTICES

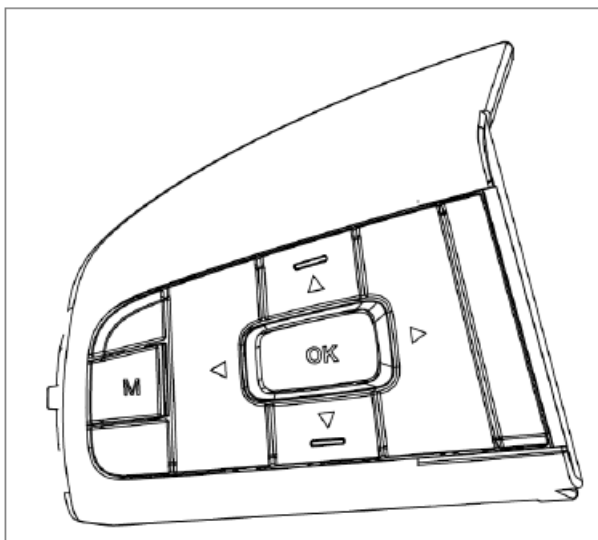
If you have used the cruise main switch to cancel and turn off the cruise function, then to activate the cruise function again, you need to use the cruise speed set switch.

Multi-functional steering wheel switch (high configuration)

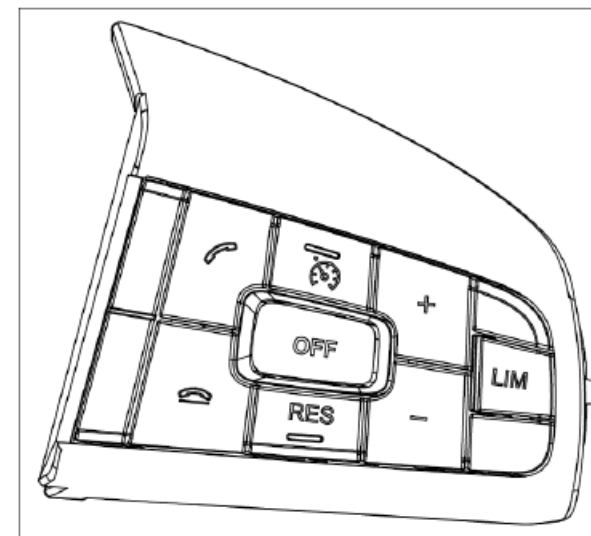
- ◆ Click MODE (mode selection) button to switch between radio, audio playback, video playback and Bluetooth music functions;
- ◆ Click the  (Mute) button to switch between mute and the last volume value;
- ◆ Click the  (Phone off) button to end the ongoing call;
- ◆ Click the  (answer/make a call) button to jump to the dialing interface and answer the incoming call.

**Multi-functional steering wheel (optional)**

- ◆ Click VOL+ (Volume Up) button to increase the volume;
- ◆ Click VOL- (Volume Down) button to decrease the volume;
- ◆ Click ▲ (forward search) button to search forward under the radio mode;
- ◆ Click ▼ (backward search) button to search backward under the radio mode.



- ◆ Click ▲ (UP) button to page up;
- ◆ Click ▼ (DOWN) button to page down.
- ◆ Click the OK button to confirm the current selection.



- ◆ Click the M (mode selection) button to switch between the on-board control and the instrument page turning control. It defaults to the on-board control mode.
- ◆ Under the on-board control mode:
 - ◆ Click ◀ (left) button to decrease the volume;
 - ◆ Click ▶ (right) button to increase the volume;
 - ◆ Click ▲ (UP) button to search backward under the on-board control mode;
 - ◆ Click ▼ (DOWN) button to search forward under the on-board control mode;
- ◆ Under the instrument page turning control mode:
 - ◆ Click ◀ (left) button to page left;
 - ◆ Click ▶ (right) button to page right;

- ◆ Click ☎ (answer/make a call) button to jump to the dialing interface and answer the incoming call;
- ◆ Click ☎ (Phone off) button to end the ongoing call;
- ◆ With the cruise ON/ACC distance set switch  ON, press the cruise ON switch once to enter the ready state. If the vehicle has ACC function, press this button again, the ACC following distance bar flashes for 5 seconds, during which you can press Set+/- to adjust the following distance;
- ◆ The RES switch:  activates and resumes the cruise;

- ◆ +/- adjustment switch +/- activates cruise/ACC; adjusts CC/LIM target speed; adjusts ACC following distance;
- ◆ LIM (Speed Limiter) function: Speed Limiter (LIM for short) allows the driver to set the upper limit of the speed according to the road information. After the function is activated, the vehicle will run within the set limit, which is suitable for speed-limited national road to prevent vehicles from speeding and illegal operation.
- ◆ Activating the LIM function **LIM**: with the vehicle powered on, press the LIM button, the LIM function enters the ready state, the instrument flashes the LIM icon; press + or- to activate LIM at the current speed; if the current speed is less than 15km/h, the default limit is 15km /h; after the function is activated, the instrument displays icon and limit; click the button to search forward in the radio mode; press the + or-switch, the LIM speed changes by 1km/h; press and hold the + or-switch, the LIM speed changes by 5km/h every second;
- ◆ Exit OFF: press the OFF switch to exit; press the (Cruise ON) switch to exit from LIM and enter the cruise Ready state.

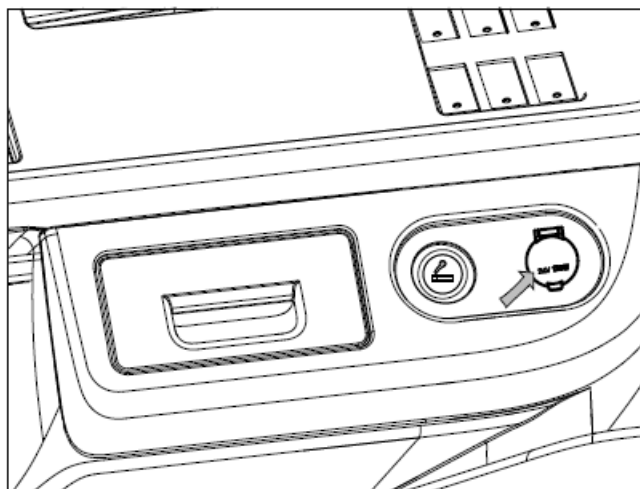
Function switch



◆ Located in the middle of the dashboard. (Subject to the actual vehicle configuration)

- ◆ 1 Hazard warning switch 
 - The switch is red.
 - Turn on the switch, and the left and right turn signals flash at the same time. Turn off the switch, the left and right turn signals go out at the same time.
- ◆ 2 Interior light 
 - Turn on the switch, and the interior light comes on.
 - Turn off the switch and the interior light goes out.
- ◆ 3 Front fog light switch 
 - Please turn on the front fog light when it is foggy or cloudy.
 - Turn on the switch, and the front fog light comes on.
 - Turn off the switch, and the front fog light goes out.
- ◆ 4 Horn change-over switch 
 - Turn on the switch and the air horn works.
 - Turn off the switch and the electric horn works.
- ◆ 5 Rear work lamp switch 
 - Turn on the switch, and the rear work lamp comes on.
 - Turn off the switch, and the rear work lamp goes out.
- ◆ 6 Hydraulic tilt control switch 
 - Turn on the switch to drive the relay to provide power to the hydraulic tilting mechanism, and then operate the cab tilting mechanism outside the vehicle to realize the lifting and lowering of the cab.
- ◆ 7 Rear fog light switch 
 - Please turn on the rear fog light when it is foggy or cloudy to remind the vehicle behind.
 - Only when the front fog light is turned on, the rear fog light can be turned on.
- ◆ 8 Inter-axle differential lock switch 
 - The differential lock switch is used to lock the inter-axle differential between the middle and rear axles.
 - When the inter-axle differential lock is engaged, the indicator light is on.
 - Press the switch up again to disengage the differential lock and the indicator light goes out.
- ◆ 9 Multi-state switch load 
 - According to the different load conditions of the vehicle, adjust the switch position: unloaded-empty, half-load-half, full-load-full, and control the fuel injection volume of the engine to achieve the fuel saving.
- ◆ 10 Overflow protection valve reset switch 
 - Reset the overflow protection valve to ensure normal gas supply.

24V power socket

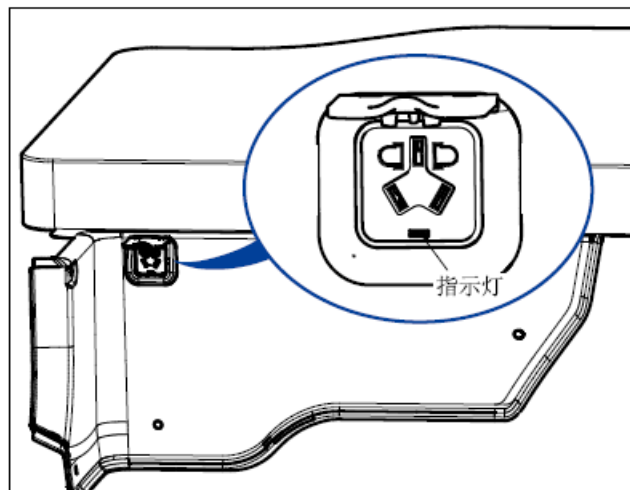


- ◆ The power socket is located in the middle of the instrument panel, on the right side of the cigarette lighter and can provide power for 24V electrical equipment.
- ◆ Open the cover of the power socket and insert the electrical equipment into it to use.

 NOTICES

- ◆ The power of the electrical equipment connected to each 24V power socket shall not exceed 120W.
- ◆ Do not insert metal and other conductors into the 24V power socket.

220V power socket (high configuration)



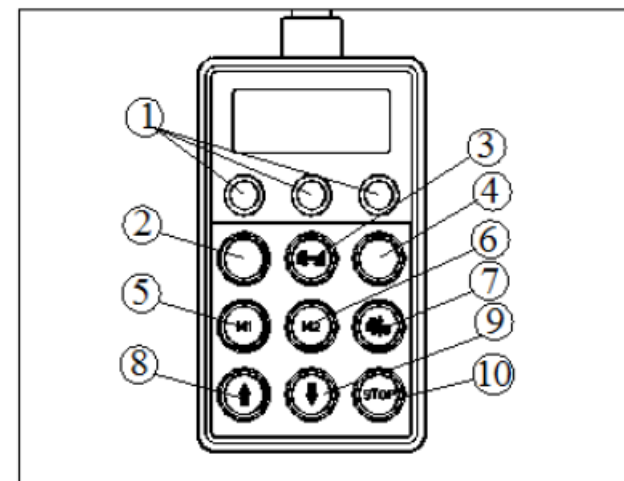
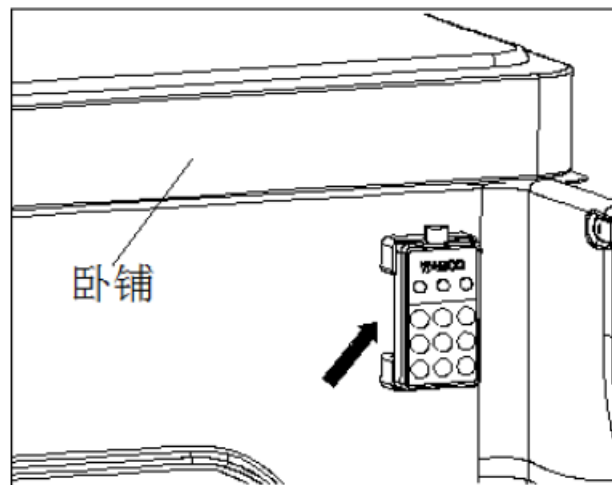
- ◆ Installed on the sleeper baffle on the front passenger side.
- ◆ When using, you need to lift up the protective cover.
- ◆ There is an indicator lamp on the 220V power socket.
 - When no electrical equipment is plugged into the socket, the indicator light is off, indicating that there is no power output.
 - When the electrical equipment is plugged into the socket, the indicator light illuminates in green, indicating that there is power output and it is working normally.
 - When the electrical equipment is plugged into the socket, if the indicator light illuminates in red, it indicates that an abnormal operation has occurred, and the electrical equipment should be unplugged immediately and check whether the electrical equipment exceeds the rated load (300W). Otherwise, please go to the designated service station for testing.

 NOTICES

- ◆ Do not insert metal and other conductors into the 220V power socket.
- ◆ When the indicator light illuminates in red, you should unplug the electrical equipment and replace with one with a power within 300W. If it still illuminates in red, please go to the designated service station for fault detection.
- ◆ Do not use it for a long period of time when the engine is not running.

Description of ECAS function switch

ECAS remote control



- ◆ ECAS system remote control is stored on the panel below the driver side berth or on the floor to the left of the driver seat.
- ◆ User can use the remote control to control the up/down of the vehicle and adjust the vehicle to the desired height. The vehicle can still run when the lights on the remote control are on.
- ◆ When the vehicle is moving, all the lights on the remote control should be turned off and the remote control should be fixed on the remote control bracket to avoid accidentally touching the button, which may lead to undesirable actions of the system and even affect the driving safety.

◆ Introduction to remote control

①Indicator light: press button ④ or button ③, the indicator light on it comes on, indicating that the shaft up/down function is activated. Press button ④ or button ③ again, the indicator light on it goes out, indicating that the shaft up/down function is off.

②Reserved

③Drive shaft selection button: after selecting this button, the drive shaft can perform up/down operation to adjust the height of the vehicle.

- ④Auxiliary axle selection button: after selecting this button, the auxiliary axle can perform up/down operation (only available for vehicles with auxiliary axle).
- ⑤Height memory 1(M1): adjust the vehicle height to height memory 1. Need to be used in combination with button ③.
- ⑥ Height memory 2(M2): adjust the vehicle height to height memory 2. Need to be used in combination with button ③.
- ⑦Normal height: press this button to return the vehicle to its normal height.

⑧Up: for performing up operation. Need to be used in combination with button ③ or button ④.

⑨Down: for performing down operation. Need to be used in combination with button ③ or button ④.

⑩Stop/Stand-by: it is red. Press this button, the height adjustment operation commanded by the control unit and the remote control will be terminated; it is also used to turn on standby function; it can also be used in combination with button ⑤ or ⑥ to set height memory 1 or height memory 2.

Use of ECAS functions

- ◆ Use the remote control to adjust the vehicle quickly.
- ◆ Users can quickly adjust the height of the system manually by using the remote control. The cross-sectional area of the inlet and outlet of the system solenoid valve is relatively large, making it possible to adjust the height rapidly. Operation method is as follows:
 - Press button ③ on the remote control, the indicator on the button comes on.
 - Press button ⑧ or ⑨ to adjust the vehicle to the required height.
 - Press button ③ on the remote control, the indicator on the button goes out.

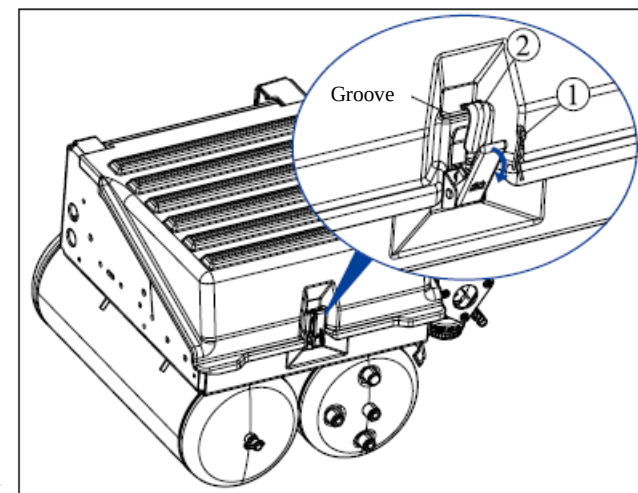


NOTICES

- ◆ When the vehicle speed is lower than a certain limit (20km/h), the height of the vehicle can be adjusted within the range limited by the mechanical structure. When the speed is higher than the limit, the system will automatically return the vehicle to normal height. But before driving the vehicle, if the vehicle is not at the normal height, it is recommended that the user manually restore the vehicle to its normal height.

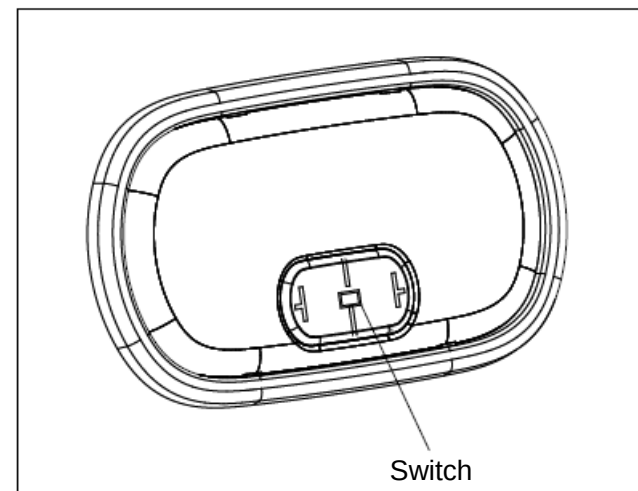
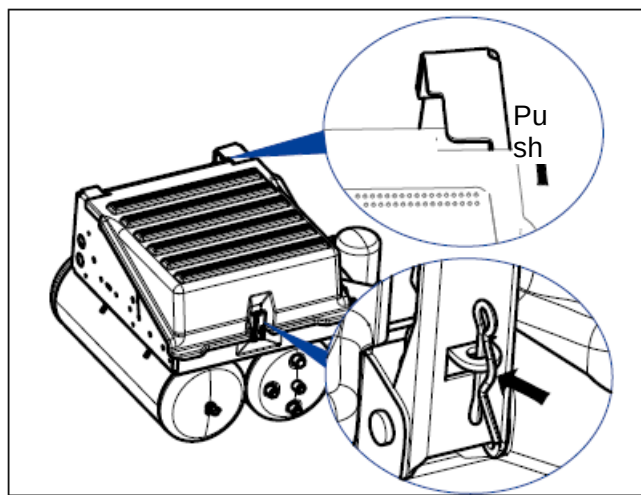
- ◆ Use of the Stand-by function
 - When the vehicle driver is not on site and the vehicle height needs to be adjusted quickly during the loading/unloading process, the Stand-by function can be used to achieve this requirement.
 - Function: with the ignition switch off and the key removed, the user can adjust the height of the vehicle continuously for up to 30 minutes according to the work needs.
 - Method to activate the function:
 - * First press and hold button ⑩ on the remote control.
 - * Turn off the ignition switch.
 - * Release button ⑩.
 - * Adjust the height.
- ◆ Set height memory 1(M1) and height memory 2(M2)
 - For commonly used heights, user can operate the remote control to make the system "remember" the two heights. When used, it can quickly adjust the vehicle to the desired height, saving the trouble of repeatedly adjusting the system.
 - The operation of storing height memory is as follows:
 - * Press button ③, then the indicator on it comes on.
 - * Press button ⑧ or ⑨ to adjust the vehicle to the commonly used height.
 - * Press and hold button ⑩, at the same time, press button ⑤ (M1) or button ⑥(M2).
 - * Release the two buttons.
 - * Store the current height of the vehicle in the system control unit.
 - Method to quickly adjust the vehicle height to the commonly used height:
 - * Press button ③, then the indicator on it comes on.
 - * Press button ⑤ (M1) or button ⑥(M2).
- ◆ Functions of auxiliary axle
 - According to the actual operating conditions, under the premise that the drive axle is not fully loaded, user can press the auxiliary axle up/down switch on the function switch panel or press the buttons ④ and ⑧ on the remote control to lift the auxiliary axle. If the auxiliary axle is successfully lifted, the auxiliary axle indicator light on the instrument comes on. - When the auxiliary axle is lifted, press the auxiliary axle up/down switch on the function switch panel or use the buttons ④ and ⑨ on the remote control to lower it; or when the load of the drive axle exceeds the set load, the auxiliary axle will automatically come down, and the auxiliary axle indicator light goes out.

Battery cover



- ◆ Drive assist function
 - To solve the problem of 6×2 insufficient starting power, the air suspension system is equipped with drive assist function. When the drive assist switch on function switch panel is pressed, the drive assist function will turn on and the drive assist indicator light on the instrument will turn on. After the vehicle starts and the driving speed is > 30km/h, the drive assist finished and the drive assist light goes out; or you can press and hold the drive assist switch for 5 seconds to cancel the drive assist function.
- ◆ Precautions for use of air suspension
 - Cushion blocks are usually used when working under a vehicle chassis equipped with air suspension. The cushion blocks should be positioned to prevent the frame from falling.
 - ECAS system may be unable to perform certain functions when the vehicle air pressure is too low.
 - The vehicle should be at normal height. Except in special circumstances, vehicles should be driven at a normal height.
 - Under special circumstances, the vehicle may be driven at an abnormal height for a short time and should be restored to the normal height immediately afterwards.
 - All indicator lights on the remote control shall be in off state and the remote control should be fixed on the remote control bracket.
 - After the drive assist is activated, the auxiliary axle control will not work until the control is completed or canceled.
- ◆ To open the battery cover, pull out the lock pin ① and turn the lock hook assembly ② outwards to make the lock hook free from the groove of the battery cover.
- ◆ Lift the battery cover up slightly and then pull it out to open it.

Berth light switch



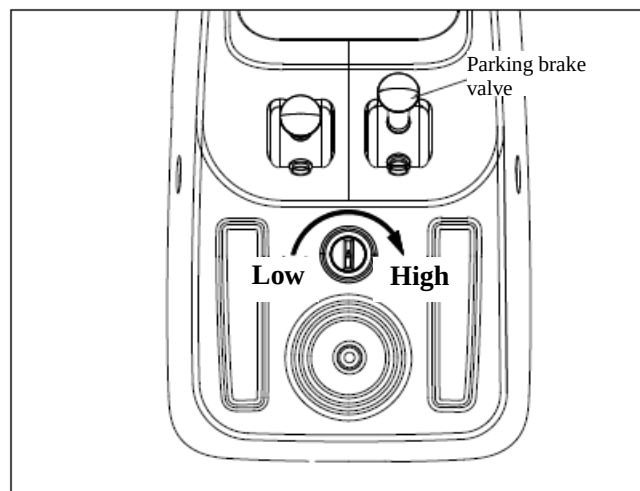
- ◆ To close the battery cover, insert the front end of the battery cover into the connection of the battery bracket, and push the battery cover inward until the rear end of the battery cover is locked into the front connecting plate of the battery bracket.
- ◆ Turn the lock hook assembly upward again to make the lock hook snap into the groove.
- ◆ Insert the lock pin so that the lock pin is locked in the middle half circle.

 NOTICES

- ◆ The lock hook assembly has been adjusted at the factory, and the user does not need to adjust it again. If you need to adjust it by yourself, make sure that the lock hook can be properly locked into the groove of the battery cover to prevent the lock hook from failing to lock the battery cover, causing the cover to be lost.
- ◆ When inserting the lock pin, just insert it to the middle half circle. Do not insert the lock pin into the bottom ring to prevent the lock pin from failing and failing to lock the battery cover, causing the cover to be lost.
- ◆ Users can also purchase locks instead of lock pins.

- ◆ Turn on the switch and the berth lamp comes on.
- ◆ Turn off the switch, and the berth lamp goes out.

Independent heater switch (optional)

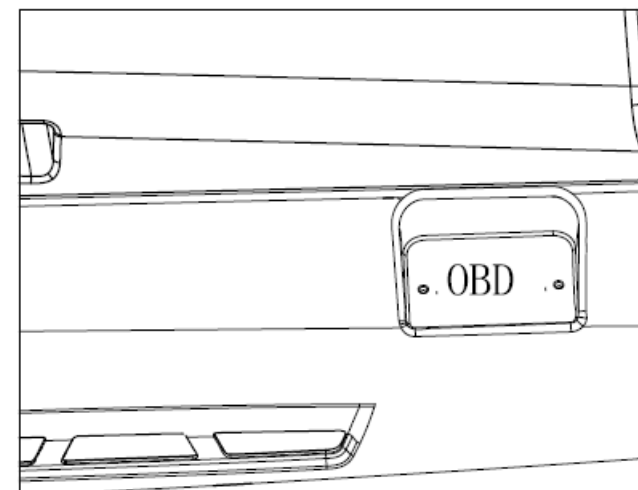


- ◆ The independent heater switch is located behind the parking brake valve.
- ◆ Rotate the knob to turn the independent heater on and off.
- ◆ Adjust the angle of the knob to set the desired temperature. Rotate it counterclockwise to decrease the temperature, and clockwise to increase the temperature.
- ◆ For other details, please refer to the document for independent heater "Operating instructions Air Top 2000 ST" provided with the vehicle.

NOTICES

- ◆ In order to avoid blockage or friction of the hot air and combustion air fans, you must ensure that nothing is placed or leaning on the heater before starting it.
- ◆ When the setting of the temperature control switch is changed, a delay is required for the new setting to be executed.

OBD diagnostic connector



- ◆ The OBD diagnostic connector is located on the right side of the dashboard, in front of the front passenger seat.
- ◆ Open the upper cover and connect the diagnostic tester.

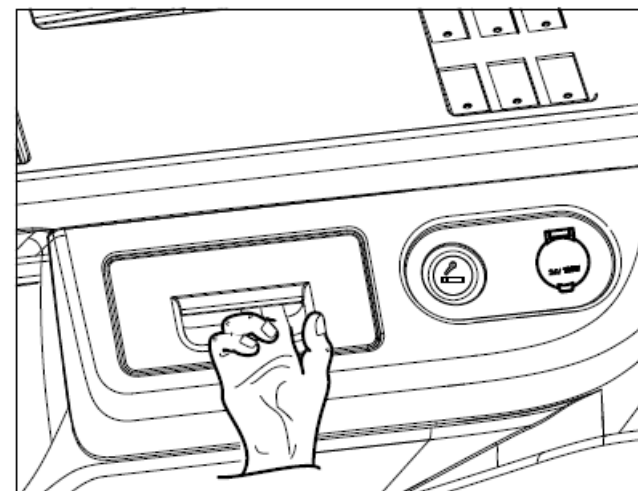
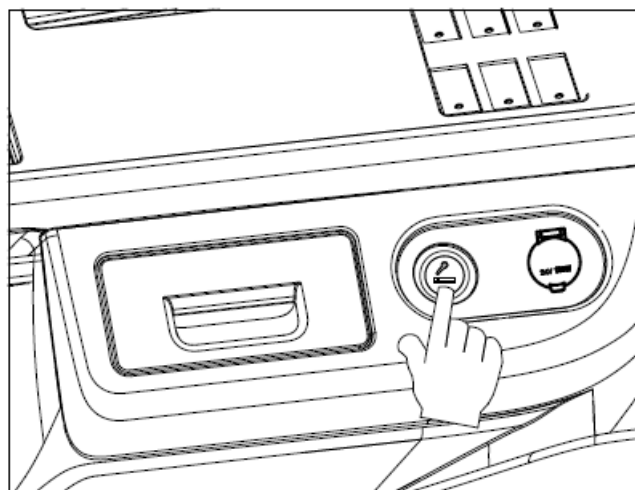
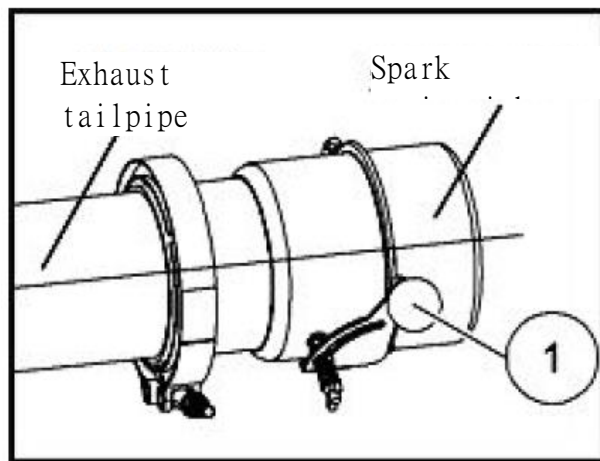
NOTICES

- The interface of the diagnostic tester should be plugged and unplugged perpendicular to the OBD diagnosis connector.

Spark extinguisher switch (dangerous Cigarette lighter chemical)

Ashtray

Switch, button, lever

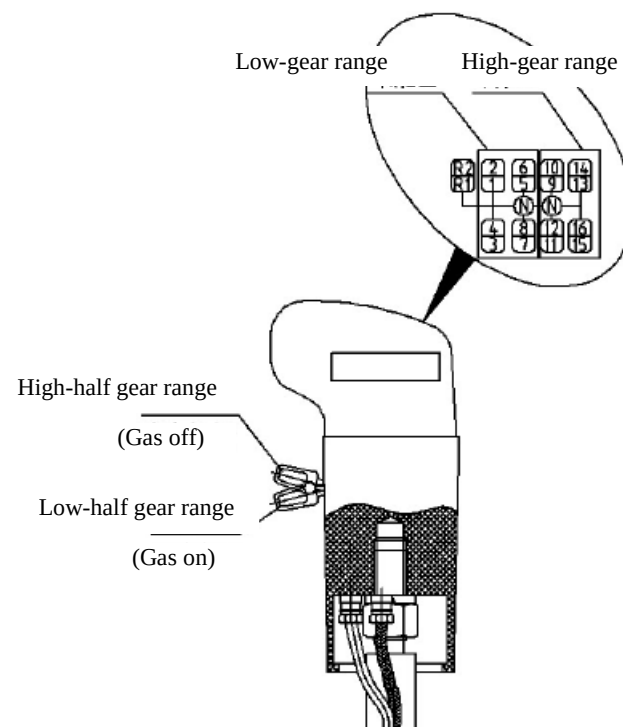


- ◆ Spark extinguisher is installed on rear end of exhaust tail pipe.
- ◆ This device should be used on those vehicles which are loaded dangerous chemical and enters inflammable and explosive producing areas and inflammable and explosive chemical storehouses and other fire prohibited areas.
- ◆ Turn the operating handle ① of spark extinguisher to turn on and off the spark extinguisher.
- ◆ The cigarette lighter is located in the lower middle of the dashboard.
- ◆ Press the button, and it pops up automatically after the resistance wire becomes red hot, and then you may pull out the button to use.
- ◆ There is an ash tray next to the cigarette lighter.
- ◆ Cigarette butts and matches should be completely extinguished before being put in the ashtray. After used, the ashtray lid must be closed.
- ◆ Do not put anything other than cigarette butts or fill it with cigarette butts, otherwise it may cause fire.

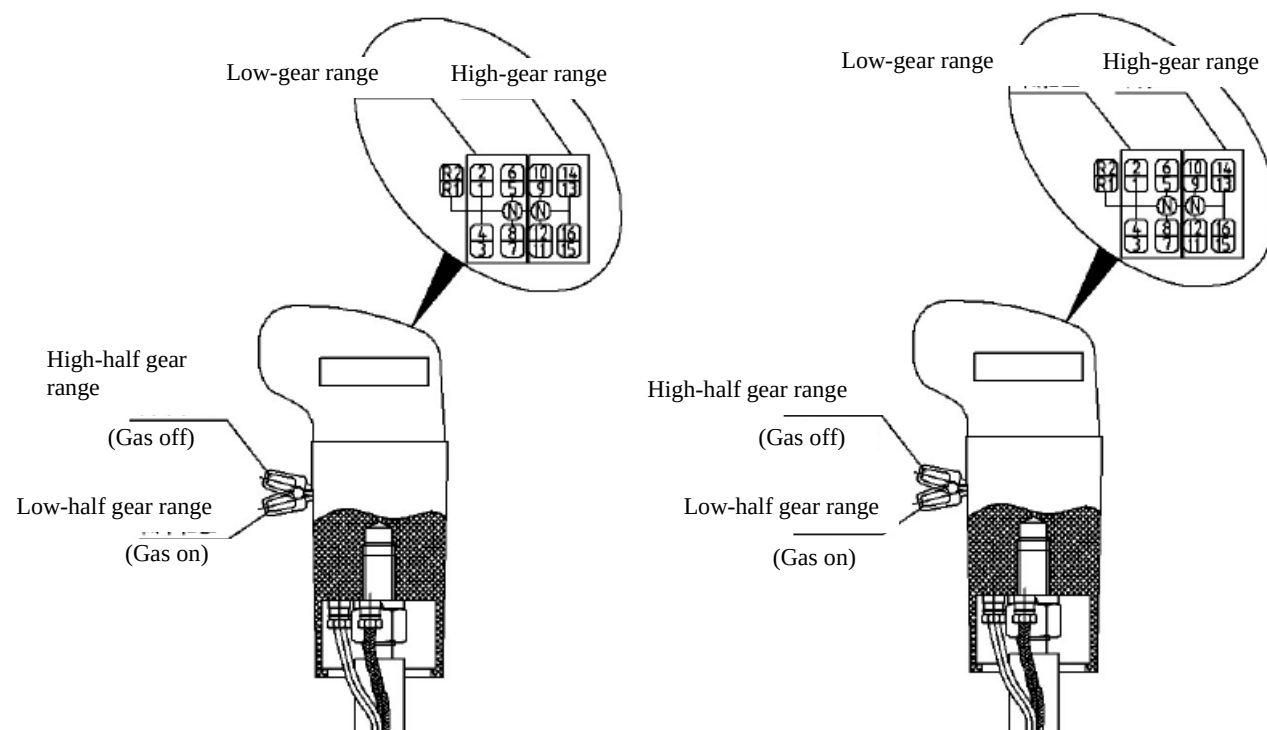
⚠ CAUTIONS

Please comply with the requirements of the state and relevant departments to use spark extinguisher.

Transmission shift lever (16-speed)



- ◆ The transmission adopts the combined design of main and auxiliary transmissions. You can get 8 forward gears through the shift lever, and then through the high-low gear switch, you can get a total of 16 forward gears and two reverse gears; among them, 1 to 8 is low-gear range, and 9 to 16 is high-gear range.
- ◆ There is a neutral gear (N) in both the high-gear range and the low-gear range. That is, the neutral is located between (9-10) gears in the high-gear range, and (7-8) gears in the low-gear range.

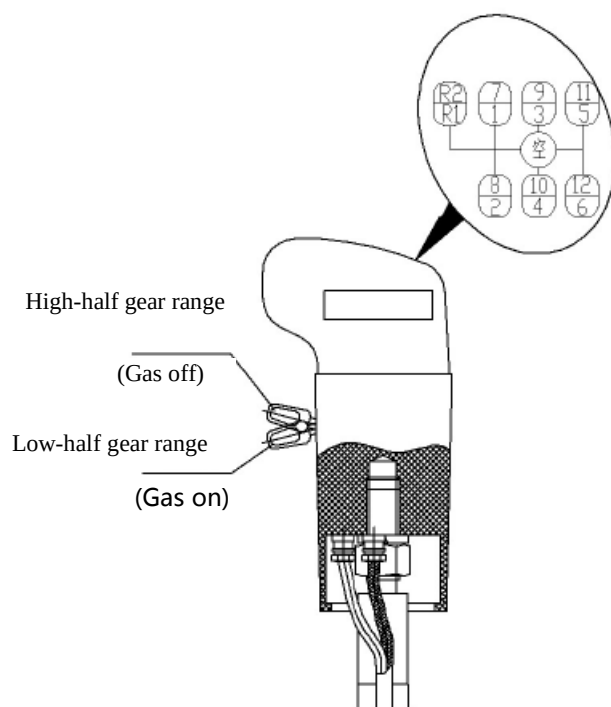


- ◆ To place the vehicle in reverse gear "R", you should stop the vehicle first.
- ◆ Low-half gear to high-half gear: When driving normally, turn the lever switch from low-half gear to high-half gear range, and then fully depress the clutch pedal, and engage it to complete the upshifting operation. And vice versa.
- ◆ When shifting gears, the clutch must be fully depressed.

NOTICES

- ◆ When the transmission is shifted from the low-gear range to the high-gear range (or vice versa), do not skip the gear, otherwise it will affect the service life of the auxiliary transmission synchronizer.
- ◆ When the vehicle goes downhill, try to avoid changing the high and low-gear ranges.
- ◆ The first gear must be used when the vehicle starts uphill or starts under heavy load. Before the vehicle starts, you must wait until the air pressure rises to the pressure required to release the brake.
- ◆ It is strictly forbidden to coast in neutral, otherwise the transmission will be damaged.
- ◆ When the vehicle needs to tow, the axle shaft must be pulled out, the propeller shaft must be disengaged or the driving wheel must be off the ground, otherwise the transmission will be damaged.
- ◆ When the vehicle speed is greater than 28km/h, the high and low-gear auxiliary transmission gears are not allowed to switch, otherwise it will cause early wear of the high and low-gear auxiliary transmission synchronizer.

Transmission shift lever (12-speed)



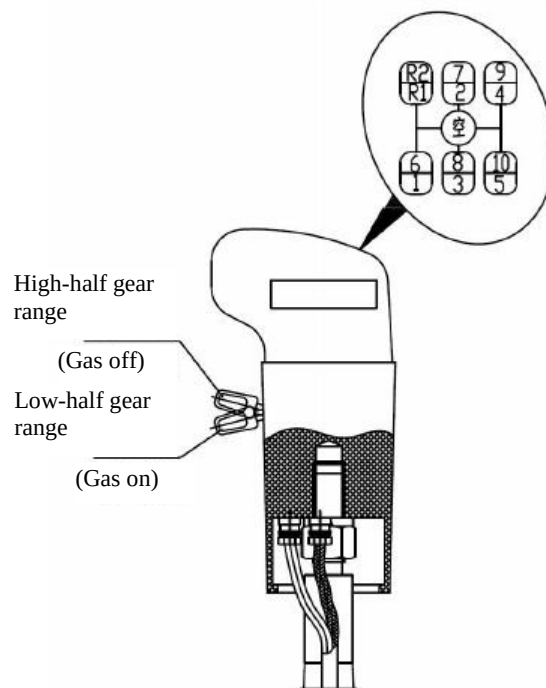
- ◆ The transmission adopts the combined design of main and auxiliary transmissions. You can get 6 forward gears through the shift lever, and then through the high-low gear switch, you can get a total of 12 forward gears and two reverse gears; among them, 1 to 6 is low-gear range, and 7 to 12 is high-gear range.
- ◆ There is a neutral gear (N) in both the high-gear range and the low-gear range. That is, the neutral is located between (9-10) gears in the high-gear range, and (3-4) gears in the low-gear range. When parking, the transmission should be placed in the low-gear range, that is, the high-low gear switch on the shift lever is in the downward position.

- ◆ To place the vehicle in reverse gear "R", you should stop the vehicle first.
- ◆ In the process of shifting from the 6th gear to 7th gear, first set the high-low gear switch to the high-gear range in the 6th gear, and then shift it to the 7th gear. Other upshifts are the same as ordinary transmission shifting methods. In the process of shifting from the 7th gear to 6th gear, first set the high-low gear switch to the low-gear range in the 7th gear, and then shift it to the 6th gear. Other downshifts are the same as ordinary transmission shifting methods.
- ◆ When shifting from 6th gear to 7th gear (or from 7th gear to 6th gear), you should consciously stop for a while to facilitate the conversion of the auxiliary transmission between high and low-gear range.

Transmission shift lever(10-speed)

NOTICES

- ◆ When the transmission is shifted from the low-gear range to the high-gear range (or vice versa), do not skip the gear, otherwise it will affect the service life of the auxiliary transmission synchronizer.
- ◆ When the vehicle goes downhill, try to avoid changing the high and low-gear ranges.
- ◆ The first gear must be used when the vehicle starts uphill or starts under heavy load. Before the vehicle starts, you must wait until the air pressure rises to the pressure required to release the brake.
- ◆ It is strictly forbidden to coast in neutral, otherwise the transmission will be damaged.
- ◆ When the vehicle needs to tow, the axle shaft must be pulled out, the propeller shaft must be disengaged or the driving wheel must be off the ground, otherwise the transmission will be damaged.



