Doc. No.:
Version No.:

XD120 III Tandem Vibratory Roller

Operation Manual

					Compiled by		
					Reviewed by		
					Approved by		
Mark	Nos.	Change File No.	Signature	Date	Reviewed by	Signature	Date

XCMG Road Machinery Business Unit

Machine Serial No.: _____

Vibratory Roller Operation Manual (Quanchai)

XD120

XCMG Construction Machinery CO., LTD.

Preface

The Manual includes the information and instructions related to safety operation and maintenance of XCMG machines.

For your and bystander's safety, preventing the accident and maintaining the environmental protection, you shall:

- Please carefully read the information herein before using the machine.

- Please make familiar with the relevant contents herein

- The Manual is one part of the machine! Please make it onto the machine for reference!

In case of the Manual damaging or losing, it must be replaced immediately!

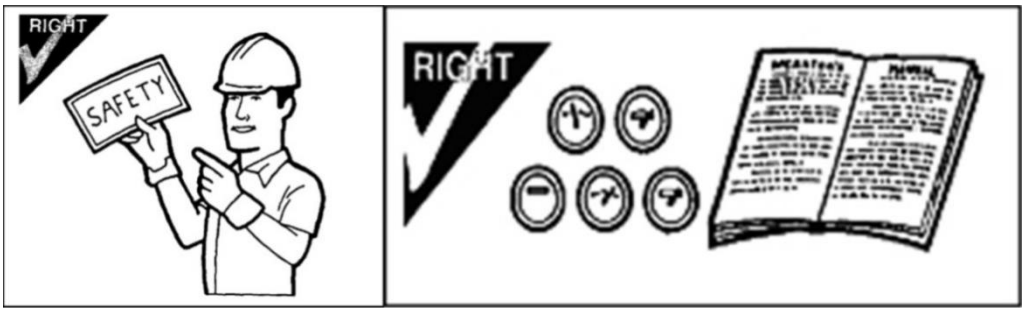

Fig. 0-1: please master the locally applicable safety regulation, the Manual and machine.

The Manual is not suitable for the wide maintenance and repairing works. Those works shall be made by XCMG service personnel or authorized experts.

During the process of design, production and maintenance for XCMG products, the operator's safety is the most important concern of XCMG.

Please note that incorrect application or maintenance may increase the danger and risk.

Therefore, please consistently operate and maintain the XCMG machines following the instructions in this Manual. In this way, the machine reliability and availability may be improved.

Please immediately repair the defected machine and make sure the safety operation and environmental protection.

If you have any other doubts about machine operation or maintenance, please contact with your XCMG agent at any time.

Attention!-

- Please make sure you're familiar with the contents herein before starting to operate the machine!

Machine Serial No.: _____

Contact information of your XCMG agent:

Address:_____

_____

_____

_____

_____

Sales Tel: +86-516-87928888 Sales Fax: +86-516-87638888 Service Tel.: +86-516-87932222 Service Fax: +86-516-85857433 Spare Parts Tel: +86-516-87938878 Spare Parts Fax: +86-516-83363922 Technical Support Tel: 0516-87938756 Post Code: 221004 Service Hotline: 400-110-9999 Web Sites: http://www.xcmg.com/xgdl

Service Service and Spare Parts Department E-mail: Tel.:	Market Marketing Department E-mail: Tel.:

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	document contents without the written permission of XCMG. All technical data, drawings, documents and others are copyrighted.
Updating	The data included in the Manual conforms to the latest level currently
XCMG reserves rights to change the machine technically and / or modify the contents, information, drawing and specifications of the Manual without the prior notice.	
The language of original version is Chinese	

0 Contents

1. About the Manual

- The Chapter includes the significant information related to use the guidance and instruction manual.

1.1 Main Purpose

- The Manual includes the instructions for machine safety, operation and regular maintenance. If necessary, it can add other documents and manuals.

- The Manual can provide supporting in the following aspects.

- Master your machine.

- Decrease the possibility of risk and hazard.

- Prevent the mis-operation, accidental use and predictable abuse.

- Improve the machine reliability and availability.

- Enhance the machine performance.

- Decrease the maintenance cost.

The instructions in this Manual must be followed.

- The Manual applies to personnel who operate and maintain the machine.

- Except that, you shall comply with the rules and regulations applicable to your working position.

- The Manual must be provided to operation and maintenance personnel attached with the machine. It shall be stored at the designated storage position (see the Fig. 1-1).

- The supplementary documents related to repair and maintenance may be applicable (for example, engine), please contact with your XCMG representative for more information.

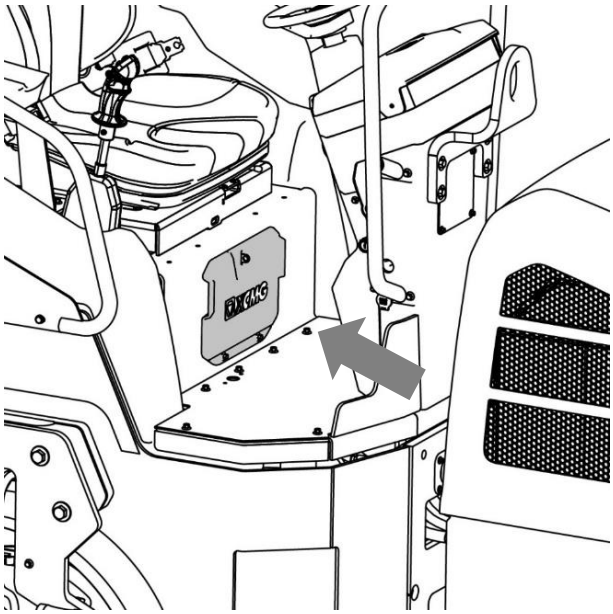


Fig. 1-1: The Manual is stored in storage box under the seats where it's the designated storage position on machine

Attention! - Please follow the instructions herein!

- For avoiding the accident during the operation or maintenance process, please follow all preventive measures specified in this Manual.

Before operating, maintaining or repairing any machine parts:

- Please carefully read and master the contents herein.

- Understand how to operate and maintain the machine correctly.

- Please pay attention the safety information in this Manual as well as the safety sign on the machine and the relationship between the two.

- Understand the safety requirement and the purpose.

The documents attached with the machine shall make readers can:

- Operate the machine safely.

- Use it under all allowable conditions.

- Maintain the machine within the required schedule.

Please make sure the documents are complete and latest all the time and available when needing:

- Please do not delete single page of the Manual.

- After the after-sales service, please ask for XCMG to provide any missing or incomplete part of the guidance manual.

- It includes the new documents provided due to modification.

- The revised contents shall replace the outdated Operation Manual.

- The attached documents compiled the designated serial number.

- It may not be applicable for the same serious machines with different serial numbers.

Attention! - Important!
- The guidance manual shall be deemed as one integral part of the machine!

Disclaimer:

We commit and make endeavor to provide the guidance manual for you and provide the complete and correct information for you. However, it cannot eliminate all errors. Therefore, the Manual and machine may be changed at any time without the prior notice. **XCMG** will not bear any responsibility for the shutdown, damage or failure caused therefrom.

1.2 Product Information

XCMG manufactured and provided the high quality products. Your machine and components were inspected for many times before assembling and delivering to meet the high standard requirement of XCMG.

You can correctly use and carefully maintain it as per the instruction herein to ensure the equipment reliability and availability. Only the original XCMG spare parts and vulnerable parts can be used.

XCMG's experts and our representatives will help you maintain and even repair the machine within the warranty period. Please refer to the warranty condition attached with the purchasing contract.

XCMG will continue providing service for you upon the warranty period expired and help you to keep the machine in optimal state within the whole service life.

XCMG will not accept the warranty claims under the following conditions:

- Operating faults and the operations inconsistent with the Manual.

- Wrong consumables are used.
- Insufficient maintenance.
- Maintenance without the permission of service personnel authorized by XCMG / repair error.
- When using the non-original XCMG spare parts.
- Modify the machine without approval of XCMG.
- Damage / defect due to delay of warranty requisition or caused by repairing.

The subsequent damages are excluded from the warranty scope without exception.

1.3 Target Population

The manual is provided for the following personnel:

- Owner.
- All operators and personnel who maintain overhaul or repair the machine.

The Manual is open to all personnel operating or using the machine.

1.4 Warning Prompt

According to the danger descending order, the warning prompts are shown as follows:

Danger! Hazard Type!
- It refers to the extremely urgent and inevitable danger, which may lead to deaths if not preventing.

Warning! Hazard Type!
- It indicates that death or serious injury could occur if potential danger is not avoided effectively.

Caution! Hazard Type!
- It refers to the potential danger that may lead to slightly or moderately reversible damage and / or relatively serious property or environmental damage if not preventing or avoiding.

Attention! Risk of property or / and environmental disruption!
- It refers to the risk of property or environmental disruption caused by ignoring.

1.5 Symbol and Text Structure of This Manual

→ It refers to the single instruction or regulation needing to be followed (for example, from the safety reason).

Refers to the complex operation instructions for executing multiple steps at the same time or relevant laws and regulations (for example, from the safety reason).

Any information and contents to guide user not needing the operation. For example:

Additional safety measures in dangerous task / process

Additional safety measures in dangerous task / process

Further detailed instructions for complex problem, or

Dangerous consequence or (a) advance action caused by ignoring the warnings.

1.5.1 Other Formats of Text

1.5.1.1 Operation Description

The operation description requires you to operate or execute the working steps.

Please perform the operation description as the sequences confirmed before step by step.

The structure of operation description is shown as follows:

Title (Brief Introduction)

- Guidance (Step)

1. Step 1

2. Step 2

Advanced operation or the result that is warned for danger approaching.

3. Step 3...

1.5.1.2 Title Structure

- The structure of unnumbered titles is shown as follows:

o Level-1 title

■ Level-2 title

- The structure of numbered titles is shown as follows:

1. Level-1 Title

2. Level-1 Title

2.1 (Level-2 Title)

2.2 (Level-2 Title)

2.3….

3. (Level-1 Title) ...

1.5.2 Other Information

The illustrations are only used for providing other or more detailed information and may be different from actual products or range.

1.5.2.1 Illustration

For example, the left/right and front/rear information refers to the seating position of driver in cabin.

The illustration and graphs are only for describing the purpose and may be different from the actual products you purchased.

1.5.2.2 Size

The size in this Manual shall be subject to ISO metric system.

1.5.2.3 Applicable Document

The equipment repair and maintenance documents also include other documents (such as those for

engine or other installed equipment), please pay your attention.

1.5.2.4 Availability

The contents of this Manual will be provided for all operators or personnel who use this machine, including the applicable documents.

1.6 Product Description

1.6.1 General Overview

The machine is a light tandem vibratory roller and extensively used for urban and rural road and highway construction as well as the small-sized soil compacting areas.

The Manual is suitable for several machine models therefore those figures are only for reference supporting the system identification but not the actual products.

