

Quality Changes the World



Motor Grader

SMG200



Safety, Operation & Maintenance Manual

SANY

SMG200 Motor Grader

Operation & Maintenance Manual

 **WARNING**

Read and understand all safety precautions and instructions in this manual before reading any other manuals provided with this machine and before operating or maintaining it. Failure to do this could result in death or serious injury

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DELINEATION OF RESPONSIBILITY

Specific Declaration

A grader is an engineering vehicle with a blade used to finish soil and create a flat surface. Graders are commonly used in the construction and maintenance of gravel road and subgrade. Graders are also used to strip topsoil or greensward, produce ditches, finish side slope. Graders can mix up, backfill, bulldoze and pave materials. If equipped with a front dozer blade, it can pave, stack and backfill loose materials. If equipped with a rear scarifier, it can loose hard and dense soil. Any other use or any operation beyond the specified working range is not authorized use. Sany expressly bears no liability for any consequence due to any unauthorized use.

Information in this manual is used to guide qualified operators to operate and maintain graders correctly. Sany expressly bears no liability for any consequence due to any use not observing the information in this manual.

It is forbidden to convert the grader without authorization. Sany expressly bears no liability for any consequence. When crack or electrical malfunction on the grader occurs, please contact the supplier, and don't conduct welding or make changes without permission, or else, for any consequence due to such contravention, Sany shall not bear any liability.

Use genuine spare parts from Sany. Sany expressly bears no liability for any machine damage or accident due to the use of untested or unauthorized spare parts or tools.

Operate and maintain parts (such as engine, A/C) on the grader, and observe related regulations on Users' guide supplied from their manufacturer.

Sany expressly bears no liability for any machine failure or damage due to force majeure of natural disasters (earthquake, typhoon) and wars.

Sany cannot predict every circumstance that might involve a potential hazard in operation or maintenance. Operators and owners should highly attach importance to safety. Local specific safety rules of the countries may be stricter. If they differ from the regulations in this manual, observe the stricter one.

Duty of Sany

- Be responsible for providing qualified products and correct documents.
- Fulfill their promises on after-sales service, and document all maintenance and repair working done by after-sales service personnel.
- Train the operation and maintenance personnel based on their needs.

Duty of Owners or Other Authorized Personnel

- Only after each person involved in the product's operation, maintenance and repair is trained and fully understands the Parts Book and Safety, Operation and Maintenance Manual, can they operate and maintain the grader.
- Ensure the operation and maintenance personnel are qualified and know their related responsibilities.
- Periodically check related personnel's safety consciousness during working.
- If any fault which will lead to unsafety occurs, stop the grader immediately.
- Sany service personnel have the right to check the grader for safety.
- Besides check items regulated by Sany, observe local laws and regulations to check the grader.
- Ensure timely maintenance and repair on the grader.
- Carefully plan the use of the grader.

Duty of All Working Personnel

- If there is any abnormal symptom which may cause abnormal working of the grader or potential hazard, report to your leader. If possible, correct fault in time.
- All personnel working around the grader must observe all warning signals and take care of their own and others' safety.
- All personnel should know their working tasks and procedures.
- Watch surrounding things like high voltage wire, unrelated personnel and poor ground for potential danger, and report to the operators and signalmen.

Duty of Managers

- Ensure the operators are trained and fully understand the Safety, Operation and Maintenance Manual supplied by Sany. Ensure they are in physical fitness and have the certification of operation. Otherwise, it is forbidden to operate the grader.
- Ensure the operators have good judgment ability, teamwork consciousness and psychological quality. Otherwise, it is forbidden to operate or repair the grader.
- Ensure the signalmen have good vision and acoustic judgment, master standard command signals. At the same time, they should have enough experience in recognizing danger factors correctly, and inform the operators of danger factors to avoid them in time.
- Ensure assistant workers can identify the model and working condition to choose a proper grader.
- Make each working person take their related responsibilities, and require them to report unsafe factors to their leader in time.

