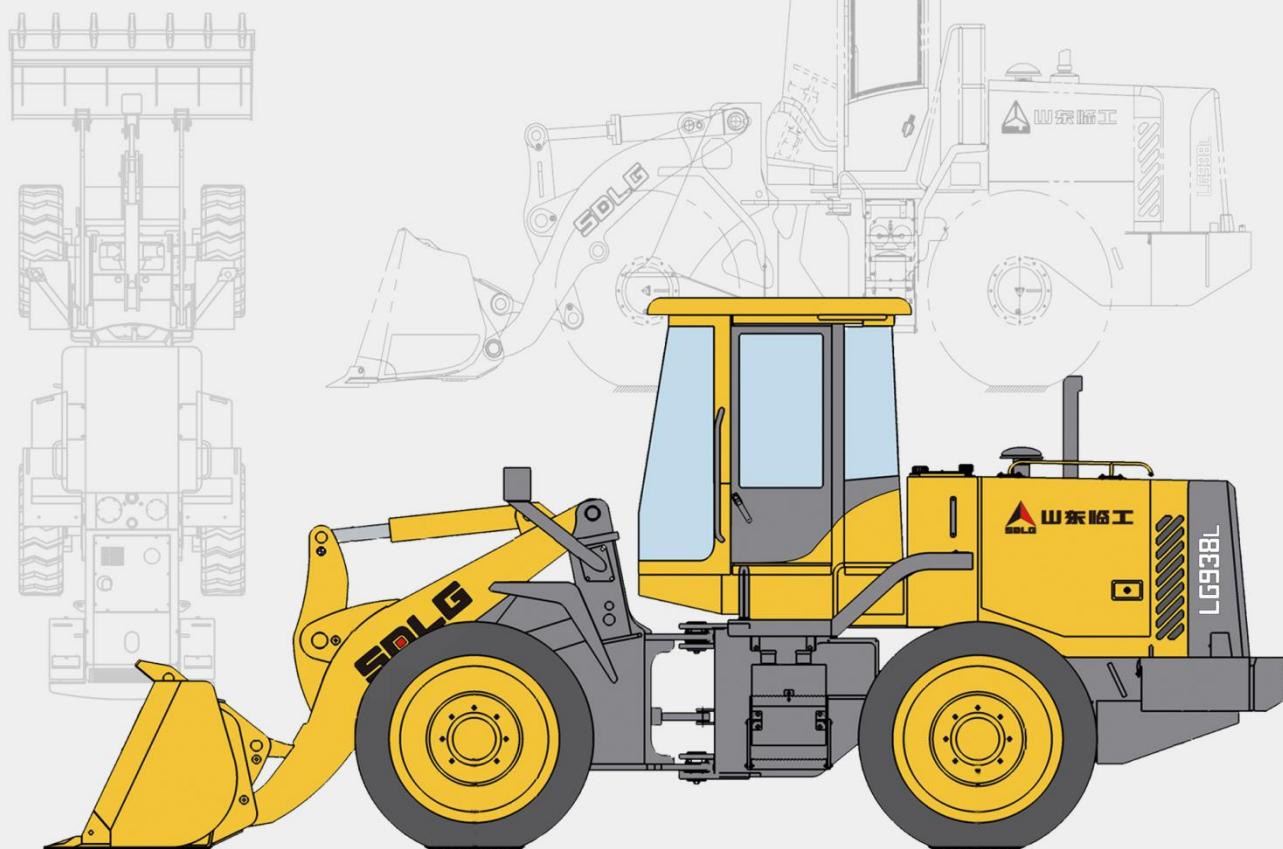




SERVICE MANUAL

LG938L



Publ.NO.2938002012

Service Manual for LG938L Wheel Loader

880×1230 mm 16# 18pieces

1st Edition in 2014. 5 1st Print

**SHANDONG LINGONG CONSTRUCTION
MACHINERY CO., LTD**

Address: Linyi Economic Development Zone

Tel: 86-0539-8785688

Fax: 86-0539-8785698

Postal code: 276023

Website: www.sdlg.cn

Services Tel: 8008607999 4006587999 0539-8785800

Services Fax: 86-0539-8785671



CONTENTS

Safety and Environment	1
0 General	0-1
1 Service and Maintenance.....	1-1
11 Lubricant, Fuel and Other Liquids	1-1
12 Repair	1-5
2 Engine System.....	2-1
21 General	2-1
22 Lubrication System.....	2-6
23 Fuel Supply System.....	2-7
24 Cooling System	2-9
25 Intake and Exhaust System.....	2-11
26 Disassembly and Assembly of Engine	2-13
27 Disassembly and Assembly of Fuel Tank.....	2-37
28 Disassembly and Assembly of Radiator	2-42
29 Diagnosis and Troubleshooting of Engine System Common Faults	2-48
3 Electrical and Information System	3-1
31 Description of Electrical System	3-1
32 Power Supply and Starting System	3-5
33 Instrument Monitoring System.....	3-20
34 Lighting System	3-25
35 Reverse Alarm System & Electric Horn System	3-28
36 Wiper and Cleaning System	3-30
37 Wiring Harness Routing	3-32
38 Fault Inspection and Diagnosis	3-41
4 Power Transmission	4-1
41 Transmission Box System	4-1