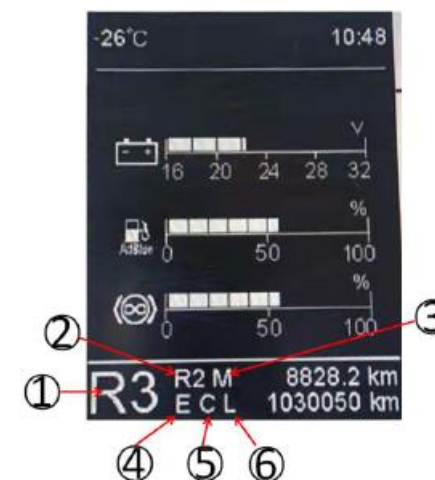
- ◆ The transmission adopts the combined design of main and auxiliary transmissions. You can get 5 forward gears through the shift lever, and then through the high-low gear switch, you can get a total of 10 forward gears and two reverse gears; among them, 1 to 5 is low-gear range, and 6 to 10 is high-gear range.
- ◆ There is a neutral gear (N) in both the high-gear range and the low-gear range. That is, the neutral is located between (7-8) gears in the high-gear range, and (2-3) gears in the low-gear range. When parking, the transmission should be placed in the low-gear range, that is, the high-low gear switch on the shift lever is in the downward position.

Transmission shift lever (AMT)

- ◆ To place the vehicle in reverse gear "R", you should stop the vehicle first.
- ◆ In the process of shifting from the 5th gear to 6th gear, first set the high-low gear switch to the high-gear range in the 5th gear, and then shift it to the 6th gear. Other upshifts are the same as ordinary transmission shifting methods. In the process of shifting from the 6th gear to 5th gear, first set the high-low gear switch to the low-gear range in the 6th gear, and then shift it to the 5th gear. Other downshifts are the same as ordinary transmission shifting methods.
- ◆ When shifting from 5th gear to 6th gear (or from 6th gear to 5th gear), you should consciously stop for a while to facilitate the conversion of the auxiliary transmission between high and low-gear range.

⚠ NOTICES

- ◆ When the transmission is shifted from the low-gear range to the high-gear range (or vice versa), do not skip the gear, otherwise it will affect the service life of the auxiliary transmission synchronizer.
- ◆ When the vehicle goes downhill, try to avoid changing the high and low-gear ranges.
- ◆ The first gear must be used when the vehicle starts uphill or starts under heavy load. Before the vehicle starts, you must wait until the air pressure rises to the pressure required to release the brake.
- ◆ It is strictly forbidden to coast in neutral, otherwise the transmission will be damaged.
- ◆ When the vehicle needs to tow, the axle shaft must be pulled out, the propeller shaft must be disengaged or the driving wheel must be off the ground, otherwise the transmission will be damaged.



AMT information displayed on LCD

1. Current gear
2. Target gear
3. A/M mode display
4. E/P mode display
5. C mode display
6. L mode display



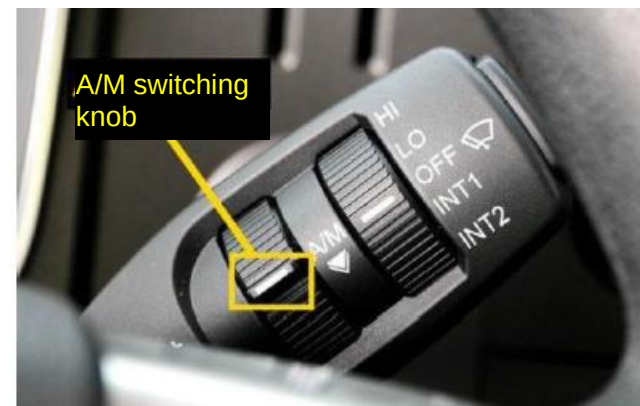
AMT knob

N	Neutral
R1	Reverse gear 1
R2	Reverse gear 2
DP	Power mode
DE	Eco mode



Operate the combination switch to shift up (+) and down (-)

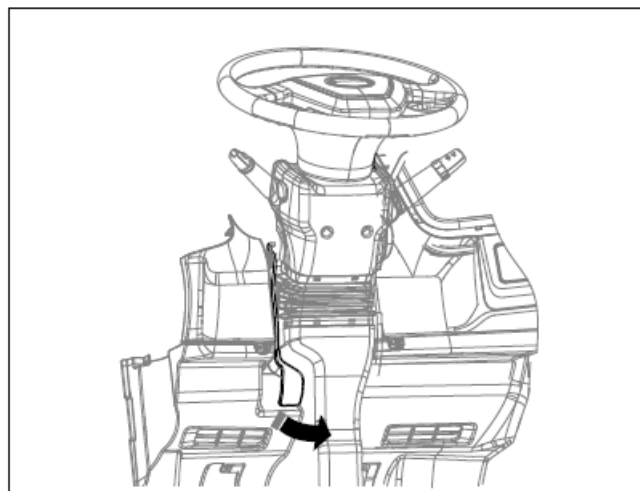
- Lift the combination switch up to shift up
- Press the combination switch down to shift down



A/M mode switching

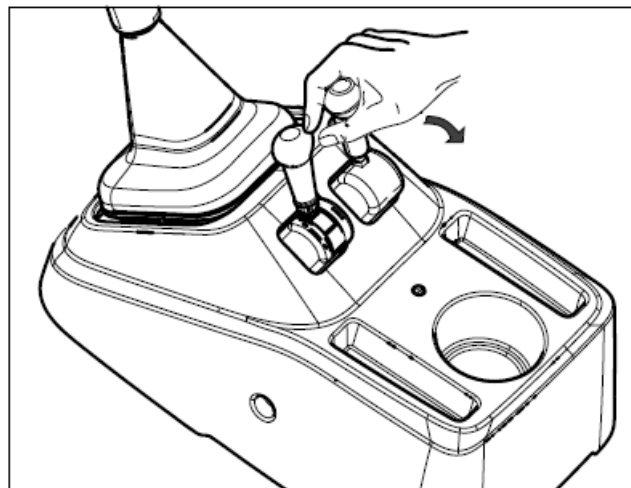
- There is a knob marked with A/M on the combination switch, move it once to switch to manual mode, and move it again to switch to automatic mode
- And the instrument will display the corresponding mode. Display "A" for automatic mode; and display "M" for manual mode.

Steering wheel lock lever



- ◆ The steering wheel lock lever is on the left side of the steering column sheath. Lift up the lock lever to adjust the position of the steering wheel.
- ◆ The steering wheel can slide and tilt forward and backward, with the vertical adjustment distance of 70mm, and the front and rear adjustment angle of 17°.
- ◆ After adjustment, press the lock lever down to fix the steering wheel.

Parking brake valve (referred to as hand valve)

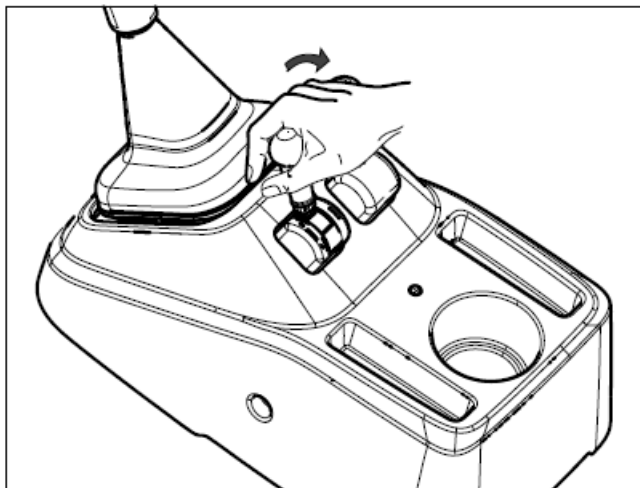


- ◆ The parking brake valve is located on the right side of the driver seat.
- ◆ To apply parking brake, pull the parking brake valve back to the end.
- ◆ To release the parking brake, lift up the parking brake 1 control handle and push it forward to the end at the same time.
- ◆ In case of emergency, the parking brake is allowed to be used as an emergency brake, but should not be used as the service brake for a long period of time.

 NOTICES

- ◆ Before releasing the parking brake valve, please confirm that the air pressure has reached 0.55Mpa. It is strictly prohibited to start off forcibly.
- ◆ After long-term parking, when the air pressure of the air reservoir drops below 0.5Mpa, it must be refilled to 0.75Mpa before the parking brake is allowed to release for start.

Brake valve of trailer



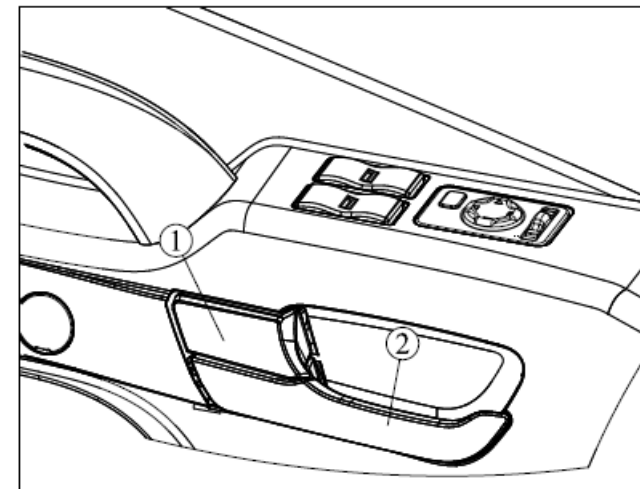
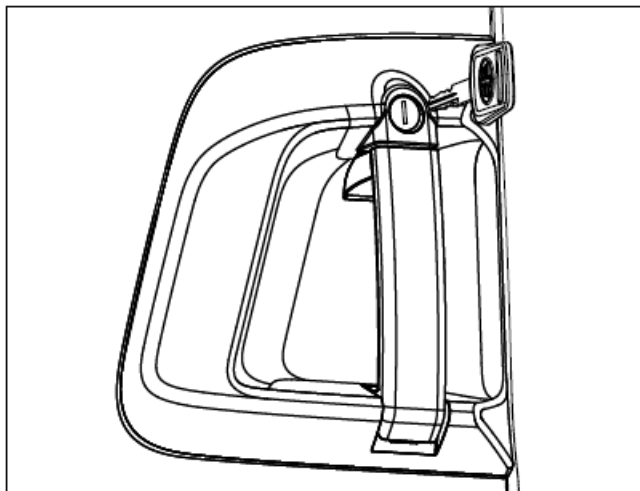
NOTICES

- ◆ The trailer brake cannot be used as a parking brake.
- ◆ Long-term continuous use will cause the trailer brake to overheat and should be avoided.

- ◆ Only used to control the trailer brake.
- ◆ The trailer brake valve is located beside the parking brake valve.
- ◆ When going downhill, etc., push down the trailer brake valve to control the speed of the trailer to prevent the trailer from colliding with the tractor.
- ◆ The braking force of the trailer brake is proportional to the angle of the brake handle of trailer.
- ◆ Release your hand and the hand brake valve handle of trailer will automatically return to the release (running) position.
- ◆ Even if the trailer brake is applied, other normal braking operations can also be performed.

Opening and closing the door

Opening and closing the door



◆ Operations outside the vehicle

- Turn the key clockwise for the left door (counterclockwise for the right door) to lock the door.
- Turn the key counterclockwise for the left door (clockwise for the right door) to unlock the door.
- After the door lock is unlocked, pull the external handle outward to open the door.
- Use the remote control key to lock or unlock the left and right door locks (power).



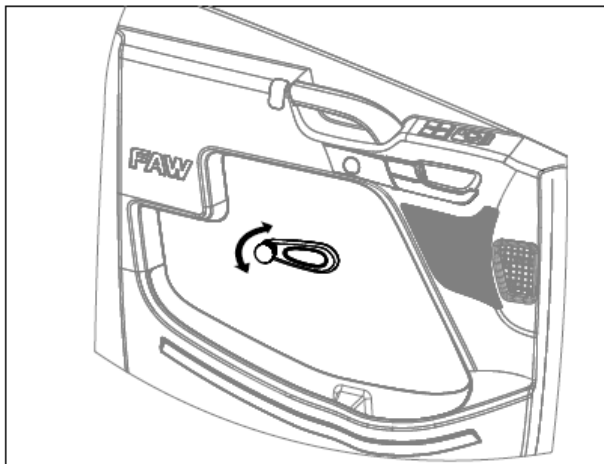
NOTICES

- ◆ Before opening the door, you should note if there are pedestrians in front and rear of the vehicle or following vehicles, and then open the door after confirming that it is safe.
- ◆ Please confirm that the doors are closed securely before starting.

◆ Operations inside the vehicle (manual)

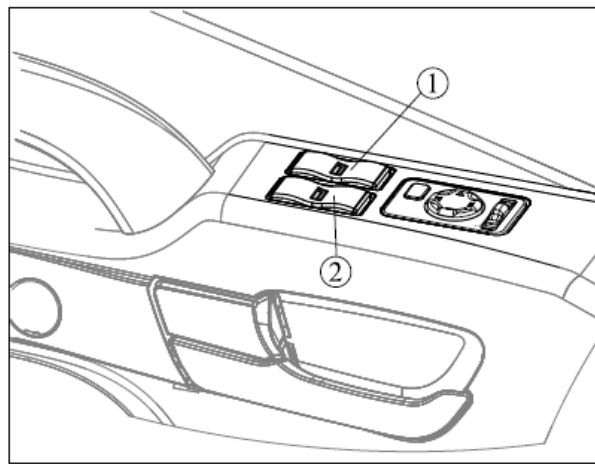
- Press the inner lock button① to lock the door.
- Pull the internal handle② inward to unlock the door first; continue to pull the internal handle②, and push the door outward to open it.

Window regulator



◆ Manual window regulator

- By operating the window regulator handle, you may move the door glass.



◆ Power window regulator

- The left and right window regulators can be controlled at the driver side.

*① Left window regulator button

*② Right window regulator button

- Press the window regulator button forward to move up the glass and close the window.

- Press the window regulator button backward to move down the glass and open the window.



NOTICES

The right button on the left door has priority over the control of the right window to the right door control button.

Seat and seat belt in the cab

Driver seat



◆The following functions are optional:

- Horizontal adjustment
- Mechanical height adjustment
- Height locking
- Backrest adjustment
- Lumbar support
- Fast lowering down
- Adjustment of shock absorber
- Inclination adjustment
- Pneumatic height adjustment
- Heating
- Ventilation

◆1.Horizontal adjustment

- When adjusting the position of the seat, pull the back-forth adjustment handle upward to adjust the seat to the desired position by your body, and then release the handle to lock the seat.

◆2. Mechanical height adjustment

- The height adjustment of the front and rear of the seat is controlled by the separate adjustment handles;

When adjusting the front height of the seat cushion, lift up the front height adjustment handle to change the front height of the seat cushion by your body to adjust it to the desired position, then release the handle to lock the seat;

If you need to adjust the rear height of the seat cushion, lift up the rear height adjustment handle, and perform the same operation as that of front height adjustment.

**◆3.Height locking**

- When the seat height locking handle is in the vertical direction, the seat can float in the height direction.
- Move the seat height locking handle to the left to lock the seat height.

**◆4.Backrest adjustment**

- Lift up the angle adjustment handle, and adjust the seat backrest to a proper angle by your back, then release the handle, the backrest is locked.

**◆5. Lumbar support adjustment**

- The pneumatic lumbar support is divided into upper and lower parts, which are controlled by separate buttons. The support of the lumbar support can be adjusted by pressing the upper and lower parts of the button.

**◆6.Fast lowering down**

Press the button down and the seat will drop to the lowest position; press the button up and the seat will return to the previous set position.

**◆7.Adjustment of shock absorber**

Adjusting the shock absorber can make the suspension performance of the seat more comfortable at the time of seating carrying different people and driving on different roads.

When the handle is up, the shock absorber has the smallest force, which is suitable for flat roads. When the handle is down, the shock absorber has the largest force, which is suitable for poor roads and heavy drivers.

**◆8. Inclination adjustment**

Pull the handle, press or lift at the front end of the cushion to adjust the inclination of the seat to the desired position.

**◆9. Pneumatic height adjustment**

Press or pull the handle to adjust the seat to the desired height.

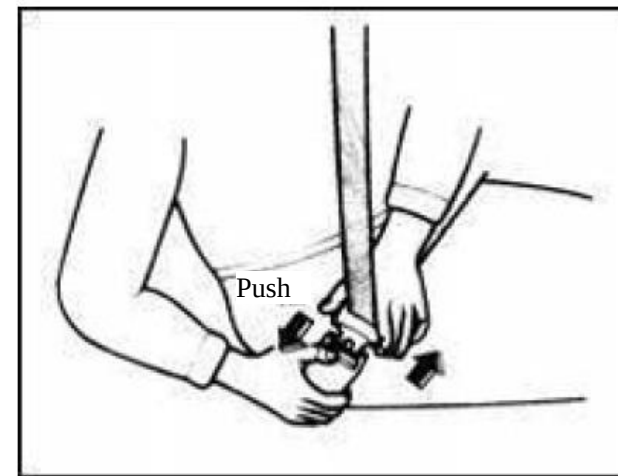
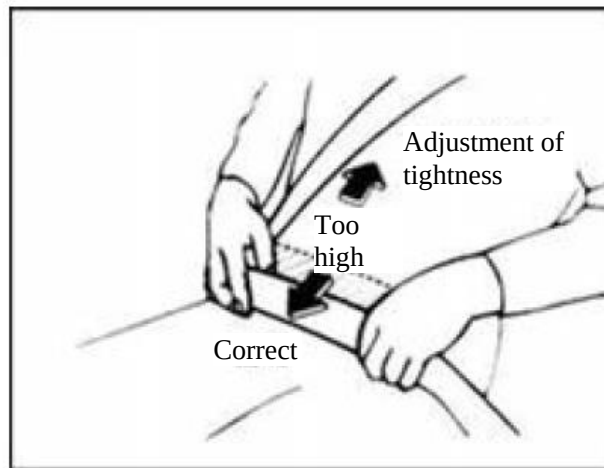
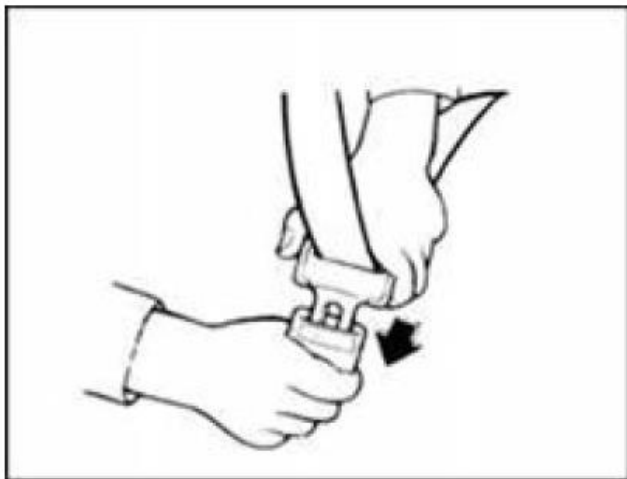
**◆10.Heating**

The electric heating knob is adjusted by levels. By operating the knob clockwise or counterclockwise, the temperature of the seat cushion and backrest can be adjusted.

**◆11. Ventilation**

The ventilation heating knob is adjusted by levels. By operating the knob clockwise or counterclockwise, the ventilation rate of the seat cushion and backrest can be adjusted.

Seat belt



! CAUTIONS

- ◆ When the vehicle is driving, the seat backrest should not be excessively tilted, otherwise, the front passenger's body will fall out of the seat belt during emergency braking, causing the neck to be strangled and the cervical spine to break and other accidental serious injuries.
- ◆ In the event of a collision and the impact on the seat belt, the seat belt should be replaced even if no damage is found.
- ◆ When you fasten your seat belt, make sure it is not twisted. The area of the twisted part becomes smaller, so the local pressure on the body is too large and can be dangerous.

◆ Fasten the seat belt

- Sitting on the seat with your back resting comfortably on the backrest, slowly pull out the plate and insert it into the buckle until a click sound is heard.

! NOTICES

- Position the seat belt as low as possible over the hips rather than waist. Then pull the shoulder belt upwards to tension it.

◆ Unfasten seat belt

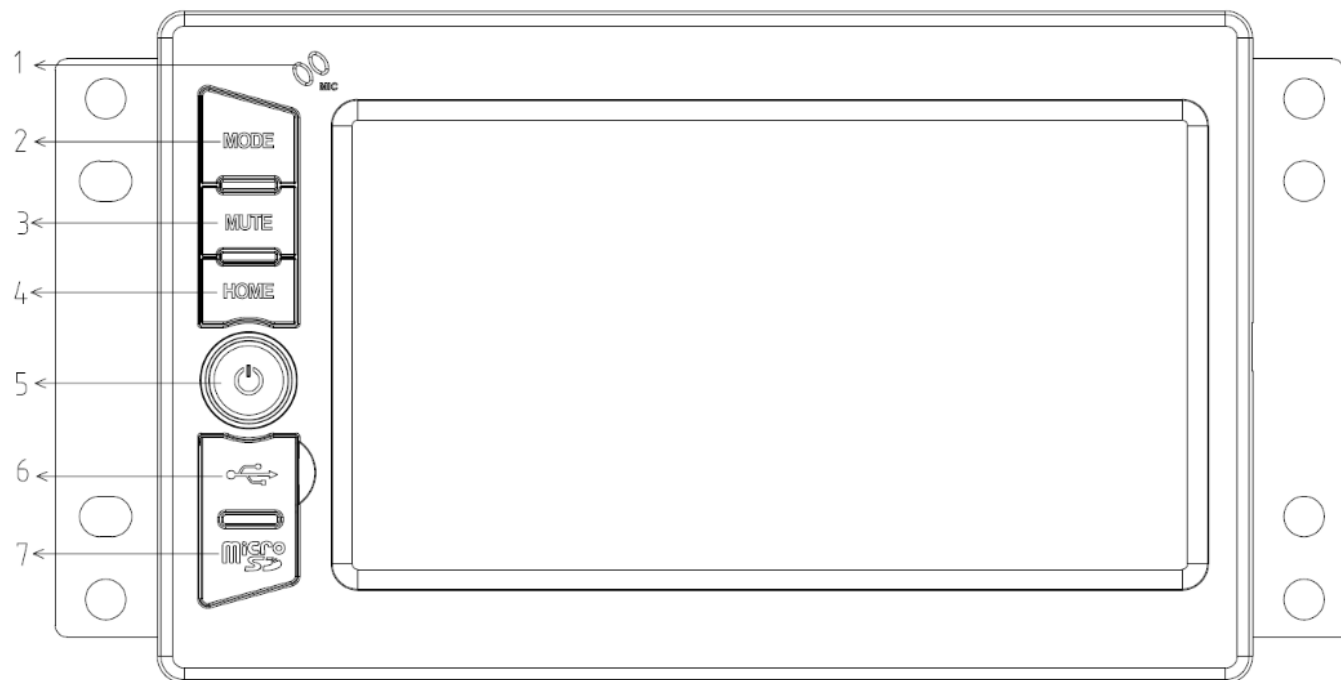
- Press the red button to retract the belt automatically.

! CAUTIONS

- The seat belt is proved to effectively protect the occupants, avoid and reduce the casualties of the occupants. Therefore, in the spirit of safety first, our company reminds you to wear a seat belt when driving.

Vehicle Information Terminal and Traveling Data Recorder

6.5-inch screen



- 1- Microphone 2- Menu button 3- Mute button 4- Return to the main interface
5-ON,OFF/screen ON,OFF/volume adjustment 6-USB port 7-SD card interface

10-inch screen



- 1- Microphone 2- Reset button 3- On/Off button 4- Home button
5- Back button 6- Vol+ button 7- Vol- button



- ◆ The on-board information service terminal will provide you with miscellaneous service such as driving navigation, Telematics, entertainment information, driving records, and emergency rescue. This manual only briefly introduces some corresponding functions. For detailed operation, please refer to the instruction manual that comes with the vehicle (see the built-in user guide for the instructions of 10-inch screen).

TripREC



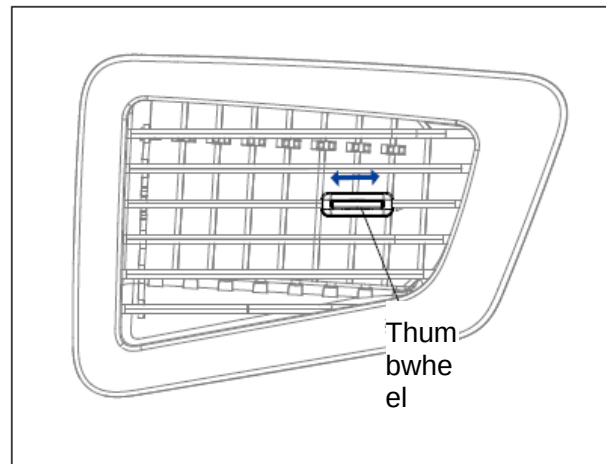
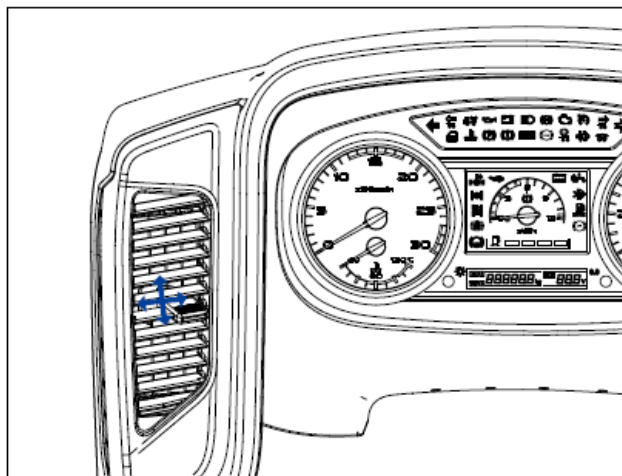
- ①-External input interface bin ②-LCD display ③-Printer ④-Menu button
 ⑤-OK button ⑥-Page-up button ⑦-Page-down button ⑧-IC card slot

! NOTICES

Cover the external input interface when not in use to prevent static electricity.

Air conditioner (optional)

Ventilation of cab



◆ Forced ventilation

- The outdoor fresh air is forcibly sucked into the room by the fan and blown to the required position through the air grids and vent on the dashboard to achieve the indoor ventilation.
- By adjusting the thumbwheel to the left and right and rotating the position of the grille up and down, select the appropriate blowing direction.

◆ Adjust the air outlet for blowing the face

- In order to improve the comfort of the cab, the air outlet for blowing the face is normally open. The user can adjust the size of the air outlet as needed. By manually adjusting the left and right directions of the thumbwheel on the grille, the air volume is increased and decreased.

! NOTICES

- ◆ When using the Defrost, Defrost/Foot, and Foot functions, you can adjust the thumbwheel on the grill to manually decrease the air volume of the four air outlets on the dashboard to improve the use of the above three functions.
- ◆ The defrosting (defogging) of the visual area of the door mirror on the front passenger side can be controlled by the door defrosting button, and the defrosting (defogging) can be assisted by adjusting the direction of the grille on the rightmost side.

Use of air conditioner (heating, cooling)(optional 1)



◆ Use of air conditioner

➤ Operating instructions

Knob:



Air volume adjustment knob

By using a digital encoder, the air volume of the air conditioner is in levels of 1~7; turn it clockwise to gradually increase the air volume, and vice versa; it can be turned by 360 °.



Heating knob

By using a digital encoder, turn it clockwise to gradually increase the set temperature, and vice versa; it can be turned by 360 °.

Button:

The button indicator light is white.



Internal and external circulation selection button. Press this button, the light is on for internal circulation, and goes out for external circulation.



Cooling button. Press this button while driving, the light is on, indicating that the cooling function is turned on; the light goes out, indicating that the cooling function is turned off. For the vehicle is equipped with a parking air-conditioning system, press this button while parking, the light is on, indicating that the parking air-conditioning is turned on; the light goes out, indicating that the parking air-conditioning is turned off



Door defrosting button. For the vehicle equipped with this function, press this button, the light is on, indicating that the door defrosting function is turned on; the light goes out, indicating that the door defrosting function is turned off



OFF button. Press this button to turn off the air conditioner



Independent heater button. For the vehicle equipped with independent heater, press this button, the indicator light is on, indicating that the independent heater is turned on; the light goes out, indicating that the independent heater is turned off



Face mode. Only the Face air outlet works



Face/foot mode. Face and Foot air outlet works



Foot mode. Only the Foot air outlet works



Foot/defrost mode. Foot air outlet and front defrosting air outlet works



Defrost mode. Only the Defrost air outlet works

NOTICES

1. Memory function: When the power is off, the air conditioner control panel will record the set mode damper position, the internal and external circulation, and the set temperature. When the power is on again, it enters the OFF state, press/turn any button/knob on the air conditioner panel (except for the internal and external circulation, OFF button), the air conditioner control panel will start the air conditioning system according to the state recorded when the power is off. *. With OFF state, press/turn any button/knob on the air conditioner panel (except for the internal and external circulation, OFF button), the air conditioner control panel will start the air conditioning system automatically according to the state recorded when the power is off and the set state now.
2. Protection function: when the room temperature sensor fails, the system defaults to 25 ℃; and when the evaporator temperature sensor fails, the system defaults to 0 ℃.
3. When it is necessary to melt the frost and fog inside the windshield, the internal and external circulation selection button should be placed at the external circulation.
4. When it rains heavily or it is dusty outside the cab, the internal and external circulation selection button should be placed at internal circulation.
5. When using the heater for defrosting, the engine coolant temperature should be above 60 ℃.
6. When parking, the internal and external circulation selection button should be placed at the internal circulation, and have the OFF button pressed to prevent dust from entering the room.

7. In order to prevent dust from entering the motor and protect the service life of the blower motor, the external air filter should be maintained regularly, and the filter element should be cleaned every 5000 kilometers; under normal conditions, the filter element should be replaced every 50,000 kilometers. In an environment with poor air quality, the cycle of cleaning and replacing the filter element should be appropriately shortened.
8. If the air conditioner is used under internal circulation for a long period of time, the internal and external circulation button should be placed at the external circulation at an appropriate time to introduce fresh air to keep the air in the cab fresh.
9. The air conditioning system refrigerant must be HFC-134a. Fill it regularly, with a filling volume of (580 ± 20) g, and use the designated grade of refrigerating oil (see the label on the compressor body).
10. The designated grade of engine coolant should be used, and water injection is prohibited to prevent corrosion of the heater core.

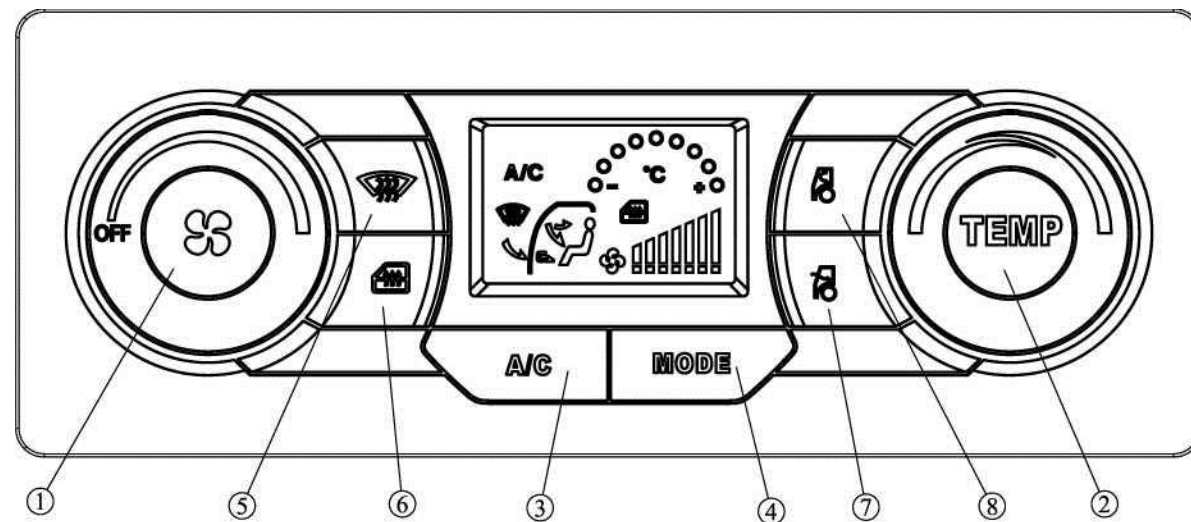
Air conditioning system failure prompt



NOTICES

When the air conditioner is turned on, if the snowflake icon on the LCD screen of the air conditioner operating mechanism continues to flash, it indicates that the air conditioning system is low in refrigerant or abnormal in pressure. At this time, you should turn off the air conditioner and drive your vehicle to the nearest service station and have it checked and repaired by the professional maintenance personnel.

Use of air conditioner (heating, cooling)(optional 2)



- ① Air volume adjustment knob ②Temperature adjustment knob ③Air conditioner (cooling) switch ④MODE button ⑤Front windshield defrosting (defogging) button
⑥Door glass defrosting (defogging) button ⑦External air circulation button ⑧Internal air circulation button

Operating instructions for climatic

◆ Knob:

➤①Air volume adjustment knob

* By using a digital encoder, turn it clockwise to gradually increase the air volume, and vice versa; it can be turned by 360 °.

➤②Temperature adjustment knob

* By using a digital encoder, turn it clockwise to gradually increase the set temperature, and vice versa; it can be turned by 360 °.

◆ Button:

➤The button backlight is in white.

➤The buttons are all touch switches, and the corresponding display icons will appear on the display screen when pressed.

*⑦  Internal circulation selection button, by pressing which to switch to the internal circulation.

*⑧  External circulation selection button, by pressing which to switch to the external circulation.

*  OFF logo.

*③  Cooling button

*⑥  Door defrosting button.

*④  Mode selection button, by pressing which to switch between Face, Face/Foot, Foot, Face/Defrost.

*⑤  Door defrosting button.

◆ Memory function:

➤The system has a memory function for the air outlet mode, set temperature, and internal and external circulation made before the last time of shutdown.

◆ OFF:

➤Rotate the air volume knob to the lowest level, and the system enters the OFF state.

◆ Protective function:

➤The time interval between restarting and last time of turning off the compressor must be greater than 6s.

➤When the room temperature sensor fails, the system defaults to 25 °C; when the outside temperature sensor fails, the system defaults to 25 °C; and when the evaporator temperature sensor fails, the system defaults to 7 °C.

◆ Fault diagnosis function:

➤ When the system is faulty, the temperature display area will flash at a frequency of 1HZ. After pressing and holding the OFF button for 5 seconds, DTCs appear, and their meanings are as follows:

* C0: Normal.

* C3: The room temperature sensor is not installed or damaged. After the temperature sensor becomes normal, the fault will be automatically cleared.

* C5: The evaporator temperature sensor is not installed or damaged. After the temperature sensor becomes normal, the fault will be automatically cleared.

* C6: 1# steering gear is not installed or damaged. When the steering gear is repaired and becomes normal, turn off and on again, the fault will be automatically cleared.

* C7: 2# steering gear is not installed or damaged. When the steering gear is repaired and becomes normal, turn off and on again, the fault will be automatically cleared.

* C8: 3# steering gear is not installed or damaged. When the steering gear is repaired and becomes normal, turn off and on again, the fault will be automatically cleared.

➤ By pressing the OFF button continuously, you may query multiple faults. And if you do not press the OFF button continuously for 5 seconds, the fault query mode will exit.

Independent air conditioner (for the south region)



◆ Operating instructions

Knob:

Air volume adjustment knob

Turn clockwise to increase the air volume gradually, and conversely, the air volume decreases and until the air conditioning system is

turned off.   Temperature adjustment knob

Turn it clockwise to gradually increase the set target temperature, and vice versa;

Button:

 Internal and external circulation selection key, by pressing which to realize the conversion between internal and external circulation.



Automatic control button, which automatically adjusts the cooling capacity and air volume according to real-time temperature changes.



Parking air conditioner button.



Cooling button.



Air outlet mode button.



Defrosting button.

◆ Explanation of display:



Indoor temperature display, which is switched to the set temperature (range: LO, 18 °C ~ 29 °C, HI) display during setting the temperature, and switched to indoor temperature display after stopping setting the temperature for 5s.

LO is forced to be in the cold air duct, and HI is forced to be in the hot air duct.



Cooling logo.



Parking air conditioner logo.



System automatic operation logo.



Defrost logo.



Internal and external circulation logo.



Fan operation logo, air volume level logo, that one grid represents one level, and the maximum is 13-level.



Air outlet mode logo, indicating the Face, Foot, Defrost+Foot, Face+Defrost modes.

◆ Parking air conditioner starting conditions

➤ With the engine off, press the parking air conditioner button to enter the parking air conditioner mode.

◆ How to use parking air conditioner

- Turn off the engine, turn the key to the ACC position, press the parking air conditioner button, and the parking air conditioner starts. At this time, the system is under automatic control and the word "AUTO" is displayed on the screen.
 - The user needs to set the target room temperature by turning the temperature knob. The parking air conditioning system will automatically adjust the cooling capacity and air volume according to real-time temperature changes.
 - At this time, press the automatic control button, the parking air conditioner exits the automatic control; the air volume knob can be manually adjusted, and the cooling capacity of the parking air conditioner can be set by turning the temperature knob.
- ◆ Turning off the parking air conditioner
- Turn the air volume switch counterclockwise to turn off the air conditioner.



NOTICES

1. The parking air conditioner can only be used with the engine off; when the engine is running, you cannot enter the parking air conditioner mode by pressing the parking air conditioner button.
2. The parking air conditioner has a battery voltage protection function. When the battery voltage is too low, the system will automatically power off.
3. The air volume of the parking air conditioner is up to 7-level under automatic mode.
4. The operating time of the parking air conditioner is affected by the outside temperature and sunlight. It is recommended to use shading measures (such as stopping in the shade, drawing the curtains) to extend the service time. The operating time can also be extended by adding battery packs.

Air conditioning condenser cleaning method

1. Open the cowl outer panel and flush the air conditioner condenser with a water pipe until the air conditioner condenser becomes clean
2. Clean the air conditioner condenser every 3 months to ensure its cleanliness

Cab tilting mechanism

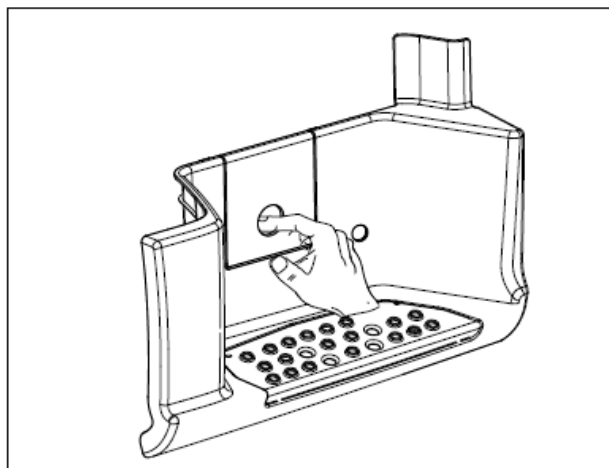
Cab tilting mechanism (for tractor, van)

NOTICES

- ◆ Before tilting the cab, park the vehicle on flat road, place the transmission in neutral, pull up the valve and check whether the door is closed, the cowl outer panel is opened.
- ◆ During tilting and returning of cab, no one is allowed in front of or behind the cab.
- ◆ It is necessary to tilt the cab to Max. angle. Never start engine and perform any other operation until the cab reaches to Max. tilting angle.
- ◆ When the cab returns back, you must confirm that the cab is locked firmly. Confirm that cab tilting mechanism warning light goes out before driving. When driving, the reverse lever must be at returning position of cab.
- ◆ For this series of models, the cowl outer panel must be opened before tilting the cab.