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 **WARNING**

Read and understand all safety precautions and instructions in this manual before reading any other manuals provided with this machine and before operation or maintaining it. Failure to do this could result in death or serious injury.

1.Introduction

1.1 About This Manual

This manual provides safety, operation, maintenance and technical specification information. A copy must be kept in the cab at all times. If you sell the machine, a copy of this manual must be provided to the new owner.

It is important to read this manual carefully before beginning any operation or maintenance. All personnel involved with this machine must read this manual periodically to remain knowledgeable about its operation and maintenance.

Items addressed in this manual are designed to help you:

- Understand the different systems and performance of your machine.
- Reduce improper operation.
- Point out possible hazardous situations when operating and maintaining the machine.
- Increase machine efficiency during operation
- Prolong the service life of your machine.
- Reduce maintenance costs.

Continuing improvements in the design of this machine can lead to changes in detail which may not be covered in this manual. Always consult your Sany dealer for the latest available information on your machine or if you have questions regarding information in this manual.

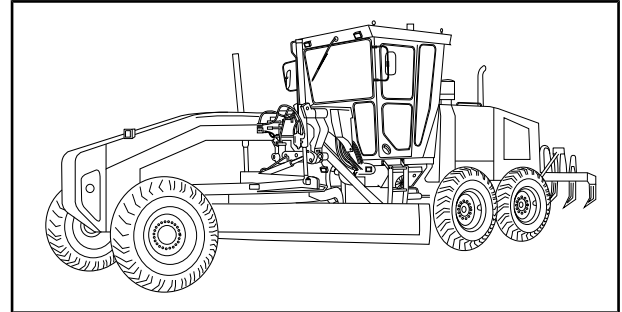


Fig.1-1

1.2 Contact Information

Thank you for purchasing a Sany machine. If you need to contact us for any reason, you can reach us as follows:

Sany Industry Town, Economic and Technological Zone, Changsha, Hunan, China 410100

E-mail: crd@sany.com.cn

Phone: 0086-731-84031888

Fax: 0086-731-84031999

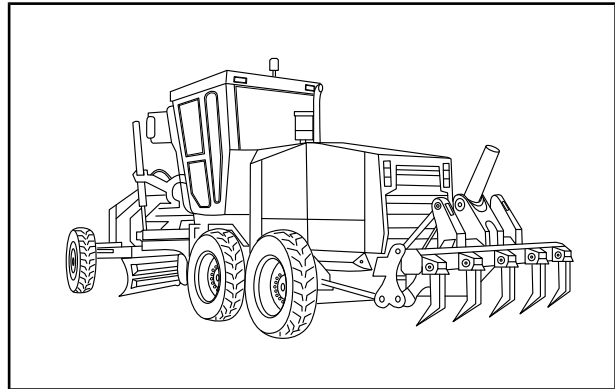


Fig.1-2

1.3 Your Documentation Package

1.3.1 Introduction

This documentation applies only to this machine and should not be used with any other machines. The documentation for this machine includes the following items:

1.3.2 Safety, Operation & Maintenance Manual

A copy of this Safety, Operation & Maintenance manual must always remain in the operator cab (a) at all times. See [“Specific Torque Values” on page 5-11](#) for complete details.

A copy of this manual should be made available to maintenance personnel when maintaining the machine.

1.3.3 Parts Book

The Parts book consists of parts lists and matching drawings used for ordering spare parts as needed. The Parts book is best left in the workshop area or office. It should always be available to the maintenance and service personnel.

1.4 Your Sany Machine

1.4.1 Directional Reference of the Machine

All views are from the operator's seat and facing forward as indicated by the black arrow in the image below.