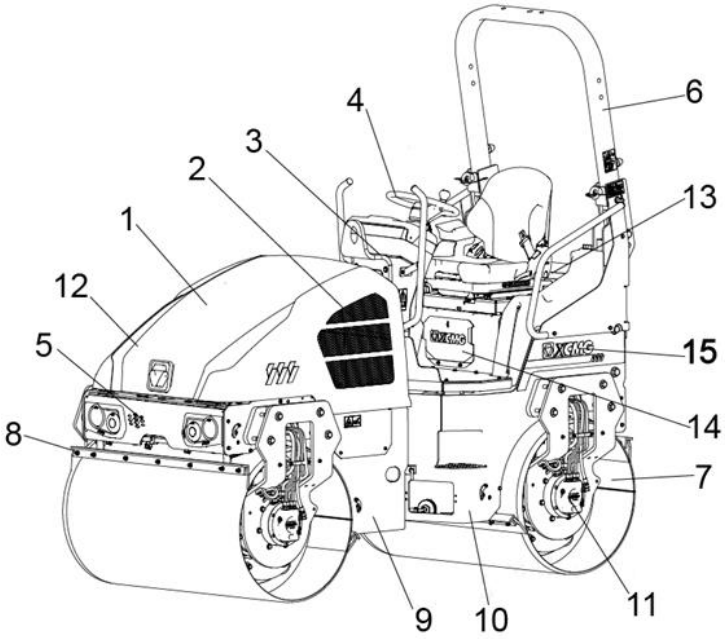


Fig. 1-2: Main Part of Machine Overview

1. Engine hood
2. Main power transmission unit (Engine system, hydraulic system etc.)
3. Steering mechanism, including steering gear, instrument panel and major electric system
4. Steering wheel
5. Horn
6. ROPS
7. Vibratory drum
8. Scraper
9. Assembling of front frame
10. Assembling of rear frame
11. Hydraulic driving and hydraulic vibrating (at both sides of each wheel)
12. Position of main switch of power supply
13. Position of Fire Extinguisher
14. Position of Manual and auxiliary tool
15. Mark

2. Routine Safety Information and Instructions

2.1 Introduction

For preventing the personnel injury or property and / or environmental damage, please follow and perform the safety instruction in this Chapter.

The following recommendations are suitable for user, operator and driver:

→ Please confirm, understand and follow all safety instructions.

2.2 Responsible Party

For convenient to communicate, the following participated groups are defined in this Manual:

a) Manufacturer (namely: XCMG, the manufacturer of unit / machine)

b) Owner

c) Operator

d) Maintenance personnel

a) Owner

Any natural person or legal person / entity:

o Have one unit (set) of machine permanently or temporarily and the legal right and responsibility

o Use, purchase or borrow the machine to manage the on-site works (such as: construction company).

o Distribute the machine (such as reseller or lease) for sales.

b) Operator

Any natural person / entity:

o Take charge of special work / (sub-) projects or one (set of) machine on construction site, and understand the functions (such as the agent of construction company), or

o The personnel who actually drive the special machines may not master and use all knowledge or technologies. (Such as the well-trained driver) or

o For the company who operates the special technology equipment, the special knowledge or skill required for operating the equipment is not obtained from the basic training.

c) Maintenance personnel / service provider

Any natural person:

o Take charge of all processes (namely: maintenance, overhaul, repair, function control and adjustment etc.) of machine running without defect.

2.3 Specific Task and Responsibility

2.3.1 General Requirement for All Responsible Parties

Any relevant responsible parties shall be committed to:

→ Follow the Operation Manual of machine.

→ Notify the related party when observed any safety-related defects of machine.

→ Check whether the machine is damaged every day before using it. Please do not operate in case of any safety problems.

→ Wear the personal protective equipment (PPE) on site / area according to suggestions or requirements.

→ Correctly operate any machine, namely following the parameters and intended use specified by this Manual.

→ If unable to make sure the safety operation of the machine, please immediately stop using the machine.

→ In case of defect, please repair the machine before continuing operation.

Only the personnel with the related qualification and authorization can operate, transport and / or maintain the machine.

The qualified personnel shall meet the following lowest requirements:

→ At least 18 years old.

→ Possess the physical and mental ability to perform the distributed tasks.

→ Capable of reading and understanding the technical documents (namely this Manual) in aspect of construction machinery.

→ Master:

→ First aid measures

→ All applicable industry safety regulations.

→ Accept the sufficient training / guidance to execute the designated machine task.

→ If required by laws, please hold the valid machine driving license.

→ Introduce the most basic knowledge for machine operation and effect.

→ The grouping works for machine are only made by the well-trained personnel with the certified knowledge, experience and skill.

→ This is to make sure the communication signal between grouping personnel and drivers in clear and reliable all the time.

2.3.2 Owner:

→ Designate and verify the skill and responsibility of personnel for operating machine or special parts of the machine.

→ Provide the necessary personnel protective equipment for the personnel operating the machine.

→ Take charge of the safe state (stable and safe running) of machine and the accessories.

→ Except for the inspection specified in manufacturer's maintenance manual, the machine shall be inspected according to local regulations.

→ Notify any machine accidents that are possible to result in or have caused the serious injury or significant property loss to manufacturer.

→ Provide the unlimited machine channel for service personnel authorized by manufacturer.

→ Carefully execute the working plan of machine.

→ Before conducting any modification for machine, please consult with the manufacturer or the authorized representative.

→ Please use the original XCMG spare parts - as shown in list of spare parts.

2.3.3 Operators:

Requirements for operators:

→ Get trained or guided for safety operation of machine according to local regulations.

→ Get authorized for operating machine.

→ Capable of safety operation of machine physically and mentally

→ Not affected by substance that may affect the operation capacity.

→ Guide the safety prevention works on construction site.

→ Take the proper safety measure for themselves and bystanders.

→ Check whether the qualification of adjacent working personnel is real

→ Completely manage the activities of personnel around the machine.

→ Make sure the machine be operated safely according to intended use.

→ Please immediately stop running the machine if the serious defect or damage related to safety occurred.

→ Regularly maintain and check the machine according to XCMG maintenance plan and local guidance and requirements.

→ Report every accident involving in machine, especially the:

→ Serious injury.

→ Serious property loss.

→ Conduct maintenance by using the exclusive and original XCMG spare parts.

→ Consecutively consider the operation condition, evaluate the possible danger and take corresponding actions.

2.3.4 Maintenance Personnel (Technical Personnel / Engineer):

→ The personnel must understand all provided documents, including:

→ Operation instructions for machine and components.

→ Operation instructions from other manufacturers (such as the interchangeable equipment).

→ When necessary, understand the technical data sheet.

→ Regularly maintain the machine and make sure it runs safely and reliably.

→ Execute all specified maintenance activities.

→ If any requirements or suggestions, please wear the personnel protective equipment (PPE).

→ Follow the safety regulations of operation site.

→ Notify operators of any changes / modifications of machine related to safety.

2.4 Scope of Application

2.4.1 Limitations of Intended Use Are:

- Scope of application and intended use (see the section of "2.5.1 Intended Use of Machine").

- Predictable misuse.

- All steps in product lifecycle (Assembling, debugging / delivering, setting, normal running, cleaning, maintaining and repairing, proper handling).

- It refers to operator's skill, experience and knowledge as well as training, experience, skill and other aspects of operators and maintenance personnel.

- Non-experienced personnel.

- Disadvantaged groups (Such as trainee, pregnant women, volunteer, child, disabled person etc.).

- Collateral damage compensation is not borne by the Company (such as employees and visitors from other working sites).

2.4.2 Space Limit

- Safety range / distance during the machine moving / deploying.

- Safety limit of personnel during the process of installing and maintaining.

- Material supply / removal.

- Working site / area.

- interface.

2.4.3 Time-related Limit

- Use period limit for whole machine or special parts.

- Time interval of suggested inspection, maintenance and repair.

2.4.4 Environment-related Limit

The following environmental factors will limit the safety operation and performance of machine:

- **Relevant limit value of environmental factor**

Limit under the special environmental conditions

o Weathering.

o Altitude.

o Slope.

o Gradient.

- **Energy Limit**

o Energy type.

o Supply / discharge interface.

- **Material Limit**

o Supply / discharge interface.

o Original material / auxiliary operation material, wastes.

2.4.5 Allowable Environment Condition

- Consider the environment conditions to make sure the machine can be operated safely, improve the machine reliability and prolong the service life.

- Operate or stop the machine on the ground all the time, stabilize it until it can bear the maximal possible load (including the dynamic vibration load) applied by machine.

Caution! Injury Risk!
- Do not tilt the machine exceeding the maximally horizontal or longitudinal slope (See the Clause 8.2 for more details) specified in this Manual

- Ambient temperature may affect machine actions, especially the acceleration, deceleration and brake performance.

- Please adjust and check the viscosity of fuel and hydraulic oil as well as cooling anti-freezing agent and other working liquid according to the ambient temperature, and avoid replacing battery at the temperature lower than 0°C.

2.4.6 Environmental Protection and Waste Handling

- Environmental protection shall be one cooperative work. XCMG implemented many measures to improve the environmental protection design, production, operation and maintenance method for the machine.

- The owner, operator and maintenance personnel shall be responsible for taking sustainable preventive measure to further promote the environmental protection.

- Follow the environmental protection regulations and systems applicable to the place where you are.

- Handle all materials (maintenance for package, replacement, wearing parts, cleaning agent, residual liquid etc.) according to locally environmental protection regulations and apply the locally available recovery system.

- Do not operate the machine unnecessarily (turn off the engine as reasonably as possible).

2.5 Intended Use

2.5.1 Intended Use of Machine

The intended use defined in this Chapter is the basic requirement for any safety operation!

Your XCMG machine is designed according to the recognized standards (i.e. EN 500-1/-4 etc.) and manufactured by the most advances method and technology when putting into market.

o **The intended use of machine is to compact the asphalt pavement.**

o **Compact the soil and clay.**

o **It's only used in working area and operation condition listed and described in this Operation Manual.**

o **Move the machine gently.**

- If necessary, please ask colleague for monitoring and managing.

- If operate it on the unsold ground or operator is lack of experience, the colleague shall monitor the moving of machine on available track.

- The machine only can be used and stopped on the surface capable of supporting the machine.

- Protect the working area (such as: rail) and prevent the unauthorized and unprotected personnel (such as: child) from entering.

If exceeding the limit for intended use of machine specified in Clause 2.5.1, the following consequences may occur:

- Threaten life or lead to fatal injury.

- Seriously damage machine, property or lead to environmental pollution, the owner / operator may

be responsible for this.

- Warranty loss and guarantee claims.

- The machine shall be used only under the available setting condition and mode provided in this operation and maintenance manual.

- Any application not specified in this Manual must be authorized by manufacturer in written.

- Any different uses without the written permission of manufacturer will be deemed as "unintended use".

The requirements for intended use are as follows:

→ Correctly install all safety devices and make sure its function in a correct state.

→ Provide and execute all maintenance and repair works specified in this Manual and conduct it as per the regulations.

→ Allow the qualified maintenance personnel or authorized personnel only.

→ During the use process, please comply with the instructions in this Operation Manual and pay special attention to operation safety.

→ It applies to all effectively local, national and international safety laws.

→ Only use the operation materials listed in the Operation Manual.

→ All personnel participating in machine operation must comply with the safety instructions in the Manual.

→ All personnel participating in machine operation must perform their duties according to the Manual.

→ Pay attention and respect the technical information value and its limit.

→ Observe and follow the operation capacity listed in this Manual.

→ Consider the model and maximal load of corresponding machine.