NOTICES

- ◆ Before driving the vehicle, check and confirm that the reversing switch is in the down position.
- ◆ Make sure to keep the environment clean when filling fluid to prevent dust, fibers, feathers and other debris from being mixed into the hydraulic fluid.
- ◆ The working medium of the tilting mechanism is 10# aviation hydraulic fluid, and should not be mixed with other types of oil.
- ◆ When washing the vehicle or repairing the engine, pay special attention not to damage the tubing; no water is allowed to enter the oil pump filler port.
- ◆ The electric pump should not be operated continuously for more than five times (although there is a protection circuit inside, too much heat will shorten the service life of the motor).

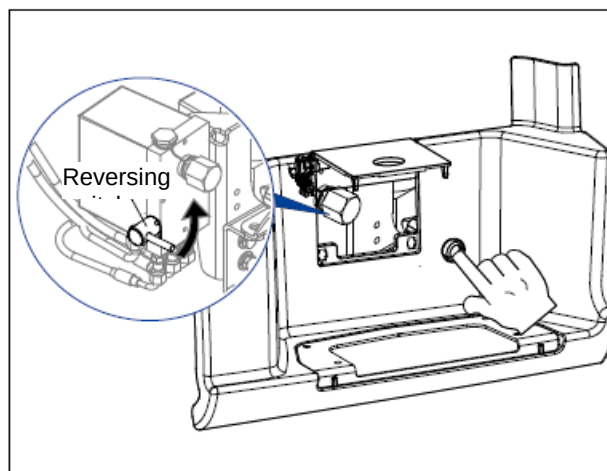


Forward tilting of electric cab

- ◆ The cowl outer panel must be opened before tilting the cab.
- ◆ Press the "hydraulic tilt control switch" on the function switch.
- ◆ Open the small door of the pedal trim cover.
- ◆ Hook the round hole on the small door with your hand and pull it outward to an appropriate angle to complete the opening of the small door.

! NOTICES

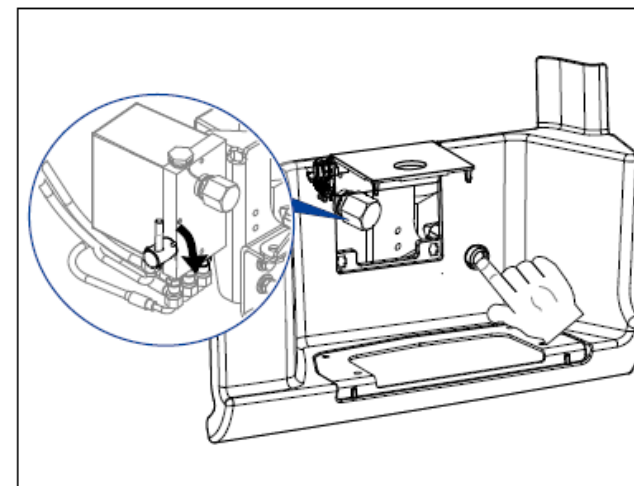
When the small door is opened to the limit position (the maximum opening angle is 120°), do not continue to open it, otherwise the small door mechanism will be damaged.



- ◆ Turn the reversing lever to the forward tilting position and press the button. At this time, the cab starts to tilt forward and stops at the maximum stroke; release the button, and the hydraulic cylinder stops working.
- ◆ The switch is normally on, the hydraulic cylinder works steplessly, and the button can be released at any time to stop the cab at any position.

! NOTICES

The operating direction of the reversing switch shall be subject to the mark on the manual/electric oil pump.

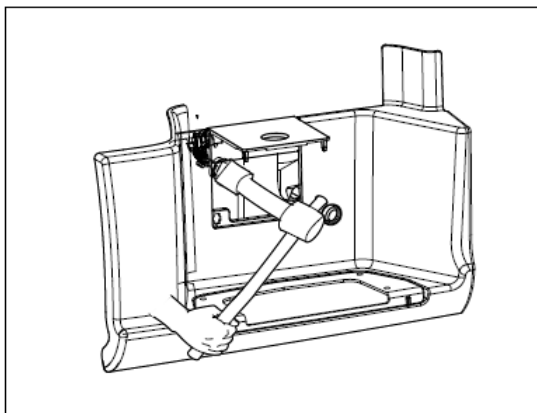


Returning of electric cab

- ◆ Turn the reversing switch to the returning position, press the button, and the cab starts to return. When the cab returns to the lowest point, the latch in the hydraulic lock locks the bolt, releases the button, and the hydraulic cylinder stops working.

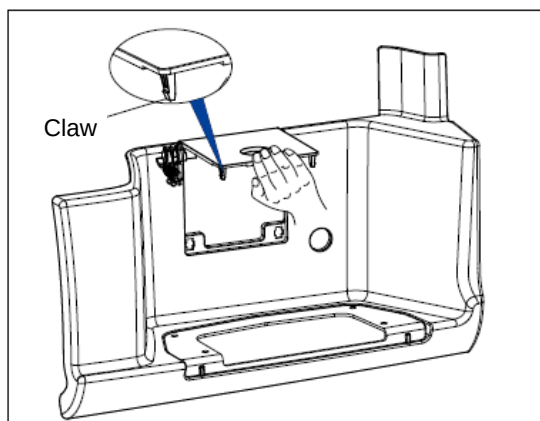
! NOTICES

In the case of low battery or electric pump failed, the manual pump can be used to realize the tilting of the cab.



Forward tilting and returning of manual cab

- ◆ Turn the reversing switch to make it in the position to tilt forward or return.
- ◆ You should use the connecting sleeve and the pressure rod in the vehicle tool that insert the connecting sleeve on the hex head of the hand pump, and then insert the pressure rod into the hole on the sleeve, and shake it up and down to tilt the cab forward or return it back.



- ◆ When you need to close the small door of the pedal trim cover, push the small door down by hand. When the claw on the small door is locked with the metal card fixed on the pedal trim cover, the operation of closing the small door is completed.

Cab tilting mechanism (for dumper)

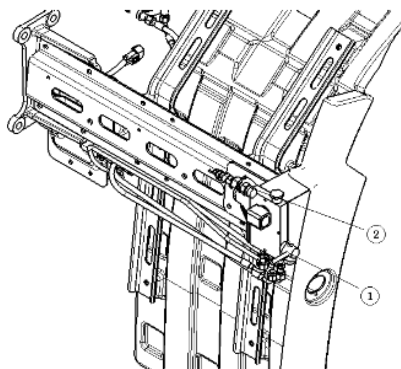


NOTICES

- ◆ Before tilting the cab, park the vehicle on flat road, place the transmission in neutral, pull up the valve and check whether the door is closed, the cowl outer panel is opened.
- ◆ During tilting and returning of cab, no one is allowed in front of or behind the cab.
- ◆ It is necessary to tilt the cab to Max. angle. Never start engine and perform any other operation until the cab reaches to Max. tilting angle.
- ◆ When the cab returns back, you must confirm that the cab is locked firmly. Confirm that cab tilting mechanism warning light goes out before driving. When driving, the shift lever must be at returning position of cab.
- ◆ For this series of models, the cowl outer panel must be opened before tilting the cab.

**NOTICES**

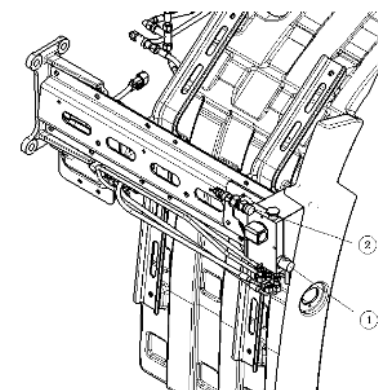
- ◆ Before driving the vehicle, check and confirm that the reversing switch is in the down position.
- ◆ Make sure to keep the environment clean when filling fluid to prevent dust, fibers, feathers and other debris from being mixed into the hydraulic fluid.
- ◆ The working medium of the tilting mechanism is 10# aviation hydraulic fluid, and should not be mixed with other types of oil.
- ◆ When washing the vehicle or repairing the engine, pay special attention not to damage the tubing; no water is allowed to enter the oil pump filler port.
- ◆ The electric pump should not be operated continuously for more than five times (although there is a protection circuit inside, too much heat will shorten the service life of the motor).

**NOTICES**

For this series of models, the cowl outer panel must be opened before tilting the cab.

**NOTICES**

The operating direction of the reversing switch shall be subject to the mark on the manual/electric oil pump.

**Forward tilting of electric cab**

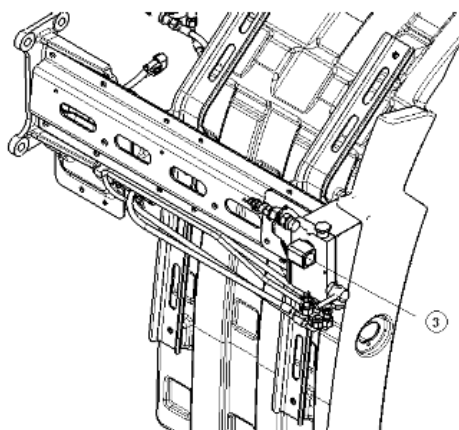
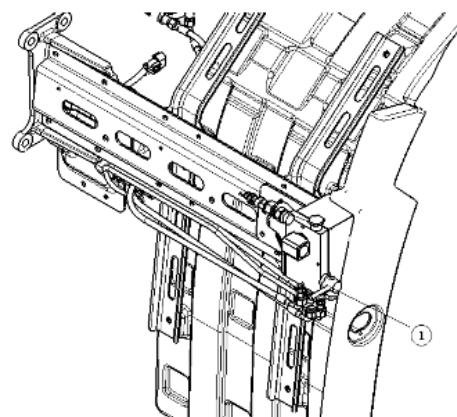
- ◆ Turn on the "cab tilt switch" on the function switch inside the cab.
- ◆ Open the cowl outer panel of the cab.
- ◆ Press the "hydraulic tilt control switch" on the function switch.
- ◆ Turn the reversing lever ① to the forward tilting position and press the switch. At this time, the cab starts to tilt forward and stops at the maximum stroke; release the switch, and the hydraulic cylinder stops working.
- ◆ The switch ② is normally on, the hydraulic cylinder works steplessly, and the switch can be released at any time to stop the cab at any position.

Returning of electric cab

- ◆ Turn the reversing lever ① to the returning position, press the switch ②, and the cab starts to return. When the cab returns to the lowest point, the latch in the hydraulic lock locks the bolt, releases the switch, and the hydraulic cylinder stops working.

**NOTICES**

In the case of low battery or electric pump failed, the manual pump can be used to realize the tilting of the cab.

**Forward tilting and returning of manual cab**

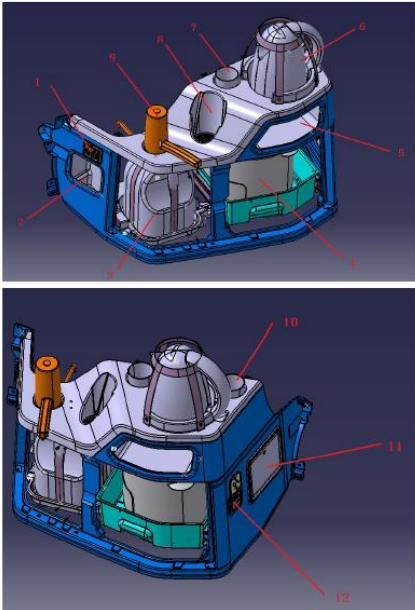
- ◆ Turn the reversing lever ① to make it in the position to lift or return.

- ◆ Choose one of the following methods to turn the cab depending on the different types of manual pump tilting mechanism:
- ◆ (1) You should use the pressure rod in the vehicle tool that insert the pressure rod into the hole on the sleeve③ of the hand pump, and shake it up and down to tilt the cab forward or return it back.
- ◆ (2) You should use the connecting sleeve and the pressure rod in the vehicle tool that insert the connecting sleeve on the hex head of the hand pump, and then insert the pressure rod into the hole on the sleeve, and shake it up and down to tilt the cab forward or return it back.

Mini kitchen (glove box assembly)

Function introduction

1. Meets the needs of users' home life;
Provides the storage locations for basic household necessities (electric kettle, rice cooker, automatic water dispenser, mineral water bottle, etc.). Users can solve the eating and drinking problems during long-distance logistics according to the configuration of daily necessities;
2. Meets the needs of users for convenience; provides USB charging, 220V power socket, space for water cup, space for mobile phone, storage box, etc., to increase the convenience for the users;
3. Description of function



No.	Description of function	Remarks
1	Twin function switch	
2	Storage box	
3	3.78L mineral water	By yourself
4	Rice cooker	By yourself
5	Storage box	
6	Electric kettle	By yourself
7	Water cup holder/550ml mineral water holder/mobile ashtray holder	
8	Big water cup holder/mobile phone holder	
9	Electric water dispenser	By yourself
10	Paper cup holder	

11	PUSH box	
12	220V power socket	

Recommended household supplies

No.	Household effects	Recommended brands	specifications and
1	Electric kettle	Specification: (1.2L/800W) Brand: Grelide	
2	Rice cooker	Specification: 2L-400W /3L-500W Brand: TRIANGLE	
3	Mineral water	Capacity: 3.78L Brand: Laoshan Spring Water	
4	Automatic water dispenser	Brand: Mei Xiang	

Use of household supplies

1. Instructions for use of rice cooker

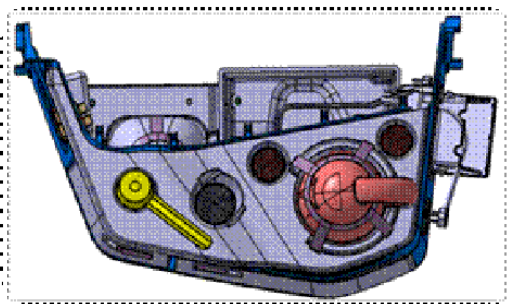


As shown in the illustration, to use the rice cooker during parking, open the side PUSH box, take out the power plug, and connect it to the 220V power socket next to it to use the rice cooker

 NOTICES

- 1). Only used when parking
- 2). The power cord of the rice cooker should be routed and arranged properly (the power cord is locked in the harness card slot on the back of the glove box) to avoid accumulation that affects the opening of the PUSH box

2. Instructions for use of electric kettle

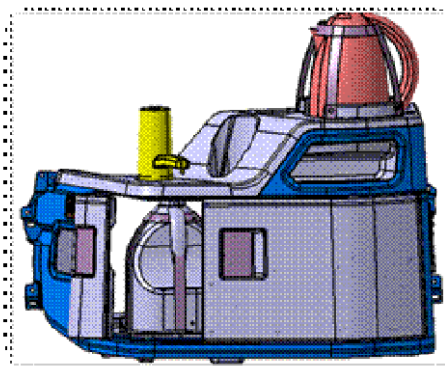


As shown in the illustration, to use the electric kettle during parking, open the side PUSH box, take out the power plug, and connect it to the 220V power socket next to it to use the electric kettle

! NOTICES

- 1). Only used when parking
- 2). The service power of the electric kettle should not be more than the maximum power of the inverter
- 3). The power cord of the electric kettle should be routed and arranged properly (the power cord is locked in the harness card slot on the back of the glove box) to avoid accumulation that affects the opening of the PUSH box

3. Instructions for use of automatic water dispenser



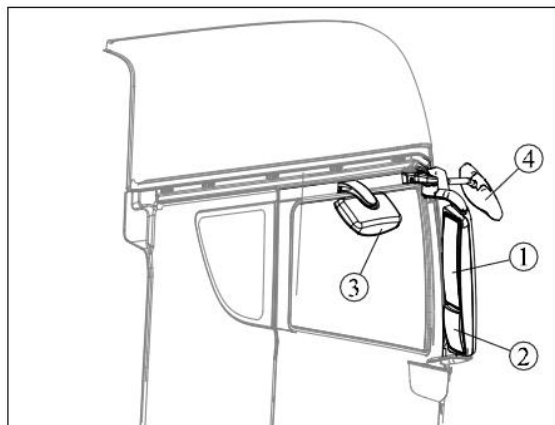
As shown in the illustration, the automatic water dispenser can be connected to the mineral water bucket through its own water guide pipe for normal use

! NOTICES

- 1). The automatic water dispenser is charged through the USB interface
- 2). After taking the water, the automatic water dispenser can be rotated to avoid affecting your movement in the cab

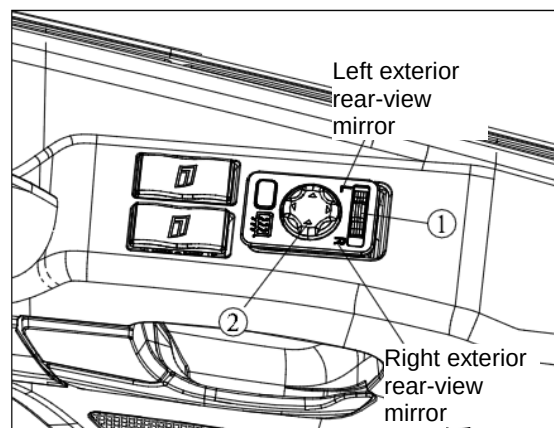
Body accessories

Exterior, rear bottom-view mirror



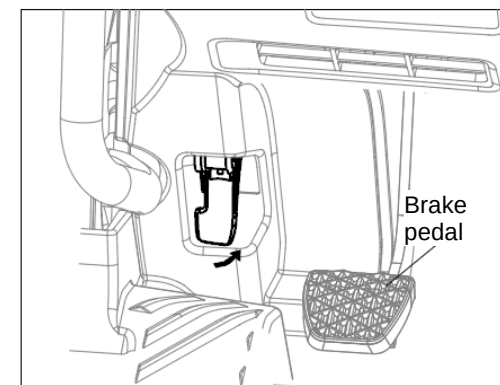
- ◆ The lenses of the main exterior rear-view mirror ① and the wide-angle exterior rear-view mirror ② can be adjusted to the required angle by using an electric switch and manually to achieve a satisfactory visual effect.
- ◆ Blind exterior rear-view mirror ③ and front bottom-view mirror ④ can be fine-tuned around the mirror rod to achieve a satisfactory visual effect.
- ◆ The rear-view mirror should be wiped regularly to keep it clean.

Exterior rear-view mirror(electric)



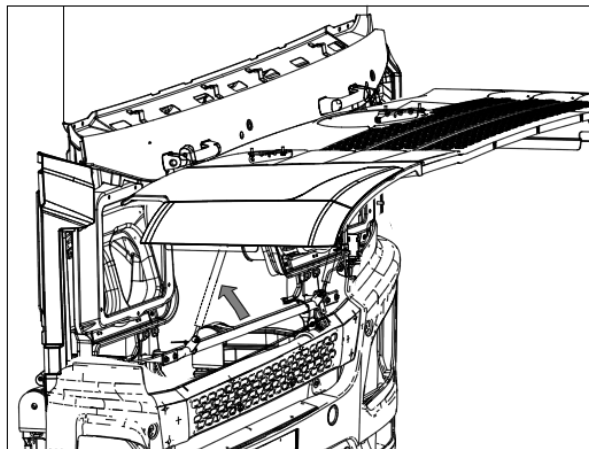
- ◆ The exterior rear-view mirror control button is located on the driver door.
- ◆ Firstly, select the left and right exterior rear-view mirror function key ①, then press the front, rear, left, and right adjustment button ② to adjust the mirror to the desired angle to achieve a satisfactory visual effect.
- ◆ The rear view mirror should be wiped regularly to keep it clean.

Cowl outer panel

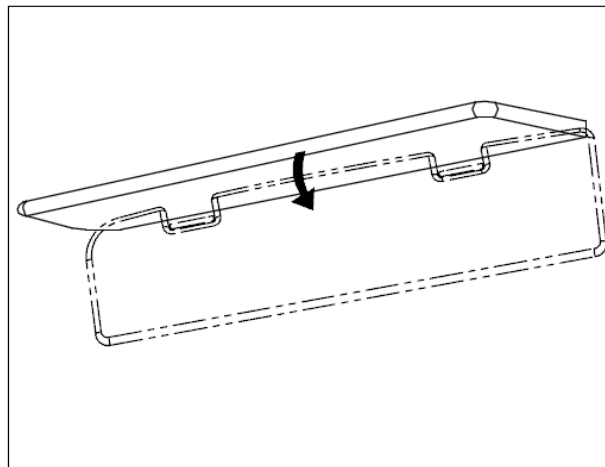


- ◆ To open the outer panel, raise the opening handle on the lower left side of the cab to open the pin lock.

Sun visor

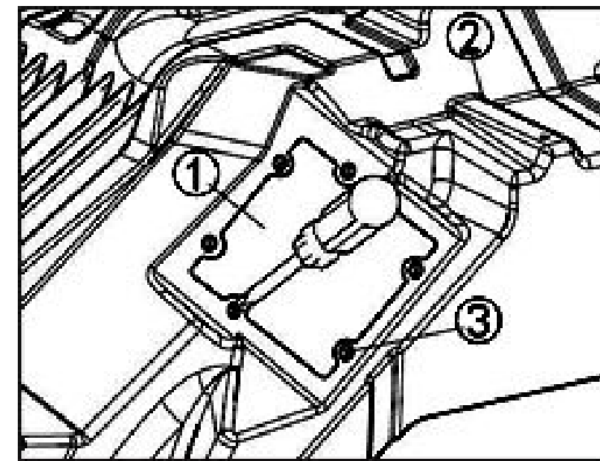


- ◆ Flip the outer panel up and have it opened by the gas spring.



- ◆ When driving, put down the sun visor if there is direct sunlight.
- ◆ Adjusting the sun visor to an appropriate angle can not only protect the eyesight of the driver, but also ensure an effective field of vision.
- ◆ Pull the sun visor out of the fixing clamp and turn it to the door side to block the side light.

Hydraulic cylinder access hole



- ◆ The hydraulic cylinder access hole ① is located on the upper right fender ②, on the same side as the suspension hydraulic cylinder.
- ◆ When performing maintenance and other operations on the suspension hydraulic cylinder, remove the plastic self-tapping screw ③ for fixing the access hole cover, and then open the cover to facilitate the maintenance.

Correct driving

Conventional starting of engine



NOTICES

- ◆ Operation before starting
 - Confirm that hand valve is in parking status.
 - Confirm that transmission shift lever is in neutral.
 - Turn key to ON position and observe if indications on meter are normal.
 - Depress the clutch pedal and continue to turn the key to S position, so as to turn on the start switch to start the engine. Once the engine starts, release the key to make it return to ON position automatically.
 - After the engine runs smoothly, release the clutch pedal at a constant speed.
 - Before start-off, check if oil pressure and coolant temperature, charging indication is normal. Only the start-off air pressure reaches 0.55 MPa, the vehicle can start off.

- ◆ When starting, never slam on the accelerator pedal, to prevent oil pressure from rising suddenly, while the oil is too thick to be delivered to the friction surface of each part in time, resulting in earlier part wear.
- ◆ The continuous working time of starter should not exceed 30 seconds, and the interval between two starting is recommended to be more than 1 minute. If the starter cannot be started in successive 3 times, it is necessary to check the oil line and circuit, etc.
- ◆ To improve the service life of turbocharger, before parking, the engine should run at idle speed for 3 to 5 minutes, so as to lubricate it well.

Engine cold start

- ◆ The engine electronic control system has a cold start warming-up function. When the outside temperature is lower than 0℃, pay attention to observe whether the warming-up indicator on the dashboard is on. If the indicator is on, it indicates that the engine is warming-up. Do not start the engine until the indicator light goes out.
- ◆ Run the engine at low speed for a few minutes after starting to warm up the engine, and start off when the coolant temperature reaches the value above 50℃. And observe the operations of the meters, indicator lights and warning lights during the process of warming up. Pay attention to not idle the engine for a long time.
- ◆ In the early stage of warming-up, each indicator light illuminates, but the warning light goes out as the oil and gas pressure rises after the vehicle starts.
- ◆ When the pointer of the barometer reaches 0.55MPa, the oil pressure reaches 0.1MPa, and the coolant temperature reaches above 50℃, the vehicle is ready to start.
- ◆ The parking brake light is still on, reminding you to release the parking brake valve before starting off.

Winter driving

- ◆ Oil: select proper oil according to current environment temperature; when the temperature is lower than -10 ℃, the oil change interval should be shortened appropriately.
- ◆ Fuel: when the temperature is lower than 4 ℃, use fuel for winter. Pay attention to check whether the fuel is condensed, and remove the water separated from the coarse fuel filter.
- ◆ Coolant: select proper long life coolant with appropriate freezing point according to ambient temperature.

Vehicle driving

- ◆ The vehicle can start off only when the engine runs normally and all meter indicator lights and warning lights operate normally.
- ◆ Confirm that hand valve is in brake released position as starting off.
- ◆ Keep the engine coolant temperature at (75~95) ℃ during driving.
- ◆ Pay attention to observe the oil pressure. The oil pressure should be maintained at 0.25 ~ 0.6 MPa when the engine is working normally.

Driving on a slope

- ◆ When going down a long and steep slope, the exhaust brake should be used. And the shift lever should be placed in the gear used for climbing the same slope. When brake power is insufficient, use the parking brake at the same time.
- ◆ To reduce braking wear and heat, slow down and shift into lower gear before going down long and steep slopes.
- ◆ When going uphill, if the speed drops gradually, it is necessary to shift into low gear in time.

**NOTICES**

- ◆ Do not start fast, sharply accelerate and make emergency brake as much as possible.
- ◆ During driving, do not keep the foot on clutch pedal. Move away the foot from the pedal immediately after shifting.
- ◆ It is strictly forbidden to shift gears without depressing the clutch pedal.
- ◆ The reverse gear can only be shifted into after the vehicle is completely stopped.

Vehicle driving

- ◆ When parking, first release the accelerator pedal to slow down the vehicle.
- ◆ Slowly depress the brake pedal and shift transmission to neutral. Wait until the vehicle stops completely, then pull up the hand valve handle to shift to braking condition.
- ◆ Idle the vehicle for a period of time.
- ◆ Turn off the power supply (turn the start switch key to LOCK position).

**NOTICES**

- ◆ Avoid parking on steep slopes. If you have to park on a hill, you must block the wheels with parking wedges.
- ◆ The exhaust pipe is very hot immediately after driving, so never park the vehicle near the combustibles such as withered grass.
- ◆ After the vehicle stops, it is necessary to idle the engine for a period time to cool down the turbocharger naturally. Otherwise, it may cause damage to turbocharger due to overheating.

ECO driving

- ◆ Unnecessary high speed driving and low-gear driving will lead to increased fuel consumption.
- ◆ Try to avoid frequent rapid acceleration, which may cause fuel consumption increasing sharply.
- ◆ Keep the coolant temperature within normal range as driving. The engine needs to warm up before driving in winter. If the engine temperature is too low, the oil consumption will increase and engine service life will be shorten. Too long warming-up time also increase the fuel consumption.
- ◆ Under-inflated tires will increase the rolling resistance of the tires, thereby increasing the fuel consumption and reducing the service life of tire.
- ◆ When the vehicle is decelerating or slowing down a long slope, the exhaust brake should be used first to reduce the frequency of using the service brake.
- ◆ Choose the lubricating oil with suitable viscosity to reduce the frictional resistance of the engine, which not only saves fuel, but also increases the service life of the vehicle.
- ◆ Slowing down for turning not only reduces the fuel consumption, but also increases the service life of tire.
- ◆ Regularly check whether the front wheel alignment parameters are correct. And improper toe-in setting will increase the fuel consumption and reduce the service life of tire.

Driving on a slope

- ◆ When going down long and steep slopes, both exhaust brake and engine brake can be used. At this time, place the shift lever in the same gear position as that of climbing the same slope. When the braking force is insufficient, the foot brake can be used.
- ◆ To reduce braking wear and heat, slow down and shift into lower gear before going down long and steep slopes.
- ◆ When going uphill, if the speed drops gradually, it is necessary to shift into low gear in time.

**NOTICES**

- ◆ When going downhill, do not turn off the engine and drive in neutral.

Braking method

- ◆ When driving, if the brake system failure light flashes, stop and find out the cause.
- Check if there is any leakage in each pipeline and joint.
- ◆ Avoid using emergency brake unless in an emergency.
- The tire may be locked during emergency brake, resulting in vehicle slippage.
- Full attention should be paid when driving downhill in an empty or light load condition, or when driving on a dirt road, snow frozen road or other roads with good condition.
- Emergency brake operation can cause early tire wear and can adversely affect other components of vehicle.
- Emergency braking may generate a great impact applied on passenger, resulting in personnel injuries and other accidents.
- ◆ Do not pump brake pedal, otherwise, brake pressure may decrease, resulting in poor braking effect.
- ◆ Do not overuse the driving brake, otherwise, the brake may overheat, significantly reducing the braking effect.

Vehicle driving

- ◆ To stop the engine, especially at high temperature, the speed must be gradually reduced to idle speed for 5 minutes before stopping. High-speed parking is strictly prohibited when it is not an emergency, to prevent the high temperature of the turbine from being transmitted to the floating bearing and compressor seal ring, causing turbocharger failure. At the same time, it should be noted that the idling time should not be too long (generally no more than 20 minutes). If it is too long, it will easily cause oil leakage.
- ◆ To stop the engine after the vehicle is running at a high load, first allow the engine to idle for at least 2 minutes. It is not recommended to turn off the engine directly after depressing the accelerator pedal under any circumstances. This is not only not allowed but also not good for the engine. Doing so will cause premature damage to the bearing of the exhaust gas turbocharger and shorten its service life.
- ◆ After each time of engine stop, the faults found during the operation must be troubleshooted in time and necessary inspections must be performed.
- ◆ To park for more than 10 minutes, the manual main valve of the gas cylinder and the electrical switch should be turned off.

**NOTICES**

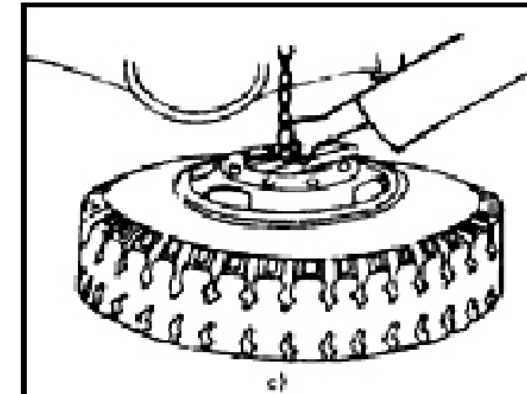
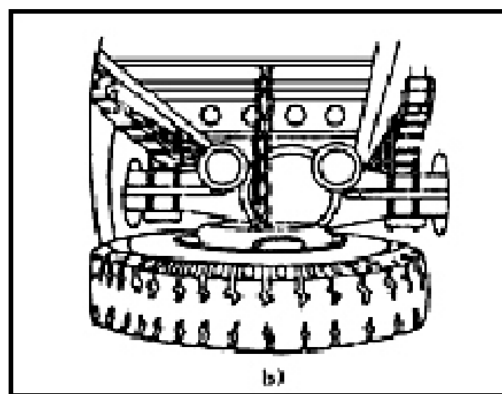
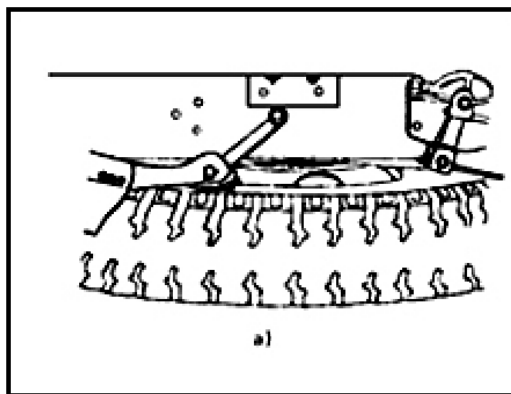
- ◆ Avoid parking on steep slopes. If you have to park on a hill, you must block the wheels with parking wedges.
- ◆ The exhaust pipe is very hot immediately after driving, so never park the vehicle near the combustibles such as withered grass.
- ◆ After the vehicle stops, it is necessary to idle the engine for a period of time to cool down the turbocharger naturally. Otherwise, it may cause damage to turbocharger due to overheating.
- ◆ After off-running every day, check whether the gas circuit is normal, whether there is any air leakage, whether the cylinder is loose or abnormal, and after closing the manual main valve and electrical switch, check the pressure of the cylinder pressure gauge for judging whether the system is leaking on the next day.
- ◆ Close the self-pressurizing valve after off-running every day to avoid unnecessary waste of gas. (LNG)
- ◆ To park the engine for a long period of time, the coolant and oil should be drained, and the gas should be used up. Disconnect the power supply, remove the battery cable, and place the vehicle in a well-ventilated area, which is moistureproof, fireproof and sun-proof.

Economical driving

- ◆ Both unnecessary high-speed driving and high-speed driving with a low gear can increase the gas consumption.
 - ◆ After accelerating, you should shift the lever to the high gear in time and gently release the clutch pedal.
 - ◆ After shifting the shift lever into the direct gear or overgear, the vehicle speed should be maintained at a certain level.
 - ◆ During driving, the coolant temperature should always stay within the normal range.
 - ◆ Under-inflated tires are detrimental to the gas economy.
 - ◆ Avoid warming up and idling the engine for a long time.
 - ◆ Do not keep your foot on the clutch pedal or brake pedal.
 - ◆ Ensure that front wheel alignment is correct.
 - ◆ Under-inflated tires will increase the rolling resistance of the tires, thereby increasing the gas consumption and reducing the service life of tire.
 - ◆ When the vehicle is decelerating or slowing down a long slope, the exhaust brake should be used first to reduce the frequency of using the service brake.
 - ◆ Choose the lubricating oil with suitable viscosity to reduce the frictional resistance of the engine, which not only saves gas, but also increases the service life of the vehicle.
 - ◆ Slowing down for turning not only reduces the gas consumption, but also increases the service life of tire.
- ◆ Regularly check whether the front wheel alignment parameters are correct. And improper toe-in setting will increase the gas consumption and reduce the service life of tire.

Spare Tire

Use of spare tire up-down regulator



◆ Remove the spare tire (Fig. a)

- The connecting rod of spare tire up-down regulator is located at rear right of frame. Use the special wrench in provided tools and turn the connecting rod counterclockwise (Fig. a)

◆ Remove the spare tire (Fig. b)

- Move down the spare tire tray (Fig. b)

◆ Remove spare tire (Fig. c)

- Remove the tray from spare tire (Fig. c)

◆ Installing the spare tire

- Hook the tray on spare tire, use special wrench to rotate connecting rod clockwise, so as to lift up spare tire.
- After the spare tire spokes contact with the supporting beam, continue to roll the wrench to compress the spring, and finally tighten the connecting rod to the torque of $100 \pm 10 \text{ N} \cdot \text{m}$.

Layout and position of spare tire

- ◆ Center-mounted (installed between the left and right side beams)



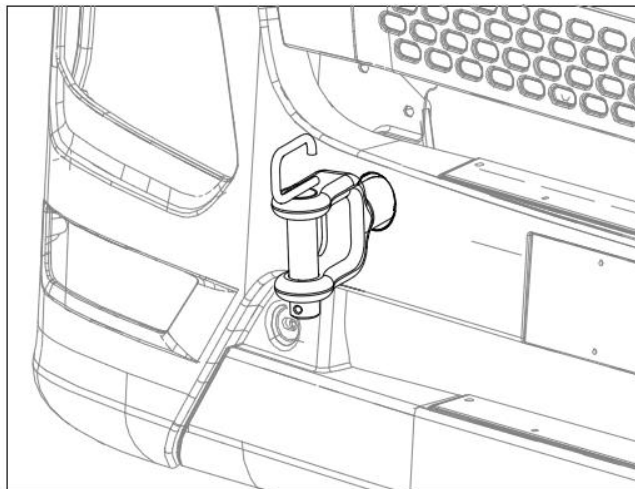
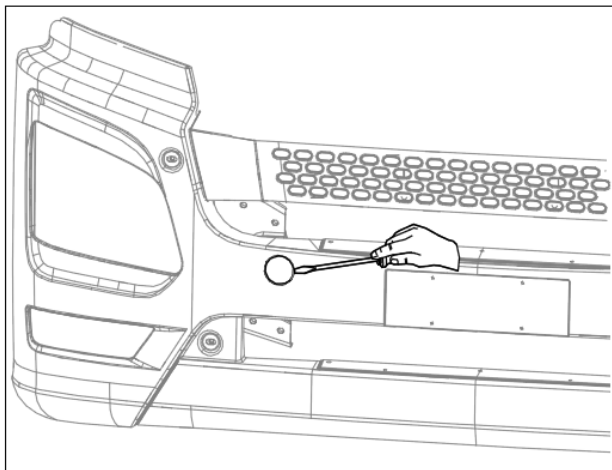
- ◆ Side-mounted (installed under the combined air reservoir on the side of the side beam)



- ◆ Side-mounted (installed on the side of the side beam)

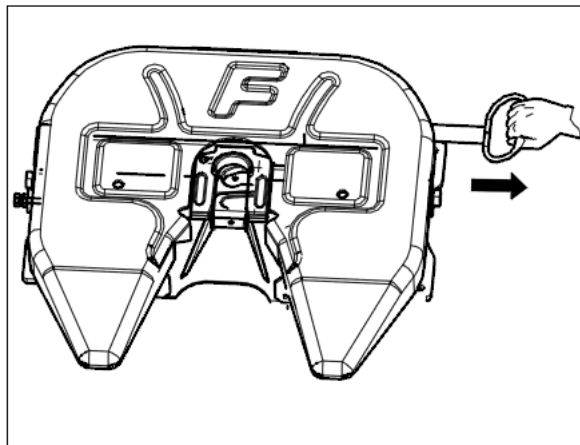
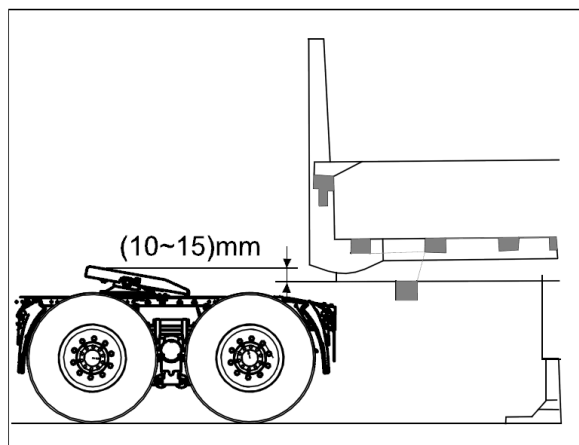
Tractor

Front towing hook



- ◆ Use a dual-purpose screwdriver to pry open the front towing hook cover on the front bumper.
- ◆ Screw the front towing hook in the vehicle kit into the mounting hole. Make the latch handle be in top-vertical condition.
- ◆ Pull out the lower cotter pin and pull up the latch handle to remove towing hook latch, then insert wire rope and finally insert latch again.