42 Transmission Shaft System	4-35



Service Manual for LG938L Wheel Loader

43 Drive Axle System.....	4-41
44 Diagnosis and Solutions for Common Faults of Transmission System.....	4-50
5 Brake System	5-1
51 Service Brake System.....	5-1
52 Parking Brake System	5-20
53 Brake System Common Faults and Troubleshooting	5-24
6 Steering System	6-1
61 General	6-1
62 Description, Disassembly and Assembly of Main Components.....	6-5
63 Deflation of Steering System	6-29
64 Deflation of Steering System	6-30
65 Diagnosis and Solutions for Common Faults of Steering System.....	6-31
7 Frames, Wheels and Working Equipment	7-1
71 General	7-1
72 Disassembly and Assembly of Counterweight	7-4
73 Disassembly and Assembly of Working Device.....	7-5
74 Disassembly and Assembly of Frame Junction	7-15
75 Disassembly and Assembly of Tires.....	7-20
76 Current Maintenance for Frame, Tires and Working Device.....	7-21
8 Cab and Covering Parts Systems.....	8-1
81 Cab Description.....	8-1
82 A/C System Description	8-4
83 Disassembly and Assembly of Cab Assembly.....	8-8
84 Disassembly and Assembly of Engine Hood.....	8-24
85 Disassembly of Left and Right Platform Assembly	8-29
86 Disassembly and Assembly of A/C System.....	8-32
87 Diagnosis and Solutions for Common Faults of A/C System.....	8-49
9 Working Hydraulic System	9-1
91 Components, Locations	9-1
92 Description of System Principle.....	9-2