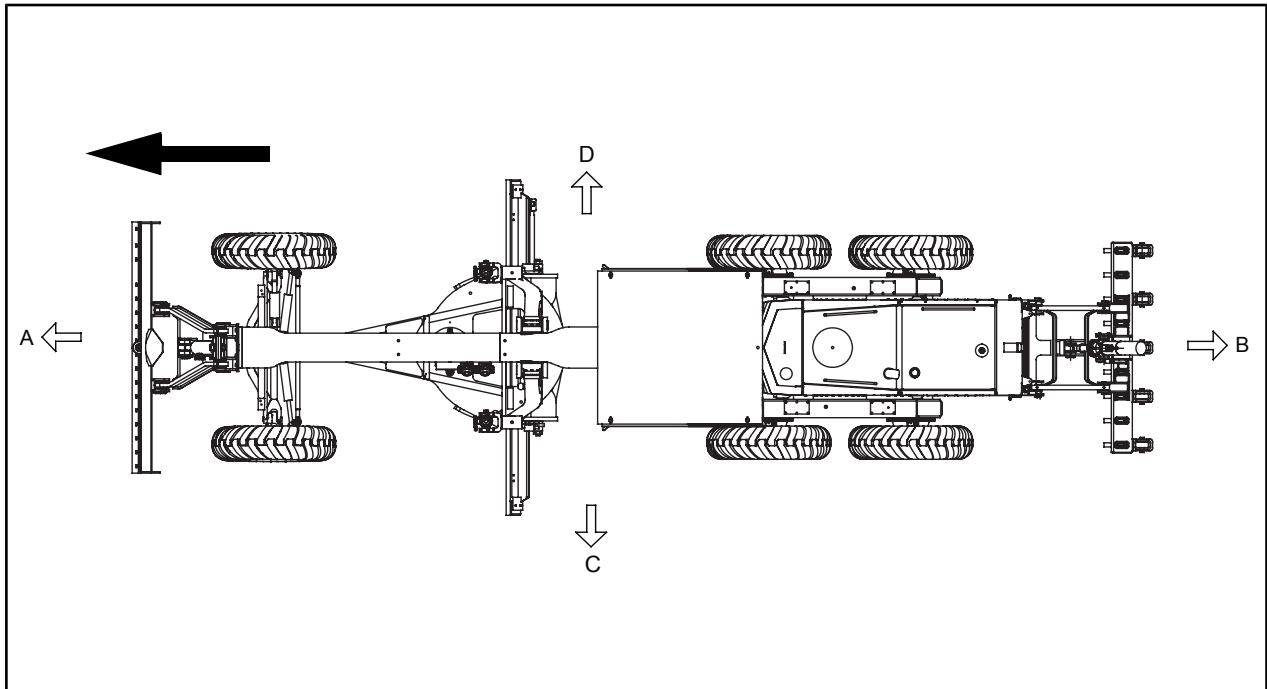


Fig.1-3

A. Front

B. Back (rear)

C. Left side

D. Right side

1.4.2 Serial Number Location

The data plate (a) includes information that will be needed by your Sany dealer when ordering replacement parts or providing assistance for your machine. Record this information in this manual for future use.