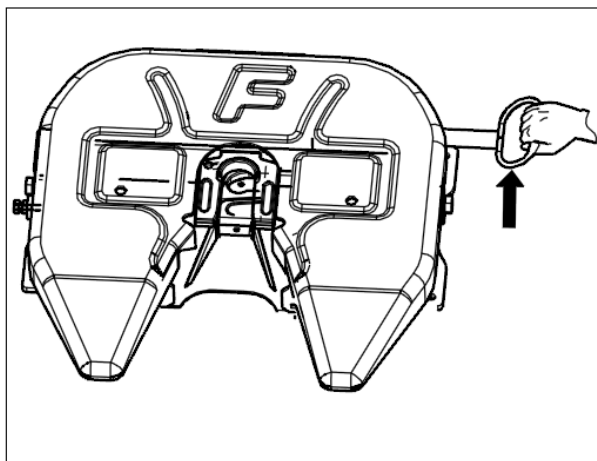
Tractor



- ◆ Before coupling the semi-trailer, select a flat ground and pull up parking brake of semi-trailer completely.
- ◆ When semi-trailer is coupled:
 - Move the tractor backward to make it in line with the semi-trailer.
 - Adjust the undercarriage of semi-trailer to make the truck body floor be lower than the center of saddle by (10~15) mm.
 - Pull out saddle handle to expand the lock hook, then slowly move tractor backward to make it couple with semi-trailer.
 - Turn off the engine and pull up the tractor hand valve.
 - Confirm that traction pin engages with lock hook. Check the coupling condition on the left and right side and confirm that there is no clearance between coupled saddle upper surface and truck body floor.
 - Couple the gas path and circuit between tractor and semi-trailer.

NOTICES

After semi-trailer is coupled, do not start off immediately. Check that the semi-trailer has been locked and ensure that there is no clearance between saddle upper surface and semi-trailer body floor. Otherwise, disengagement between semi-trailer and tractor may occur, causing a major accident.



- ◆ When semi-trailer is to be decoupled:
 - The tractor and semi-trailer are in a line and parked in flat ground.
 - Pull up the hand valve of tractor and parking brake handle of semi-trailer completely, and block the wheel with wheel block to prevent movement.
 - Lower the semi-trailer undercarriage down to ground.
 - Adjust the undercarriage of semi-trailer to make the truck body floor be higher than the center of saddle by (10~15) mm.
 - Disconnect air path and circuit.
 - Pull up semi-trailer handle and then pull it outward to release the lock hook, then slowly move tractor forward to make it decouple with the semi-trailer.

Dumper

Parking power taking

With the engine running at idle speed, shift the transmission shift lever to neutral position within low-gear range.

Meanwhile, press the PTO switch and parking PTO switch located on the instrument panel functional switch, depress the clutch pedal to shift the transmission shift lever to any position within low gear range, then slowly release the clutch pedal and lightly accelerate, thus realizing parking lift.

Service power taking

Depress the clutch pedal and shift the transmission shift lever to any position within low-gear range, then press PTO switch and slowly release the clutch pedal,

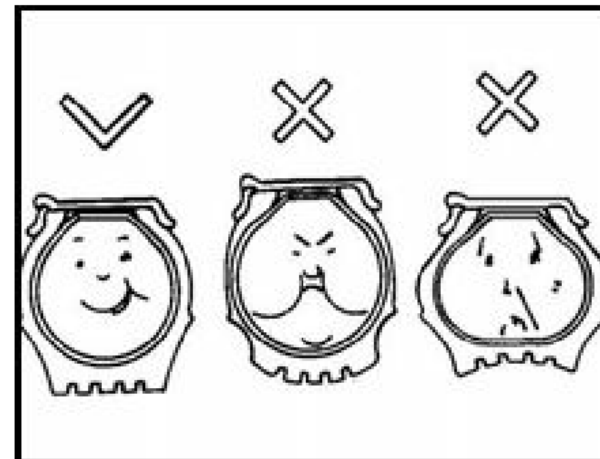
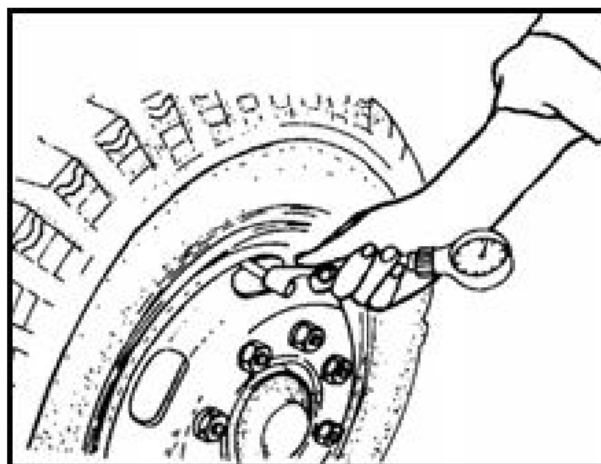
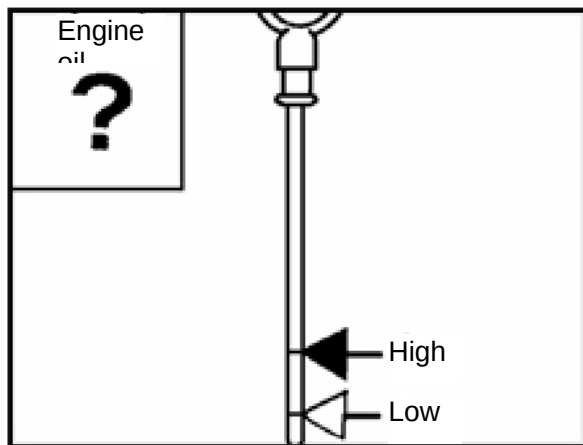
meanwhile lightly accelerate, thus realizing the driving lift.

**NOTICES**

The superstructure lifting also needs the lifting operation valve from the modified vehicle factory

Periodic maintenance

Pre-departure inspection



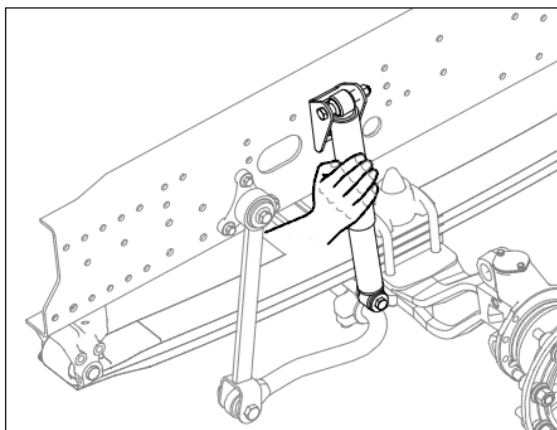
- ◆ Check the engine lubricant level, which should be between the two marked lines.
- ◆ Check the amount of gas in the gas cylinder.
- ◆ Check the tightening of the gas cylinder band.
- ◆ Check the engine coolant level, which should be between the two marked lines.
- ◆ Check if cab locking mechanism is locked firmly.
- ◆ Check if all lights are normal.
- ◆ Check tire pressure: (measured at room temperature)
- ◆ Air pressure regulation: (see the table below)

Tire model	Front wheel (kPa)	Rear wheel and spare tire(kPa)
12R22.516/18PR	830/930	830/930
11.00R2016/18PR	830/930	830/930
12.00R2018/20PR	830/930	830/900
295/80R22.516/18PR	830/900	830/900
315/80R22.518/20PR	830/900	830/900

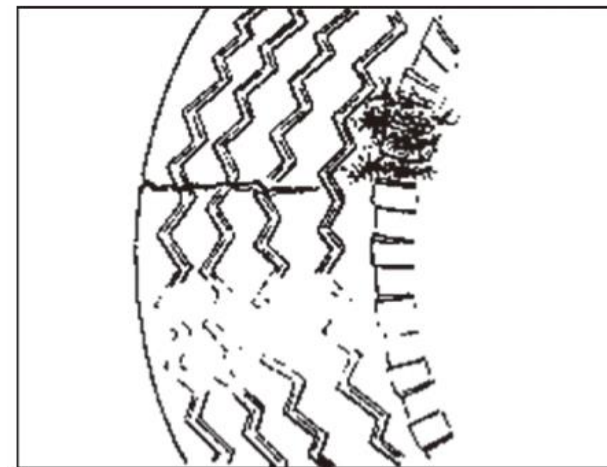
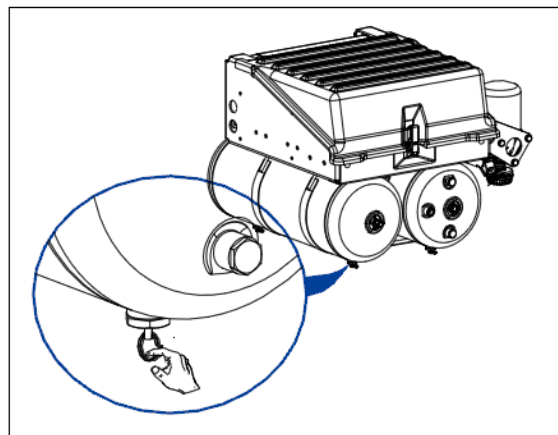
NOTICES

The tire pressure should be kept within specified range. Excessively high tire pressure may accelerate wear, shorten the tire service life; Excessively low tire pressure may cause cracks and affect vehicle driving speed and increase gas consumption.

Inspection during driving



Off-running inspection



- ◆ In a safe place, drive the vehicle at a speed of about 20km/h to check the braking effect and the operation of the steering mechanism.
- ◆ Inspection of shock absorber
 - If the vehicle is found to make abnormal continuous jitter during driving, you should stop the vehicle and check whether the shock absorber is oil leaking.
 - Drive the vehicle down a poor road for a certain distance (not less than 10km), and then stop the vehicle and check whether the shock absorber is hot by hand. If it is not hot, it indicates that the shock absorber has failed and should be replaced with a new one in time.
- ◆ The vehicle is equipped with an air dryer, due to which the air reservoir does not need to be water drained daily, but should be drained every few days. If there is water drained for several times in a row, please replace the drying tank located on the air dryer immediately.
- ◆ Check if the brake system has any air leakage and confirm if air dryer operates normally. If above symptoms exist, perform repair in time.
- ◆ Check if there is any scratch, crack or abnormal wear on tire tread.
- ◆ Check if there is any metal plate, gravel and other foreign matters embedded in tire tread. If so, clear it in time.
- ◆ Check if there is any gravel and other foreign matters attached between rear tires. If so, clear it in time.

Coolant

◆ Precautions

- It is necessary to use coolant which conforms to Q/CAM - 192 standard and labeled "FAW Spare Parts" on tank cover.
- Use coolant throughout the year.
- Never mix with other bands of coolant during use.

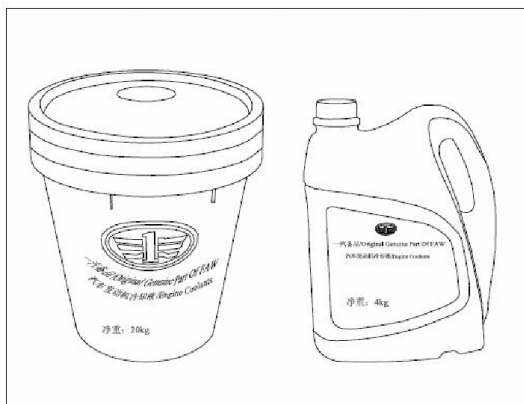
◆ Inspection and replacement interval:

- 100,000 km or 2 years
- Inspection and replacement cycle is based on mileage or years, whichever comes first.
- Wash cooling system before replacing.

◆ Capacity:

- About 38~42L for WP10H engine.
- About 43~47L for WP12/WP13 engine.
- About 36L for CA6DL engine.
- About 48L for CA6DM engine.
- ◆ The user should select the coolant type in following table according to the temperature conditions in the area where the vehicle is used:

Model	Part code	Freezing temperature	Colour feature
YQ-2004X	523204040262	-20 ℃	Dark blue, transparent, no precipitation
YQ-2004D	523204040278	-35 ℃	Dark blue, transparent, no precipitation
YQ-2004J	523204040322	-45 ℃	Orange, transparent, no precipitation
YQ-2002	523204040323	-8 ℃	Light green, transparent, no precipitation

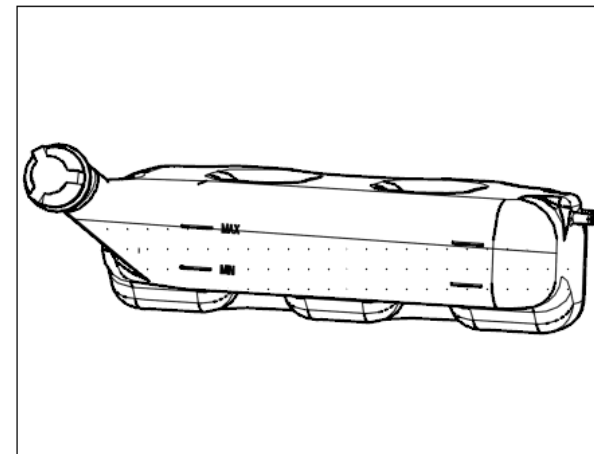
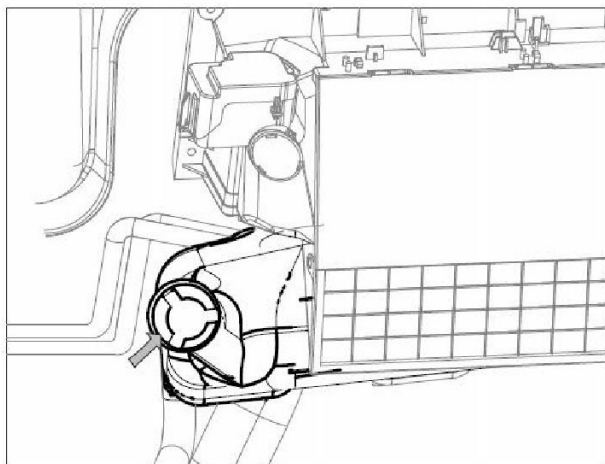


! NOTICES

- ◆ The user should check the package of tank and confirm the following information before use:
 - There are two packing patterns of 20 kg and 4 kg and the tank body colour is Van Gogh Golden.
 - Tank cover is disposable part with “FAW Spare Parts” stamped.
 - The tank body should have genuine security label. If not, it is a fake and inferior product.
 - The tank cover should be intact without any damage. If not, please refuse to use.
 - Expiration date of the product: store in a closed container at room temperature and avoid light. The shelf life is 18 months.
 - Before winter, verify that the freezing point temperature of coolant used is suitable for the minimum temperature in the area where the vehicle is used.

! NOTICES

- ◆ Safety and environmental protection
 - Avoid contacting with eyes. In case of accidental contact, rinse immediately with clean water; It is harmful to health, if taking this product by mistake, seek medical advice immediately.
 - Be aware of hot coolant burns.
 - Store coolant away from children.
 - To protect the environment, never pour the coolant into sewers, soil and water. Recycle it in time.



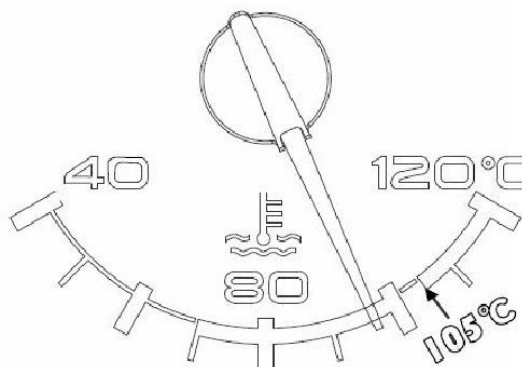
◆ Adding of coolant

- Open the cowl outer panel, and the expansion tank filler cap is on the left side.

! NOTICES

- ◆ Never open pressure cap immediately after engine stops running, so as to avoid hot pressure air out of cooling system, resulting in burns.
- ◆ After the engine stops running for 10 minutes, place a piece of cloth or other protective items on cap to rotate it by 1st stop and wait until pressure is released to open pressure cap.

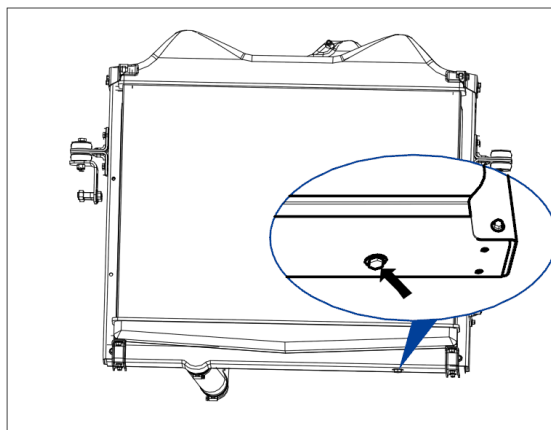
- Open the expansion tank water filler cap to fill coolant. Tighten the water filler cap until reaching upper line.
- When filling the coolant, it is not necessary to bleed the cooling system, because the position of expansion water tank is very high and the bubbles in coolant can be bled from filler port through air degassing pipe.
- Start the engine and run it at normal temperature (the coolant line from radiator upper tank to thermostat chamber becomes obviously hot). Check the coolant level, if the level drops, fill coolant as necessary.



- In normal use, if the engine overheats (pointer exceeds 105 °C) or the coolant level warning light illuminates, check the coolant level and replenish in time.

◆ Draining of coolant

- Unscrew the coolant drain plug at bottom of radiator to drain coolant.



AdBlue

- ◆ Selection of AdBlue
 - AdBlue meeting GB 29518 standard shall be used.
 - Be sure to buy it at a regular filling station or service station.



NOTICES

- ◆ It is forbidden to use the AdBlue that does not meet the standard or add water and other liquids to the AdBlue solution to avoid insufficient engine power.
- ◆ Do not add AdBlue solution to the fuel tank.

◆ Adding of AdBlue

- Observe the AdBlue level value displayed on the LCD screen of the meter, and when the AdBlue level is close to 15%, add the AdBlue solution in time.

➤ Filling amount of AdBlue solution:

* Maximum capacity of AdBlue tank corresponding to the indication of 100% on the instrument (50L for Bosch system and 40L for air-driven system).

* The filling amount of AdBlue tank is approximately:

$$L_{\max} \times (100 - k)\%$$

$L_{\max}$: maximum capacity of AdBlue tank

k: Residual content of AdBlue indicated on the instrument

- The AdBlue solution should be added with the engine off.

- If you do it yourself, please use a special filling pipe and keep the filling pipe clean.
- When filling, you should prevent the impurities from falling into the AdBlue tank; stop filling when the AdBlue level reaches the filler.

**NOTICES**

- ◆ Please wear rubber gloves when filling the AdBlue solution and keep it away from the skin.
- ◆ Do not get the AdBlue solution in your eyes. Once you get it, rinse thoroughly with water.
- ◆ If the AdBlue container falls down, lift it up quickly. Ensure that the AdBlue solution does not flow into the drainage system or surface water. Collect the leaked AdBlue liquid into the waste AdBlue container, and clean the ground with plenty of water.
- ◆ If you swallow the AdBlue by mistake, rinse your mouth with clean water for several times, then drink plenty of water and seek medical attention immediately.

Regular maintenance

First maintenance items

◆ After new vehicle running-in completes, namely 2500 km is regarded as the first maintenance.

No.	Maintenance items
1	Change the engine oil (vehicles without long oil change interval)
2	Replace the oil filter (vehicles without long oil change interval)
3	Change the transmission fluid (vehicles without long oil change interval)
4	Change power steering oil
5	Change the drive axle oil (vehicles without long oil change interval)
6	Water draining for diesel oil coarse filter
7	Check and tighten fuel tank band
8	Check and tighten propeller shaft fixing bolt
9	Check the steering gear and its bracket fixing bolts, the bolts connecting the steering shaft and steering gear, and the steering arm fixing nuts
10	Check and tighten wheel nuts
11	Check and tighten the U-bolt of the leaf spring and the fixing bolt of the balanced suspension support bracket
12	Check and tighten upper reaction rod bolts and lower connecting plate bolts
13	Check the brake clearance and lining wear
14	Check and tighten cab front and rear mounting pad fixing bolt

Regular maintenance items

◆ For replacement or adding of oil, grease, fluid, filter element and other items which needs to be performed at service station according to specified mileage are referred as regular maintenance.

No.	Items	Mileage (km)
1	Change engine oil	For vehicles without long oil change interval: 10,000/6 months For vehicles with long oil change interval: 100,000/12 months
2	Change transmission oil	For vehicles without long oil change interval: 50,000 For vehicles with long oil change interval: 100,000
3	Change drive axle oil	For vehicles without long oil change interval: 50,000 For vehicles with long oil change interval: 100,000
4	Change power steering oil	20,000/6 months
5	Replace centrifugal oil filter rotor	For vehicles without long oil change interval: 30,000 For vehicles with long oil change interval: 100,000/12 months
6	Replace the oil filter	For vehicles without long oil change interval: 10,000/6 months For vehicles with long oil change interval: 100,000/12 months
7	Replace diesel fine filter	10,000/1 month
8	Replace diesel coarse filter	15,000
9	Maintain integrated air filter main element	Perform maintenance per 10,000 km; Replace with a new filter element after performing maintenance 4 times or after 12 months
10	Replace integrated air filter secondary element	100,000/12 months

No.	Items	Mileage (km)
11	Change integrated oil-bath air filter oil	250 hours
12	Maintain integrated oil-bath air filter paper main element	Perform maintenance every 750 hours of driving Replace with new one every 3000 hours of driving/12 months
13	Replace integrated oil-bath air filter paper secondary element	Every 3000 hours of driving/12 months
14	Replace compressed air filter element (air-driven system)	100,000/12 months
15	Clean AdBlue tank	50,000
16	Replace AdBlue tank filter	30,000 (Bosch SCR system) 50,000 (air-driven SCR system)
17	Change clutch hydraulic control brake fluid	24 months
18	Replace steering tank element	20,000/6 months
19	Replace air dryer	20,000/6 months
20	Fill the cross shaft with grease	10,000/1 month
21	Fill the sliding fork with grease	10,000/1 month
22	Fill the front and rear leaf spring pin with grease	10,000/1 month
23	Fill the double front axle balance arm with grease	10,000/1 month
24	Fill the steering column universal joint cross shaft and sliding fork with grease	10,000/1 month

No.	Items	Mileage (km)
25	Fill the steering rod ball pin with grease	10,000/1 month
26	Fill the steering knuckle king pin with grease	10,000/1 month
27	Fill the hub bearing with grease (vehicles without long oil change interval)	10,000/1 month
28	Maintenance of CONMET hub	Front axle: 100,000 for inspection, 500,000 for oil change Middle and rear axle: 100,000 for oil change
29	Maintenance of FAG hub	150,000/12 months for comprehensive inspection
30	Fill the brake adjustment arm with grease	10,000/1 month
31	Fill the brake cam bracket with grease	10,000/1 month
32	Water draining for diesel oil coarse filter	2500
33	Check and tighten fuel tank band	10,000/1 month
34	Check the reaction rod joint rubber	10,000/1 month
35	Replace A/C inner and outer circulation element	30,000
36	Perform tire rotation in specified order	10,000/1 month
37	Check battery condition display	2 months

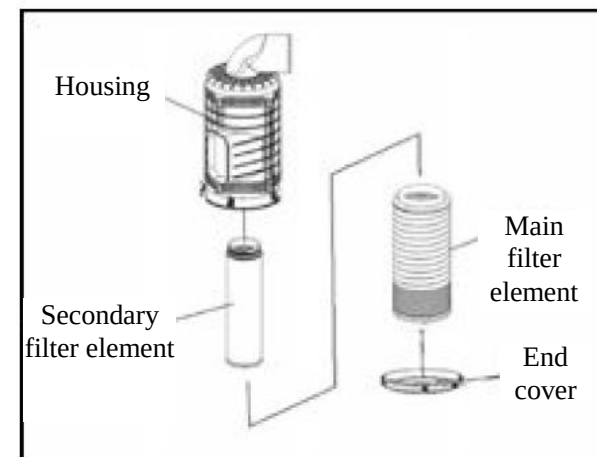
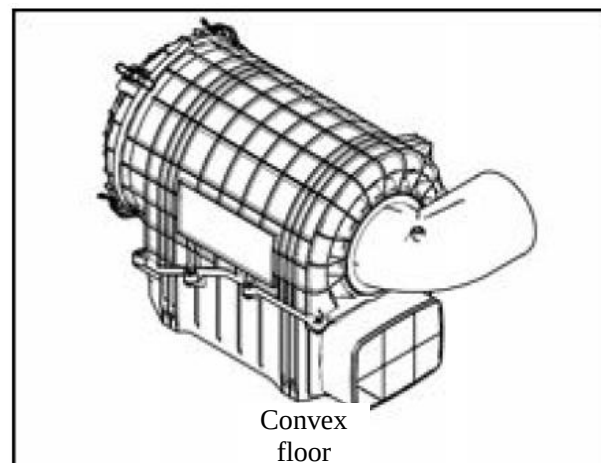
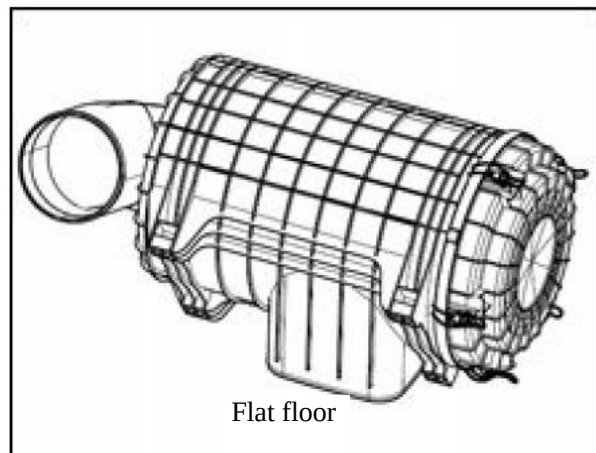
Self-inspection items

◆ Except for the first maintenance items and periodic maintenance items, the items that are inspected daily or irregularly are regarded as the self-inspection items.

No.	Items
1	Check the level of clutch oil storage cup, and fill it to specified line when the oil is insufficient.
2	Check and replenish transmission gear oil, dredge ventilation plug and add when insufficient.
3	Check and replenish drive axle gear oil, dredge ventilation plug and add when insufficient.
4	Check power steering oil tank level and add to specified line when insufficient.
5	Check the steering wheel for free rotation extent.
6	Check brake clearance and wear condition of lining plate, and replace brake lining as appropriate.
7	Check brake pipeline and drain water from air reservoir.
8	Clean the A/C inner and outer circulation element.
9	Check and tighten propeller shaft fixing bolts.
10	Check the steering gear and its bracket fixing bolts, the bolts connecting the steering shaft and steering gear, and the steering arm fixing bolts.
11	Check and tighten the wheel nuts.
12	Check and tighten the U-bolt of the leaf spring and the fixing bolt of the balanced suspension support bracket, upper reaction rod bolts and lower connecting plate bolts.
13	Check and tighten cab front and rear mounting pad fixing bolt.
14	Check the status of the battery status indicator.

Simple inspection and maintenance

Air filter

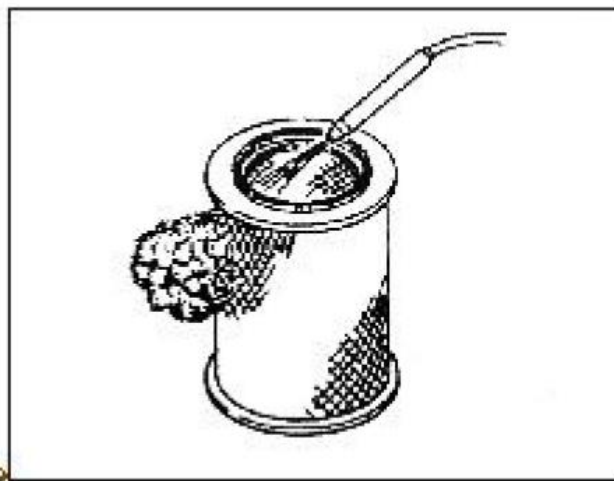


- ◆ The main air filter element must be maintained timely, otherwise, the filter element may be blocked, the engine power decreases or fuel consumption increases; If the filter element is damaged, it may cause premature wear to the engine.

NOTICES

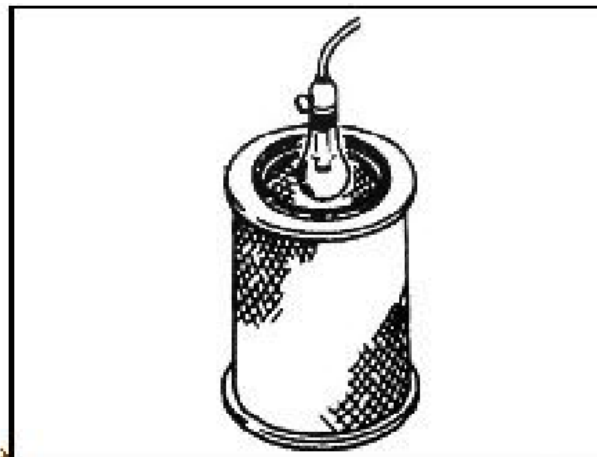
- ◆ The user should use the filter element produced by the original factory, or the filter element that has been tested by the FAW Technology Center and provided with a test report.
- ◆ Never use unqualified filter element, otherwise it will cause premature wear to the engine.

- ◆ Maintenance of main filter element:
 - Maintain the main filter element every 20,000km in general areas; and if you often drive in dusty or windy areas, you should appropriately shorten the maintenance mileage of main filter element;
 - It must be replaced with new main filter element after 4 times of maintenance or 1 year of use.
- ◆ Maintenance of secondary filter element:
 - The secondary filter element assembly is not allowed to be maintained, and it should be replaced together with the main filter element.



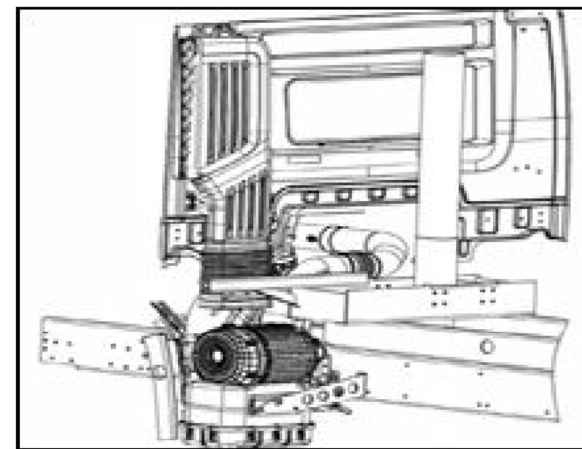
◆ Maintenance procedures of air filter

- Loosen the air filter end cover snap ring and remove end cover. Remove the dust from end cover and wipe the end cover clean with a cloth.
- Gently pull out the filter element and blow it outwards with (400 ~ 600) kPa dry and clean compressed air. Blow the filter element clean and wipe the seal end face clean.



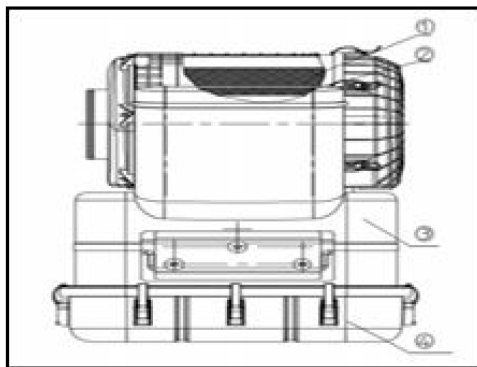
◆ Installation of air filter

- Before installing back, it is necessary to check if the gasket of filter element end is intact and if the filter paper is damaged. If there is any damage, replace filter element with a new one.
- Press the filter element gently into the housing according to correct position and install the end cover.
- Thoroughly check whether the connection line between air filter outlet and engine turbocharger inlet is properly sealed.



◆ Air filter (integrated oil-bath air filter)

- It is necessary to add oil before putting it into operation. The oil type is the same as the engine oil type used in the same period (generally 15W/40, and 5W/40 in winter in the northern cold region).
- The user should fill the shell ④ with oil to the oil level (usually about 4 liters), and not excessively. For details, see "Maintenance Steps for Oil-bath Pre-filter Module".



➤ Maintenance of oil-bath pre-filter module:

- In general areas, change the oil every 250 hours of driving; if you often drive in sandy or dusty areas, the above maintenance interval will be halved.
- When the shell ④ is shaken and the oil is not easy to flow, the oil-bath filter element should be cleaned and the oil should be changed. In particularly bad conditions, it must be checked daily.

➤ Maintenance of paper main filter element① of fine filter module:

- Every 750 hours of driving: Maintain the paper main filter element①; The above maintenance interval is halved if driving in complex and harsh environments (duty, humid);
- If any paper main filter element ① damage is found, it is necessary to replace it with a new one, meanwhile, replace the secondary filter element ②;

- After every 3000 hours or one year of driving: - Assemble the shell ④, and fix the oiled shell ④ replace the main filter element①. The above firmly with a hook. maintenance interval is halved if driving under complex and harsh environment (dusty, humid).

➤ Maintenance of paper secondary filter element② of fine filter module:

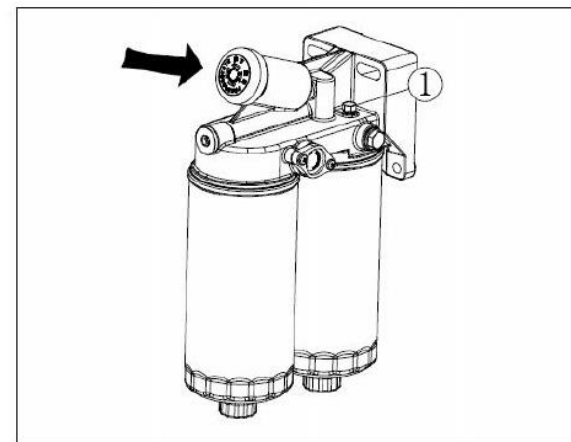
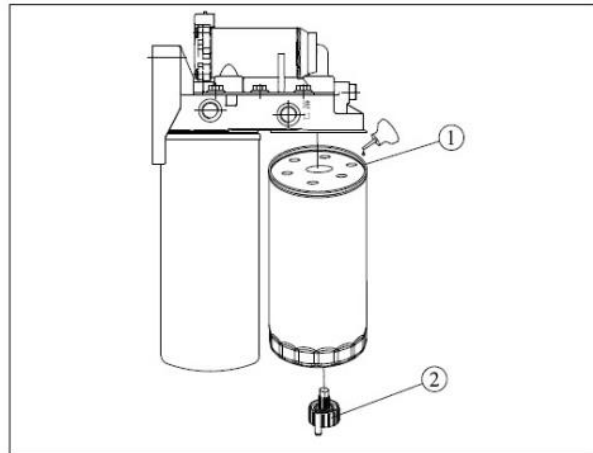
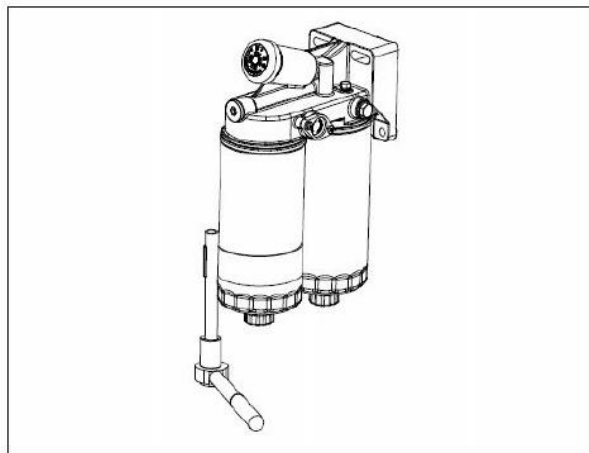
- Replace it together with paper main filter element ①. Never perform maintenance during above period.



➤ Maintenance steps of oil-bath pre-filter module filter element:

- Loosen the shell hook, remove the shell ④, and remove the oil-bath filter element ③;
- When cleaning, use a brush to clean the dust in the gap of the filter element and the bottom of the oil pool;
- Dry the filter element ③ and the shell ④ with compressed air or have it air dry;
- Fill the shell ④ with oil to the oil level (usually about 4 liters), and not excessively;

Twin fuel filter



- ◆ Drain water from two-stage fuel filter element in time every 2500 kilometers.
- ◆ Replace the primary diesel filter element at the same time every 30,000 kilometers.
- When replacing, use a special wrench to remove the filter element and replace it with a new one.

- ◆ When assembling, first apply a coat of oil on gasket ① surface and then gently tighten the filter element onto the base by hand, then rotate it by 3/4 of a turn (about 10~12 Nm); then tighten the drain plug ②.



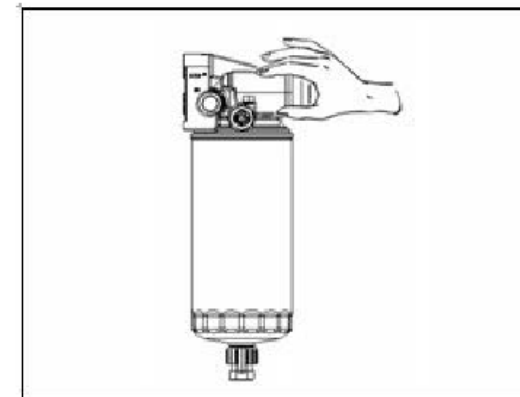
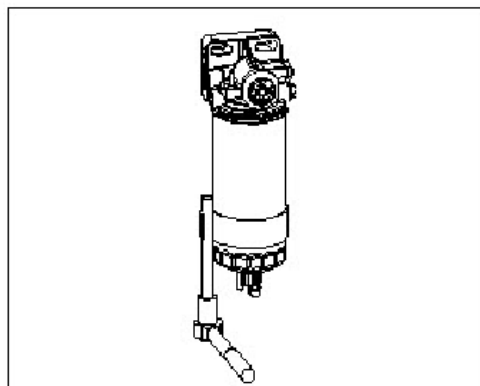
NOTICES

Do not leave any gasket without installed.

After assembling, unscrew the vent plug and press the manual oil pump (if it is a fuel filter with electric pump, turn the power supply of the whole vehicle to ON and start the electric pump) to fill coarse filter with fuel. Ensure that there is no oil leakage in each sealing part. Replace the grommet with a new one as necessary. Finally, tighten the vent plug.

- ◆ When disassembling the oil inlet and outlet joints, check whether the gasket is in good condition, and replace it in time if damaged. The tightening torque of oil tube joint is (20-25)Nm.

Single fuel filter



- ◆ Drain water from two-stage fuel filter element in time every 2500 kilometers.
- ◆ Replace the primary diesel filter element at the same time every 30,000 kilometers.
- When replacing, use a special wrench to remove the filter element and replace it with a new one.

- ◆ When assembling, first apply a coat of oil on gasket ① surface and then gently tighten the filter element onto the base by hand, then rotate it by 3/4 of a turn (about 10~12Nm); then tighten the drain plug ②.



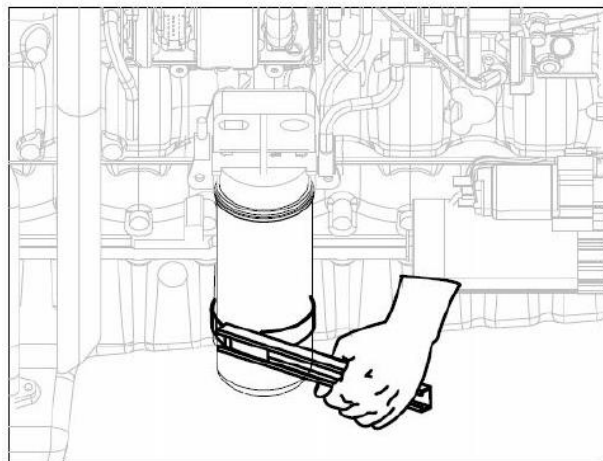
NOTICES

Do not leave any gasket without installed.