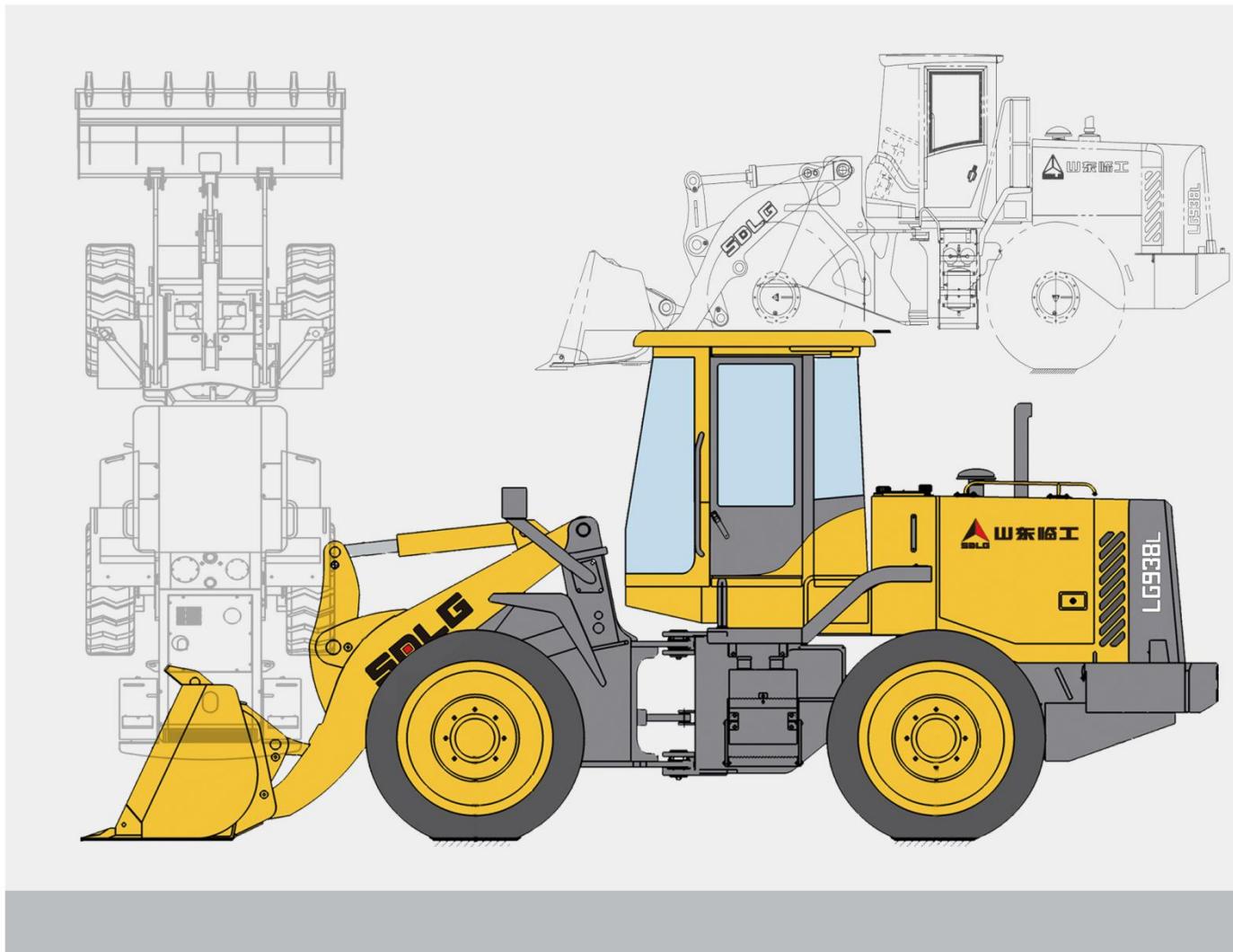
Service Manual for LG938L Wheel Loader

93 Description, Disassembly and Assembly of Hydraulic System Components	9-5
94 Pressure Measuring Methods and Standards of Working Hydraulic System	9-45
95 Diagnosis and Solutions for Common Faults of Hydraulic System.....	9-47



SERVICE MANUAL

LG938L



Version:0001

Safety & Environment





CONTENTS

Safety & Environment.....	1
Preface	1
Function Checking.....	2
Safety When Handling the Loader	3
Safety Regulations for Maintenance	6
General.....	7
Maintenance Position 1	9
Working under Elevated Boom	10
Fire Prevention Measures	10
Notes for Tire.....	12
Safety When Lifting and Supporting the Complete Machine	14
Methods for Front Axle	14
Methods for Rear Axle	15
Safety for Operation of the Battery	15
Starting with a Boosting Battery	17
Safety When Dealing with Oil and Fuel.....	18
Safety When Dealing with Refrigerant	19
Safety When Operating Accumulator (If installed)	21
The Safety of Hydraulic System.....	22
Checking after Experiencing a Fire or Heating	23
Health Hazard from Paint, Plastic and Rubber.....	24
Environment	27
Waste Disposal	27
Environmental Method	27
Environmentally Hazardous Liquids	29
Work in a Polluted Environment.....	29
Decontamination.....	30



Safety &

Environment

Preface

This booklet is a part of **Service Manual for LG936L Wheel Loader**. Please carefully read this part.