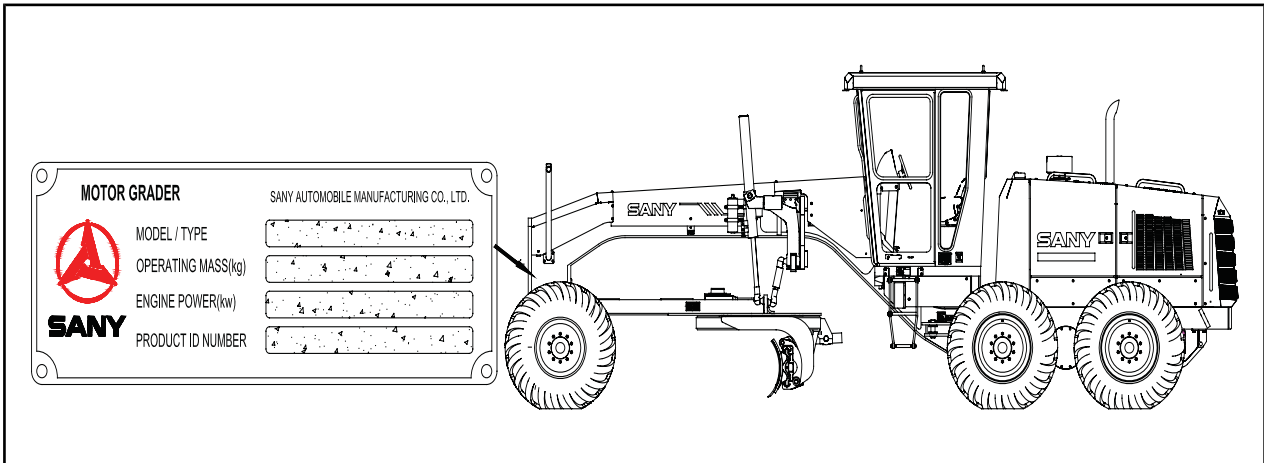


Fig.1-4

1.4.3 Record of Serial Number and Dealer Information

This location is for you to record information relating to your machine. It is required that you keep this manual with your machine at all times for reference.

Model No.	SMG200 T3 Motor Grader
Machine Serial Number	
Engine Serial Number	
Transmission Serial Number	
Rear Axle Serial Number	
Right Tandem Case Serial No.	
Left Tandem Case Serial No.	
Date of Production	
Dealer Name:	
Address:	
Phone Numbers:	