After assembling, unscrew the vent plug and press the manual oil pump (if it is a fuel filter with electric pump, turn the power supply of the whole vehicle to ON and start the electric pump) to fill coarse filter with fuel. Ensure that there is no oil leakage in each sealing part. Replace the gasket with a new one as necessary. Finally, tighten the vent plug.

- ◆ When disassembling the oil inlet and outlet joints, check whether the gaskets are intact. If damaged, replace them in time. The tightening torque of the oil pipe joint is (20-25)Nm.

Fuel fine filter



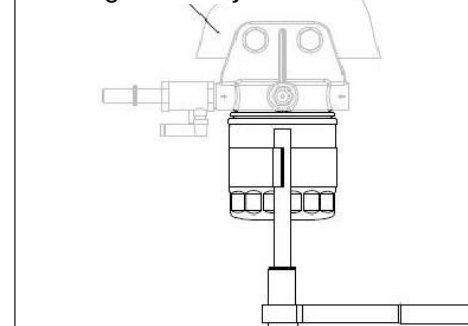
NOTICES

Check the integrity of each seal ring during assembling, and replace it in time if damaged. Do not leave any seal ring without installed.

- ◆ Fuel fine filter plays an important role in ensuring the normal operation of fuel injection pump and fuel injector, so it is necessary to maintain it timely. If it is found that no oil passes through the fine filter, it is necessary to check and repair the air filter, and replace it with a new filter in time as necessary.
- ◆ Generally, the filter should be replaced every 30,000km, and the mileage should be appropriately shortened according to the oil condition.
- ◆ When replacing with a new filter, first apply a coat of lubricant on the gasket, then screw it onto base and tighten it by hand.

Compressed air filter

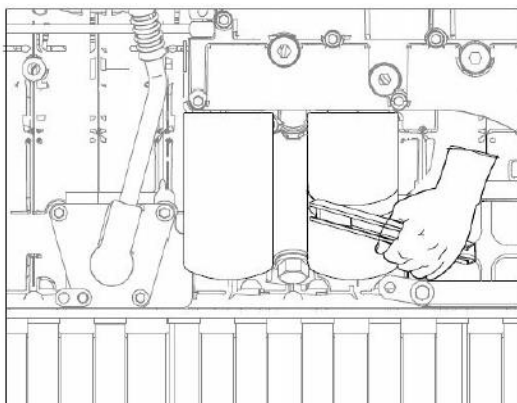
AdBlue tank and bracket welding assembly



- ◆ Replace the filter element every 100,000 km or a year.
- Before replacing the filter element, first turn off the ball valve switch (the state shown in the figure is normally on), then use a special wrench to remove the filter element and replace it with a new one.
- When assembling, first apply a layer of oil on the surface of the gasket, then gently screw the coarse filter onto the base by hand, then screw it in 3/4 turn; and after assembling, turn on the ball valve switch (return to the state shown in the figure).

NOTICES

Do not leave any gasket without installed.

Rotary oil filter

- ◆ Replacement period (models without long oil change interval):
 - Replace the oil filter every 6 months or every 10,000 kilometers.
 - In dusty areas, replace the oil filter every 3 months or every 5000 km of driving.
- ◆ Replacement period (models with long oil change interval):
 - When a new vehicle travels 60,000 km or 12 months,
 - Every 100,000 km or 12 months thereafter.
 - When used in dusty areas, mountainous areas, and cold areas (with an ambient temperature below -20 °C) for more than three months within a year, the oil change interval is halved.
- ◆ Removal and installation
 - The oil filter can be removed by turning it counterclockwise with a special tool.

- The installation surface of filter must be flat and smooth without any dirt.
- Coat the surface of the filter seal with engine oil during installation.
- Tighten the oil filter clockwise until the gasket contacts with the base surface, then tighten it once more.

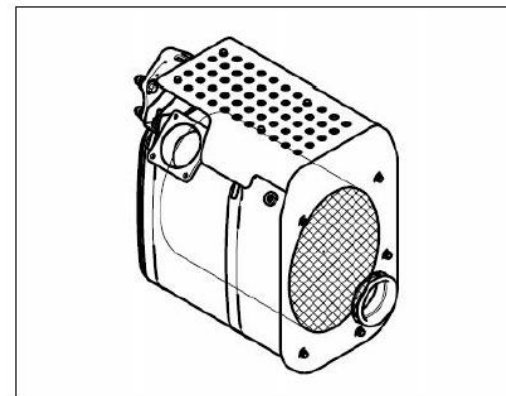
NOTICES

- ◆ Users who purchase rotary oil filter assembly must purchase the original oil filter assembly, or purchase the oil filter which has been tested by FAW Technology Center and provided with test report.
- ◆ Never purchase unqualified product, otherwise it will cause abnormal engine wear and parts damage.

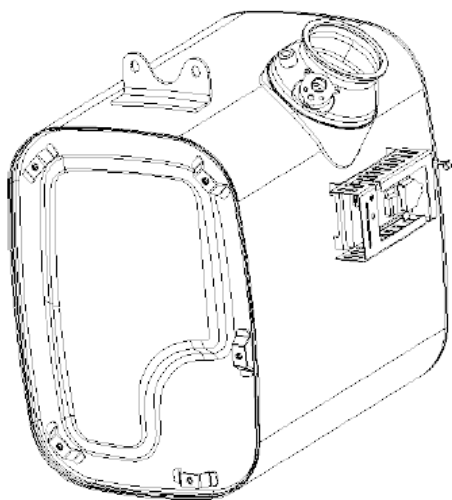
Fan clutch

- ◆ Regularly check the accumulated excessive dirt on front and rear covers of clutch, so as not to affect the heat dissipation of clutch, increasing the slip difference of fan clutch and affecting the heat dissipation effect of fan clutch, even causing high temperature of engine in serious cases (never clean the clutch with water or other fluids to prevent the fluid from entering the clutch, causing short circuit).
- ◆ Regularly check that the electric control fan wire harness is fixed firmly to prevent interference with other rotating parts of engine, resulting in breakage.
- ◆ Regularly check the connection between clutch coil connector and speed feedback connector to ensure that the connector seal plug is installed in good condition.

- ◆ Regularly check whether the fan outer diameter is concentric with opening of fan shroud in each direction to ensure that the clearance between fan and fan shroud in each direction is uniform and the amount of clearance is 15 - 20 mm.

Exhaust SCR

- ◆ The surface temperature of SCR and exhaust pipeline immediately after engine starts operating or stops is very high. Care must be taken to prevent burns.
- ◆ Avoid the inflammable and explosive articles contacting the surrounding area or surface of SCR. If there is any oil stain on surface of SCR, clean it in time.
- ◆ Fragile ceramic carrier is installed in SCR assembly. Collision, external impact and foreign matters should be avoided during use. If any air leakage or ceramic carrier fracturing occurs due to above causes, please go to the designated service station for replacement.



- ◆ If back pressure of SCR is excessively high, it may result in serious deterioration of engine performance. It is necessary to replace it at the designated service station in time.

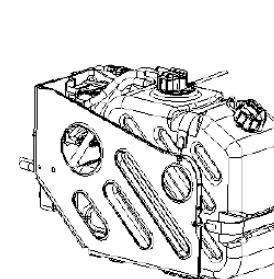


NOTICES

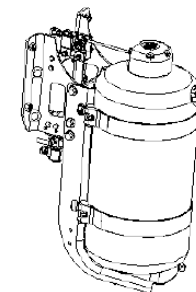
The damaged SCR assembly must be replaced at the designated service station in time. Otherwise, it will lead to excessive emission and OBD operation, resulting in engine torque limit.

- ◆ All the gaskets of exhaust system are disposable parts, which need to be replaced each time they are removed.
- ◆ Do not modify the exhaust system parts in any form, so as not to affect the SCR efficiency, resulting in excessive emissions, even engine torque limit.
- ◆ Avoid the intrusion of liquids such as fuel, engine oil, coolant and water into the SCR, which may contaminate the SCR and reduce the conversion efficiency of SCR. The contaminated SCR should be replaced at the designated service station in time to avoid engine torque limit.

Use and maintenance of SCR system



Bosch system



Air-driven system

- ◆ Clean the AdBlue tank every 50,000km of driving.
- ◆ If air-driven SCR system is equipped, replace the AdBlue tank filter every 50,000 km; According to the situation of AdBlue solution, the replacement mileage should be shortened or increased appropriately.
- ◆ If Bosch SCR system is equipped, replace the AdBlue tank filter every 30,000 km; According to the situation of AdBlue solution, the replacement mileage should be shortened or increased appropriately.

Electronically-controlled silicon oil fan clutch



- ◆ Maintenance instructions
 - Regularly check the accumulated excessive dirt on front and rear covers of clutch, so as not to affect the heat dissipation of clutch, increasing the slip difference of fan clutch and affecting the heat dissipation effect of fan clutch, even causing high temperature of engine in serious cases (never clean the clutch with water or other fluids to prevent the fluid from entering the clutch, causing short circuit).
 - Check regularly to confirm that the wiring harness is firmly fixed to the engine body by two wiring harness fastening clips to prevent the wiring harness from breaking due to interfering with other rotating parts of the engine.
 - Regularly check the connection between clutch coil connector and speed feedback connector to ensure that the connector seal plug is installed in good condition.
 - Regularly check whether the fan outer diameter is concentric with opening of fan shroud in each direction to ensure that the clearance between fan and fan shroud in each direction is uniform and the amount of clearance is 25mm
- ◆ Fault diagnosis flow
 - Visual inspection
 - * Whether the appearance of the clutch, radiating ribs, wiring harness, and connectors are intact
 - * Whether the fan is damaged or cracked, and whether there is any interference with the fan shroud at the largest diameter
 - * Whether there is dust and oil sludge on the surface, accumulated in the radiating ribs, especially for earthwork and mining environment
- Function test
 - * Remove the two-hole plug from the ECU
 - * Start the engine, and the fan speed will be at high speed directly or reach high speed within 2 minutes.
 - * Observe for 2 minutes, and if the fan is always running at high speed, the fan clutch is normal
- [Remarks] The clutch self-protection function determines that it will run at a high speed after the 2-hole plug removed.

◆ Precautions for installation and maintenance:

- Avoid bumping the fan clutch during installation.
- When assembling the clutch, ensure that the clutch flange surface and flange mating surface are clean, otherwise it will cause damage to the fan clutch.
- The bolts and nuts connecting the fan and the clutch must be tightened, otherwise the fan will loosen and damage the clutch and engine, causing the fan to rupture, damage the radiator and other parts, or cause personal safety accidents.
- During the process of assembling, make sure that the wire harness is fixed properly (two-point fixing). Single-point fixing will cause the wire harness to move freely and interfere with the fan.

Inspection and adjustment of V-belt

- ◆ Check if the whole belt has any damage. If so, replace the damaged belt.
- ◆ Always check the tension of belt. If it is too tight, premature damage to the water pump bearing, generator bearing and oil pump bearing may occur; If it is too slack, belt slippery, engine overheating and other problems may occur.
- ◆ After installing the new belt, run the engine for 15 minutes and then perform inspection and adjustment again. After driving 1000 km, perform inspection again. After that, the deformation of belt tends to be stable, and perform inspection once every 3000~5000km.

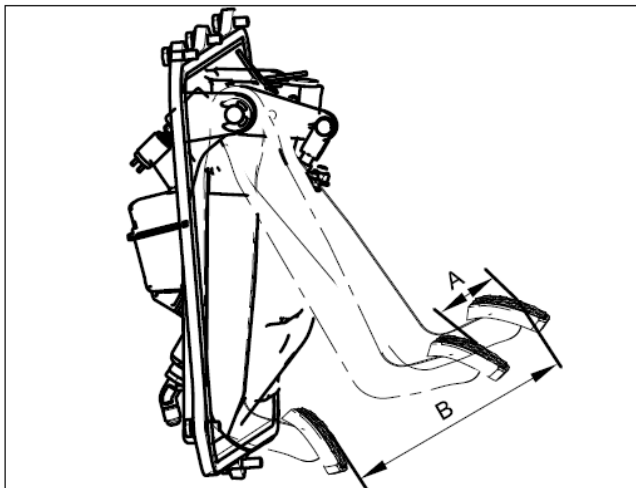
**CAUTIONS**

Stop the engine before inspection, adjustment and replacement of belt.

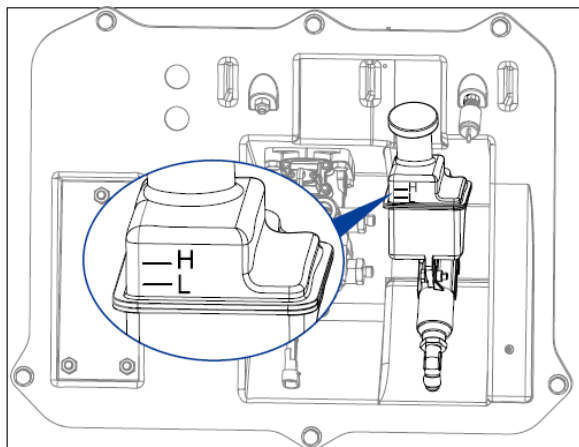
Precautions for Use of Electronic Control System

- ◆ Maintenance personnel for electronic control system must be specially trained before performing the maintenance.
- ◆ The ECU and various sensors of electronic control system are not allowed to be disassembled and repaired at will. If the damage is confirmed, FAW products with same type should be used for replacement.
- ◆ It is necessary to connect every wire harness connector of electronic control system firmly.
- ◆ Before removing the components of electronic control system, it is necessary to turn off the power supply first.
- ◆ The ECU of electronic control system should be away from the heat source, and should be dustproof, waterproof, anti-interference, anti-collision.
- ◆ When the electronic control system malfunction light illuminates, it is necessary to go to service department for inspection and service, so as to troubleshoot the fault.

Clutch



- ◆ Clutch pedal free stroke A: (5~10) mm.
- Total clutch pedal stroke B: (125~135) mm.

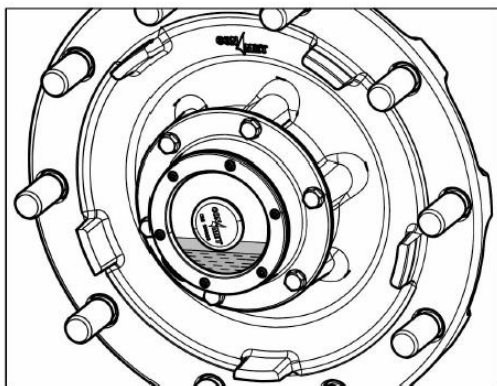


- ◆ The clutch oil tank is located on the left side of the cowl. Open the cowl outer panel, check the liquid level and add clutch hydraulic oil if it is low.
- ◆ Oil change interval: Change the clutch hydraulic control brake fluid every two years.
- ◆ The filling amount is about 0.3L, and the level should be kept between the "H" line and the "L" line.
- ◆ Oil type: DOT-3 brake fluid(Q/CAM-50).



NOTICES

To keep the system pipeline clean, it is not allowed to take off the strainer when adding clutch hydraulic oil, so as to prevent foreign materials from entering.

Maintenance of CONMET hub

- ◆ Before driving, check whether there is oil leakage at the hub cap (front axle) or the tire inside the wheel (rear axle).
- ◆ Observe the color of the front axle lubricant. If it is white or milky, please go to the service station to change the lubricant.
- ◆ Front axle hub oil change interval.
 - Go to the service station for inspection every 12 months or 100,000 km of driving (whichever comes first).
 - Go to the service station for maintenance every 500,000 km.
- ◆ Intermediate and rear axle hub oil change interval
 - Change the hub lubricant at the time of changing the axle lubricant.
- ◆ Capacity
 - 0.5L on both sides of the front axle;
 - 1L on both sides of the intermediate and rear axle;

◆ Oil type

---1700801-54W-C00 lubricant;

 NOTICES

When checking or replacing the brake shoe and brake drum, there is no need to remove the hub; if you have to, you must go to the service station to replace the hub oil seal.

Maintenance of grease lubricated wheel end

- ◆ Before leaving the factory, the Sinopec HP-R extreme pressure lithium-based grease is filled. When replacing the grease, clean up the grease in the ball track.
- ◆ You should remove the wheel hub, clean its inner cavity and the hub bearing, and fill the cavity between the inner bearing cone roller and the cage with lubricant every 8,000-10,000km.
- ◆ Pre-tightening of the axle spindle nuts
 - Tighten the adjustment nut by using a special wrench to 500Nm.
 - Rotate the brake drum for 2-3 turns to allow it to be in the correct position, and then tighten it to 500Nm.

---Reverse the adjusting nut for 1/4-1/6 turns, rotate the brake drum for 2-3 turns, and measure the starting force on the hub bolt with a spring balance. The value should be 30-65N.

---Install the lock plate and tighten the lock plate fastening screw.

Maintenance of FAG hub



- ◆ The maintenance-free product does not require daily maintenance, but go to the service station for a comprehensive inspection every 12 months or 150,000 kilometers, and the inspection content shall be implemented in accordance with the Service Manual.

Suspension

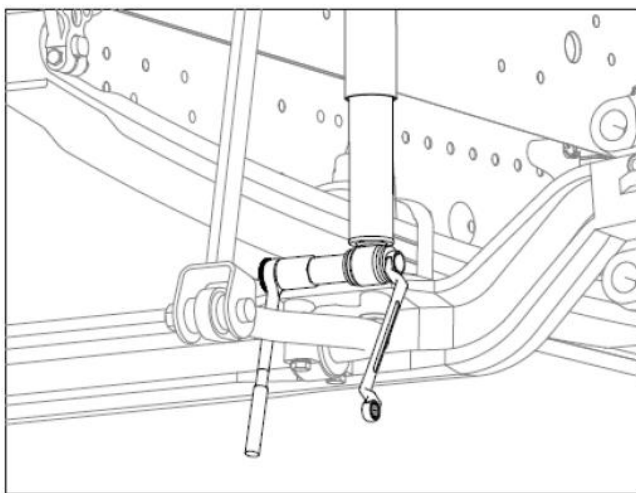
Suspension-tractor, van

- ◆ Tightening of the bolts and nuts of key parts.



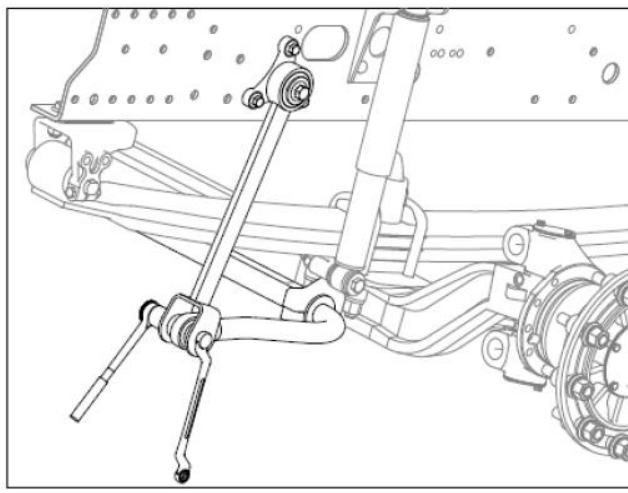
NOTICES

- ◆ Before tightening the bolt and nut, make sure the thread itself and the connected surface are clean.
- ◆ Before tightening, threads of bolts shall be coated with gear oil as required. Gear oil grade is 80W/90 GL-5.
- ◆ All bolts and nuts should be evenly tightened to the specified torque.
- ◆ Perform regular maintenance every 30,000km or six months (2500km for the first maintenance).



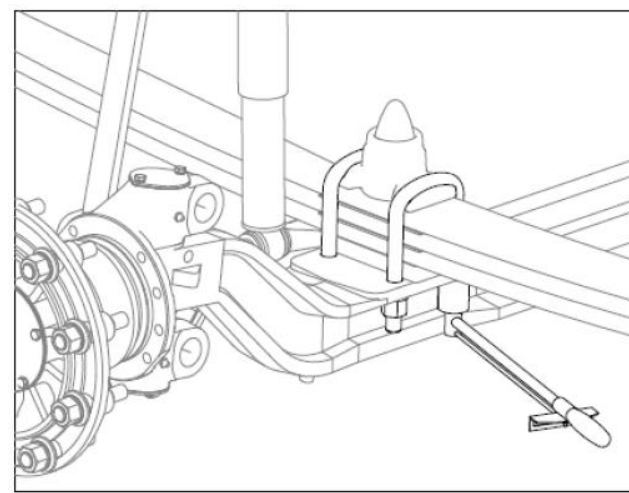
- ◆ See the table below for the tightening torque of the shock absorber lower connecting bolt and nut.

Thread specification	Tightening torque (Nm)
M16×1.5	260±50
M24×1.5	650±130



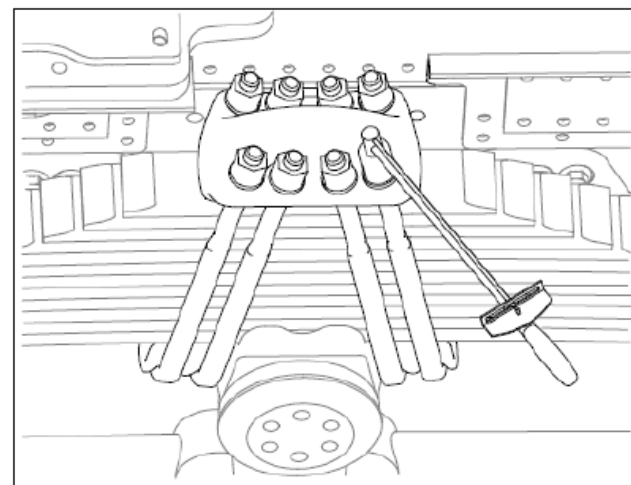
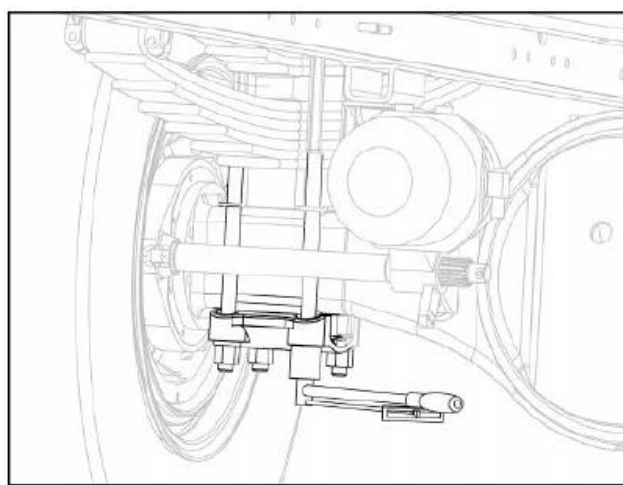
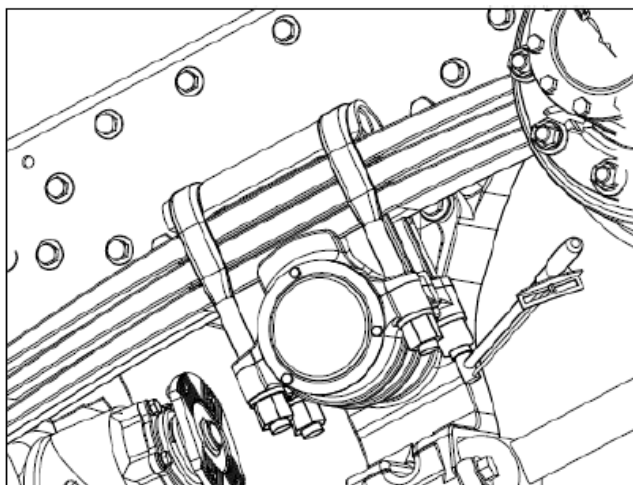
- ◆ See the table below for the tightening torque of the bolts and nuts of the stabilizer bar.

Thread specification	Tightening torque (Nm)
M20×1.5 (lower end)	400±80
M18×1.5 (upper end)	450±90



- ◆ Tightening of leaf spring U-bolt
 ➤ See the table below for the tightening torque of the front leaf spring (in the driving direction of the vehicle) U-bolt and nut.

Thread specification	Tightening torque (Nm)
M20×1.5	500±50



- See the table below for the tightening torque of the leaf spring U- bolts and nuts of the rear balanced suspension.

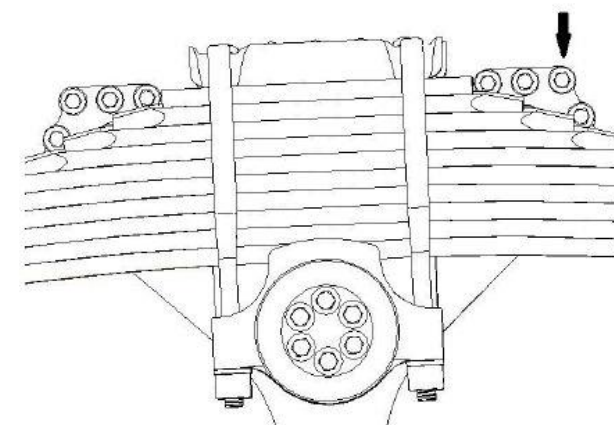
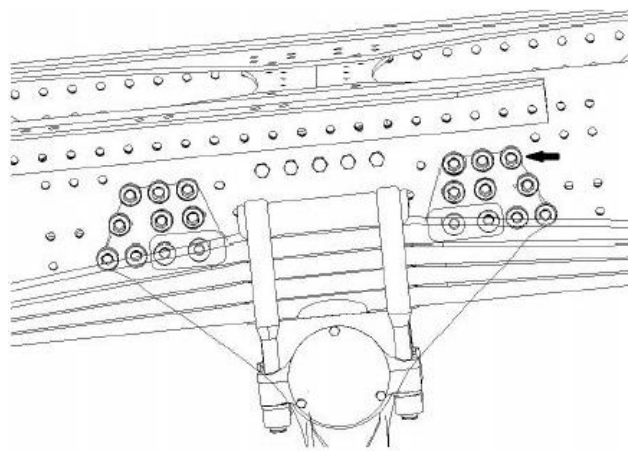
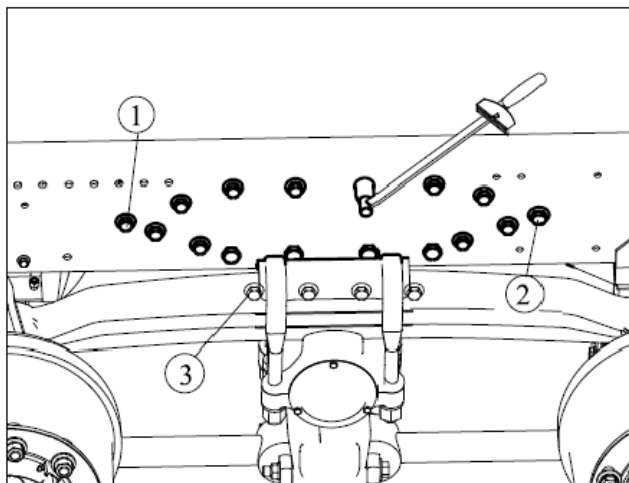
Thread specification	Tightening torque (Nm)
M24X1.5	600 ±50
M27X2	800 ±100

- See the table below for the tightening torque of the rear leaf spring U-bolts and nuts.

Thread specification	Tightening torque (Nm)
M24X1.5	600 ±50

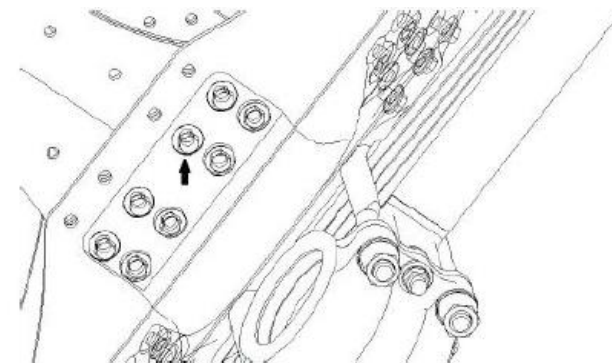
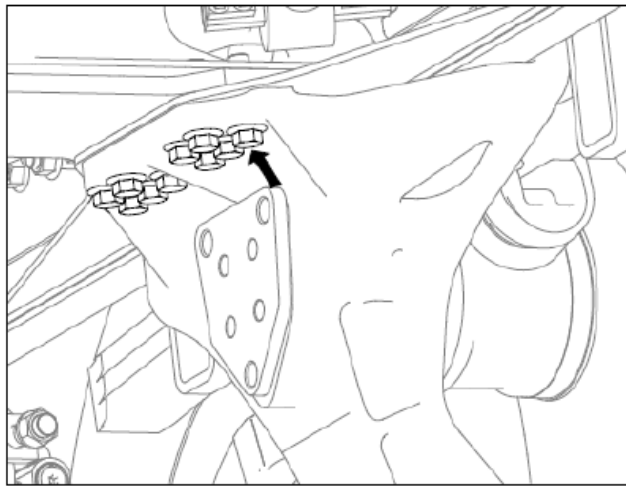
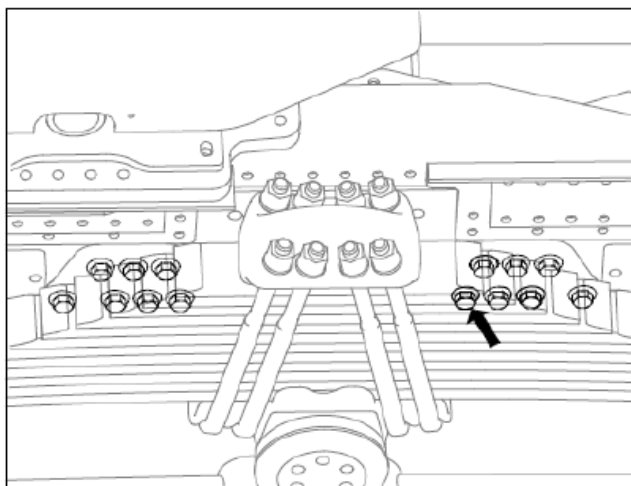
- ◆ See the table below for the tightening torque of the leaf spring U- bolts and nuts of the rear balanced suspension. (Reinforced suspension)

Thread specification	Tightening torque (Nm)
M24X1.5	600 ±50



- ◆ Tightening of bolts of balanced suspension support bracket
- See the table below for the tightening torque of bolts and nuts of balanced suspension support bracket.

Thread specification	Tightening torque (Nm)
M18×1.5 (①, ② shown in the figure)	430±80
M20X1.5 (③ shown in the picture)	600±100
M16X1.5	260±50

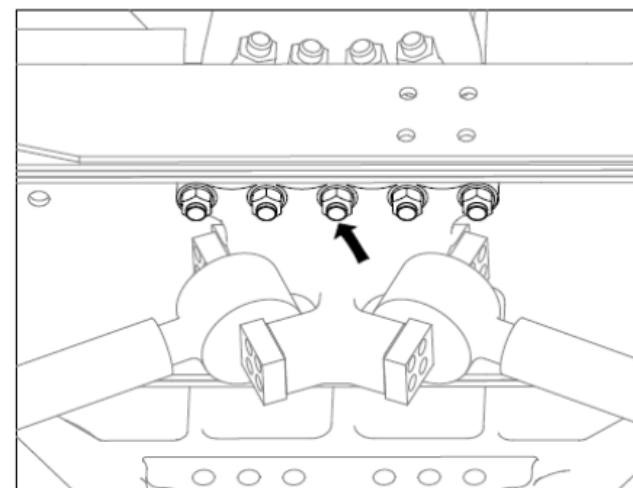
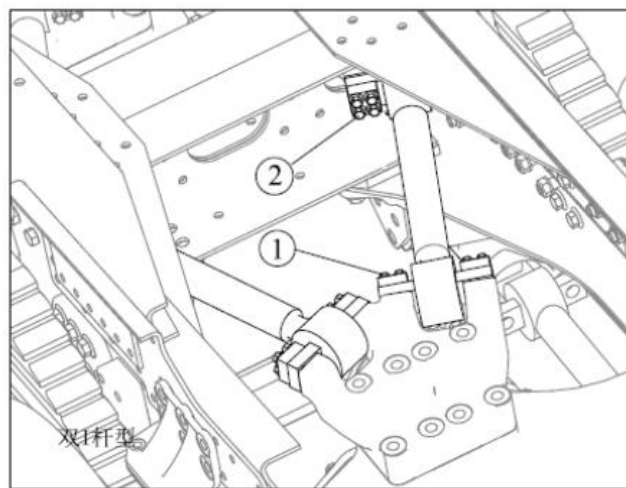
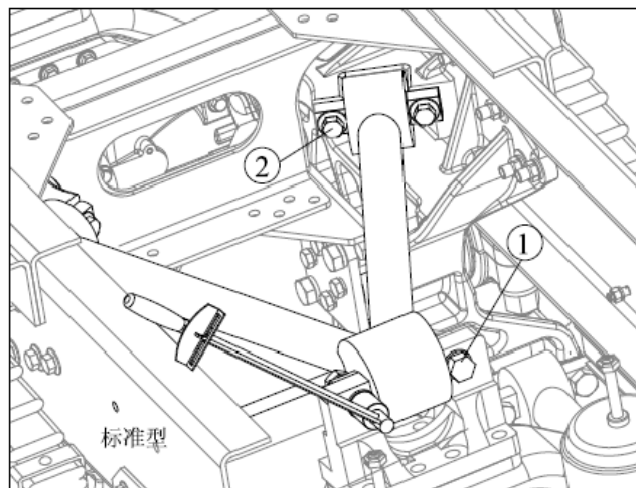


- ◆ See the table below for the tightening torque of bolts and nuts connecting the balanced suspension support bracket and side member of the frame. (Reinforced)

Thread specification	Tightening torque (Nm)
M20×1.5	600 ±100

- See the table below for the tightening torque of bolts and nuts connecting the balanced suspension support bracket and cross member of the frame. (Reinforced)

Thread specification	Tightening torque (Nm)
M20×1.5	600 ±100
M18×1.5	430 ±80
M16×1.5	260 ±50



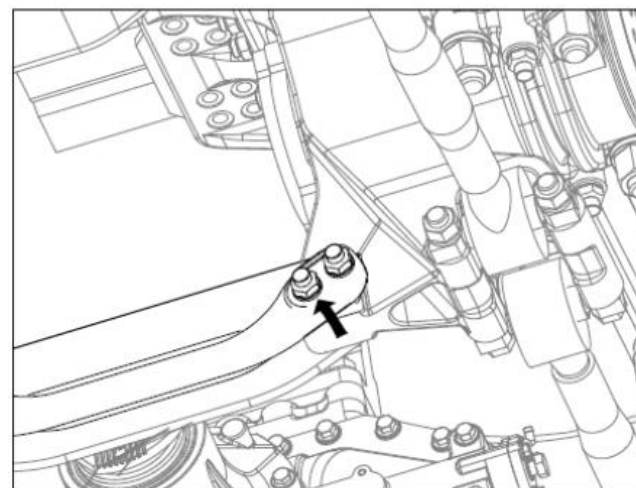
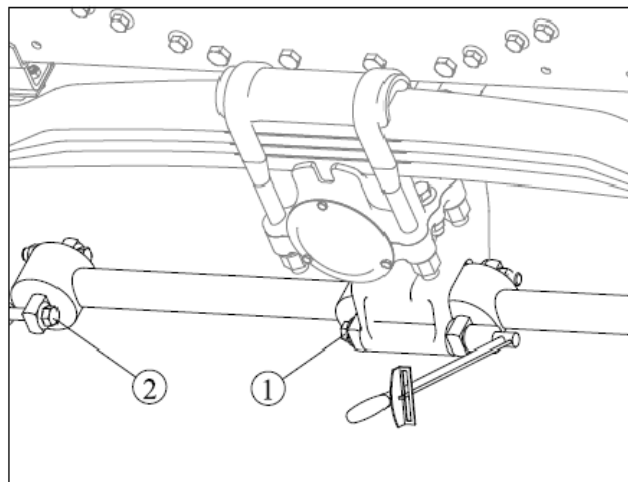
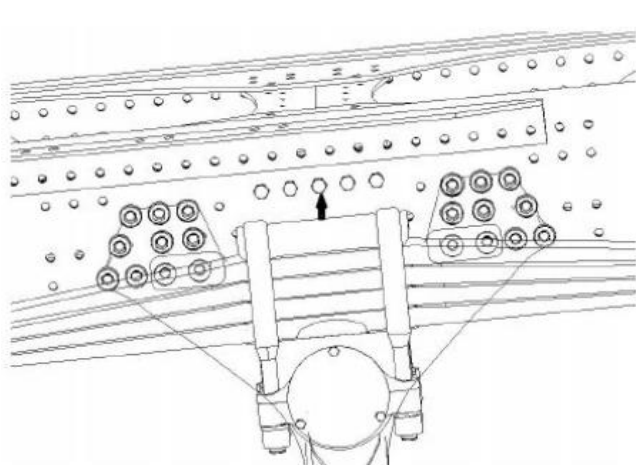
◆ Tightening of reaction rod bolts

- See the table below for the tightening torque of standard upper reaction rod bolts and nuts.

Thread specification	Tightening torque (Nm)
M24X1.5 (big end ①)	1000±150
M20X1.5 (small end ②)	600±100

- See the table below for the tightening torque of double-I type upper reaction rod bolt.

Thread specification	Tightening torque (Nm)
M14X1.5 (big end ①)	165±35
M14X1.5 (small end ②)	165±35



- See the table below for the tightening torque of the bolts and nuts connecting the reaction rod bracket and the frame.

Thread specification	Tightening torque (Nm)
M20X1.5	600±100
M18X1.5	430±80

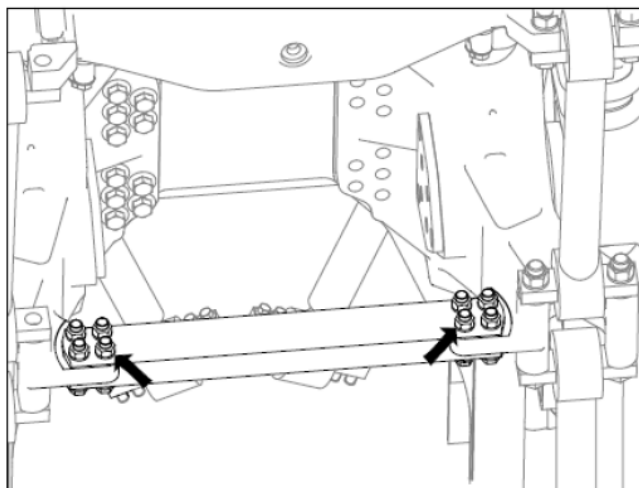
- See the table below for the tightening torque of lower reaction rod bolts and nuts.