WARNING

Be sure to read “Safety” part in the manual before operating.

Security Related to Everyone

You should always comply with the instructions in **Operation and Maintenance Manual for LG936L Wheel Loader**.

SDLG is aimed at the design and manufacture of safety and efficient machines. However, if the operators do not carefully read the safety instructions, or do not comply with these provisions or use wrong tools for this operation, then our efforts will be wasted.

To keep the functions of machine safely and effectively, you must always use the appropriate spare parts designed for this loader (SDLG original authentic parts). If you use unauthorized spare parts, we will not be responsible for the damage of the loader, and also offer the free repair and compensation.

Staff should be with strong safety consciousness, and keep the loader well-maintained. In this way we



cannot only realize safety and efficiency, but also produce profit.

If the operators do not comply with safety instructions, and do not pay attention to warning instructions in this manual, they should ensure their methods of operation are safe and reliable. Otherwise, there is the risk of accidents, and even leading casualties.

Function Checking

Please check the functions after safety-related electrical system operations are carried out, to ensure safety.

Safety-related electrical systems

Check the safety-related electrical system of the followings:

Parking brake

Service brake

Transmission box

Lifting function

Please refer to **Operation and Maintenance Manual for LG936L Wheel Loader** for details.



Safety When Handling the Loader

Shandong Lingong Construction Machinery Co., Ltd. is responsible only for the following conditions:

- Properly use and maintain the loaders based on the instructions described in **Service Manual for LG936L Wheel loader** and **Operation and Maintenance Manual for LG936L Wheel Loader**.
- Carry out the required examinations and checking in specified interval.
- Comply with the provisions about lubrication of the machine in the manual.
- No security seal is opened by unauthorized persons.
- All maintenance and repair work is carried out by the way defined by SDLG.
- Only use original authentic parts, accessories and attachments required by SDLG.

⚠ WARNING

Operation personnel must fully understand and master the contents in *Operation and Maintenance Manual for LG936L Wheel Loader* before operating the machine.

It is essential that drivers should carefully read *Operation and Maintenance Manual for LG936L Wheel Loader* and follow its instructions.

Untrained personnel to drive the loader may cause serious injury or death.

Do not operate the loader if *Operation and Maintenance Manual for LG936L Wheel Loader*

is not in place.

Be familiar with warning labels, symbols, and driving instructions on the machine before using it.

Several simple safety rules

- Resolve the safety problems and faults as soon as possible.
- Always wear protective items, such as helmet made of hard materials, safety glasses, gloves, boots, and security supplies for operation.
- When the engine is running, do not stand in front or rear of it.
- Ensure that the surface of the pedal, maintenance sites, handrails and anti-skidding parts are clean and without oil, diesel fuel, sludge and snow, etc., and ensure that if these parts are damaged or lost, timely replace and repair them.
- Check regularly whether all anti-skidding protection devices are secure. If not, firmly install or replace them.
- Always face the machine and use pedals and handrails when climbing on the machine. Always use the three-point contact, namely two hands and one foot, or two feet and one hand.
Do not jump up and down!



Fig. 1 Entering/leaving the machine

Here are some important rules:

- Perform all safety inspection measures in **Operation and Maintenance Manual for LG936L Wheel Loader**.

⚠ WARNING

If you feel tired or influence of alcohol, drugs or affected by other drugs, do not



Fig. 2 Read **Operation and Maintenance Manual for LG936L Wheel Loader** before operating the machine

drive the machine.

- Before starting the engine, make sure there is adequate ventilation. The machine is equipped with diesel engine and the emission gas is harmful to your health. Therefore, do ensure adequate ventilation. If ventilation is insufficient, please avoid running the engine unless it is absolutely necessary.
- Before operation or maintenance on the machine, please read all signs and instructions as well as the contents in **Operation and Maintenance Manual for LG936L Wheel Loader**. Each sign contains information about safety, treatment and maintenance.
- Use the seat belt during operation.
- Always sit on the operator seat when starting the engine.
- Before the machine is used, make sure a ready for use, all functions should be intact and effective, and all the faults that may cause an accident should be ruled out.