1.4.4 Cab Interior

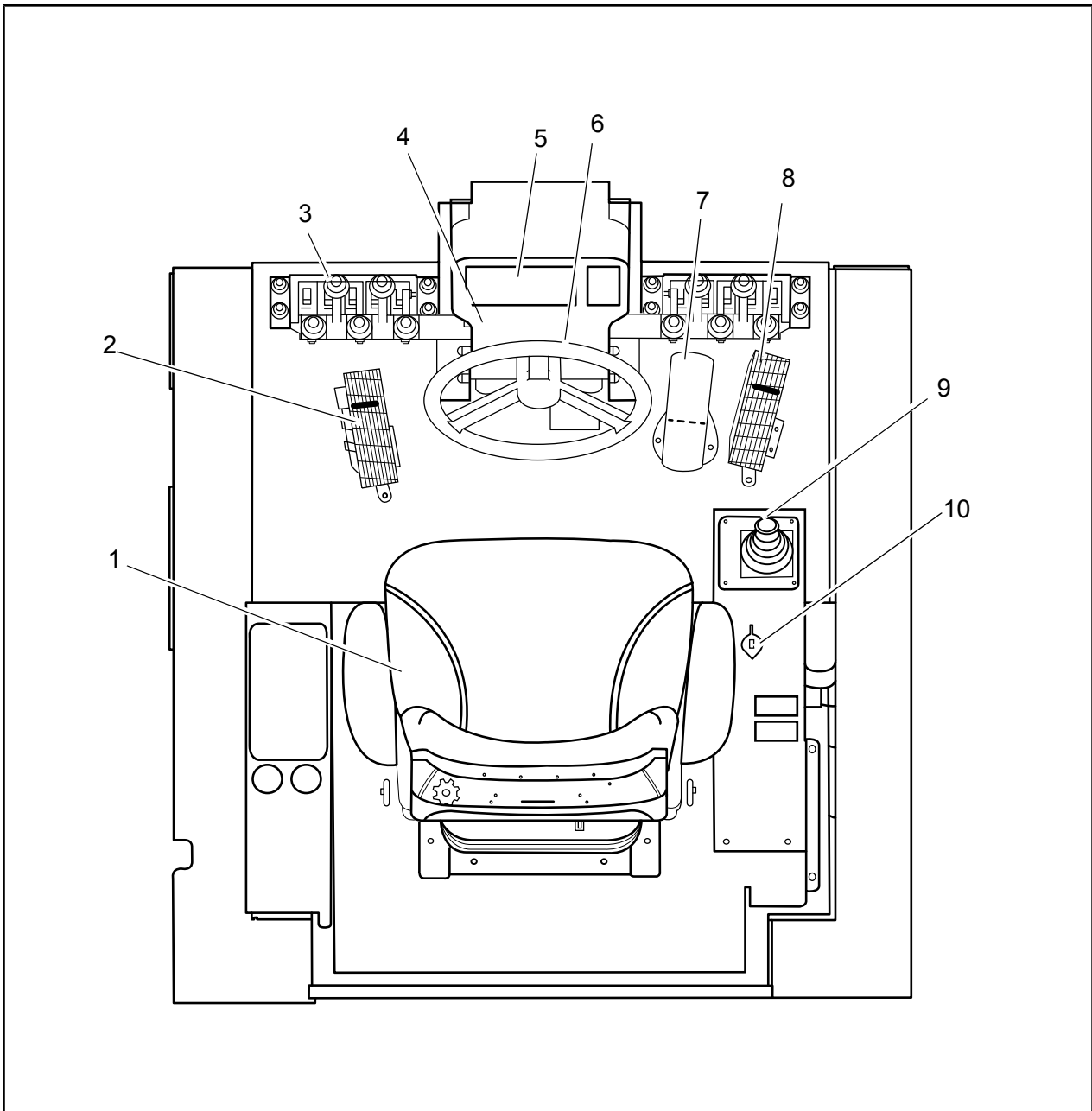


Fig.1-5

- | | |
|-------------------|----------------------|
| 1. Seat | 6. Steering wheel |
| 2. Clutch pedal | 7. Brake pedal |
| 3. Control levers | 8. Accelerator pedal |
| 4. Console | 9. Gear selector |
| 5. Display | 10. Key switch |

1.5 Correction Request

If you find a problem with this manual, please email techpubs@sanyamerica.com with the page(s) where the problem was found and a description of the problem.

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 **WARNING**

Read and understand all safety precautions and instructions in this manual before reading any other manuals provided with this machine and before operation or maintaining it. Failure to do this could result in death or serious injury.

2.Safety

2.1 Safety - General

2.1.1 Introduction

This section of the manual provides detailed information on basic safety precautions and preventative measures to be followed during operation and maintenance of this machine.

2.1.2 Hazard Alerts in This Manual

Most accidents are usually caused by the failure to follow fundamental safety rules for the operation and maintenance of the machine. To avoid accidents, it is important that all personnel involved with the operation or maintenance of this machine must read this manual before operating or performing maintenance on this machine.



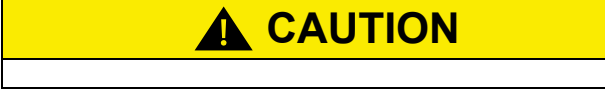


Improper operation or maintenance of this machine could result in death or serious injury.

Carelessness or neglect by operators, job supervisors, maintenance staff, or job site workers can result in their death or injury and costly damage to the machine and property.

Hazard alerts are used throughout this manual. Each hazard alert contains a hazard alert symbol and a signal word to identify the hazard's degree of consequence if the message is ignored.

The following (ANSI/ISO) signal words are used to inform that there is a potentially hazardous situation that may lead to damage, personal injury or even death. In this manual on the machine decals, different signal words are used to express the potential level of hazard.

Table 2-1

Safety Decal	Explanation
	indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
	indicates a situation which can cause damage to the machine, personal property and/ or the environment, or cause the machine to operate improperly
	This symbol is used within a graphic to alert the user not to do something.

Sany cannot foresee every circumstance that might involve a potential hazard in operation or maintenance. Therefore, some hazard alerts in this manual and on the machine may not include all possible safety precautions.

Local governments or authorities may have stricter standards. If some stipulations in this manual disagree with the local laws or regulations, the stricter ones prevail.

All procedures and precautions outlined in this manual apply only to the intended use of this machine. If you use your machine for any unintended use that is not specifically prohibited, you must be sure that it is safe for you and others to do so. In no event should you or others engage in prohibited uses or actions as described in this manual.