2.5.2 Unintended Use

The machine is not used for:

- As the transport tool (material and personnel).

- It's not suitable for application not related to compacting / flat surface.

- It's used on the instable site (namely no safety landfill).

- The environment where it's explosive potentially.

- The site (namely the enclosed space) where it's poor ventilated is prohibited.

The other uses described here are not authorized by manufacturer and not within the legal range of manufacturer's responsibility.

During the operation process, the ROPS shall be unfolded and fixed vertically and provided for the optimal protection.

2.6 Reasonable and Predictable Misuse

The "reasonable and predictable misuse" also refers to machinery failure caused by human behavior that is not specified in this Manual but easy to predict. It includes the unstated application program or any types of misuse listed above.

The most advanced technology also cannot avoid many possible "predictable misuse" by technical methods therefore operator shall operate the machine with cautions.

The misuse or improper use of machine may lead to serious injury or death, and lead to the expiry of a warranty period!

- The machine operator and / or owner shall bear full responsibility for all damages caused by "unintended use" of machine.

- Any application not specified in this Manual will be deemed as "unintended use".

The reasonable and predictable misuse includes but not limited to:

o This Manual is not read and followed.

o Operate the machine under the condition that the Manual is missing, incomplete or there is no contract language on machine.

o Untrained or unqualified personnel operate the machine.

o Operate the machine ignoring the safety requirement applicable to the site.

o Reflect the action of operator.

o Transport of material and/or passengers.

o Traction load.

o Do not operate machine on driver's seat.

o Operate the machine when the ROPS is not fixed vertically in the place.

o The machine is not tightened when operating.

o Dismantle the bypass protection equipment (namely ROPS, seat belt, seat occupying switch, cover etc.).

o Execute the maintenance / repair task when engine is working or machine is not fixed.

o Operate the machine when technical condition of machine is not normal.

o Use and / or stop the machine (including but not limited to) exceeding the environment-limited area specified by this Manual:

- Temperature.

- Longitudinal and horizontal slope.

- Surface stability and bearing capacity.

- Possible submerged area (namely in water channel) etc.

o Move the machine under the condition lack of sufficient vision or poor vision for seat/cabin without the supervision of colleague.

o Conduct any of structural modification that may affect operation safety to machine or interchangeable equipment without the written approval and statement of manufacturer.

o The maintenance instructions and time interval is not followed.

o Skip and/or delay the maintenance and activity that may prevent or inspect the damage.

o Improper maintenance and repair.

o Do not use the unapproved spare parts.

o Unauthorized modified machine.

o Improperly use the high pressure cleaning agent, detergent and/or other equipment.

o The proper lashing materials are not used on transport vehicles for transporting machines.

o When stopping and storing machine, the unauthorized personnel shall not access

(Namely those are in tilting area, open area and ignition key is on the machine, opening cover etc.).

o Ignore the warnings displayed on indicator lights and instrument.

o Open flame or smoking when handling the combustible materials (namely when refilling)

2.7 Residual Risk

XCMG evaluates and designs the machine taking safety as the main task. Although it's impossible to predict all potential events, this Manual describes the current residual risks as far as possible when editing.

You can avoid risks and safely operate the machine relying on the instructions provided herein and considering the warning signs on machine labels.

Note: The following conditions may lead to residual risks:

√ The local occupational safety guidance, requirement and instructions are not followed.

√ Misuse or mis-operation, the contents herein are ignored.

√ Not familiarize or ignore the tandem roller reducing, steering gear stopping and slipping.

√ The machine transport is improper, inappropriate vehicles are used for transporting machine or lack of safety measures.

√ Hesitate to repair / replace the defected parts.

√ Operate the machine under the effect of drugs, alcohol or any other substances, and it may damage the capability of operator safely operating the equipment.

√ The personnel who cannot operate the machine conduct the operation (such as: the person who is too young, fails to machine operation, not trained or not educated).

√ Machine is not clean, channel equipment (step, handle etc.) is slipping, safety sign and operate component cannot be read or damaged.

√ When stopping, maintaining or repairing, the machine safety is poor.

√ The safety prevention measures on site are not sufficient.

√ The personnel protective equipment is not sufficient for use.

√ Smoke and/or open flame when handling the combustible materials (such as: oil refilling).

√ When engine is working, if conduct oil refilling, the oil or fuel may overflow to the high temperature surface.

The risk that may damage the machine and property in this area due to the following reasons:

√ Misuse or wrong operation caused by ignoring the contents herein.

√ The machine is running in an improper environment, namely:

- Vibration of hard surface.

- It works on the structure with the poor bearing capacity.

- It may damage the underground facilities.

√ The improper consumables, devices and spare parts are used.

√ Poor maintenance and / or repair.

Environmental risk reasons:

√ Misuse or mis-operation, the contents herein are ignored.

√ It includes the unnecessary noise and waste gas without need of engine operating.

√ The improper consumables, devices and spare parts are used.

√ Poor maintenance and / or repair.

√ The machine is cleaned in the area not conducting the activity and by the not environmental agent.

√ The internal treatment, degreasing and scratching of machine or spare parts (including consumables and liquid).

In case of the following condition, the service life of machine may be decreased:

√ Misuse or mis-operation, the contents herein are ignored.

√ The improper consumables, devices and spare parts are used.

√ Poor maintenance and / or repair.

√ Unnecessary operation (the engine operates unnecessarily for the long time).

2.8 Personnel Protective Equipment (PPE)

→ Get familiar with safety prevention measures on the construction site.

→ Please wear the PPEs as per requirements when operate any machines on site. Personnel protective equipment (PPE) includes:

- Correctly wear the safety helmet because the swinging, falling or splashing particles or components may lead to head injury.

- Correctly wear the goggles when contacting with corrosive and pressurized liquid, loose parts and dust.

- Correctly wear the respiratory protective equipment / breathing mask when the dangerous gas, vapor, smoke or dust occur in working area.

- Provide the hearing protection when work near the running machine.

o Do not decrease the driver's attention of environmental communication.

- Protective gloves.

- Safety shoes.

- Special protective clothing (it can prevent burn, chemical burn or scratching may occur in working place with radiation).

- Striking colorful or reflective clothing (when working at night or needing to be recognized by other personnel).

3. Safety Operation of Machine

3.1 Safety Procedure before Operation

Fig.3-1 : Getting Familiar with the Manual and Other Safety Instruction Applicable to the Site

Caution! Injury Risk!
Before operating or maintaining the machine, you shall:
→ Get familiar with Operation Manual of machine.
→ Master:
→ The safety instructions, rules and regulations applicable to the area / site where you are.
→ Install and provide the safety device on site.
→ Use the PPEs (personnel protective equipment) as per requirement in the area / site where you are.

→ Follow any other regulations, standards and laws applicable to the area and working site where you are.

→ Please wear the required PPEs (such as: reflective vest, gloves, goggles, safety shoes etc.) according to the condition of working place

→ It maybe needs to wear the anti-dust mask in dust area.

Fig. 3-2: Pay attention to and follow the effectively local regulations where you are

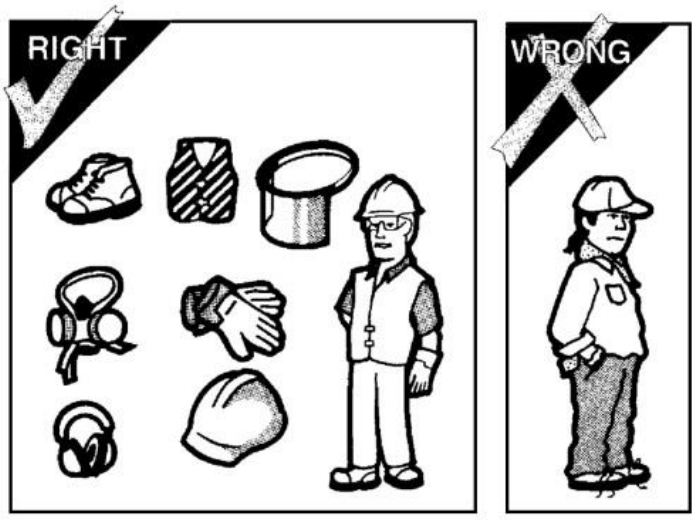


Fig. 3-3: it's suggested that you shall use the PPEs on site, which may be compulsory

→ Get familiar with safety prevention measures on the site.

→ If drive it on the public road, please comply with the local traffic regulations, including the driving rules and machine condition.

→ If there are other documents related to machine safety and operation, they must be attached into the Manual.

→ Make sure the safety-related system is operable and not damaged.

→ The ROPS and the frame structure shall not be damaged and free from rusting, deformation, bending or tearing and any of breakage or crack is prohibited.

→ This is also applicable to screw, bolts and nuts.

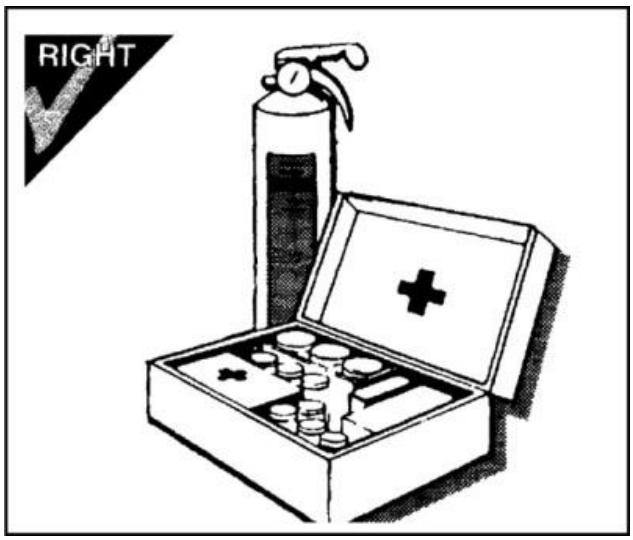


Fig. 3-4: Familiarize with Safety Prevention Measure (i.e. Emergency Telephone, Fire Extinguisher, First-aid Case and Defibrillator) on the Site

→ The screw and nut shall be tightened.

→ In case of any damage, please immediately contact with the XCMG service partner.

→ The seat belt and the lock shall be kept intact and normal working.

→ The safety switch of seat shall be kept with the normal function.

ⓘ When the safety switch of seat detects that operator leaves a moment, engine will be turned off and parking brake will be started.

Danger! - Overturning will lead to life risk!
− It's strictly prohibited trying to repair or modify the components related to ROPS.

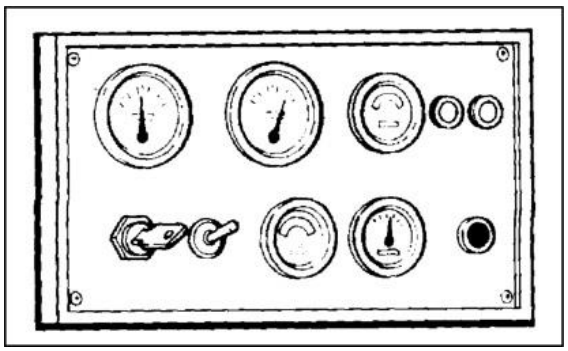


Fig. 3-5: Make sure all operation components are operable

→ Make sure all indicator lights can work normally and display with no error code.