Seat belt

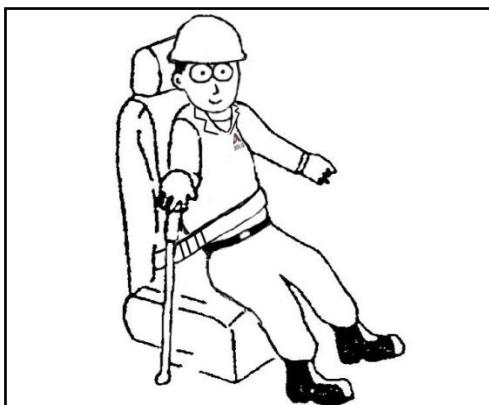


Fig. 3 Use the seat belt during operation

- If the seat belt is worn, or the seat belt has been subjected to force when the machine has an accident, then this seat belt should be replaced immediately.
- Modifications on seat belt and mounting parts are absolutely prohibited.
- Seat belt is designed for only one adult, and it cannot be used for a couple of people.
- When the belt is not in use, it should always be in rolled-up state.



When the engine is running

- Pay attention to warning lights. For red one, apply immediate actions or pay special attention to it. Refer to the gauge part in **Operation and Maintenance Manual for LG936L Wheel Loader** for details.
- Before using the parking brake button, confirm attachment/attachment brackets have been placed on the ground.
- Be sure all the levers and handles are in the neutral position, and gear shifting handle is in the neutral position before leaving the machine.

⚠ WARNING

Risk of serious injury

- Do not stand near the hinged part between the front and rear frame, unless it is already locked with a locking lever frame.
- Before driving it on the road, empty the bucket.
- When leaving the machine and nobody watches it, it should be parked on level ground, and put the working device down on the ground, turn off the engine and remove the key.

When rollover danger is involved

For the cab with ROPS, if there is a risk of rollover, on the premise firmly fastened seat belt, and do grasp the wheel. Do not jump!

Cab emergency exits

The cab has two emergency exits, namely, the door and the right window.

Safety Regulations for Maintenance

This section includes the general safety rules about inspection and maintenance.

Other rules, information and warnings are offered in **Operation and Maintenance Manual for LG936L Wheel Loader**.

Incorrect maintenance may be very dangerous.

Before starting any maintenance work:

Make sure you have maintenance certificate, the correct information, the right tools and equipment in good condition to correctly perform maintenance work.

★ ATTENTION

Before mastering the correct knowledge about correct repair techniques and how to carry out maintenance on the machine, you are prohibited doing anything on the loader.

General

- If there is someone else to take over your maintenance work, ensure the person to get detailed information on the progress of work, how much has been done, and how much needs to be done.
- When you use high pressure tap to wash the machine, do not aim the nozzle directly at the coated anti-skipping surface or the signs attached on the vehicle.

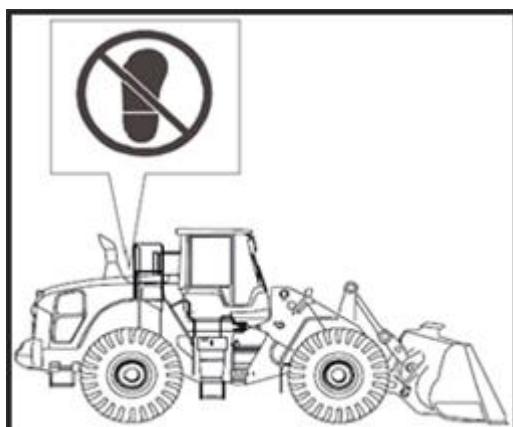


Fig. 4 Do not step on the engine hood

⚠ WARNING

Step on special pedals when walking up and down the machine; refer to *Operation and Maintenance Manual for LG936L Wheel Loader*.