Thread specification	Tightening torque (Nm)
M20X1.5 (① shown in the picture)	600±100
M24X1.5 (① shown in the picture)	1000±150
M20X1.5 (② shown in the figure)	600±100
M24X1.5 (② shown in the figure)	1000±150

- ◆ Tightening of connecting plate bolts and nuts

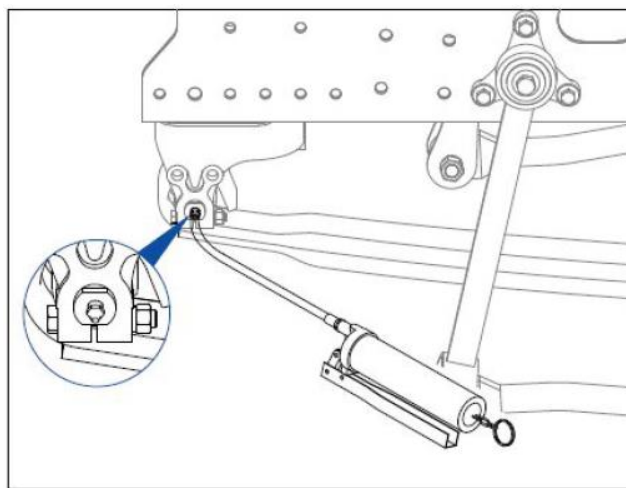
- See the table below for the tightening torque of the lower connecting plate bolts and nuts.

Thread specification	Tightening torque (Nm)
M20X1.5	600±100

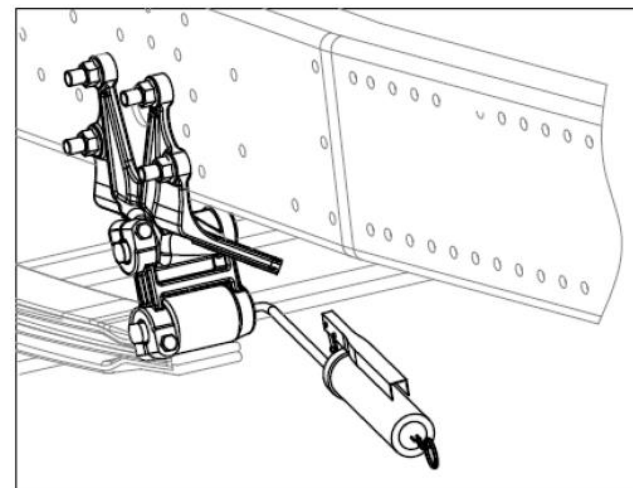


- See the table below for the tightening torque of the lower connecting plate bolts and nuts.

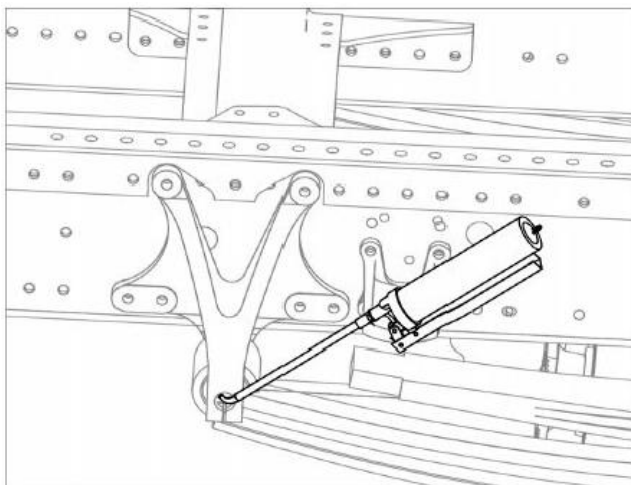
Thread specification	Tightening torque (Nm)
M20×1.5	430±80



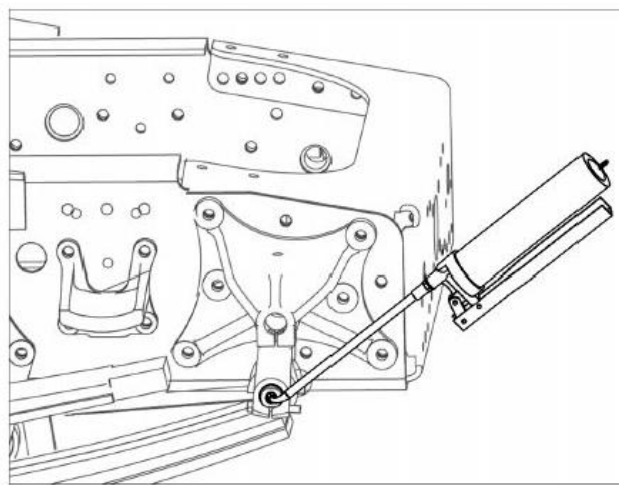
- ◆ Apply grease to the front leaf spring front bracket pin



- ◆ Apply grease to the front leaf spring rear bracket pin and lifting ring pin



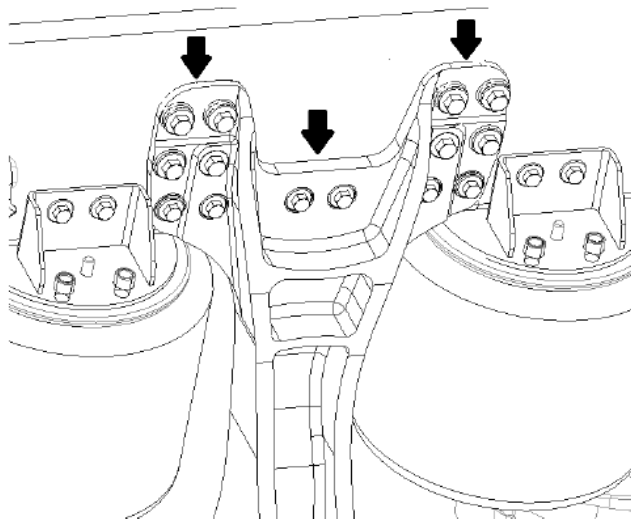
- ◆ Apply grease to the rear leaf spring front bracket pin.



- ◆ Apply grease to the rear leaf spring rear bracket pin and lifting ring pin.

Air suspension

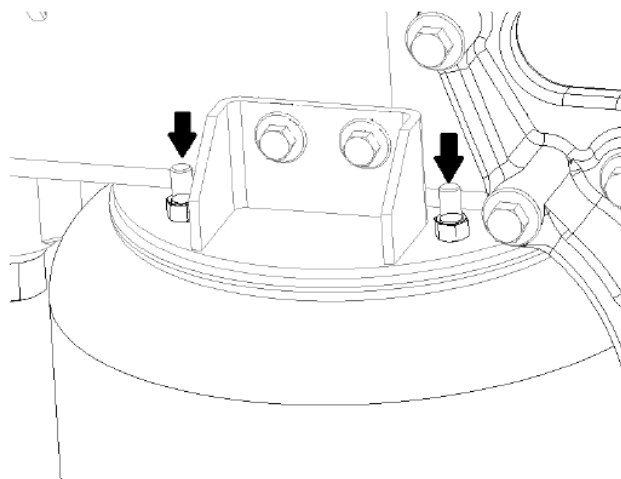
- ◆ Before tightening the bolt and nut, make sure the thread itself and the connected surface are clean.
- ◆ Before tightening, threads of bolts shall be coated with gear oil as required. Gear oil grade is 80W/90 GL-5.
- ◆ All bolts and nuts should be evenly tightened to the specified torque.



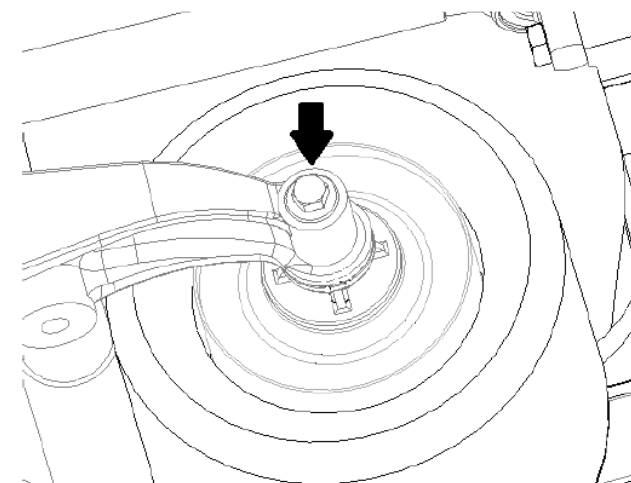
Air suspension support bracket bolt and nut

- ◆ Tightening of bolts and nuts of air suspension support bracket. - Bolts and nuts should be tightened to the specified torque evenly.

Thread specification	Bolt	Nut
M14X1.5	Flange face	SPL flange
M16X1.5	Flange face	SPL flange



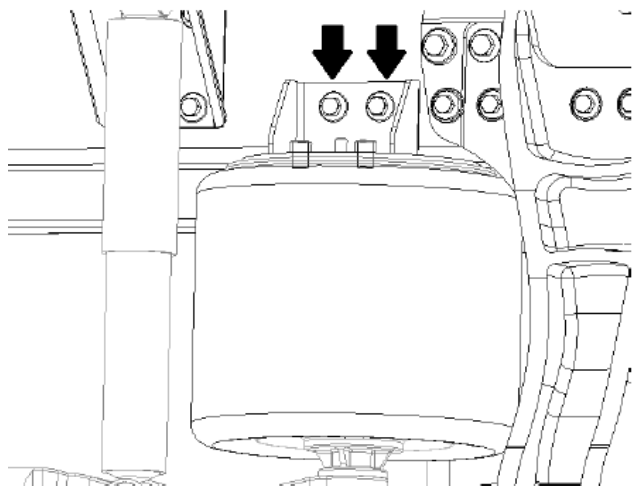
Bolt and nut connecting airbag and upper connecting plate



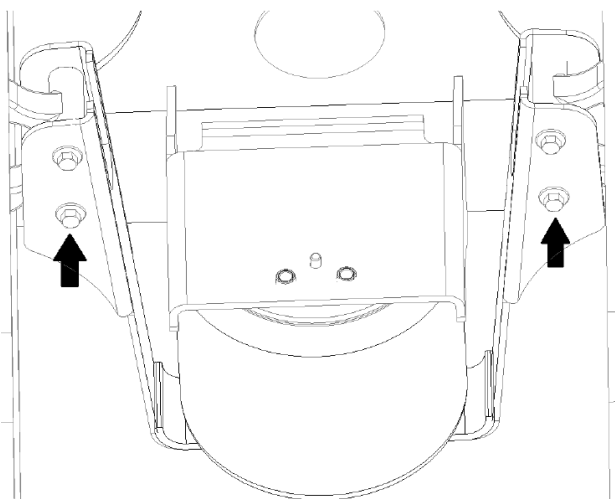
Bolt and nut connecting airbag and lower arm

- ◆ Tightening of airbag mounting bolts and nuts. - Bolts and nuts should be tightened to the specified torque evenly.

Thread specification	Bolt	Nut
M12×1.25	Hexagon head	SPL flange
M18×1.5	Flange face	None



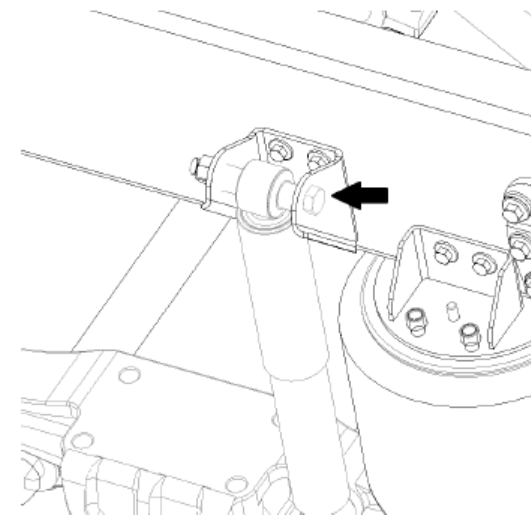
Bolt and nut of airbag upper connecting plate



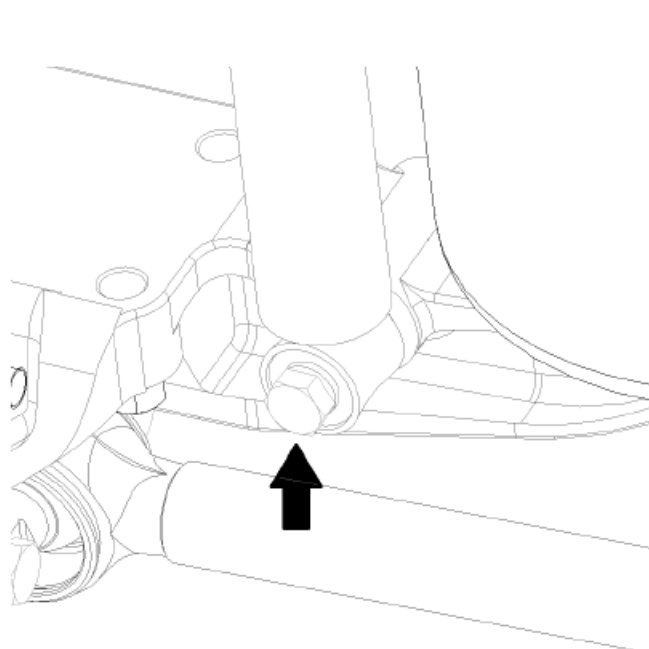
Bolt and nut of lifting airbag lower bracket

- ◆ Tightening of airbag connecting plate bolts and nuts.
 - Bolts and nuts should be tightened to the specified torque evenly.

Thread specification	Bolt	Nut
M12×1.25	Hexagon head	Hexagon
M14×1.5	Flange face	Flange face
M16×1.5	Flange face	Flange face
M18×1.5	Flange face	Flange face



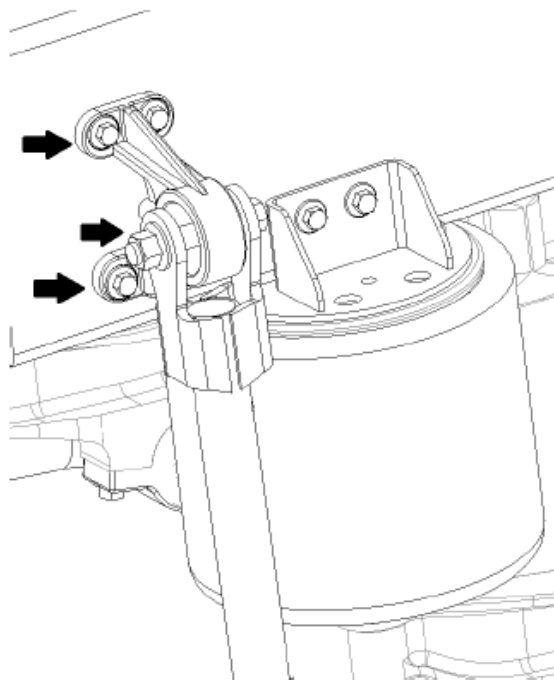
Bolts and nuts at the shock absorber upper bracket



Bolts and nuts at the shock absorber lower bracket

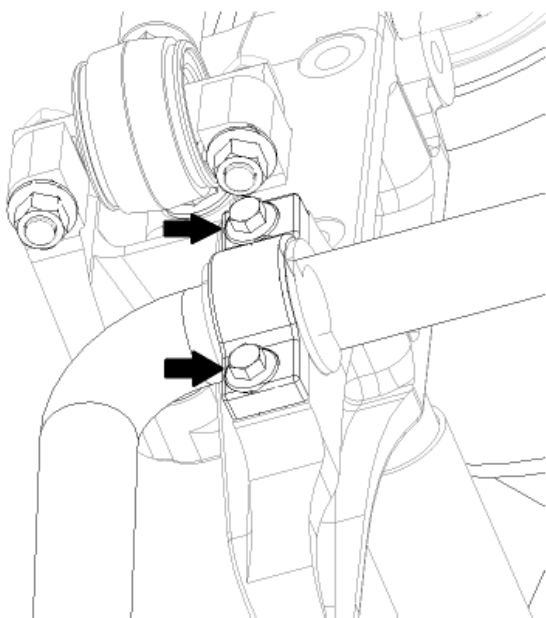
- ◆ Tightening of bolts and nuts at the shock absorber. - Bolts and nuts should be tightened to the specified torque evenly.

Thread specification	Bolt	Nut
M20×1.5	Flange face	Flange face



Bolts and nuts of stabilizer bar bracket and stabilizer bar

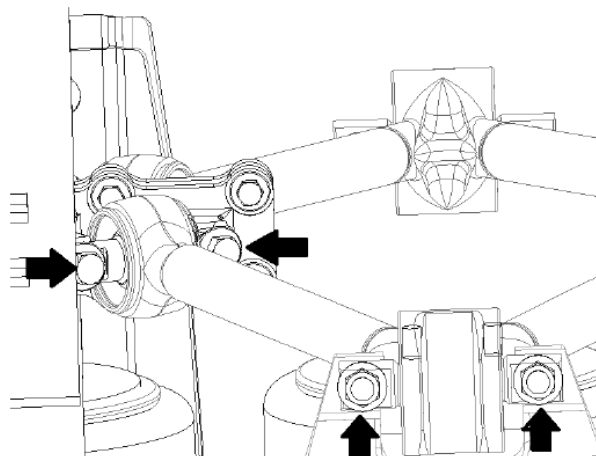
Bolts and nuts of stabilizer bar bracket and stabilizer bar



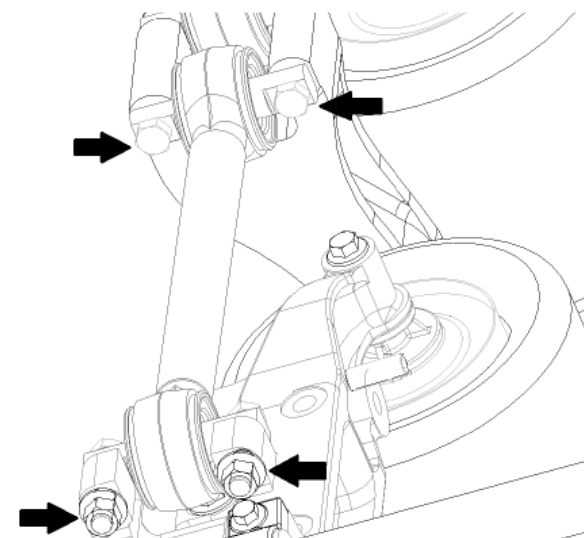
Bolts and nuts of stabilizer bar bracket and stabilizer bar

- ◆ Tightening of bolts and nuts at stabilizer bar bracket. - Bolts and nuts should be tightened to the specified torque evenly.

Thread specification	Bolt	Nut
M14×1.5	Flange face	SPL flange
M16×1.5	Flange face	SPL flange
M20×1.5	Flange face	SPL flange



Upper thrust rod bolts and nuts



Lower thrust rod bolts and nuts

- ◆ Tightening of bolts and nuts at thrust rod. - Bolts and nuts should be tightened to the specified torque evenly.

Bolt specifications	Tightening torque(N m)
M18×1.5	550--600
M20X1.5	550--800
M24×1.5	750--1100

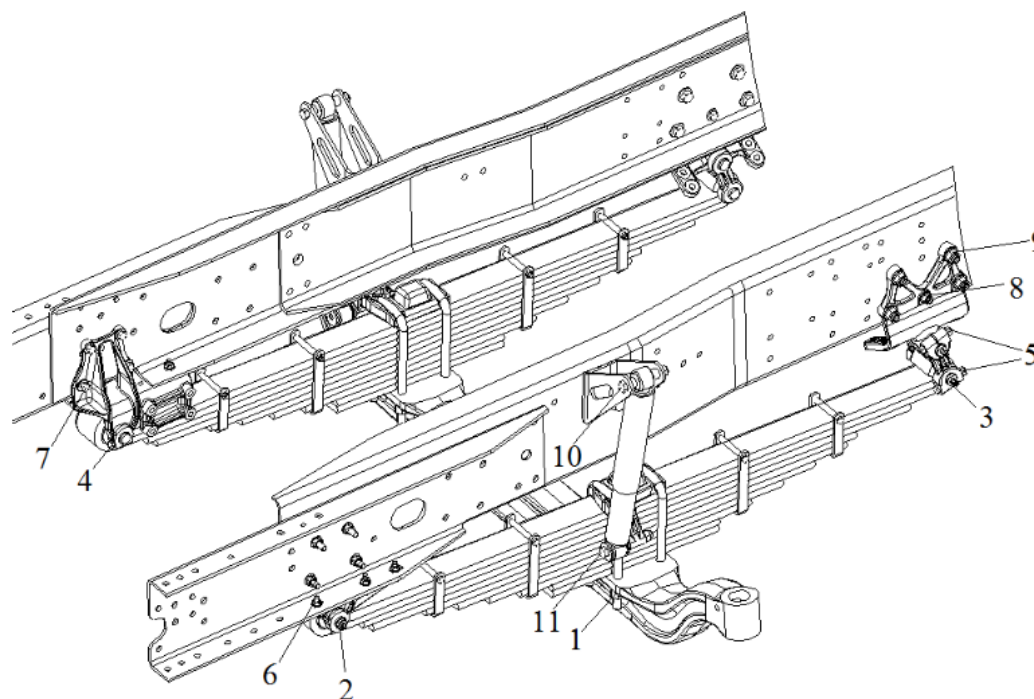
Suspension-dumper

- ◆ Tightening of the bolts and nuts of key parts.

 NOTICES

- ◆ Before tightening the bolt and nut, make sure the thread itself and the connected surface are clean.
- ◆ Before tightening, threads of bolts shall be coated with gear oil as required. Gear oil grade is 80W/90 GL-5.
- ◆ All bolts and nuts should be evenly tightened to the specified torque.

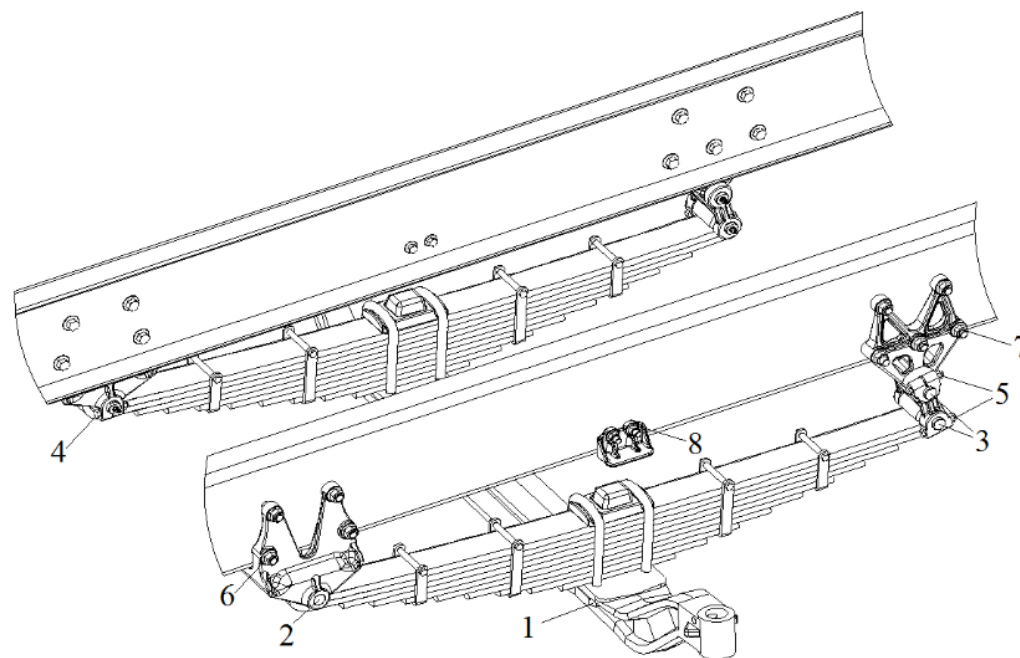
- ◆ Maintenance of front suspension system



No.	Maintenance items	Specification of fasteners	Tightening torque (N·m)	First maintenance (2,500km)	Regular maintenance (Every 5,000 kilometers or every month)
1	U-bolt nut	M20X1.5	500 ±50	Check the fasteners and tighten them	
2	Fill grease to front bracket pin	-	-	Check and fill grease	
3	Fill grease to lifting ring pin	-	-		

4	Front bracket pin bolt and nut	M12X1.25	100±20	Check the fasteners and tighten them	During the first two maintenance (including the first maintenance), check the fasteners and tighten them; since the 3rd maintenance, check the fasteners and tighten them if necessary.
5	Lifting ring pin bolts and nuts	M12X1.25	100±20		
6	Bolts and nuts connecting front bracket and frame	M12X1.25	150±30		
7		M14X1.5	200±40		
8	Bolts and nuts connecting rear bracket and frame	M14X1.5	200±40		
9		M18X1.5	420±70		
10	Front shock absorber upper connecting bolt and nut	M16X1.5	260±50		
11	Front shock absorber lower connecting bolt and nut	M16X1.5	260±50		

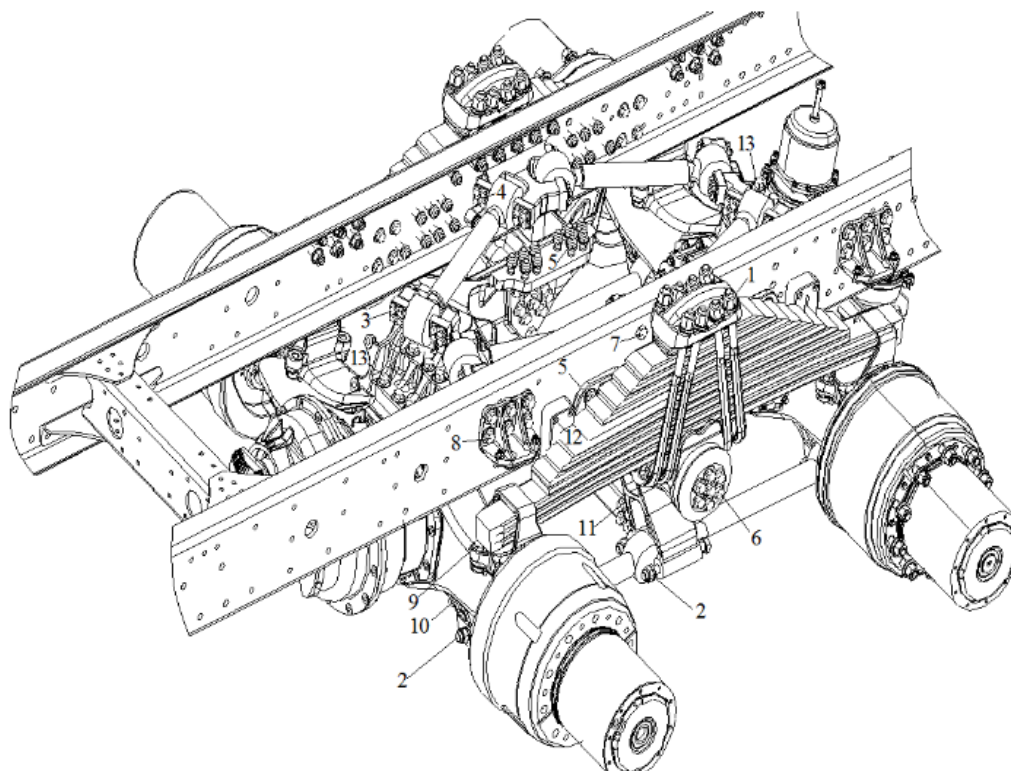
◆ Maintenance of second front suspension system



No.	Maintenance items	Specification of fasteners	Tightening torque(N m)	First maintenance (2,500km)	Regular maintenance (Every 5,000 kilometers or every month)
1	U-bolt nut	M20X1.5	500 ±50	Check the fasteners and tighten them	
2	Fill grease to front bracket pin	—	-	Check and fill grease	
3	Fill grease to lifting ring pin	—	-		

4	Front bracket pin bolt and nut	M12X1.25	100±20	Check the fasteners and tighten them	During the first two maintenance (including the first maintenance), check the fasteners and tighten them; since the 3rd maintenance, check the fasteners and tighten them if necessary.
5	Lifting ring pin bolts and nuts	M12X1.25	100±20		
6	Bolts and nuts connecting front bracket and frame	M18X1.5	420±70		
7	Bolts and nuts connecting rear bracket and frame	M18X1.5	420±70		
8	Bolts and nuts connecting position limiter and frame	M14X1.5	200±40		

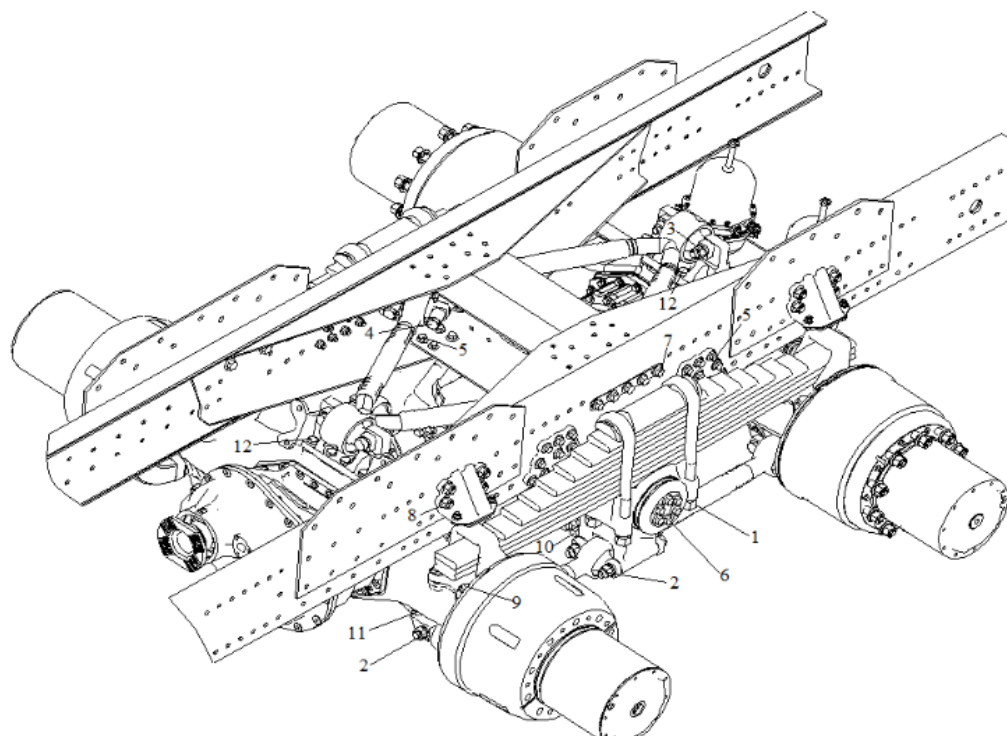
◆ Maintenance of rear suspension system



No.	Maintenance items	Specification of fasteners	Tightening torque(N m)	First maintenance (2,500km)	Regular maintenance (Every 5,000 kilometers or every month)
1	U-bolt nut	M24X1.5	750±150	Check the fasteners and tighten them	
2	Lower reaction rod bolts and nuts	M24X1.5	900±100		
3	Upper reaction rod bolts and nuts	M14X1.5	165±35		
4		M14X1.5	165±35		

5	Balanced suspension support bracket bolt and nut	M20X1.5	550±80	Check the fasteners and tighten them	During the first two maintenance (including the first maintenance), check the fasteners and tighten them; since the 3rd maintenance, check the fasteners and tighten them if necessary.
6	Balanced suspension support bracket front end cover bolt	M20X1.5 (with press)	410±40		
		M20X1.5 (without press)	500±50		
7	Bolts and nuts connecting reaction rod bracket and frame	M20X1.5	550±80		
8	Bolts and nuts connecting position limiter and frame	M20X1.5	550±80		
9	Rear leaf spring support bolt	M20X1.5	600±100		
10	Reaction rod lower bracket bolt	M20X1.5	600±100		
11	Balanced suspension junction plate bolt and nut	M18X1.5	420±70		
12	Bolts connecting transverse position limiter and frame	M18X2.5	430±80		
13	Middle and rear axle reaction rod upper support connecting bolt	M20X2.5	550±80		

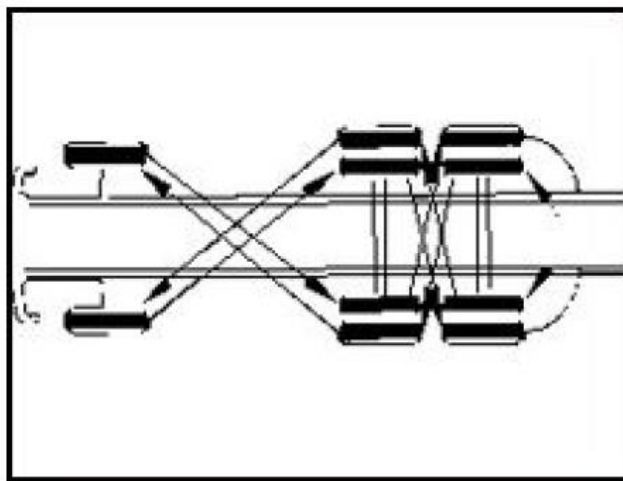
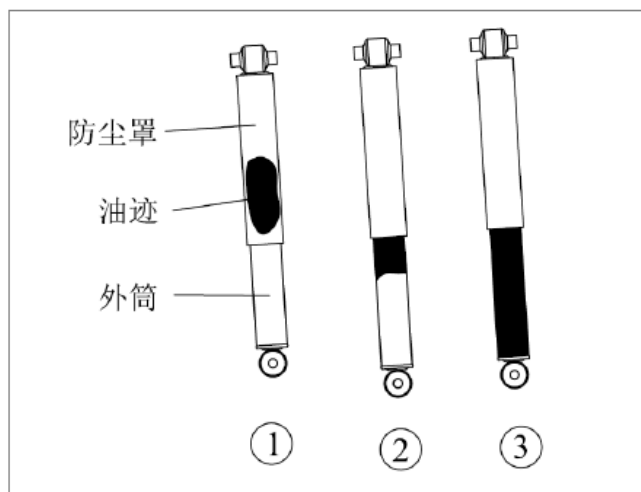
◆ Maintenance of rear suspension system



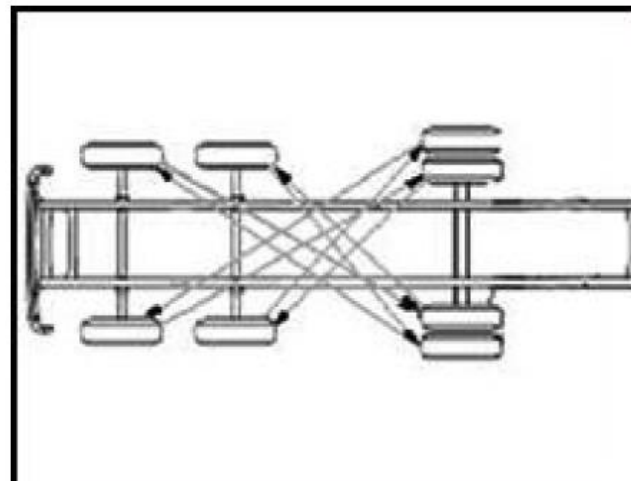
No.	Maintenance items	Specification of fasteners	Tightening torque (N m)	First maintenance (2,500km)	Regular maintenance (Every 5,000 kilometers or every month)
1	U-bolt nut	M27X2	800±100	Check the fasteners and tighten them	
2	Lower reaction rod bolts and nuts	M24X1.5	900±100		
3	Upper reaction rod bolts and nuts	M24X1.5	900±100		
4		M22X1.5	600±100		
5	Balanced suspension support bracket bolt and nut	M16X1.5	260±50	Check the fasteners and tighten them	During the first two maintenance (including the first maintenance), check the fasteners and tighten them; since the 3rd maintenance, check the fasteners and tighten them if necessary.
6	Balanced suspension support bracket front end cover bolt	M18X1.5 (with press)	310±30		
		M18X1.5 (without press)	420±40		
7	Bolts and nuts connecting reaction rod bracket and frame	M18X1.5	420±70		
8	Bolts and nuts connecting position limiter and frame	M20X1.5	550±80		
9	Rear leaf spring support bolt and nut	M20X1.5	600±100		
10	Balanced suspension junction plate bolt and nut	M18X1.5	420±70		
11	Reaction rod lower bracket connecting bolt	M20X1.5	600±100		
12	Middle and rear axle reaction rod upper support connecting bolt	M20X2.5	600±100		

Shock absorber oil leakage fault determination

Periodic tire rotation



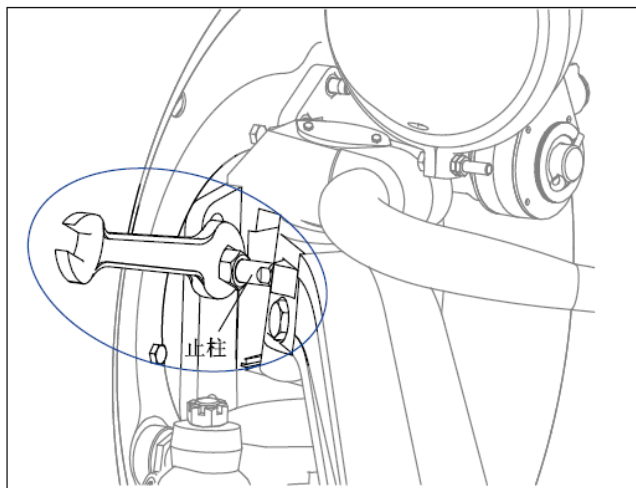
6X4



6X2

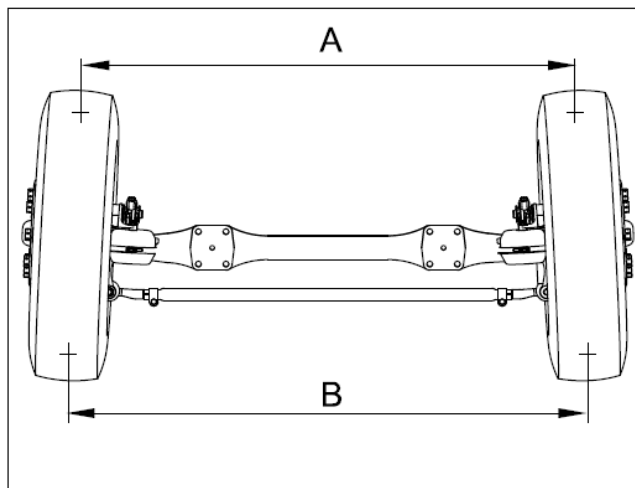
- ◆ If oil contamination is only found on the dust cover, there is no need to replace the shock absorber. (Figure ①)
- ◆ Stretch the shock absorber. If there are oil stains on the outer cylinder, wipe it and wipe again after two weeks. If no oil stains are found after wiping twice, there is no need to replace the shock absorber. (Figure ②)
- ◆ Stretch the shock absorber. If there is obvious oil stain and high humidity, the oil stain seems to be developing, and the outer cylinder is covered by the operating oil over time, it is necessary to replace the shock absorber. (Figure ③)
- ◆ Every 10,000km, the tires must be performed tire rotation in the order shown in the figure.

Front wheel maximum angle



- ◆ The maximum angle of the front wheel is controlled by the limit bolt on the steering knuckle and the stopper on the front axle. Adjust the extended length of the limit bolt to adjust the maximum angle of the front wheel.

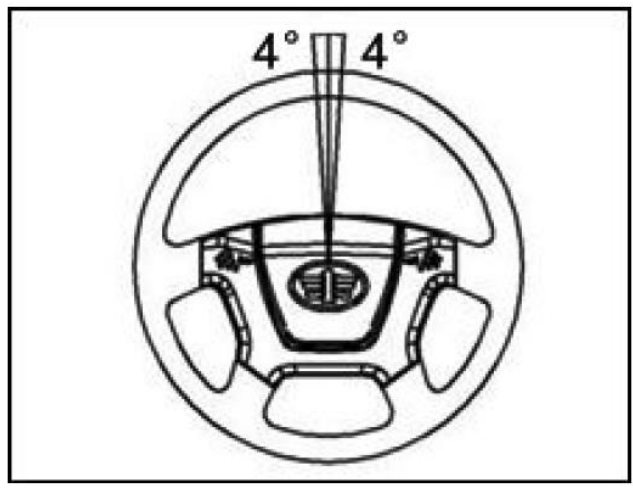
Front wheel toe-in adjustment



- ◆ Make sure to check whether the toe-in value is within the specified range every 10,000km. If it is not within the specified range, adjust it in time.