→ All light units and sound and light warning indicators (such as horn, light beacon, setting of in-service light or seat belt indicator light (if installed)) are applicable as well.

→ Keep the machine clean and avoid the surface of pedal and control console in wet and smooth state.

→ Regularly maintain and check it according to figure and table.

3.2 Construction Site Safety

Danger! The working machine is a fatal risk!
- The brake distance of roller may be longer than other vehicles.

Caution! - Injury Risk!
- When roller is working, the pavement needs the sufficient stability. When starting vibrating, it needs more stable pavement structure.

Attention! Damage Risk!
- The excessive compacting will damage the pavement.
- For avoiding damaging the pavement when compacting, please make sure the operation parameters of machine match with the performance of compacting materials.

- Make sure the safety on the construction site.

- Any unauthorized personnel are limited by entering the construction site according to local regulations and best practices.

- Please notice the validity and actual condition of regulations when reading.

- In the area where you are and special construction sites, other different regulations may be applicable!

- Inquire your director, dealer or notice yourself because there is no further reference provided in this Manual.

- When the machine is not working and before starting the engine, please make sure there is no personnel within the radius of 1 meter around the machine.

- When the machine is operating, please make sure there is no person on the operating route for 10 meters in front of or behind the machine.

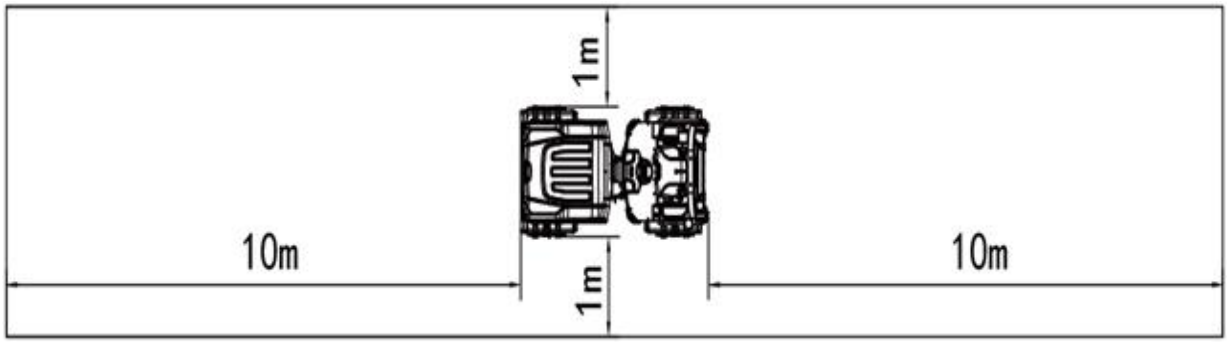


Fig. 3-6: Area Prohibiting Bystanders Entering

Fig. 3-7: Considering the impact of vibration on surrounding structure

3.3 Driver's Safety

Danger! - Life Risk!

- When operating machine, please fasten the seat belt!

Caution! Injury Risk!
- Do not adjust the seat when the machining is driving!

Attention! Attention - Safety Protection!
- When the pressure switch of seat is not activated, the engine will not be started or shut down!

Safely get on and off the machine by using stairs and handrail!

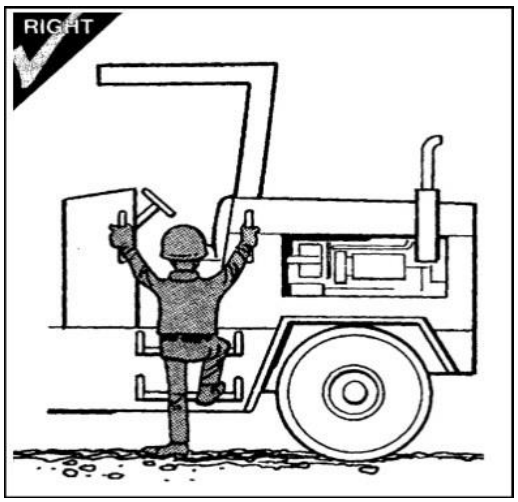


Fig. 3-8: Please Get On and Off Machine with a Caution

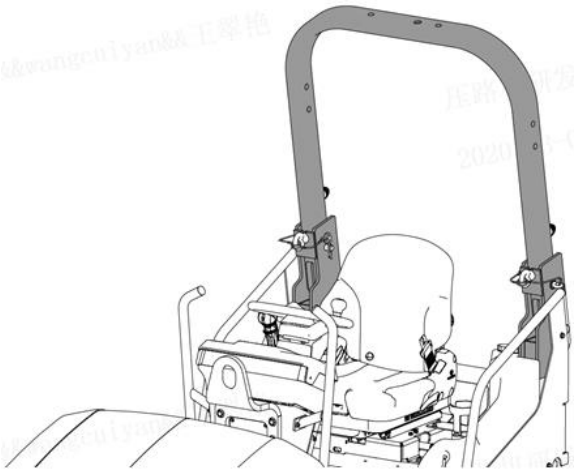


Fig. 3-9: ROPS structure must be placed in vertical position in all operation processes

ROPS is the safe equipment and shall be ensured for folding and fixing. All relevant locks, bolts and nuts shall be tightened.

→ If required, adjust the seat before starting engine according to needs.

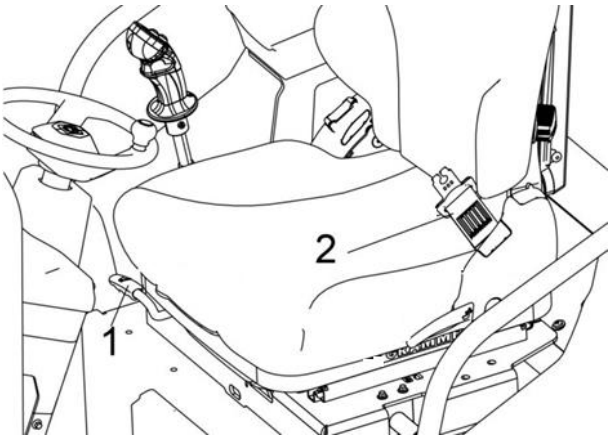


Fig. 3-10: Seat Adjustment

1 - Adjusting lever of front and rear seat

2 - Seat belt

Warning! - Life Risk!

- Do not jump off a machine!
- Leave safely!
- The injury risk may be added for jumping off the machine!

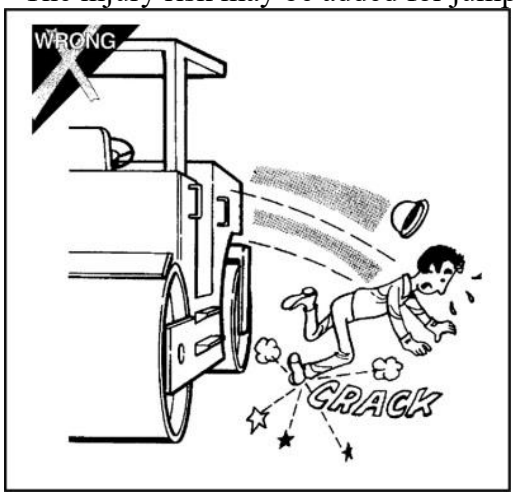


Fig. 3-11: Do not jump off the machine

- When operating the roller equipped with the ROPS, the seat belt must be fastened.

3.4 Safety Rules for Handling Battery

① It shall be especially careful to handle the starter battery or jump the starter.

① Please refer to Clause 4.8.2 and item 5.6.14.1 under the Clause 5.6.14 for specific instructions.

3.4.1 The auxiliary cables are used to bridge and start the engine

- Please refer to Clause 4.8.2 for relevant danger and safety procedure when using the auxiliary cables to bridge and start the engine.

3.4.2 Safety Label

① The following figures show all labels on machine.

→ Immediately replace any damaged or lost labels.

→ Find out the accurate list of spare part number in list of spare part of documents,

→ If you need any support, please contact with your XCMG service partner.