2.1.3 Operator Safety Information

It is impossible to compile a list of safety precautions covering every situation. However, there are basic principles that must be followed when operating this machine:

- Only qualified personnel who have been specially trained are permitted to operate and/or work on this machine.
- Operator aids such as warning lights, horns, or buzzers, along with displays on the monitors are designed to alert the operator to potential problems. Sole reliance on these operator aids, in place of good operating practices, can lead to an accident. Inspect the operator aids of this machine daily and make sure each operator aid is in normal working condition. Any faults found shall be reported to your Sany dealer. Stop all work immediately if any operator aid is found to not be working properly.
- All accident prevention guidelines, operating instructions, etc., are based on authorized use of the machine.
- Read and understand this manual and any accompanying manuals before operating this machine.
- This manual must be readily available to the operator at all times and must remain in the cab while the machine is in use.
- Ensure that all personnel in the working area around the machine are thoroughly familiar with safe operating practices as stated in this manual.
- Review the local, state, and federal regulations and standards regarding this machine and its operation. Work practice requirements may vary among government regulations, industry standards, and employer policies. A thorough knowledge of all such relevant work rules is required

before operating this machine or performing maintenance on it.

- Inspect the maintenance log before the start of each workday shift. Ensure that routine maintenance has been performed as stated in this manual. Do not operate a damaged or poorly maintained machine.
- No one besides the operator is to be anywhere on the machine while it is in operation.

2.1.4 Mount and Dismount the Machine

Mounting or dismounting could pose some hazards. Observe the following:

- Always be sure the machine is at a full stop before attempting to access the machine. Never jump onto or off of the machine.
- Never exit or enter the operator cab or deck by any other means than the provided grab handles (a) and steps (b).
- Always face the machine as you mount and dismount.

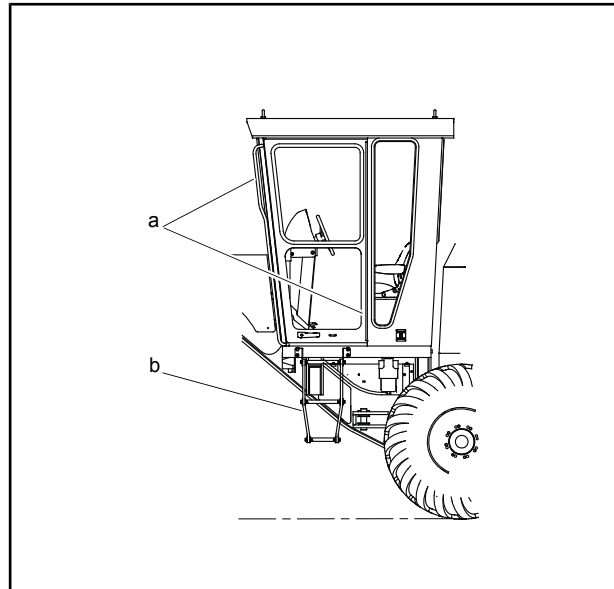


Fig.2-1

a. Provided grab handles b. And steps

- Always maintain a three-point contact (both feet and one hand or one foot and both hands) with the grab handles, steps and deck to ensure proper support.
- Do not walk on the front counterweight. If you must work on the counterweight use a ladder or appropriate safety alternatives (hoist and harness.)
- Wear shoes with a slip-resistant sole material.

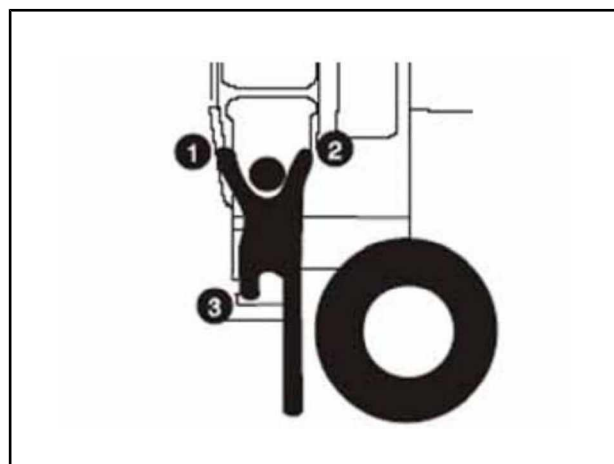


Fig.2-2

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