Front wheel toe-in value:
 $B - A = (0 \sim 2) \text{ mm}$ (radial tire)

Steering wheel free play



- ◆ Check the steering wheel free play every 8,000km.
- ◆ During adjustment, place the front wheels in a straight line and rotate the steering wheel to left and right until resistance is felt (the front wheels should not be deflected at this time), and the free play should not exceed $\pm 4^\circ$.
- ◆ If the free play is too large, following inspections should be conducted:
 - Check if front wheel hub bearing clearance is correct.
 - Check if the steering drag and tie rod end is loose.
 - Check if the connection between the steering arm and the arm shaft is loose.
 - Check if the axial clearance of steering arm shaft is too large.

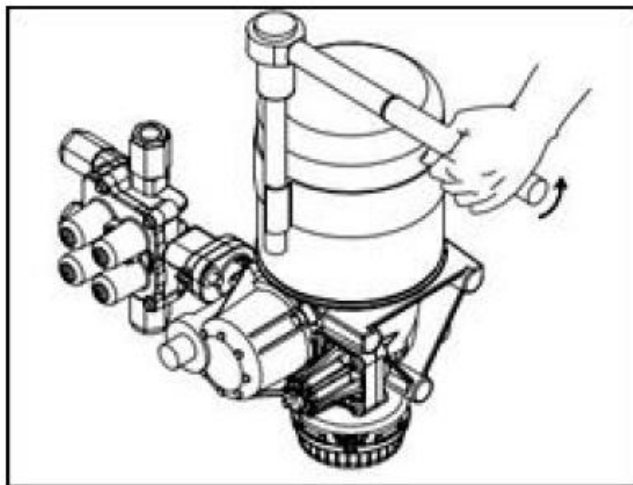
Steering torque

◆ Check and tighten the steering mechanism (especially the steering drag and tie rod, steering upper and lower knuckle arm, steering drive shaft, etc.) and the connecting bolts of the wheels and other parts every 5,000km.

◆ Tightening torque table for major bolts and nuts:

Fastening position	Steering drag and tie rod ball pin locking nut	Steering knuckle upper arm tightening nut	Left and right steering knuckle arm tightening nut	Steering arm fixing nut	Wheel bolt tightening nut	Power steering gear fixing bolt	Steering wheel tightening nut	Steering universal joint fork tightening bolt	Spare tire lifter connecting rod
Tightening torque (N.m)	185~230	280~350	280~350	M30 : 300±20	M20X1.5 : 450±50	M16X1.5 : 240~260	M14:50~70	48~63	147~225
				M42 : 550±50	M22X1.5 : 550±50	M20X1.5 : 390~450	M20:100~120		
				M45 : 550±50	M24X1.5 : 650±50				

Maintenance of air dryer

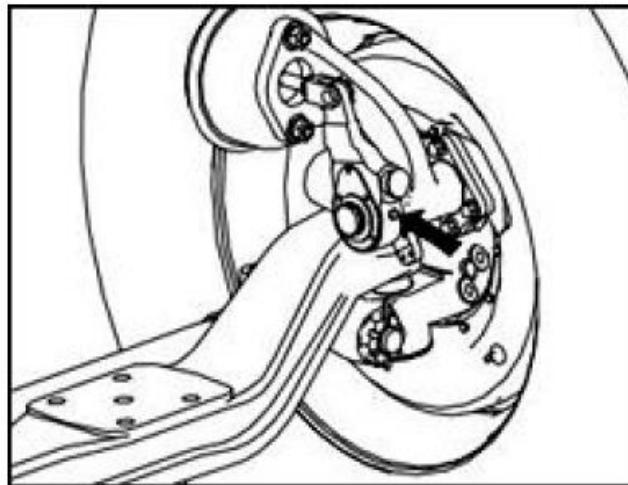
**Precautions for maintenance of air dryer**

- ◆ Check for water in air reservoir regularly (once a month is recommended). When water is found in the air reservoir farthest from the dryer, it indicates that the desiccant has failed, and the drying cylinder shall be replaced.

Replacement method of drying cylinder:

- ◆ Remove the old drying cylinder, and clean the connecting bolt and valve body. Apply a layer of grease evenly to the matching part between the new drying cylinder and the seal of valve body, and apply a little thread sealing sealant to the matching part between the drying cylinder and the connecting bolt.
- ◆ Install the new drying cylinder on the valve body with a maximum torque of 15Nm.

Maintenance of drum brake system

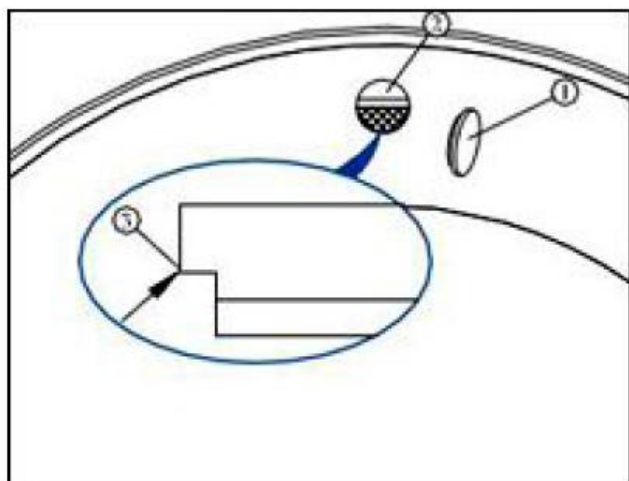


- ◆ For maintenance of front and rear wheel brakes, grease shall be filled through the grease nozzle until fresh grease overflows from the holes at the camshaft root.

Adjustment of brake clearance automatic adjusting arm

- ◆ Generally, there is no need to adjust the brake clearance during use. But periodical inspection is necessary. The brake clearance can be checked through the dust baffle check hole.

Replacement of friction lining

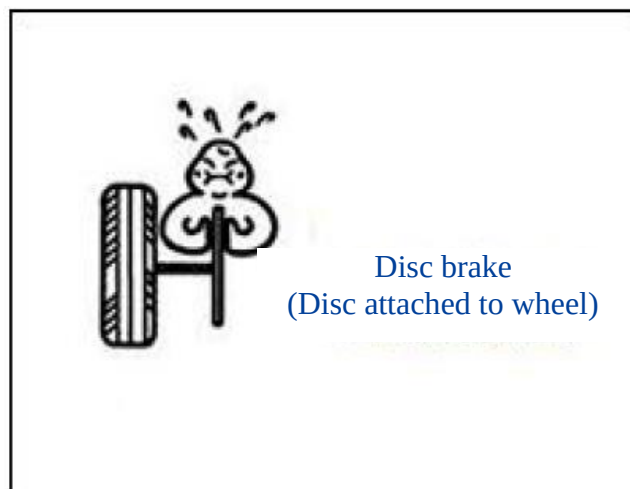


- ◆ Remove the plug ①
- ◆ Observe the wear of friction lining through the access hole ② of the dust baffle.
- ◆ If the friction lining is worn to the side step ③, it needs to be replaced.

NOTICES

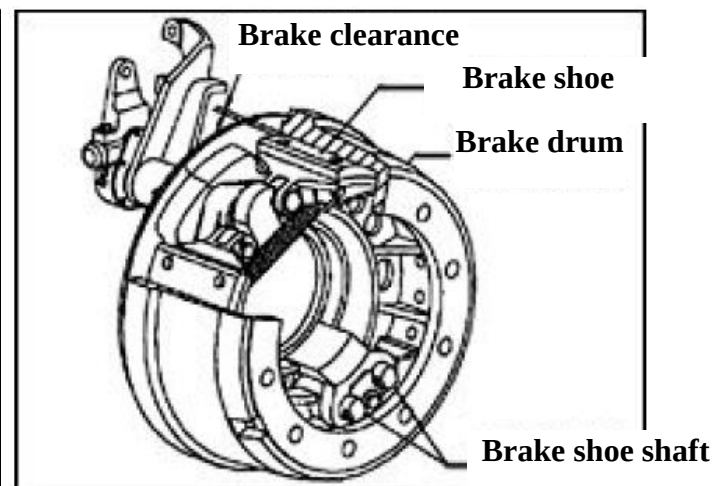
Please go to the service station designated by FAW to replace the brake friction lining, and use products without asbestos fiber, which are safe and environmentally friendly.

Precautions for use of disc brake



- ◆ The internal structure of disc brake is comparatively complex, so it is not allowed to disassemble the brake caliper internal parts to perform replacement or maintenance without any professional training.
- ◆ When the brake system warning light  in the cab illuminates, it indicates that you should check the brake system, including the disc brake friction lining, and determine whether it should be replaced.

Partial adjustment of wheel brakes



- ◆ The wheel brake local adjustment is to reduce the clearance between brake shoe friction lining and brake drum after the brake shoe friction lining is worn.
- ◆ Local adjustment is generally carried out every 8,000km.
- In order to make left and right wheels have the same braking effect, the difference between left and right brake chamber push rod stroke should be minimized, and should not exceed 5mm
- Do not adjust the brakes by turning the yoke or changing the length of the push rod.

Adjustment of brake clearance automatic adjusting arm (optional)



◆ Adjustment method:

- Remove the dust cover of the adjusting arm.
- Push the adjusting arm lock sleeve to expose the square or hexagonal head of the worm shaft, and turn the worm shaft with a wrench to keep the clearance between brake drum and brake shoe within the range of (0.50 ~ 0.85)mm (measured at the access hole of the dust shield).

➤ Brake chamber push rod stroke:

Front brake chamber 25 ± 5 mm

Rear brake chamber 30 ± 5 mm

- ◆ When replacing with a new brake friction lining, the brake clearance shall be re-adjusted. The adjustment procedures are as follows:
 - Turn the hexagonal head of the worm at the end of the adjustment arm clockwise.

 NOTICES

Do not use electric wrench or pneumatic drill.

- Align the hole of the adjusting arm with the cylindrical pin of the U-fork of the cylinder push rod.
- Then insert the cylindrical pin into the U-fork hole and lock the cotter pin.

Fix the adjustment arm on the S camshaft with bolts, washers or retainers. At this time, ensure that the adjustment arm has an axial clearance of 0.5-0.2mm, and then push the control arm in the braking direction until it stops. The purpose is to ensure the set clearance between the friction lining and the brake drum.

 NOTICES

The arrow on the control arm indicates the direction of pushing.

Normal use of ABS



- Then tighten the positioning bracket and the control arm.

➤ Rotate the worm hexagonal head of the adjusting arm clockwise with a wrench until it can't be rotated further (friction lining contacts with brake drum), then rotate the worm hexagonal head counterclockwise for 3/4 turn (click will be heard when turning in the opposite direction).

⚠ NOTICES

Do not use electric wrench or pneumatic drill.

- After several times of braking, the brake clearance will automatically adjust to the normal range. It can be observed that the worm hexagonal head will rotate clockwise automatically to adjust the brake clearance when the braking process is about to end.

◆ Ensure sufficient braking distance.

◆ Never pump the brake pedal. Pumping the brake pedal will make ABS control command on and off, leading to a reduction in braking ability and an increase in braking distance.

◆ The wheels do not lock up during ABS emergency braking, the front wheels still have a guiding role, and the driver may depress the brake pedal while turning the steering wheel for emergency avoidance.

◆ The specified tire pressure standard should be strictly followed. Also, the pressure of coaxial tires should be balanced, and it is strictly prohibited to use tires of different specifications.

◆ Pay attention to check the gap between the wheel speed sensor and the ring gear. Excessive gap will directly affect the normal operation of ABS.

Precautions for use of ABS

- ◆ It is strictly prohibited to wash ECU with water.
- ◆ The ECU cannot be directly measured with a multimeter.
- ◆ When charging the battery with external high voltage, make sure to disconnect the ABS.
- ◆ Turn off the power when removing and installing various parts.
- ◆ Disconnect ABS when the vehicle is being welded.
- ◆ Always check whether the voltage of the generator is stable.
- ◆ ABS indicator light should be replaced in time if broken.
- ◆ Do not change the capacity of relevant fuses at will.

 NOTICES

If the ABS light is on during driving, it indicates there is a malfunction in the ABS system, but the brake system still works and the vehicle can still be driven safely. In this condition, drive to the designated repair shop for diagnosis and maintenance as soon as possible so as to restore the ABS system.

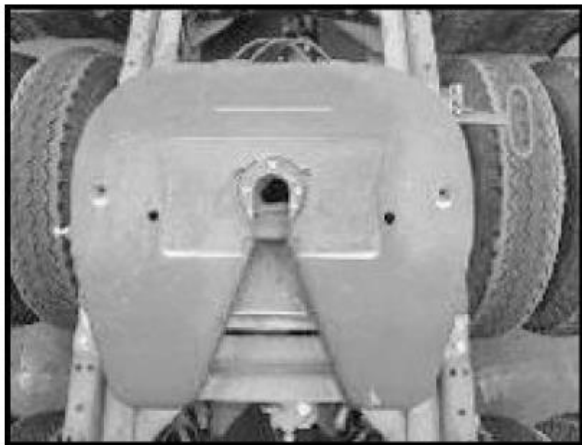
Precautions for use of retarder

- ◆ When the vehicle is parked, the manual switch must be pulled back to 0 position in time.
- ◆ Use the manual switch of the retarder as much as possible.
- ◆ To avoid too fast conversion of retarder position.
- ◆ After using the retarder for a long period of time, it is best to drive a certain distance at a low speed before stopping to ensure that the retarder can fully dissipate heat.
- ◆ When the vehicle is going down a long slope, it is best to alternately use the retarder and normal braking to control the vehicle speed.
- ◆ Retarder is a kind of secondary brake, which has many advantages over the main brake, but it cannot replace the main brake system. Therefore, you should not relax your vigilance just because your vehicle is equipped with a retarder.

Regular maintenance of retarder

- ◆ The company recommends that the regular maintenance of the retarder be included in the routine maintenance plan of the vehicle.
- ◆ Under normal circumstances, the retarder should be fully inspected every 5,000 kilometers.

Maintenance and repair of saddle



- ◆ Clean the surface of the saddle and lubricate the surface of the saddle with heavy-duty grease before coupling the tractor with the trailer.
- ◆ Add grease to the wedge block bolt from the hole on the upper surface of the saddle every 5,000km.
- ◆ Adjust and check the following parts every 5,000km.
 - In order to compensate for the wear of the traction pin and the lock hook and prevent the wedge from being too tight during coupling, so that the handle cannot be pulled out, the adjustment bolt should be unscrewed every 5,000km with the tractor coupled with the trailer, and then screwed clockwise until you feel the adjustment bolt contacting with the wedge block, and then reverse half a turn to lock the bolt on the adjustment bolt; if the above method can not eliminate the gap, please replace the wear ring, lock hook or traction pin.

Inspection of the rubber bushing of the bracket. To check the wear of the rubber bushing, press the saddle by hand to make it swing. When released, the saddle should return to its original position. At this time, the operator will feel elastic action on the hand, otherwise the rubber bushing should be replaced.

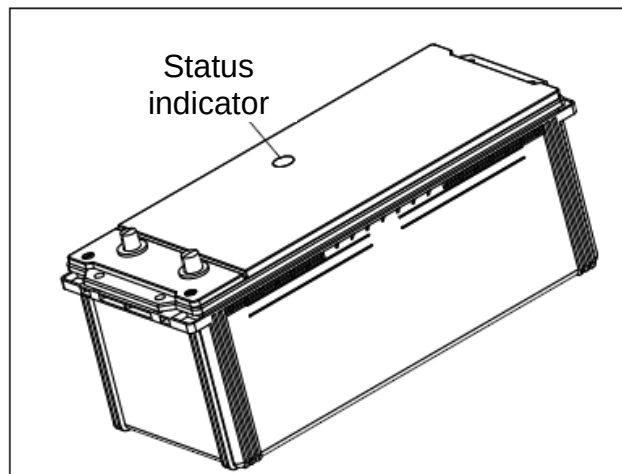
Check the lock hook bolt and wedge block bolt to ensure that they are fastened and not loose.

The bolts connecting the saddle and the mounting plate, the bolts connecting the mounting plate and the frame (L plate), and the supporting shaft bolts should be checked at any time. They should be tightened and not loosened.

Miscellaneous

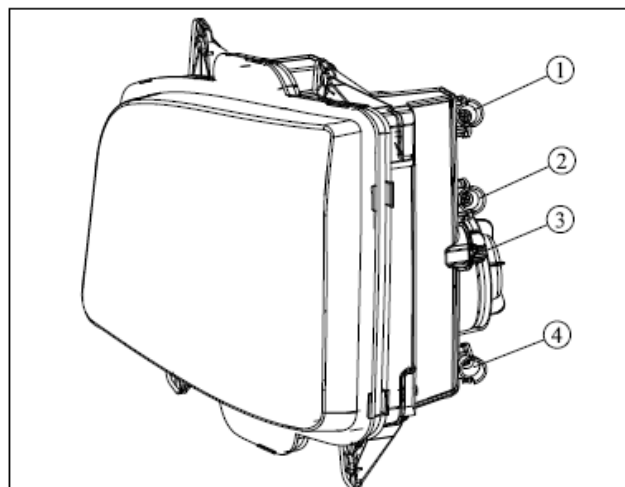
- ◆ The position of the saddle on the tractor is determined by the OEM and cannot be changed at will (including position, height, axial load, mounting plate, etc.).
- ◆ Before the tractor coupling with the semi-trailer, the height of the semi-trailer should be adjusted so that the lower plane of the semi-trailer slide is 0-50mm lower than the mounting surface on the saddle.

Battery



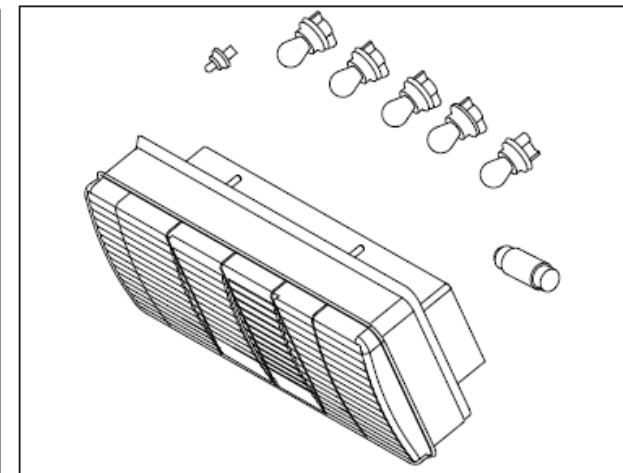
- ◆ Periodically check the battery shell for deformation, seepage or damage, check the battery post terminal for seepage and melting, and replace the battery if above symptoms occur.
- ◆ The battery status indicator should be checked every 2 months of normal driving.
 - If the indicator is in green, the battery is in good condition;
 - If the indicator is in black, the battery needs to be charged;
 - If the indicator is in white, the battery needs to be replaced.

Headlight adjustment



- ◆ This figure shows the left headlight with 4 adjusting holes.
- ◆ Use the dual-purpose screwdriver in the vehicle tool to fine-tune the light pattern of the high and low beams.
 - ①: High beam vertical adjustment.
 - ②: Low beam vertical adjustment.
 - ③: Low beam level adjustment.
 - ④: High beam level adjustment.
- ◆ The light pattern must conform to GB4599.

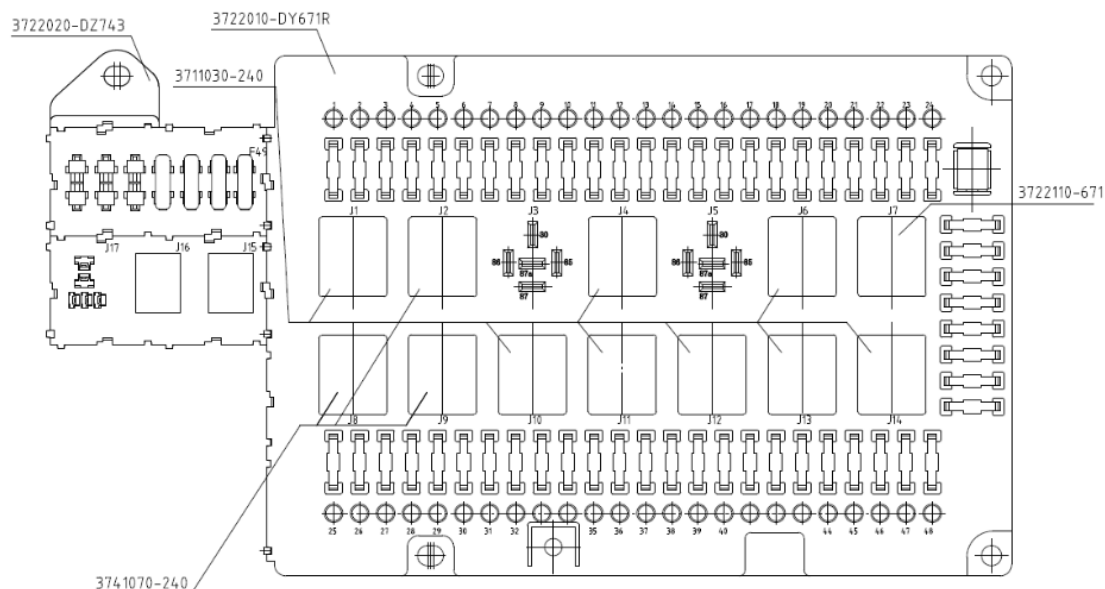
Replace bulbs



- ◆ When replacing bulbs of the rear combination light assembly, use original bulbs whenever possible.
- ◆ When replacing the bulb of side marker light (side light), make sure to use bulbs with the same power. It is prohibited to use high-power bulbs for replacement.

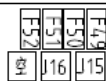
Fuse box

- ◆ There are many types of fuse boxes and nameplates. The following examples are for reference only. The specific configuration must be based on the actual vehicle.



Fuse box 3722065-DZ743

- ◆ The fuse box is located at the right side of instrument panel.
- ◆ Corresponding fuse specification and function descriptions are provided on the cover plate, as shown in the Fuse Box Nameplate Description on the next page.

F1/20A: 空调开关 F2/10A: 车速信号控制器 F3/10A: ① F4/10A: 室内灯/气喇叭/卧铺照明灯 F5/10A: 制动信号分离 F6/10A: F7/10A: 液压翻转控制开关/逆变器(ACC) F8/10A: 点烟器/车载终端(ACC) F9/10A: 自动空调(控制面板) F10/20A: 暖风电机、暖风控制开关控制+ F11/5A: 空调压缩机 F12/5A: 仪表(常电) F13/10A: F14/10A: F15/15A: 闪光灯/危险警报开关(常电) F16/15A: 车门控制器(玻璃升降) F17/10A: 车门控制器(后视镜和门锁) F18/10A:	F19/5A: 功能开关工作指示灯电源 F20/5A: 空气干燥器加热、NOx传感器供电 F21/10A: 后工作灯 F22/10A: 门开警报灯/踏步灯 F23/10A: 左远光灯 F24/10A: 右远光灯 F25/10A: 24V供电插座 F26/15A: ABS控制器(主车) F27/20A: DC-AC ① F28/10A: OBD诊断插座 F29/10A: 车载信息服务终端供电 F30/10A: 刮水器/洗涤器/间歇刮水控制器 F31/10A: 制动灯 F32/10A: 轴间差速锁电磁阀 F33/20A: F34/20A: F35/10A: F36/10A: 前雾灯/后雾灯开关	F37/10A: 电喇叭 F38/5A: 车门控制器 F39/5A: 闪光灯 F40/5A: 仪表(ON) F41/10A: ABS控制器(挂车) F42/10A: 挂车ABS F43/5A: 发动机ECU F44/5A: F45/10A: 左近光灯 F46/10A: 右近光灯 F47/5A: 驾驶室室内小灯 F48/10A: 底盘小灯	J1: 空调继电器 J2: 制动信号分离继电器 J3: J4: 空调压缩机继电器 J5: J6: 后工作灯继电器 J7: 远光继电器 J8: 高速刮水继电器 J9: 低速刮水继电器 J10: 制动灯继电器 J11: 前雾灯继电器 J12: 电喇叭继电器 J13: 近光继电器 J14: 小灯继电器
小保险丝盒示意图: 	F49/5A: 起动机继电器 F50/5A: 排气制动电磁阀 F51/5A: 液力变速器电源	F52/5A: 燃气泄漏报警传感器 J15: ECU制动信号继电器 J16: 空调信号继电器 J17(空)	

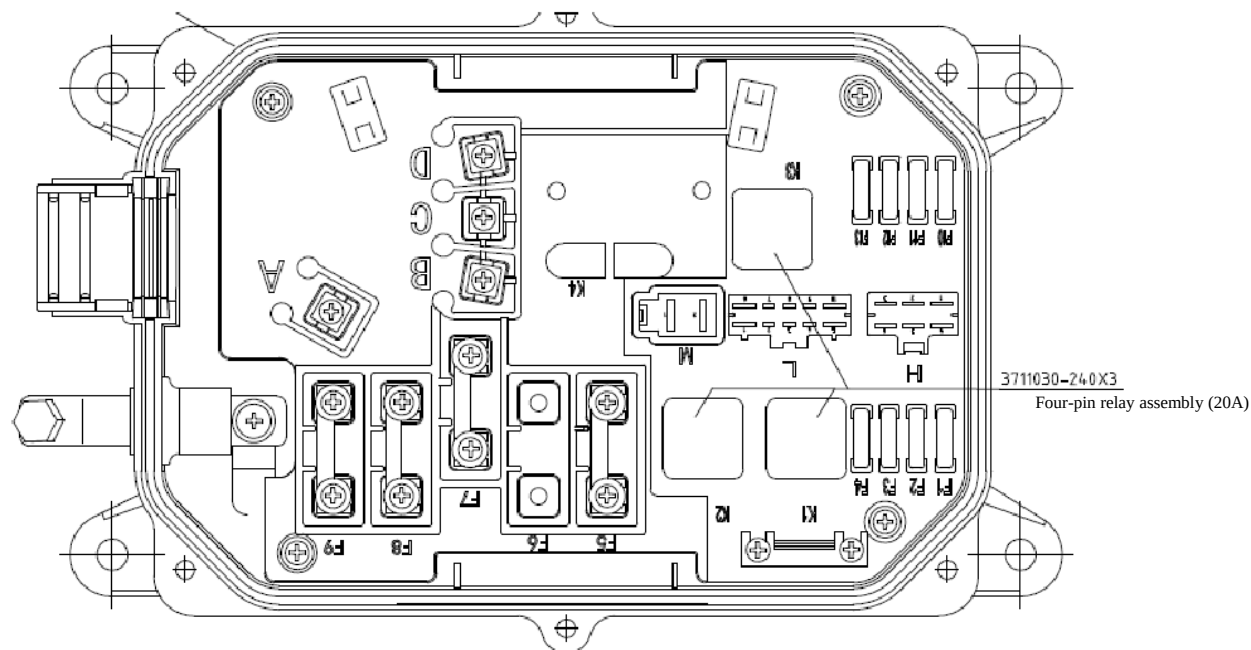
Fuse box nameplate 3722014- DZ740

NOTICES

- ◆ Before replacing the fuse or relay, turn off the manual main power switch and ignition switch and turn off all electrical equipment.
- ◆ If fuse or relay is damaged, make sure to replace with original fuse and relay of the same specification. Inferior fuse and relay is prohibited.
- ◆ It is forbidden to refit wiring in power distribution box, which may cause fire.

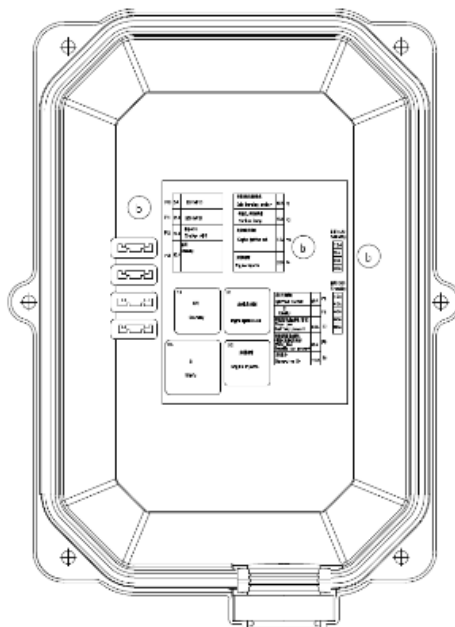
Power distribution box

- ◆ There are various types of power distribution boxes. The following sample is for reference only. The specific configuration shall be based on the real vehicle.



Power distribution box 3722155- DZ730L

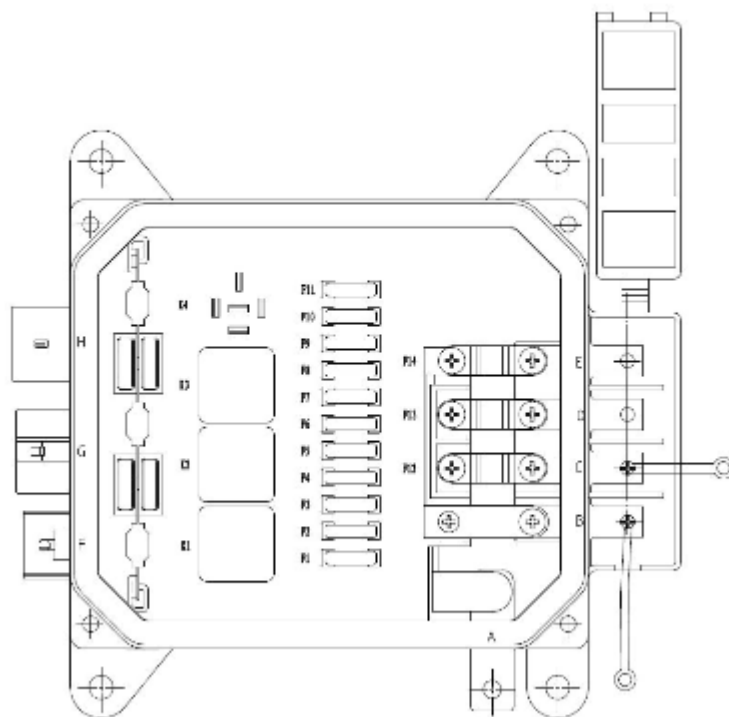
- ◆ The power distribution box is located near the battery frame.
- ◆ Corresponding fuse and relay specification and function descriptions are provided on the cover plate, as shown in the Description of Power Distribution Box Cover on the next page.



Power distribution box cover 3722151-DZ730L

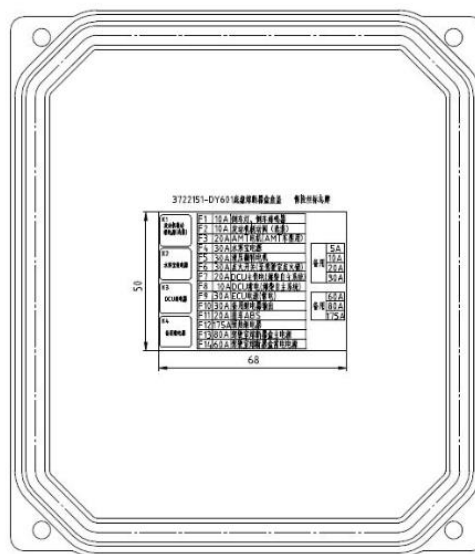
⚠ NOTICES

- ◆ Before replacing the fuse or relay, turn off the manual main power switch and ignition switch and turn off all electrical equipment.
- ◆ If the fuse, relay is damaged, make sure to replace with original fuse, relay of the same specification. Inferior fuse and relay is prohibited.
- ◆ It is forbidden to refit wiring in power distribution box, which may cause fire.



Power distribution box 3722155-DY601

- ◆ This kind of power distribution box is located inside the battery frame and above the battery.
- ◆ Corresponding fuse and relay specification and function descriptions are provided on the cover plate, as shown in the Description of Power Distribution Box Cover on the next page.



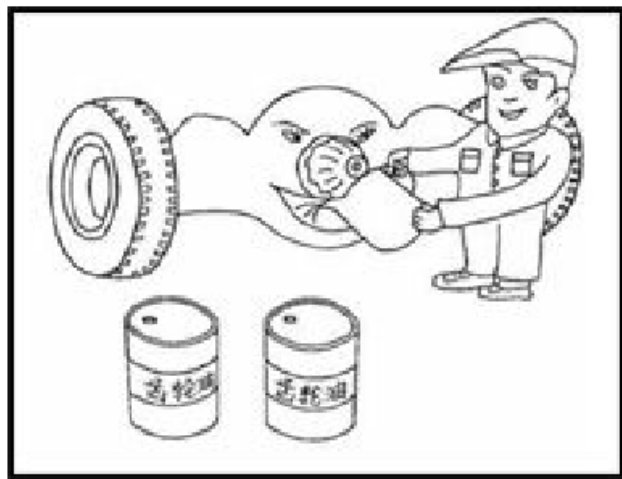
Power distribution box cover 3722151-DY601

NOTICES

- ◆ Before replacing the fuse or relay, turn off the manual main power switch and ignition switch and turn off all electrical equipment.
- ◆ If the fuse, relay is damaged, make sure to replace with original fuse, relay of the same specification. Inferior fuse and relay is prohibited.
- ◆ It is forbidden to refit wiring in power distribution box, which may cause fire.

Lubricating oil

Replacement of lubricating oil



- ◆ When the assembly is disassembled and reassembled, lubrication shall be carried out for each bearing bushing, etc., and grease shall be applied on the friction surface of parts with relative movement.
- ◆ Check the lubricating oil level of each assembly frequently and add it in time.
- ◆ When the vehicle reaches the specified mileage, the lubricating oil or gear oil of corresponding assembly must be replaced.

NOTICES

- ◆ Use the lubricating oil conforming to the standard strictly in accordance with the regulations.
- ◆ It is strictly prohibited to mix lubricating oil of different brands produced by manufacturers.
- ◆ Lubricating oil must be filtered out before it can be filled into the diesel engine.

Oil change interval for each assembly



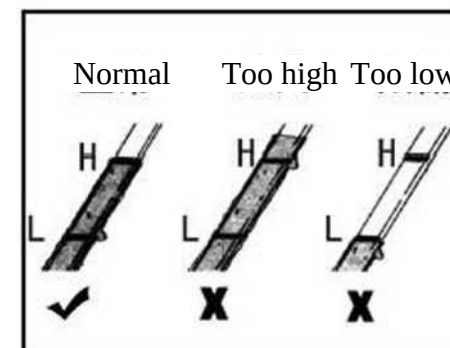
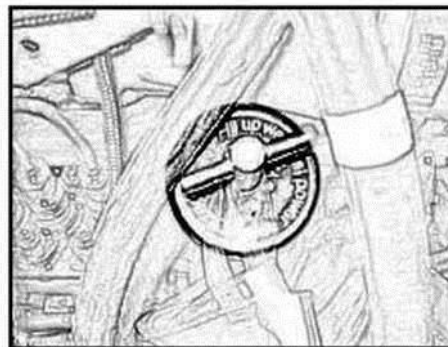
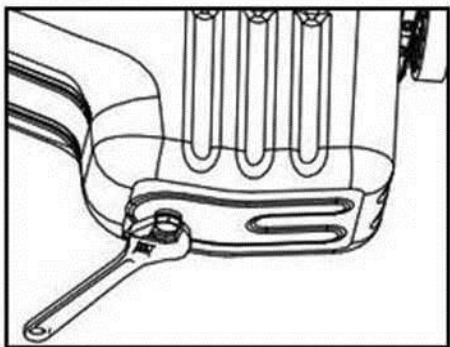
Oil change interval for each assembly (without long oil change interval)

- ◆ Every 10,000 km for engine
- ◆ Every 50,000 km for transmission
- ◆ Every 50,000 km for drive axle
- ◆ Every 20,000 km or 6 months for steering system

Maintenance of assembly with long oil change interval

- ◆ This chapter focuses on the three major assemblies with long oil change intervals, focusing on the special descriptions of the oil change intervals of the engine, transmission, and drive axle, the amount of lubricating oil, the oil grade number, and the filling requirements.
- ◆ For these three major assemblies with long oil change intervals, the oil is not changed when the vehicle is performed the first maintenance.

Replace engine lubricating oil



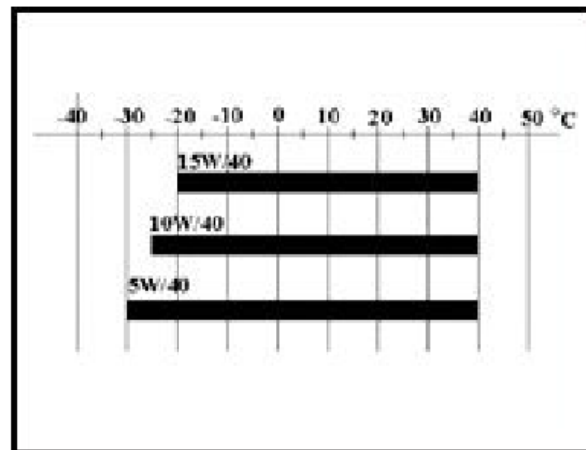
- ◆ Park the vehicle on a level surface and block the wheels with stoppers.
- ◆ After vehicle is warmed up (the oil temperature is about 80°C), unscrew the drain plug at the bottom of the oil pan (pay attention to the heated oil to prevent burns), and remove the impurities attached on the plug.
- ◆ After oil is drained, tighten the drain plug.
- ◆ Open the oil filler cap on the cylinder head cover. The engine oil filler is on the top of the engine.
- ◆ Add new lubricating oil until oil level reach the upper limit of the oil dipstick.
- ◆ Start the engine and idle it for several minutes. After stopping for 30min, check the oil level with the oil dipstick. The oil level should be between the two marks.
- ◆ Oil change interval (models without long oil change interval)
 - At the end of new vehicle running in (2,500km).
 - Every 10,000km.
- ◆ Oil change interval (models with long oil change interval)
 - For WP12, WP13, WP10H, CA6DM2, CA6DM3, CA6DL3 models with long oil change interval, the oil should be changed when the new vehicle is driven for 60,000 km or 12 months, and the oil will be changed every 100,000 km or 12 months thereafter.
 - For CA6DL2 series models with long oil change interval, the oil should be changed when the new vehicle is driven for 36,000 km or 12 months,

and the oil will be changed every 60,000 km or 12 months thereafter.

- For CA6DK1 and CA6DH1 series models with long oil change interval, the oil should be changed when the new vehicle is driven for 30,000 km or 12 months, and the oil will be changed every 50,000 km or 12 months thereafter.

◆ Capacity:

- About 27L (WP10H series), based on the “H” line on the oil dipstick.
- About 34L (WP12/WP13 series), based on the “H” line on the oil dipstick.
- About 24.6L (CA6DK series), based on the “H” line on the oil dipstick.
- About 33L (CA6DM series), based on the “H” line on the oil dipstick.
- About 23L (CA6DL series), based on the “H” line on the oil dipstick.
- About 17L (CA6DH series), based on the “H” line on the oil dipstick.



◆ Oil type:

- CA6DM3 model with long oil change interval is filled with Shell HD1908 10W/40 oil.
- CA6DM2 model with long oil change interval is filled with Shell Rimula R6M 10W/40 oil.
- CA6DL2/L3 model with long oil change interval is filled with Shell HD1908 10W/40 oil.
- WP10H/WP12/WP13 models with long oil change interval are filled with Weichai special long-mileage engine oil (CI-4, 10W/40).
- CA6DK, CA6DH models with long oil change interval are filled with CH-4 grade or higher grade oil.