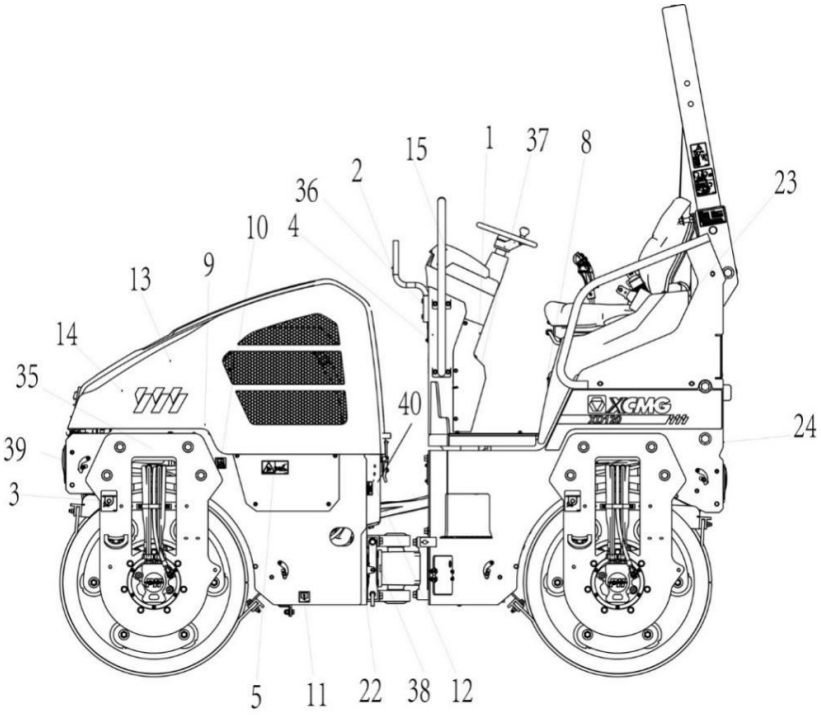


Fig. 3-12: see the table for specific label position

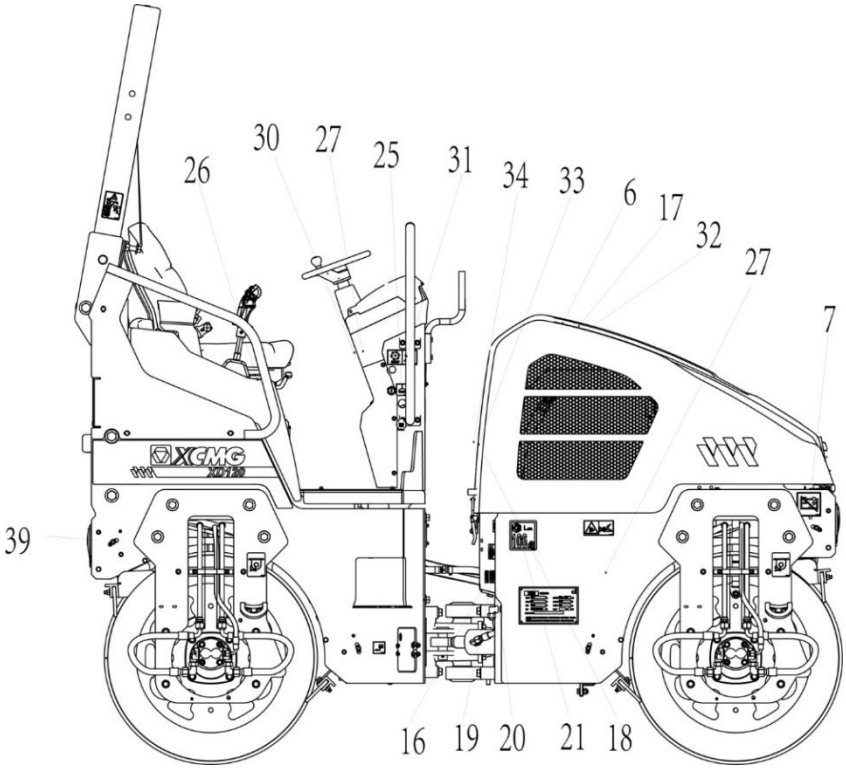
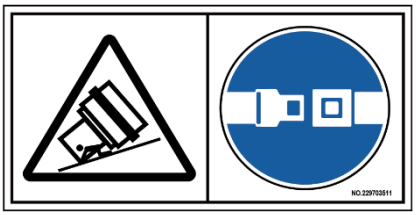
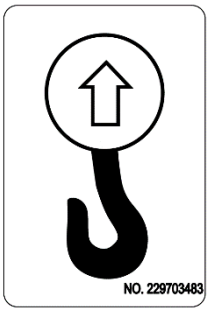
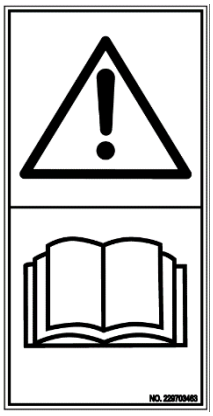
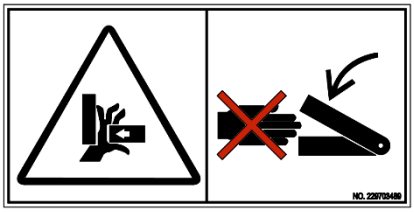
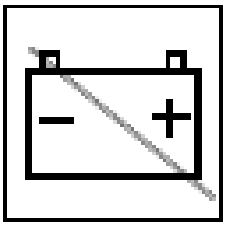
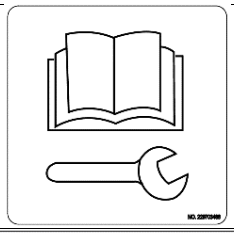
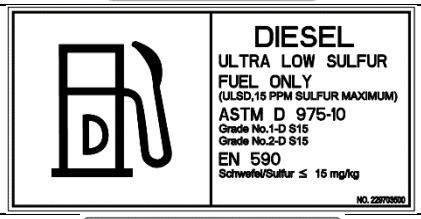
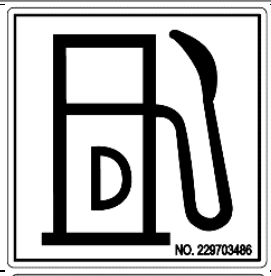
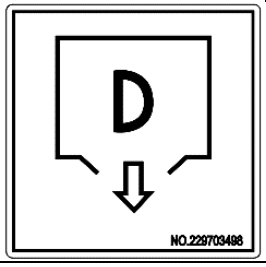
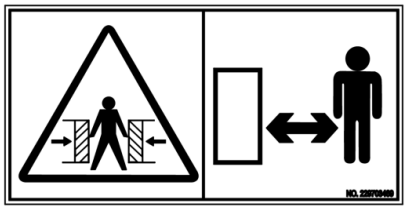
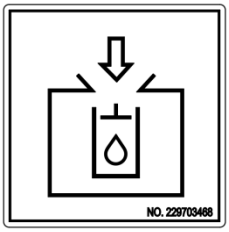
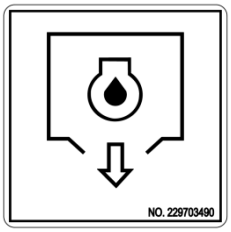
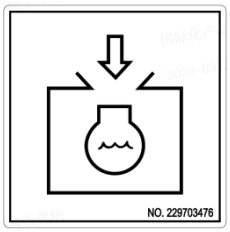
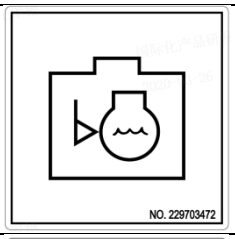
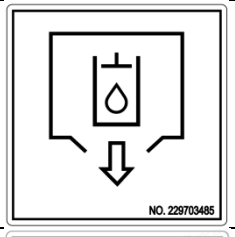
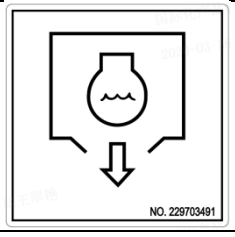
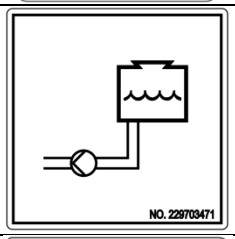
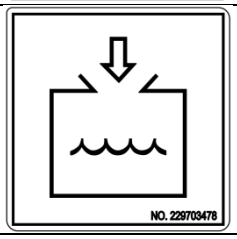
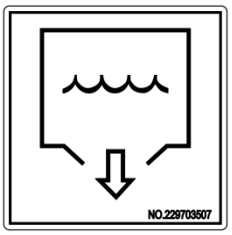
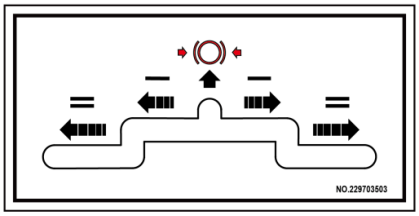
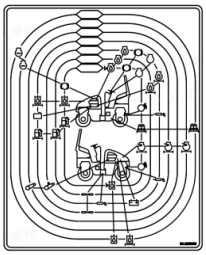


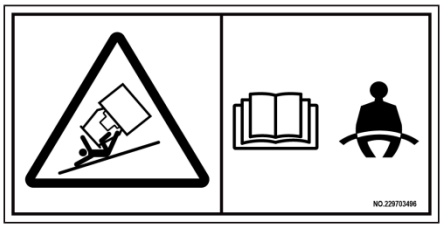
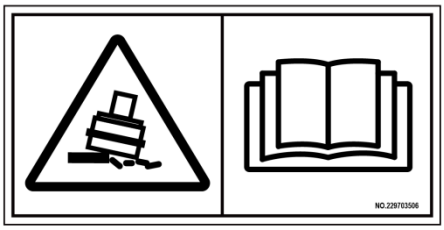
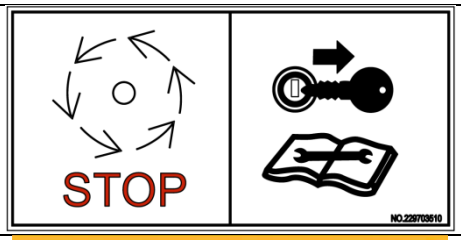
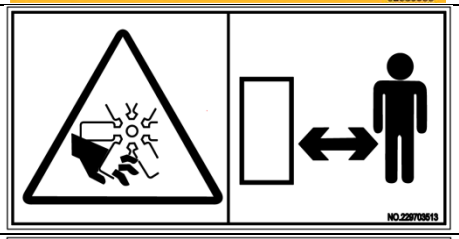
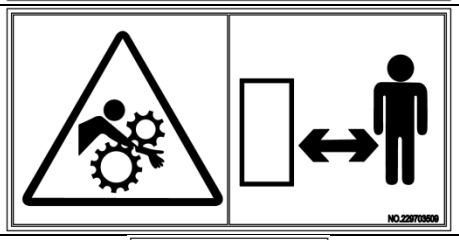
Fig. 3-13: see the table for specific label position

S/N	Label	Description
1		The seat belt must be used (only for ROPS) Part No.: 229703511 It shall be tightened when operating machine. When the machine is tilting, it may lead to serious injury and even death.
2		Lifting point Part No.: 22973483 It indicates the lifting lug for lifting, loading and unloading
3		Strapping point Part No.: 229703461
4		Read the Manual PN: 229703463 Special prompt! It prompts the driver shall carefully read the Manual before driving the machine
5		Crushing risk Part No.: 22973489 It indicates there will be the risk of crushing in case of moving parts. Please do not get close.
6		Hot surface Part No.: 229703487 The surface temperature is relatively high and there is the risk of scalding. Please do not contact. Keep away from combustibles.

7		Battery position 229703462 It indicates the position of battery
8		Toolkit PN: 229703488 It indicates the position of tool kit
9		It's the indication of fuel quality Part No.: 229703500 Only the sulfur-free oil conforming to EN 590 can be used otherwise it will damage the engine and post-treatment system of waste gas.
10		Fuel refilling indications Part No.: 229703486 It indicated the position of oil refilling port
11		It's the indication for oil outlet of fuel tank Part No.: 229703498
12		Crushing risk Part No.: 229703469 There is the risk of crushing for articulated steering joint of machine. Do not go in this area.
13		Hydraulic oil refilling port Part No.: 229703468

14		It's the indication for oil level of hydraulic oil Part No.: 229703504
15		Noise protective hood Part No.: 229703505 High noise level! It may damage the hearing so please wear the personnel protective equipment.
16		Engine drain outlet Part No.: 229703490 The drainage point for draining the lubrication oil of engine. It shall be considered for environmental protection when draining.
17		Filling inlet of anti-freezing solution Part No.: 229703476
18		Level of anti-freezing solution Part No.: 229703472
19		Hydraulic oil drainage port Part No.: 229703485 The drainage point for draining the lubrication oil of engine. It shall be considered for environmental protection when draining.
20		Drainage outlet of anti-freezing solution Part No.: 229703491 Drainage outlet of engine anti-freezing solution

21		Noise label Part No.: 229703477
22		Position of water sprinkling pump Part No.: 229703471
23		Filling inlet of water sprinkling tank Part No.: 229703478
24		Drainage outlet of water sprinkling tank Part No.: 229703507
25		12V power socket Part No.: 229703502
26		Propel lever label Part No.: 229703503
27		Regularly maintain the meter Part No.: 229703470

28		The machine may be tilted and the seat belt must be fastened Part No.: 229703496
30		There is the risk of tilting so please operate it as per the requirements of Manual Part No.: 229703506
31		Pull out ignition key and rotate the component 229703510
32		Hot surface
33		Fan 229703513 Shearing Risk
34		V-belt 229703509 Risk of Getting Stuck
35		Please do not use it as the hoisting point 229703501

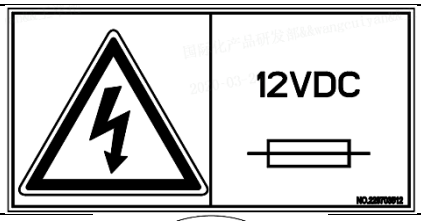
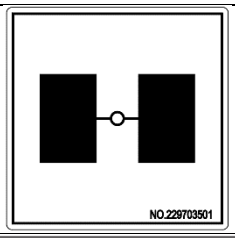
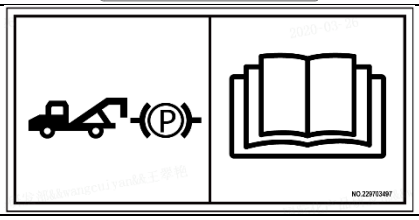
36		Overload protection Part No.: 229703512
37		It's strictly prohibited using the high pressure gun for this attachment here
38		Articulation lock Part No.: 229703501
39		Please read the instructions before towing Part No.: 229703497

Table 3-1: Details of Label on Machine

3.4.3 Storage Box for Manual

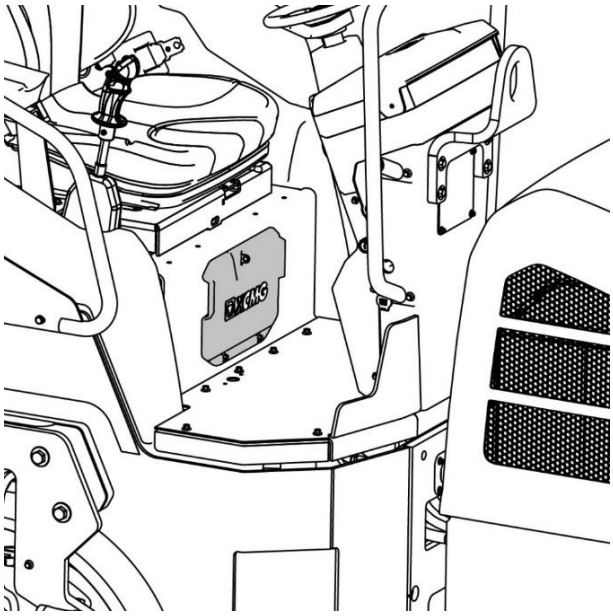


Fig. 3-14: Storage Box for Manual.