- When working on the machine, do not wear loose cloth that may be stuck, in order to avoid personal injury.
- Always wear protective caps, goggles, gloves,

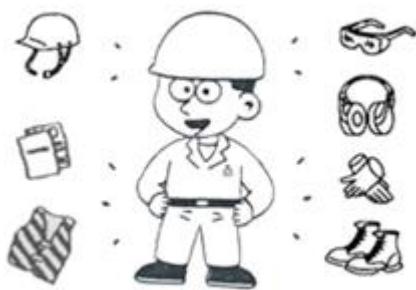


Fig. 5 Wear protective items

protective boots and other safety that your work needs.

- Always turn off the engine for maintenance unless the marking and signs of the vehicle or this manual have other instructions.
- Do not stand near the hinged frame, unless it is already locked with a locking lever frame.
- Before opening the engine cover, radiator tanks and similar parts, turn off the engine. Make sure that no tools or items that may cause damage left on the machine.
- When the engine is running and the machine is in operation, the engine cover should be kept closed.

Maintenance Position 1

Stop the machine on a level and hard surface, as shown in the following figure:

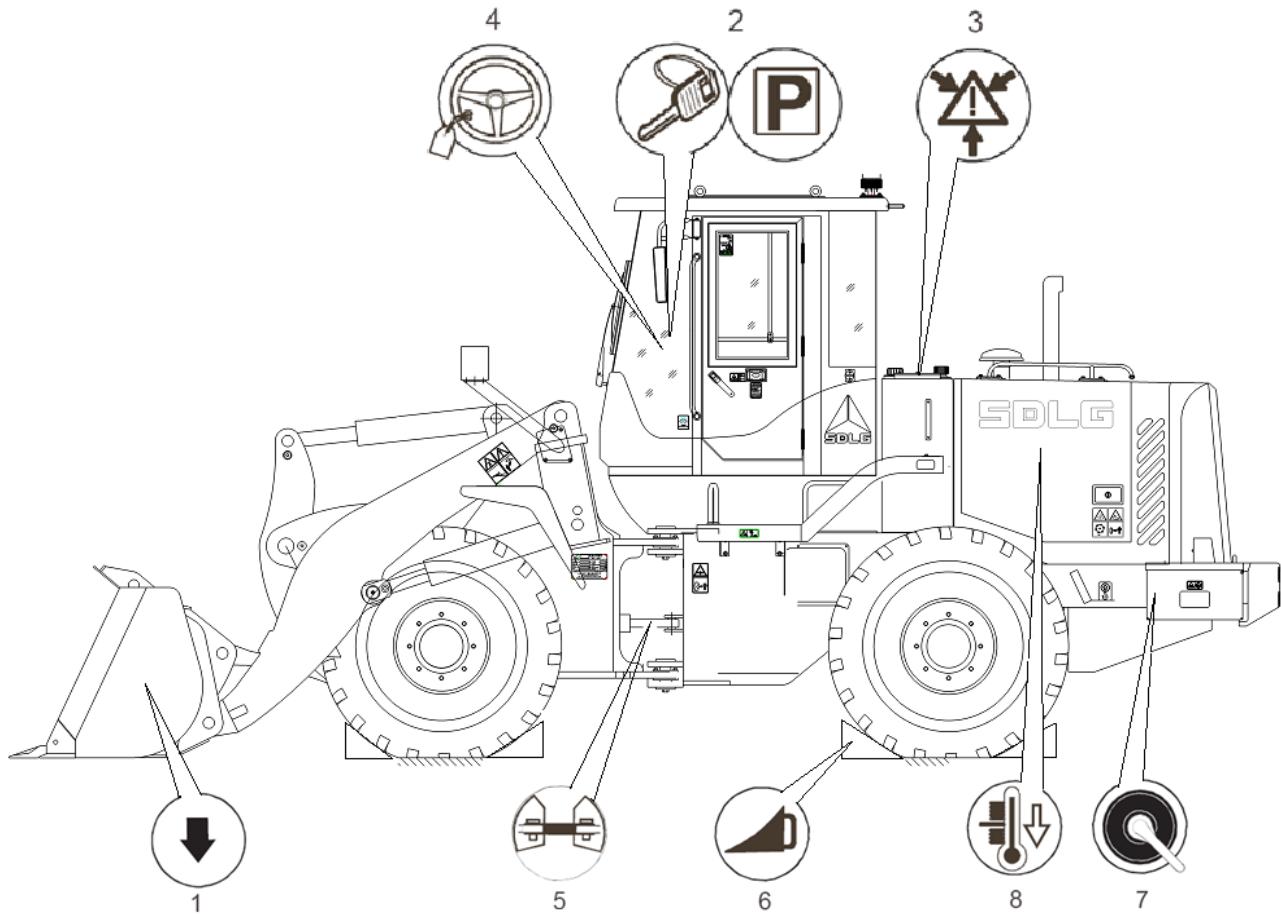


Fig.6 Maintenance position 1

1. Put attachments on the ground.
2. Turn off the engine and take down the ignition key.
3. Release the pressure in pressurized pipe and oil tank to prevent accidents.

WARNING

If the system pressure is not reduced before opening, oil will spray under high pressure, and may cause serious personal injury accidents.

4. The steering wheel should be connected with yellow black warning flag (a red warning flag may be used in the United States).
5. Make sure the frame lock lever is connected.