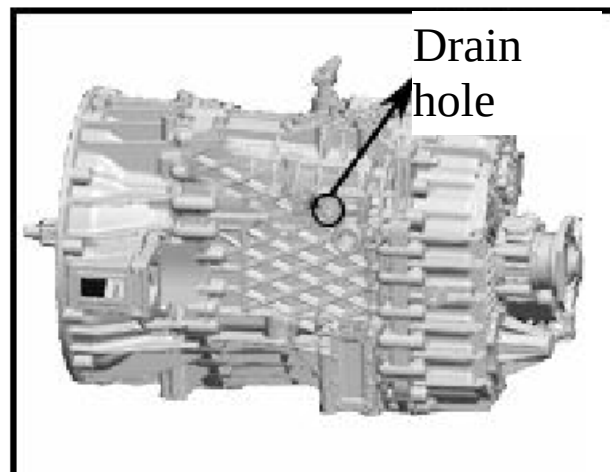
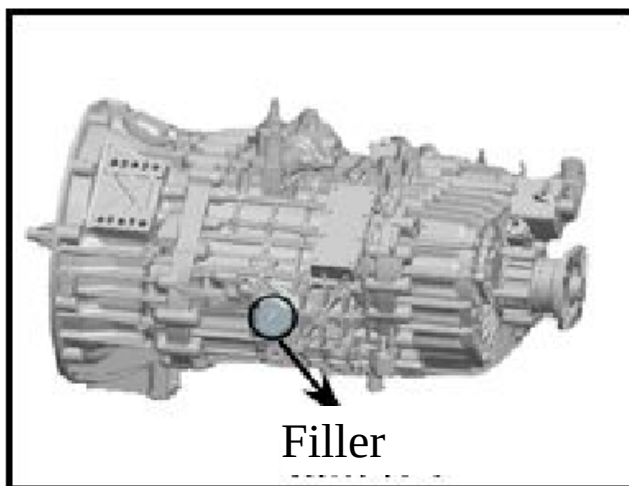
⚠ NOTICES

- ◆ Oil viscosity is greatly affected by the temperature, so it is important to choose oil with appropriate viscosity according to the ambient temperature.
- ◆ If the ambient temperature is lower than the applicable temperature range of oil for a short time, the starting performance will be affected, but no harm will be caused. If the wrong oil is used for a long time, it will accelerate the engine wear.

⚠ NOTICES

- ◆ Do not coat the exhaust pipe, turbocharger, exhaust manifold, and exhaust system heat shield with floor protective agent and sealant to prevent these materials from being ignited during driving and causing a fire.
- ◆ Engine oil is a highly flammable substance. When adding engine oil, be careful not to splash the engine oil on hot parts of the engine.

Replacement of transmission oil



- ◆ Check the transmission oil level every 10,000km and add it as required.
- ◆ When changing oil, make sure to drain out the lubricating oil in the transmission first, and then add new lubricating oil.
- ◆ When adding oil, add until the oil level is flush with the oil filler.
- ◆ Filling amount: see the table below
- ◆ Oil change interval :
 - At the end of new vehicle running in (2,500km).
 - Every 50,000km for road vehicle and 20,000km for off-road vehicle.

 NOTICES

- ◆ Replacement of lubricating oil should be performed with the vehicle in warmed up status.
- ◆ Be careful not to be scalded by the heated oil.
- ◆ Remove the impurities attached on the drain plug.
- ◆ Dredge the ventilation plug.

Transmission oil capacity (FAW transmission)

Transmission model	CA12TA160/190/210M	CA12TA160/190M3	CA12TA210/230M3
	CA12TAX160/190/210M	CA12TAX160/190/210M3	CA12TAX230M3
	CA12TA160/190/210A	CA12TA160/190A3	CA12TA210/230A3
	CA12TAX160/190/210A	CA12TAX160/190/210A3	CA12TAX230A3
Capacity	15.8L	18L	16L
Oil type	In areas where the lowest temperature is above -12 ℃, use 85W/90 (GL-5) vehicle gear oil throughout the year; In areas where the lowest temperature is below -12 ℃, use 80W/90 (GL-5) vehicle gear oil throughout the year; In severe cold areas where the temperature is below -26 ℃, use 75W/90 (GL-5) gear oil.		
Remarks	Transmission with PTO needs 0.5L more gear oil		

Transmission oil capacity (FAST transmission)

Transmission model	12JSD160T 12JSD160TA	12JSD180T 12JSD180TA 12JSD200T-B 12JSD200TA-B 12JSDX220T-B 12JSDX220TA-B	12JSDX240T 12JSDX240TA	C12 JSDQXL180T/200T/220T C12JSDQXL180TA/200TA C12JSDQXL220TA/240TA C12JSDQXL240T/260T	C16JSDQXL180T/2 OOT/220T C16JSDQXL180TA/200TA C16JSDQXL220TA/250TA C16JSDQXL240T/260T
Capacity	15 L	16L	16.5L	15L	15L
Oil type	In areas where the lowest temperature is above -12 ℃, use 85W/90 (GL-5) vehicle gear oil throughout the year; In areas where the lowest temperature is below -12 ℃, use 80W/90 (GL-5) vehicle gear oil throughout the year; In severe cold areas where the temperature is below -26 ℃, use 75W/90 (GL-5) gear oil.				
Remarks	Transmission with PTO needs 1L more gear oil				

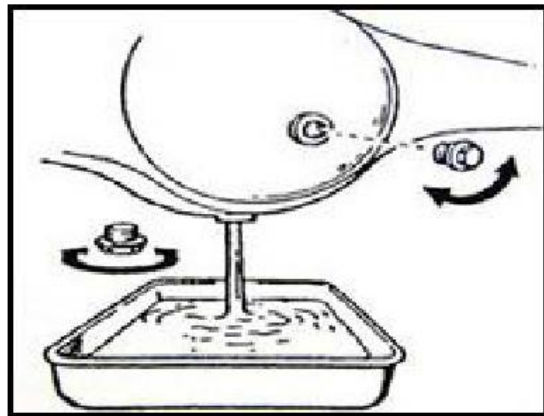
Transmission oil capacity (ZF transmission)

Transmission model	16S2230 16S2330 16S2530 16S2235 16S2335 16S2535	16S2231 16S2331 16S2531	12TX2421TD 12TX2621TD
Capacity	12.4L	18.5L	19L
Oil type	ZF Ecofluid M 02E For other oil products and oil change mileage, see ZF oil change standard TE-ML02		

Transmission oil capacity (Allison transmission)

Transmission model	3200P
Capacity	30L
Oil type	TRANSYND Allison automatic transmission special oil Oil change interval 120,000 km

Replacement of drive axle lubricating oil



- ◆ Check the oil level of the drive axle every 10,000km, and add it as required.
- ◆ Filling amount: see the table below
- ◆ Oil type

In areas where the lowest temperature is above -12 °C, use 85W/90 (GL-5) vehicle gear oil throughout the year; in areas where the lowest temperature is below -12 °C, use 80W/90 (GL-5) vehicle gear oil throughout the year; in severe cold areas where the temperature is below -26 °C, use 75W/90 (GL-5) gear oil throughout the year.

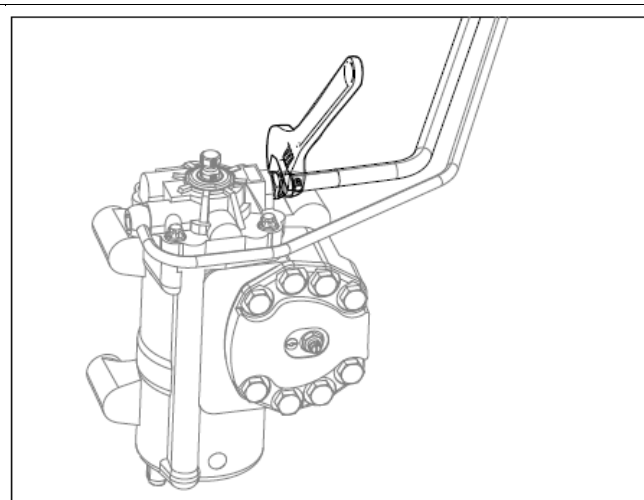
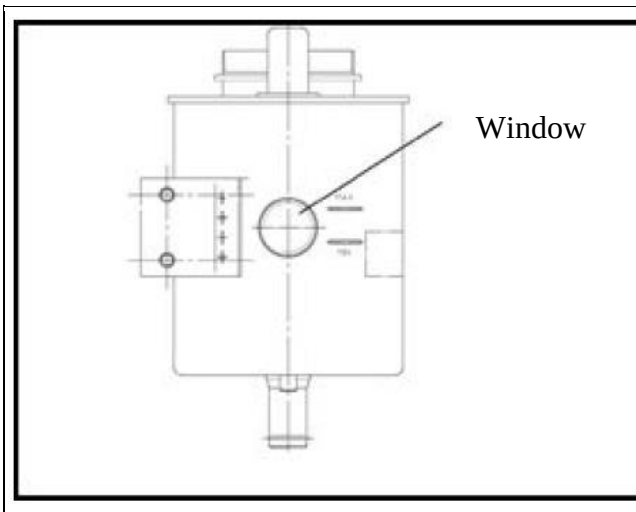
- ◆ Oil change interval
 - At the end of running in (2,500km).
 - Every 50,000km for road vehicle and 20,000km for off-road vehicle.

⚠ NOTICES

- ◆ Replacement of lubricating oil should be performed with the vehicle in warmed up status.
- ◆ Be careful not to be scalded by the heated oil.
- ◆ Remove the impurities attached on the drain plug.
- ◆ Dredge the ventilation plug.

Drive axle type	Upgraded press-welding axle 435	Upgraded press-welding axle 457	498/upgraded press-welding axle 498	457 press-welding axle	290 hub reduction axle	300 hub reduction axle
Capacity (L)	19L for intermediate axle final drive 12L for rear axle final drive 1L for each wheel hub (CONMET) Gear oil is not required for hub with greased bearing	20L for intermediate axle final drive 14L for rear axle final drive 0.8L for inter-axle differential 1L for each wheel hub (CONMET) Gear oil is not required for hub with greased bearing	17L 1L for each wheel hub (CONMET) Gear oil is not required for hub with greased bearing	20L for intermediate axle final drive 0.8L for inter-axle differential 14L for rear axle 1L for each wheel hub (CONMET) Gear oil is not required for hub with greased bearing	16L for intermediate axle final drive 14L for rear axle final drive 2L for inter-axle differential 3.5L for each wheel hub	16L for intermediate axle final drive 14L for rear axle final drive 2L for inter-axle differential 3.5L for each wheel hub

Change the steering system lubricating oil



- ◆ When the vehicle is driven for 10,000 km, check the hydraulic oil level and add it as required.
- ◆ Oil capacity: about 4L for single front axle; about 7L for dual front axle.
- ◆ Oil type: 8M hydraulic transmission oil (freezing point -35°C), as per A08M-30.
- ◆ Oil change interval:
 - At the end of vehicle running in (2,500km).
 - Replace the hydraulic oil and the filter element in the steering tank every 20,000km or half a year.
- ◆ Oil change method:
 - ◆ Jack up the front axle; remove the low pressure pipe joint from the steering gear.
 - ◆ Turn the steering wheel left and right to the limit position for 2 ~ 3 times to drain the oil. Then reinstall the joint.
 - ◆ Open the top cover of the steering tank, fill the tank with hydraulic oil until it exceeds the top cover of the filter element, and idle the engine.
 - ◆ Turn the steering wheel left and right to the limit position (note that the steering wheel should not stay at the limit position for more than 5 seconds) and continue filling the tank until the oil surface exceeds the top cover of the filter element and no more drops and no bubbles occur.
 - ◆ The oil level should be between the upper and lower marking lines.

 NOTICES

- ◆ When filling steering hydraulic oil, the oil level must be between the upper and lower marks.
- ◆ Excessive hydraulic oil will leak, resulting in waste, and too little will affect the steering performance.

Lubrication Table

Note: ●-indicates filling of lubricating oil ○-indicates changing of lubricating oil ★-indicates adding of grease ▲-indicates applying of grease

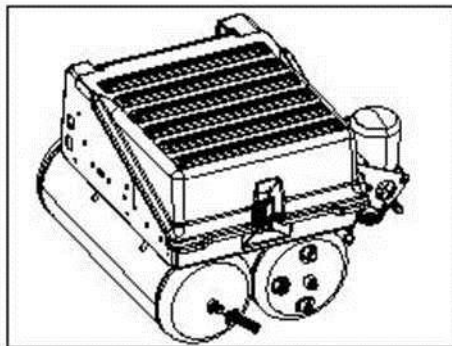
No.	Lubricated parts	Interval mileage (km)				Lubricant	Lubricating points	Remarks
		2000	8000	24000	48000			
1	Engine		○			Weichai Power requires Weichai gas engine users to purchase the Sinopec (Mobil, Shell, BP, Total) special gas engine oil at Landking Euro III Special Service Center to ensure the good operation of your vehicle and extend the service life.	1	Change the lubricating oil every 8,000km and check the oil level with a dipstick every day
2	Clutch pedal shaft and brake pedal shaft	★				All-weather automotive general purpose lithium lubricating grease	2	
3	Clutch release fork shaft support bushing			▲			2	
4	Transmission	●		○		Vehicle gear oil (see P123-P125)	1	

5	Cross shaft of propeller shaft	★				All-weather automotive general purpose lithium lubricating grease	3	
6	Sliding fork of propeller shaft	★					1	Take out the spline sleeve and remove the old grease
7	Rear axle		●			Vehicle gear oil (see P126)	1	Wash the ventilation plug
8	Front and rear leaf spring pin	★				All-weather automotive general purpose lithium lubricating grease	12	
10	Shock absorber				○	50% first grade 32# steam turbine oil GB11120 50% 25# transformer oil GB2536	2	By weight
11	Hub bearing		▲			All-weather automotive general purpose lithium lubricating grease	4	Remove the wheel hub and apply grease to the bearing cavity
12	Recirculating ball integral power steering gear	★	○		○	8M hydraulic transmission oil (freezing point -35 ℃) as per G08-010-99	1	

13	Steering knuckle king pin	★				All-weather automotive general purpose lithium lubricating grease	4	
14	Steering drag and tie rod assembly	★				All-weather automotive general purpose lithium lubricating grease	4	
15	Steering drive shaft sliding fork and cross shaft bearing	★				All-weather automotive general purpose lithium lubricating grease	2	
16	Steering column ball bearing				▲	All-weather automotive general purpose lithium lubricating grease	1	
17	Front and rear brake cam bracket and support seat	★				All-weather automotive general purpose lithium lubricating grease	6	
18	Brake adjusting arm				★	All-weather automotive general purpose lithium lubricating grease	4	
19	Engine exhaust brake control cylinder piston				▲	All-weather automotive general purpose lithium lubricating grease	1	
20	Clutch oil cup	●				LD3000 brake fluid	1	

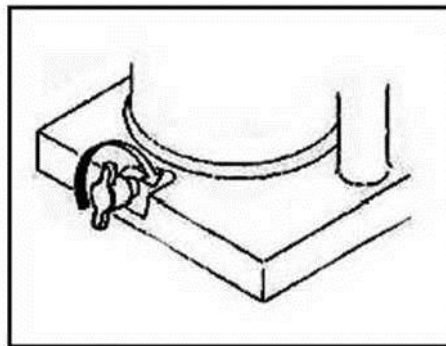
Emergency management

Tire inflation

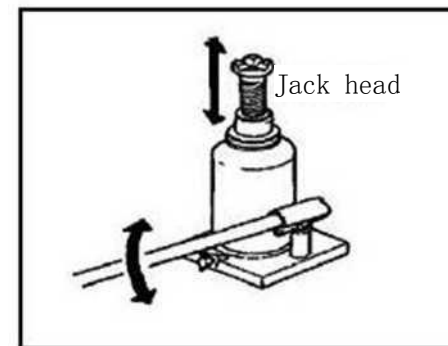


- ◆ If a tire is deflated while driving, inflate it promptly.
- ◆ Inflation method: use the tire inflating device of the in-vehicle tools. First connect one end to the tire valve, then screw the other end to the test joint of the air reservoir, start the engine to make the air compressor work, and then the tire can be inflated.
- ◆ Check with a barometer after inflation and adjust the air pressure to the specified value.

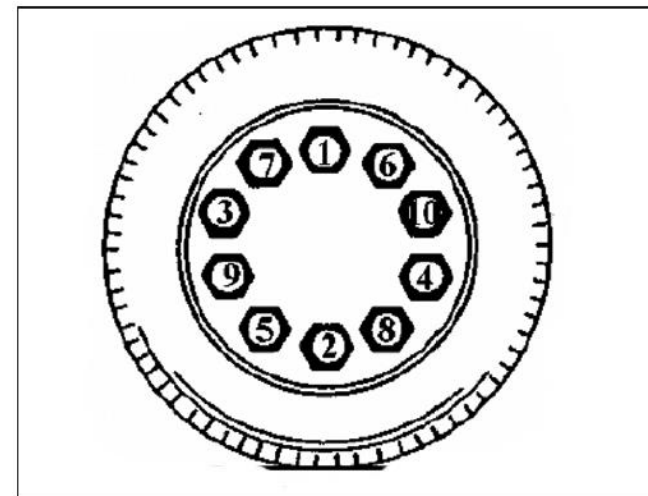
Tire replacement



- ◆ Removal of tire
- When removing the tire, loosen the wheel nut before using the jack.
- Place the jack on the front axle or rear axle, then tighten the relief valve clockwise to secure the jack.



- Insert the socket wrench handle into the jack sleeve and shake the handle up and down, so that the jack head will stretch out to jack-up the vehicle. When the tire is slightly off the ground, unscrew the nuts and remove the tire.



⚠ CAUTIONS

- ◆ The jack must be used on the hard bearing surface, the vehicle must be supported on the plane position of the vehicle fulcrum, the maximum incline angle must not exceed 6°; avoid violent vibration or sliding of the jack, and do not use the jack in overload state.
- ◆ After the vehicle is lifted, a stable equal-height body should be placed in the corresponding part of the vehicle, otherwise personnel shall not work under the vehicle.
- ◆ When the jack needs to be unloaded, just slightly open the oil valve to make it fall slowly, otherwise it will fall too fast, the jack may slip or be damaged easily, resulting in a sharp drop of the vehicle, causing danger.

◆ Installation of tire

Before installing the tire, clean the threaded part of the bolt and nut and the mounting surface of the rim. Otherwise, the nut will become loose. If the threads of bolt or nut are damaged or the rim is deformed or cracked, replace them in time.

⚠ NOTICES

- ◆ Please do not use molybdenum-added lubricants such as molybdenum disulfide and organic molybdenum.
- ◆ Insufficient or excessive tightening torque of wheel nuts will cause hub bolts to break and rim to crack, in which condition the wheel may come off.

- Tighten the nuts until it is firm, loosen the jack, lower the vehicle, and tighten the nuts in the order shown in the figure.
- After the wheels touch the ground, rotate the tire for half a turn and tighten the nuts again.
- After replacing the tire, an initial test run should be carried out. After driving (50~100) km, tighten it again to the specified torque. The tightening torque is 590~630N·m.

Precautions for using tires

⚠ CAUTIONS

In the first 500km, the road adhesion of new tires cannot reach the best condition, so the vehicle should be driven at a proper speed to prevent accidents!

- ◆ Inadequate road adhesion of unrun or worn tires directly affects the braking effect.
- ◆ Do not drive with damaged tires! Otherwise, it is very liable to cause accidents, as the damaged tires may blow out during driving, causing traffic accidents and injuring people.
- ◆ The tire pressure must meet the regulations! Otherwise, it may cause an accident. If the tire pressure is insufficient, and the vehicle continues to run at high speed, it will cause the tire to bend and overheat. As a result, the tire may peel or burst.
- ◆ Too low or too high tire pressure will cause early tire wear, affect the steering stability of the vehicle, and easily cause accidents.
- ◆ Do not use the tires that are damaged or worn to the tire pattern wear mark. Do not delay, but should replace such tires in time; the adhesion of worn tires drops sharply, especially when driving at high speed on wet roads, which is liable to cause the vehicle to float and slip, which seriously affects safety.

- ◆ Avoid using tires with age over 6 years as possible as you

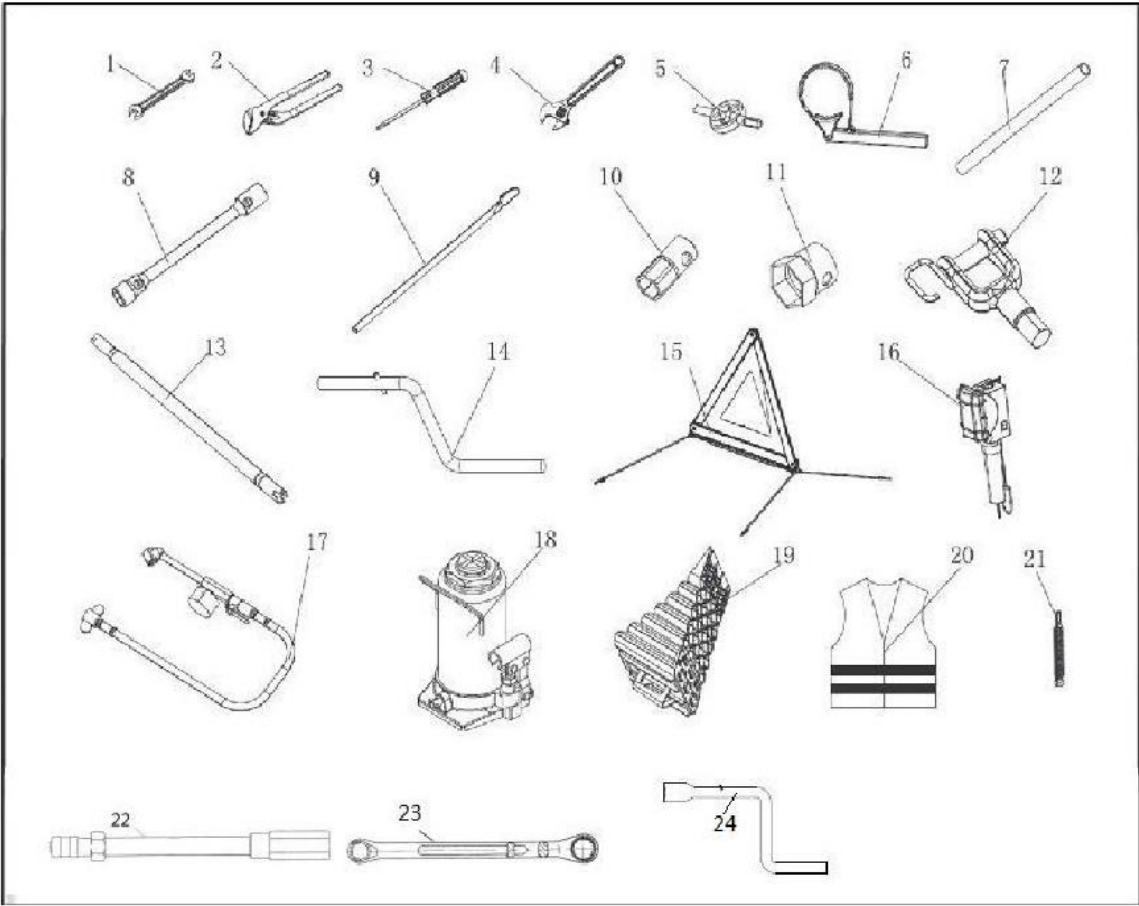
If necessary, drive prudently at low speed.

- ◆ Under no circumstances should you use old wheels and tires whose origins are unknown. Although such wheels and tires have no visible damage, they may be damaged, which may cause the vehicle to lose control while driving and cause a traffic accident.
- ◆ Damaged wheels and tires must be replaced in time.
- ◆ Pay attention to keep the engine oil, fuel and brake fluid away from the tires.

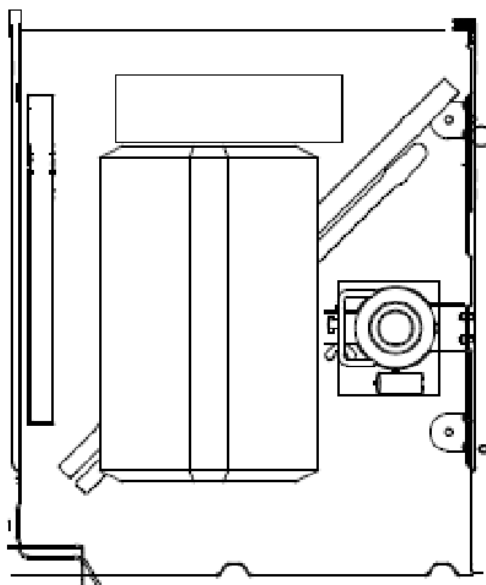
On-board tools

No.	Designation	Qty.	No.	Designation	Qty.
1	8X10 double-ended wrench	1	11		1
	11X13 double-ended wrench	1	12	Front towing hook assembly	1
	16×18 double-ended wrench	1	13	Multi-purpose sleeve	1
	21×24 double-ended wrench	1	14	Multi-purpose socket wrench rod assembly (selected depending on different models)	1
2	Multi-function pliers assembly	1	15	Warning triangle	1
3	Dual purpose screwdriver assembly	1	16	On-board utility light	1
4	Adjustable wrench assembly	1	17	Tire inflating device assembly	1
5	Tap wrench for valve core repair (selected depending on different models)	1	18	20t hydraulic manual jack assembly	1
6	Spin-on filter wrench	1	19	53 stop wedge assembly	2
7	Rod (selected depending on different models)	1	20	Reflective vest assembly	1
8	30X33 wheel socket wrench	1	21	Adblue liquid filler pipe	1
9	Crowbar and wrench	1	22	Valve nozzle extension rod assembly (selected depending on different models)	1
10	Leaf spring U-bolt socket wrench (dimensions of widths across flats is 30)	1	23	Plum wrench (selected depending on different models)	2
	Leaf spring U-bolt socket wrench (dimensions of widths across flats is 41)	1	24	Spare tire carrier wrench (selected depending on different models)	1
11	Front axle steering knuckle nut socket wrench	1			

On-board tools



Storage of on-board tools

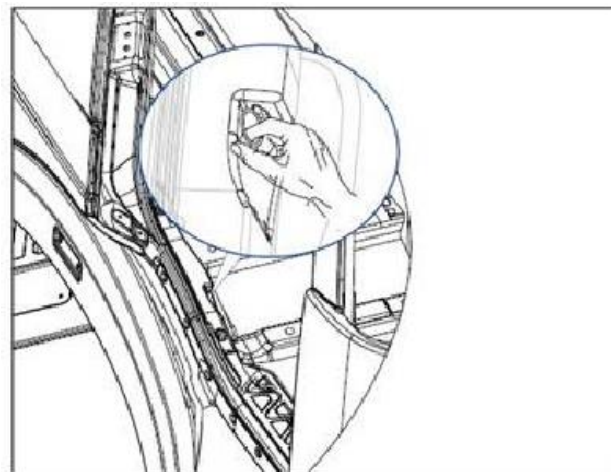


- ◆ The on-board tools are placed in the tool box under the cab berth.
- ◆ The fire extinguisher is placed on the floor bracket on the left side of the driver and fastened with a strap.
- ◆ Regarding the use of jack, please note the followings.

 CAUTIONS

- ◆ The jack must be used on the hard bearing surface, the vehicle must be supported on the plane position of the vehicle fulcrum, the maximum incline angel must not exceed 6 °; avoid violent vibration or sliding of the jack, and do not use the jack in overload state.
- ◆ After the vehicle is lifted, a stable equal-height body should be placed in the corresponding part of the vehicle, otherwise personnel shall not work under the vehicle.
- ◆ When the jack needs to be unloaded, just slightly open the oil valve to make it fall slowly, otherwise it will fall too fast, and may slip or be damage easily, resulting in a sharp drop of the vehicle, causing danger.

Opening of tool box



- ◆ The opening handles of the left and right tool boxes are respectively located under the berth behind the left and right seats.
- Pull the handle, and the tool box is slowly opened under the action of the gas spring.
- ◆ The multi-purpose sleeve is placed on the last side of the tool box, close to the guard plate.
- ◆ The warning triangle and the in-vehicle tool lamp are placed in the tool box on the rear right outside of the cab.
- ◆ The jack is stored in the tool box on the rear right outside of the cab.

Common fault

Engine

Fault symptom	Analysis of causes	Troubleshooting
Engine does not start(starter does not rotate or rotates slowly)	Current fuse of starter magnetic switch blown	Replacement
	Low battery voltage	Charge or replace battery
	Battery cable off, loose or corrode	Clean corrosion location and install
	Engine oil viscosity too high	Replace with engine oil of appropriate viscosity
	Abnormal operation of starter	Go to FAW service station for maintenance
	Transmission handle is not in neutral position	Return handle to neutral position
Engine does not start (starter can rotate normally)	Fuel shortage	Add fuel and bleed air
	Fuel cut-off control system fault	Check control circuit, gas circuit and mechanical part
	Fuel system is mixed with air	Bleed air
	Fuel filter blockage	Replace filter element
	Fuel freezes	Heat fuel pipe
	Air filter blocked	Clean or replace filter element
	Insufficient engine preheating time	Correct Operations
	Engine preheating circuit fuse burns out	Replace fuse

Fault symptom	Analysis of causes	Troubleshooting
Engine can be started, but immediately turn off	Low idle revolutions	Go to FAW service station for adjustment
	Fuel filter blockage	Replace filter element
	Air filter blocked	Clean or replace filter element
Black smoke	Air filter blocked	Clean or replace filter element
Engine overheated	Foreign body attached front part of radiator	Clean with a soft brush
	Thermostat fails	Replacement
	Insufficient coolant	Add coolant
	Water pump leakage	Replacement
	Fan clutch fails	Replacement
Engine oil pressure does not rise	Insufficient engine oil	Add engine oil
	Incorrect engine oil viscosity	Replace with engine oil of appropriate viscosity
	Oil pump fault	Replace oil pump

Fault symptom	Analysis of causes	Troubleshooting
Excessive oil consumption	Wrong engine oil	Replace with engine lubricating oil that confirms to the specification
	Excessive engine oil	Add appropriate amount of oil
	Oil leakage	Check the lubrication system to remove any looseness or oil leaks
	Engine oil replacement interval is too long	Replace engine lubricating oil immediately
	Oil filter blockage	Replace filter element
Excessive fuel consumption	Fuel leakage	Check fuel system to remove any looseness or oil leaks
	Air filter blocked	Clean or replace filter element
	Under-inflation tires	Adjust tire pressure according to the specification
	Clutch slipping	Replace clutch driven disc assembly
Insufficient power performance	Parking brake not released	Release parking brake
	Air filter blocked	Clean or replace filter element
	Fuel filter blockage	Replace filter element
	Air leakage and blockage in intercooler	Check and clean
	Clutch slipping	Replace clutch driven disc assembly
	Fuel system is mixed with air	Bleed air
	Fuel injection pump does not work normally	Check and adjust

Electrical parts

Fault symptom	Analysis of causes	Troubleshooting
Light won't work	Broken bulb wire	Replace bulbs
	Blade fuse blown	Replace with blade fuses of the specified amps
	Broken relay	Replacement
	Broken light switch	Repair or replacement
	Open circuit or poorly grounded	Go to FAW service station for adjustment
	Fluorescent substance of dangerous goods marker lamp fails	Replace the marker lamp
Battery repeatedly discharge	Battery connector off, loose or corrosion	Clean corrosion parts and tighten the joint
	Battery service life expires	Replace the battery
	Engine idle speed too low	Go to FAW service station for adjustment
	Switch stays at ON position	The switch should be turned off frequently

◆ Common problems on on-board information service terminal

Common problems	Solutions
System halted/error pop-up	1. Please try to switch back to the main interface, or try to switch back and forth to other interfaces
	2. Please turn off the panel power of this product and turn it on again
	3. Please stop the vehicle, remove the key and wait for more than one minute, then reinsert the key to ignite and start the product
No response after starting up	1. Vehicle battery is low
	2. Vehicle fuses are burnt out, replace with new ones
	3. When starting up with external mobile storage device connected, the system may not start normally, please remove the mobile device and turn it on again.
	4. Fuse of this product has been burned out. Please contact the after-sale service provider to replace the fuse
The radio cannot find a station	1. Please make sure that your location is covered by radio signals
	2. Please play the radio in the place where there are broadcast signals, away from the underground parking lot
	3. In some cities or regions, every Tuesday afternoon is the maintenance time for radio stations
No response when clicking other buttons when searching for radio stations	When the radio is searching for stations, please do not perform other operations, otherwise it will enter the machine protection function, please switch to other modes to adjust
The previous radio station failed to be saved when switching between AM/FM	When switching radio stations, the first station after the search is completed is the default station

Common problems	Solutions
Bluetooth hands-free failed to be used	1. Please confirm that the phone has Bluetooth hands-free function, please refer to the phone configuration for details
	2. Please confirm that the Bluetooth function of the mobile phone is turned on
	3. Please confirm with the phone manufacturer whether the phone you are using supports Bluetooth hands-free protocol and functions
	4. Please check whether the Bluetooth matching of the mobile phone and this product is carried out according to the steps specified in this manual
	5. Please restart this product, and refer to this manual to connect it
The phone failed to respond with the data cable connected	1. Please check if the data cable is properly connected
	2. Please check if the phone's USB debugging function is turned on
	3. Check if FAW Jiefang Assistant is running normally
	4. If the above methods do not solve the problem, you can disconnect and connect the data cable
No sound from mobile phone interconnection	1. Please check if the Bluetooth connection of the mobile phone is normal
No sound	1. Check the mute button to see if the product is in a mute state
	2. Check whether the volume of this product is adjusted to the appropriate level
	3. Please check whether the speaker cable in the vehicle is connected properly
	4. Please check if the speaker is working properly, and if it is damaged, please contact 4S shop or service station to replace the speaker
Sound is prohibited in radio mode, but still available in music mode	Muting in radio mode can only turn off the sound of the radio, which is normal

◆ Common problems on quick plug-in vehicle data terminal

Common problems	Solutions
Failed to establish connection with mobile phone	Click the switch button to restart the terminal, and then establish a connection between the mobile phone and the terminal. This terminal can only be connected to one mobile phone at a time, if other mobile phones are already connected to the terminal, you need to restart and disconnect
Unable to boot	1. Reinsert the data terminal fully to the diagnostic interface, click the power button, and observe whether the red indicator light is on, and if it is on, it indicates that it is connected successfully
	2. If it is confirmed that the vehicle battery is charged, the diagnostic interface is fully inserted, and the red indicator light still fails to illuminate after several attempts to turn on the device, please return to the factory for repair
System fails to detect and prompts "Network connection failed"	If the mobile phone is not connected to the WIFI hotspot established by the terminal device, it will prompt "Network connection failed" during the system detection process. At this time, check the WIFI connection status or whether the terminal is too far away from the phone
The interface prompts "please turn the ignition switch to ON"	If the ignition switch of the vehicle is not turned to the ON position, the system will prompt "Please turn the ignition switch to the ON position" during the system detection, and you should turn the ignition switch of the vehicle to the ON position at this time.
The interface displays "Load failed"	If the electronic control system of the detected vehicle is not within the detection range during system detection, it will prompt "Load failed" during system detection.
Basic information and fault diagnosis	If the ignition switch of the vehicle is not turned to the ON position, the system will prompt "Please turn the ignition switch to the ON position" during the diagnosis, and you should turn the ignition switch of the vehicle to the ON position at this time.
The electronic control system replies in a timeout way or negatively during the diagnosis	If the electronic control system replies timeout or make a negative response, it should prompt "data detection completed" during the diagnosis. At this time, the re-detection can be performed

Clutch part

Fault symptom	Analysis of causes	Troubleshooting
Clutch is not fully disengaged	Air pressure is too low	Increase engine revolution to increase air pressure
	Insufficient clutch fluid	Add brake fluid

Steering part

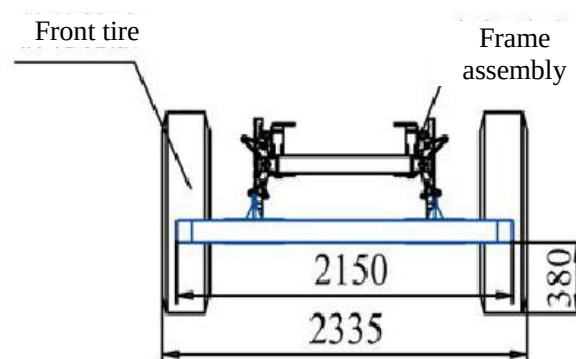
Fault symptom	Analysis of causes	Troubleshooting
Steering wheel operation is heavy	Insufficient power steering oil	Add power steering oil
	Front wheels under-inflation	Adjust to the specified tire pressure
	Power steering oil is dirty	Go to FAW service station to change oil, clean steering gear and steering pump
Steering wheel wiggles	Wheel nut is loose	Tighten with specified torque
	Under-inflation	Adjust to the specified tire pressure
	Tire worn unevenly	Replace tire
	Steering rod ball pin is loose	Replacement
	Front wheel alignment parameters are incorrect	Go to FAW service station for adjustment
	Unbalanced wheels	Go to FAW service station for adjustment

Brake part

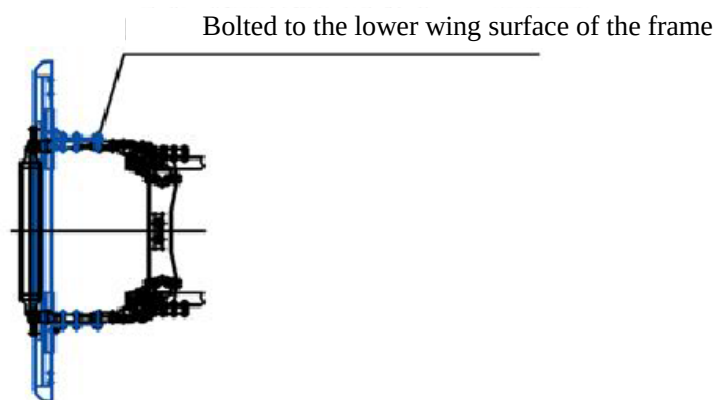
Fault symptom	Analysis of causes	Troubleshooting
Poor brake performance	Brake friction lining wear	Replacement
	Brake valve fails	Replacement
Brake deviation	Air pressure of tires is uneven	Adjust to the specified tire pressure
	Tire worn unevenly	Replace tire
	Unbalance loading	Even load
	Uneven brake clearance of left and right wheels	Adjust brake clearance to specified value

Front lower protection

Front lower protection/front view



Front lower protection/top view



Description of parts not included in the vehicle overall size

- ◆ Following parts are not included in the vehicle overall size:
 - Wiper and washer.
 - External marks and other marks reflecting the characteristics of the vehicle.
 - Light and light signaling devices
 - Anti-collision rubber block and similar devices
 - External shading device.
 - Device for fastening rainproof cloth and its protective devices.
 - Locking device, hinge, handle, controller, switch.
 - Entrance and exit steps (or stairs), boarding steps and handles on top of bumper for window cleaning
 - The rear mark plate, including LOGO
 - Hitch or towing device of detachable vehicle.
 - Exhaust tailpipe.
 - Partial gutter channel.
 - Splash protection system flexible protrusion part.
 - Tire failure signal device.
 - Tire pressure indicator.
 - Reverse assist device.

Glossary