ⓘ The Manual is placed inside the storage box here to make sure driver can check it at any time.

- Attention! - Please pay attention to the availability of Manual
- If the document storage box of machine is locked, please hand over the key and ignition key to next user.

3.4.4 Position of Placing Fire Extinguisher

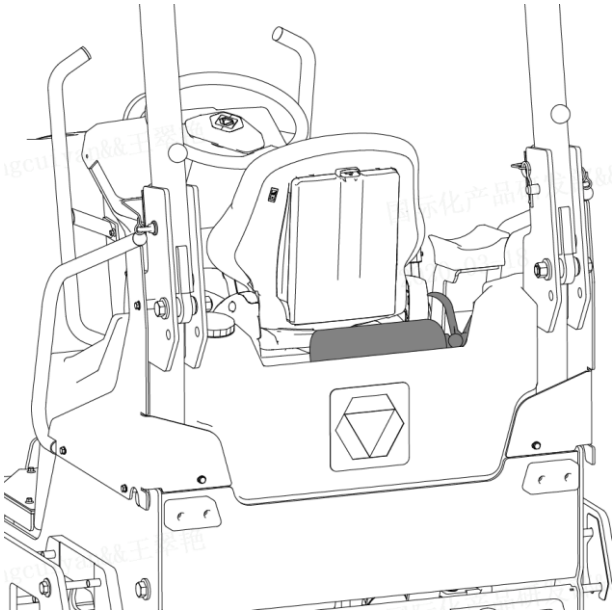


Fig. 3-15: Position of Placing Fire Extinguisher (Fire extinguisher was not delivered when machine left the factory)

- Store the shaft / tank of 1.5L fire extinguisher behind the machine.
- Highly recommend preparing fire extinguisher on the machine at any time.
- Understand the requirement and availability in the place where you're.

Attention! Check the protective device!
- Make sure the used fire extinguisher conform to the local requirements where you're.
- Comply with the requirement of supplier.
- Before using the machine, read and follow the instructions of fire extinguisher.
- Store it joint with the Manual.

4. Operation

4.1 Equipment Overview:

4.1.1 Introductions

① The Manual is applicable for the products with different models.

The following figures are only for schematic diagrams but not applicable for each machine. Fig. 4-1 shows the main components of the machine.

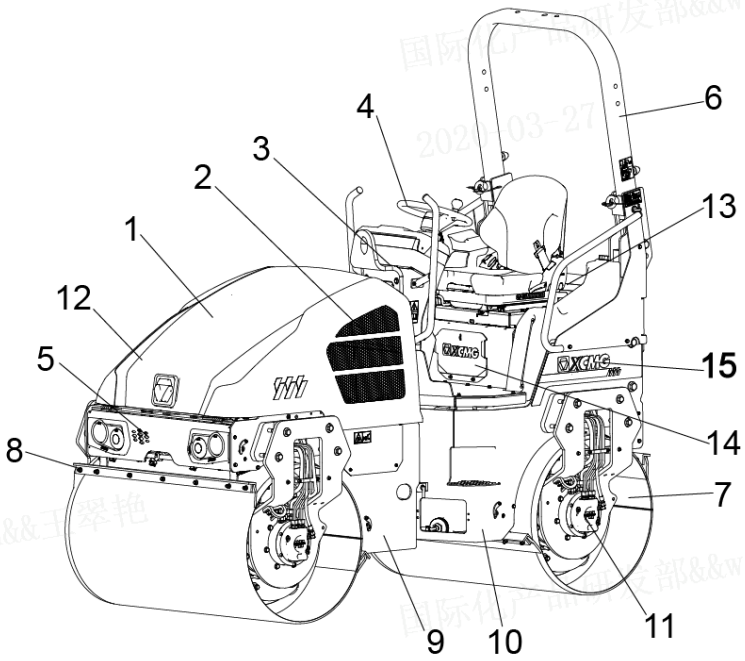


Fig. 4-1: Main Components of Machine

1. Hood
2. Engine and main hydraulic components
3. Steering system, include the electric circuit
4. Steering wheel
5. Horn
6. ROPS
7. Vibratory drum
8. Scraper
9. Assembling of front frame
10. Assembling of rear frame
11. Hydraulic driving and vibratory system
12. Battery installation
13. Water sprinkling tank
14. Took kit
15. Machine label

4.1.2 Introduction of Basic Function

The basic function and principle of the machine is shown as table below:

Driving system	Variable pump and piston motor controlled by manual servo constitute the traveling driving system. The output and displacement of hydraulic oil can be adjusted through controlling the position of handle to realize the moving forward and backward of continuously variable transmission (CVT).
Brake system	The static hydraulic driving brake and auxiliary / parking brake are controlled by operation handle.

Power system	The water-cooled four-stroke diesel engine is adopted to meet the China III emission.
Vibration system	The hydraulic vibratory system is equipped with the open circuit that is composed of gear pump, gear motor and separable vibration valve set. It can realize the separable vibration and meet the compacting requirement under different working conditions.
Steering system	The hydraulic articulated steering has the relatively large steering angle and swing angle.
Crab-walk system	The machine is the adjustable crab-walk mechanism and realizes the left and right positions.
Water spray system	The water sprinkling tank with the large volume can sprinkle the water for multiple-gear intermittent pressure and the time interval for water sprinkling can is the multi-gear adjustable.
Mud scraper system	The polyurethane adjustable mud scraper is anti-wear.
Electric system	12V, the working state indication and fault alarm system of key spare parts are equipped with the emergency brake switch.
Dashboard	The multi-functional dashboard includes the monochromatic indicator and LED state indicator light.
Seat	The comfortable control seat is equipped with seat belt.

Table 4-1: Function Overview of Machine

4.2 Operation Environment

4.2.1 Operation Limit

Caution! - Operation limitation of machine!
- Follow the operation environment and operation limitation of the machine.

4.3 Introduction of Display and Control Component

4.3.1 Description of Control System

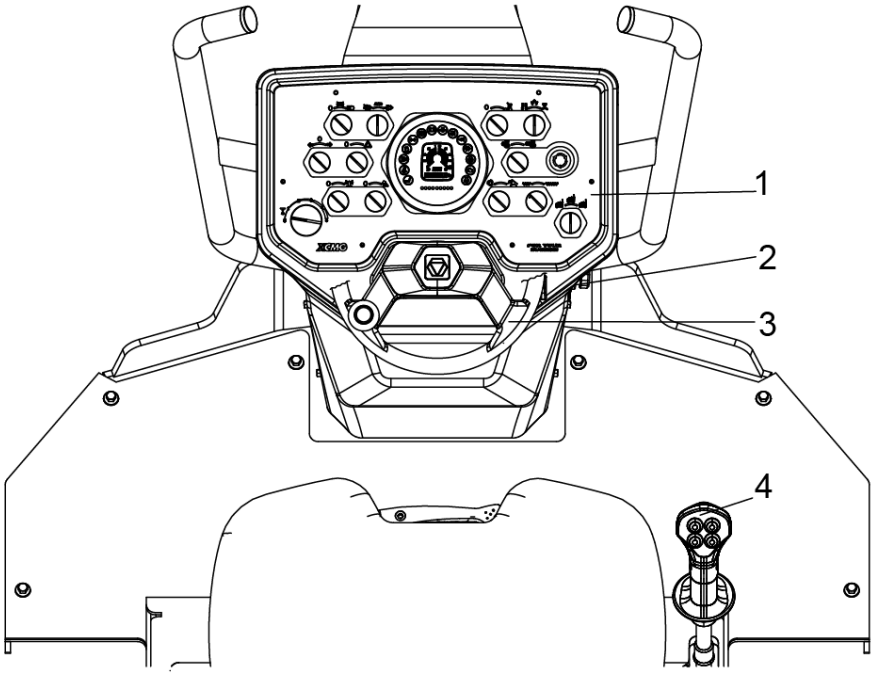


Fig. 4-2: Diagram of Control System

1 - Dashboard

2 - Key starting switch

3 - Steering wheel

4 - Travelling propel lever

4.3.2 Dashboard

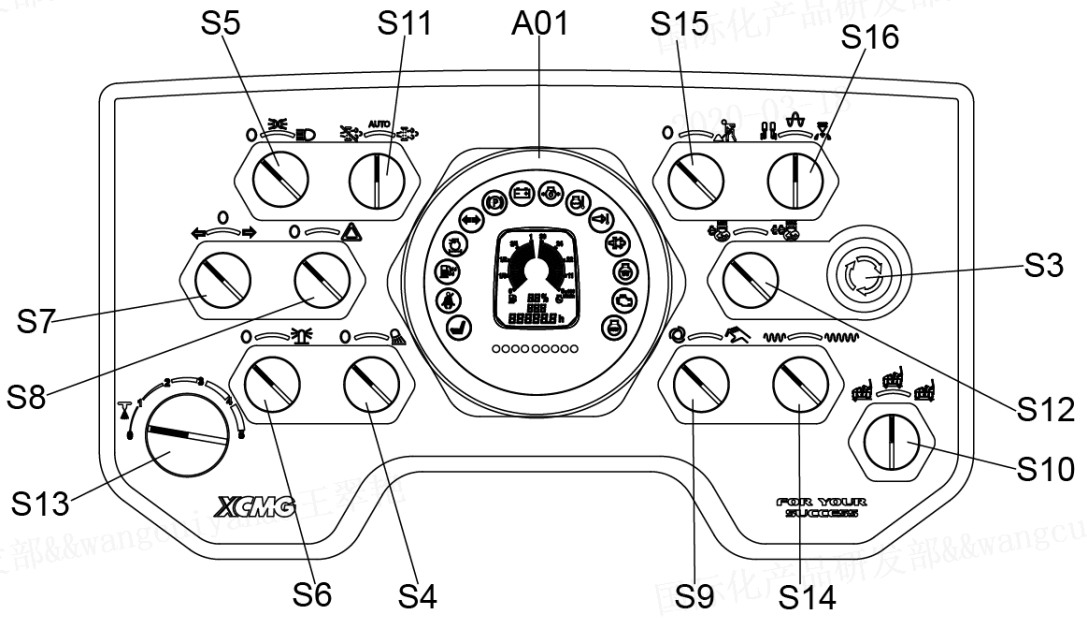


Fig. 4-3: Diagram of Dashboard (See Table 4-2)

The control component is on the dashboard and details are shown as below:

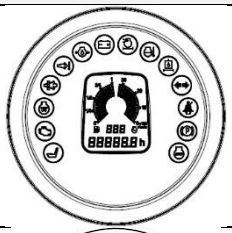
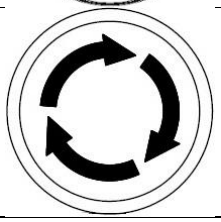
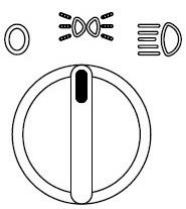
S/N	Switch	Symbol	Function
A01			**Combination dashboard** It indicates the state information of roller component.
S3			**Emergency braking switch** Parking brake Emergency stop of roller

Table 4-2a: Dashboard Component

S/N	Switch	Symbol	Function
S4			**Work light switch** Turn on the optional work light. O Work light (optional) on ROPS O Drum sidelight
S5			**Driving light switch _ width light** Turn on the roller width light.
			**Driving light switch _ driving light** Turn on the roller driving light.