6. Press the parking brake button, so that the vehicle is in the parking brake status and wedge the loader.
7. Battery cut-off switch is off.

8. Let the machine cool down.

WARNING

If you have to operate on the machine before it is cooled down, pay attention to hot liquid and components, in order to avoid burns.

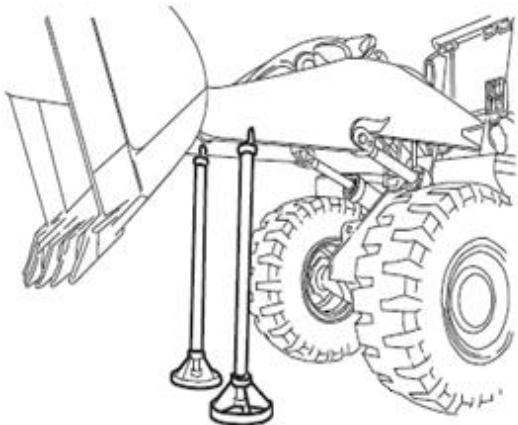


Fig. 7 Fix the boom firmly

Working under Elevated Boom

Before starting operation, always use the support frame. Support frame must be mounted on a sturdy and flat surface.

WARNING

Pay attention to the exact location of the support under the boom.

If the support is placed too forward, it will be overwhelmed when the attachment fixator tilts forward.

Fire Prevention Measures

● Even if only the fire may happen, if circumstances permit, and remember your personal safety, you can take the following measures:

- Start the machine, leaving the fire or hazardous sites.
 - Lower the lift arm to its lowest position, so that the attachments stay on the ground.
 - Turn the ignition key to turn off the engine.
 - Leave the cab.
 - Disconnect the battery switch.
 - Start to put out the fire, and call for the fire department when necessary.
- When fill the machine with oil, or when the fuel is exposed to air, the machine should not be

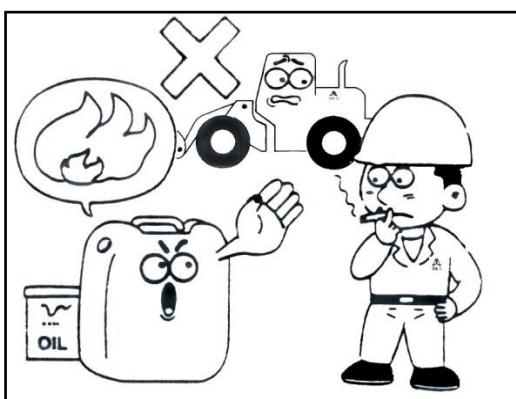


Fig. 8 When filling the fuel or the fuel is exposed to air, absolute prevention of fireworks is needed