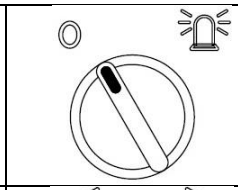
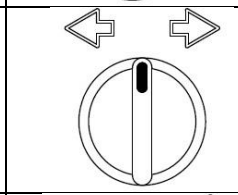
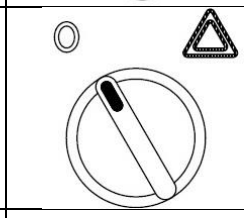
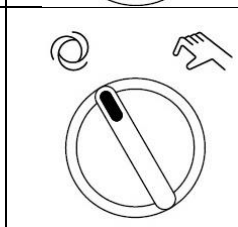
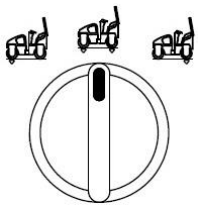
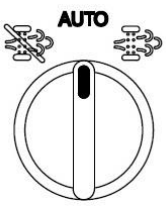
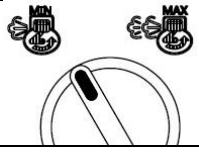
S6			**Rotary beacon** Turn on the rotary alarm light (optional).
S7			**Steering lamp switch** Turn on the steering indicator light of roller
S8			**Warning light switch** Turn on the roller warning light
S9			**Vibration mode selection switch** - automatic vibration: the vibration function of the roller is automatically controlled. **(The function is not applicable to this machine)**
			**Vibration mode selection switch** - manual vibration: The vibration function of the roller is manually controlled. **(The function is not applicable to this machine)**

Table 4-2b: *Dashboard Component*

S/N	Switch	Symbol	Function
S10			**Vibratory drum selection switch - front drum:** Only the front drum is vibrating.
			**Vibratory drum selection switch - front and rear drum:** Both front and rear drums are vibrating.
			**Vibratory drum selection switch - rear drum:** Only the rear drum is vibrating.
S11			**Regeneration switch** Prohibit / cut off the engine DPF regenerating. **(The function is not applicable to this machine)**
		AUTO	**Regeneration switch** Engine DPF is the automatically regenerating. **(The function is not applicable to this machine)**
			**Regeneration switch** Parking / compulsory engine DPF generates. **(The function is not applicable to this machine)**
S12			**Engine speed switch** Engine idles.

			**Engine speed switch** Working speed of engine.
S13			**Control switch of water sprinkling** 0 - turn off water sprinkling 1 - the longest interval for water sprinkling 4 - the shortest interval for water sprinkling 5 - continuous water sprinkling

Table 4-2c: Dashboard Component

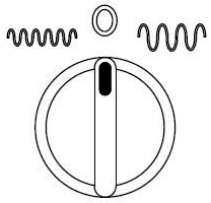
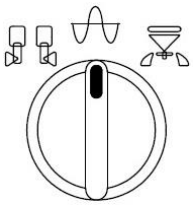
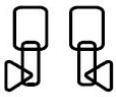
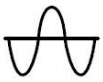
S/N	Switch	Symbol	Function
S14			**Vibration frequency selection switch - high frequency vibration** Select the roller high frequency vibration.
			**Vibration frequency selection switch - low frequency vibration** Select the roller low frequency vibration.
S15			**Working mode switch** Start the working mode. The operation (such as vibrating, water sprinkling etc.) can be made under the working mode.
S16			**Working unit selection switch - edge cutter** Start the edge cutting function of roller. (Optional)
			**Working unit selection switch - vibrating** Start the vibrating function.
			**Working unit selection switch - sand distributor** Start the sand distributing function of roller. **(The function is not applicable to this machine)**

Table 4-2d: Dashboard Component

4.3.3 Display and Instructions of Combined Instrument

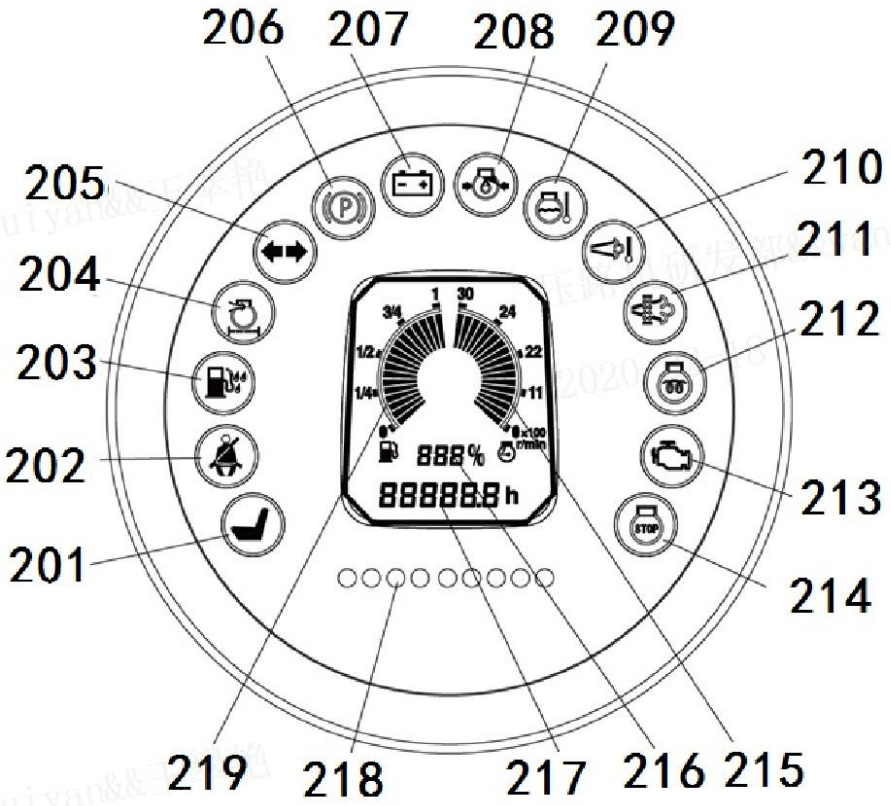


Fig.4-4 : Layout of Instrument Indicator Light (see the table)

The function of instrument indicator light is shown as follows:

S/N	Symbol of Indicator Light	Description
201		**Seat indicator light (the function is not applicable to this machine)** If the indicator light is on, it indicates that driver does not sit on the driver's seat correctly.
202		**Indicator light of seat belt (the function is not applicable to this machine)** If the indicator light is on, it indicates that driver does not fasten the seat belt or not fasten it correctly.

Table : Instrument Indicator Light

S/N	Symbol of Indicator Light	Description
203		**Indicator light of oil and water separator** If the indicator light is on, it indicates the water in oil and water separator is excessive. **(The function is not applicable to this machine)**
204		**Engine air intake indicator light** If the indicator light is on, it indicates the air filter of engine is blocked. **(The function is not applicable to this machine)**
205		**Steering indicator light** If the indicator light is on, it indicates the steering indicator light has been turned on.
206		**Parking brake indicator light** If the indicator light is on, it indicates the roller has braked.
207		**Power supply indicator light** If the indicator light is on, it indicates the battery is under using.
208		**Machine oil pressure alarm light** If the indicator light is on, it indicates the oil pressure of engine is low.
209		**Engine water temperature indicator light** If the indicator light is on, it indicates the water temperature of engine is high.

Table : Instrument Indicator Light

S/N	Symbol of indicator light	Description
210		**Regeneration temperature indicator light** If the indicator light is on, it indicates the temperature of waste gas is high during the process of engine DPF regenerating. **(The function is not applicable to this machine)**
211		**Regeneration indicator light** If the indicator light is on, it indicates the engine DPF must regenerate immediately. **(The function is not applicable to this machine)**
212		**Preheat indicator light** If the indicator light is on, it indicates the engine is under the preheat stage before starting.
213		**Engine fault indicator light** If the indicator light is on, it indicates the engine fails.
214		**Engine stop indicator light** If the indicator light is on, it indicates the engine needs and has shut down already.
215		**engine speed meter** It indicates the current speed of engine.

Table 4-4c: Instrument Indicator Light

S/N	Symbol of indicator light	Description
216		Engine post-treatment life & engine warning indicator (FMI). It represents 0%, 50% and 100%. When it displays 100%, DPF needs regenerating immediately. **(The function is not applicable to this machine)**
217		**Hour meter & engine warning indicator light (SPN)** The hour meter will display the engine fault code when the engine fails. It indicates the fault code is suitable for EU V emission engine. The fault code is suitable for EU V emission model.
218		**ADVib Indicator Light (Optional)** It indicates the compactness of compacting materials under the working state. The more lights are turning on indicates the higher compactness will be higher. The red LED light at left side indicates the excessive compactness.
219		**Fuel liquid level indicator** It indicates the current fuel level.

Table 4-4d: Instrument Indicator Light

Caution! System Warning!

If one of the following indicator lights is turned on and keeping, stop the roller under the safe state and immediately turn off the engine:

- Indicator light of engine fault

- Indicator light of oil pressure

- Parking brake warning

ⓘPlease contact with XCMG service engineer.

4.3.4 Propel Lever

Some important functions of propel lever can be controlled by right hand.

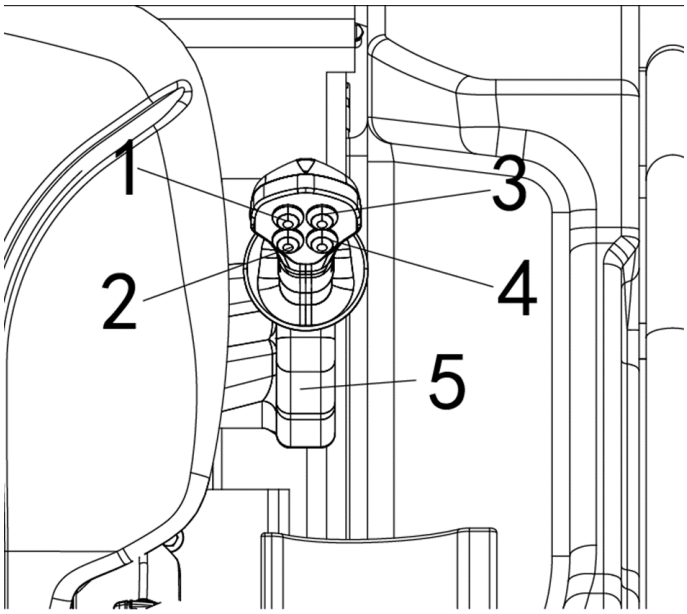


Fig. 4-5: Multi-functional Propel lever (see the table 4-5a and b)

1. Vibration button
2. Horn button
3. Control button of water sprinkling
4. Standby button
5. Propel lever lever

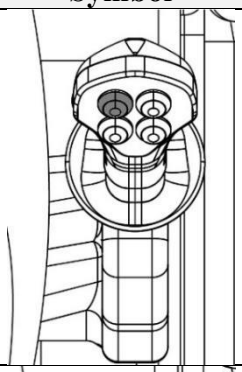
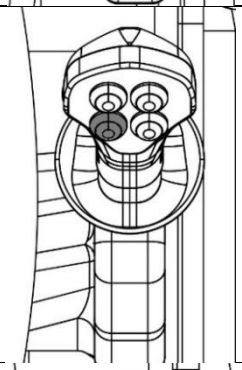
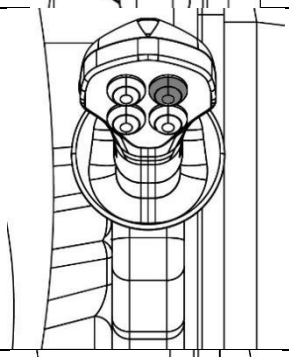
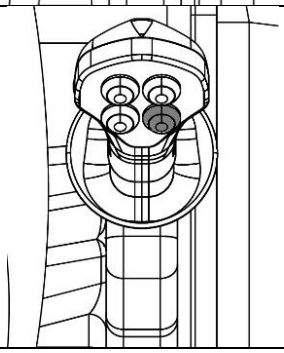
S/N	Symbol	Function
1		**Vibration button** Under the working mode, press it to start or stop the vibrating function.
2		**Horn button** Press it and the horn will make sounds.
3		**Water sprinkling button** Press it and the function of water sprinkling will be activated.
4		Standby button

Table 4-5a: Description of Propel Lever Function

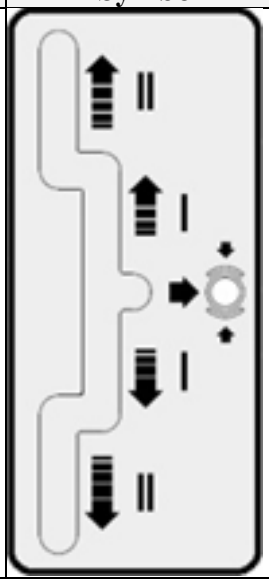
S/N	Symbol	Function
5		**Propel lever lever** When the propel lever keeps in middle position, it will automatically move outward to the parking brake position, and vibratory drum is under the parking brake. When the propel lever leaves the position of parking brake, the engine will operate and release the parking brake.

Table 4-4b: Description of Propel lever Function

4.3.5 Switch of Power Supply

Attention! The battery discharge will lead to battery damage!
- Before starting the machine, please turn on the switch of power supply.
- Rotate the switch to "ON" position to operate the machine.
- When stopping the machine, please turn off the switch of power supply.

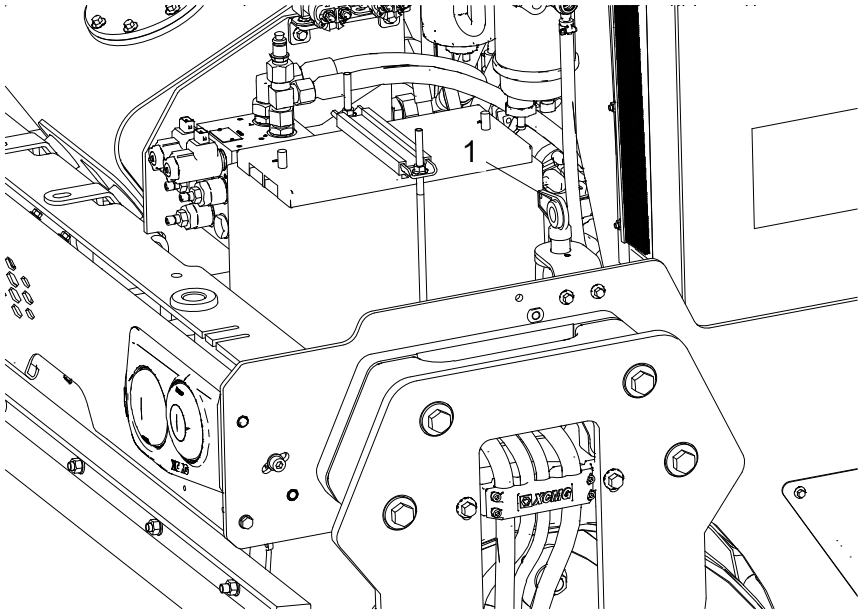


Fig. 4-6: The switch of power supply is under the engine hood and on the left side of battery

4.4 Articulation Lock

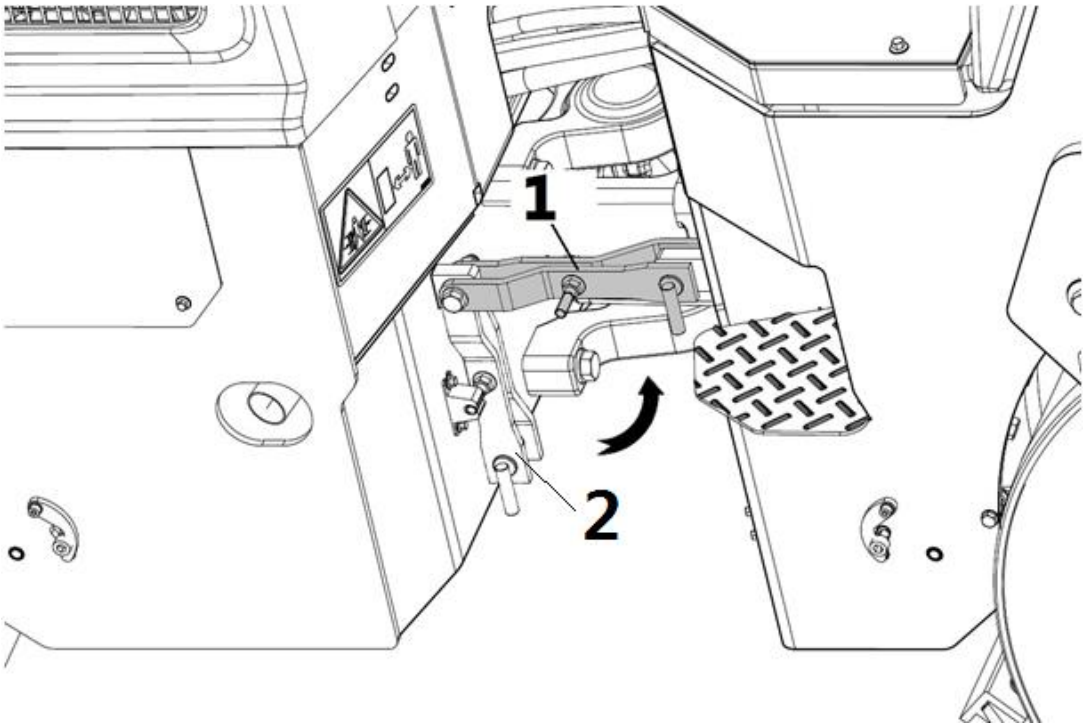


Fig. 4-7: Articulation Lock

The articulation locking rod can be fixed on the following two positions.

- Position 1 - Locking: the cross bar connects the front and rear frame. When fixing the articulation lock on the "Locking" position, the fixed pin will be totally pushed into it and the rod will face downward.

- Position 2 - Starting: the cross bar is fixed on the front frame.

Attention! Machine Damage Risk!
- Before operating the machine, please open the articulation lock.
- When hoisting, transporting or stopping the machine, please keep the articulation lock at the locking position.

4.5 ROPS - Folding / Unfolding Use

Danger! Pressing Risk!
Crushing Risk!
- If ROPS is not fixed on the vertical position, please do not operate the machine!
- It's strictly prohibited operating the machine equipped with the ROPS under the condition of not fixing!

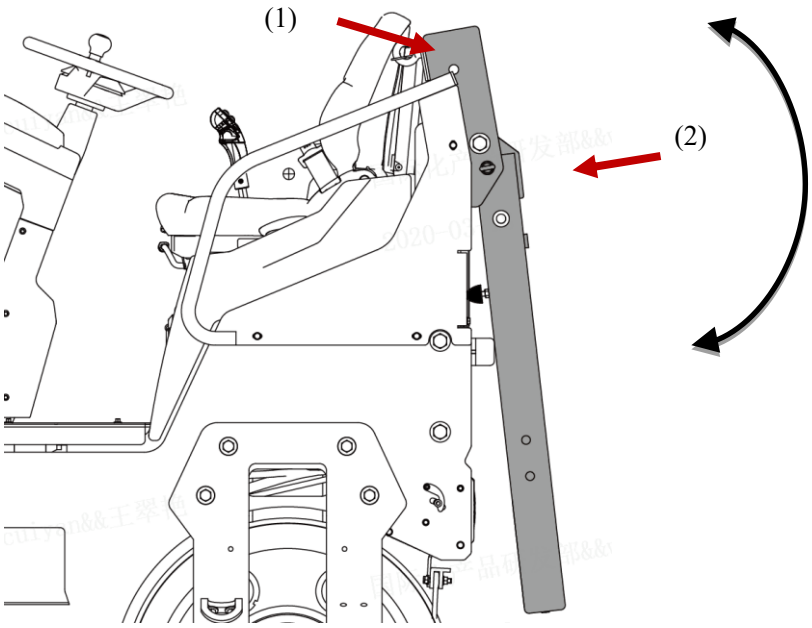


Fig. 4-8: ROPS is in the folding position and convenient for transporting

4.5.1.1 ROPS Vertical Installation

- The ROPS shall be installed in vertical state. Please execute the following operations for both sides of ROPS:

→ Unscrew the eye bolt (1) and dismantle the fixed pin (2) (see the Fig. 4-9).

→ Totally stand the ROPS.

→ Re-insert into the fixed pin (2) to fix the ROPS in vertical position.

→ Insert it through the bolt to fix the fixed pin (2) (see the Fig. 4-10).

→ Screw the eye bolt (1) to ROPS.

Danger! Crushing Risk!
Crushing Risk!
- Use the fixed pin (2) and eye bolt (1) to fix the machine and ROPS together.
- If those components are not fixed correctly, please do not operate the machine!

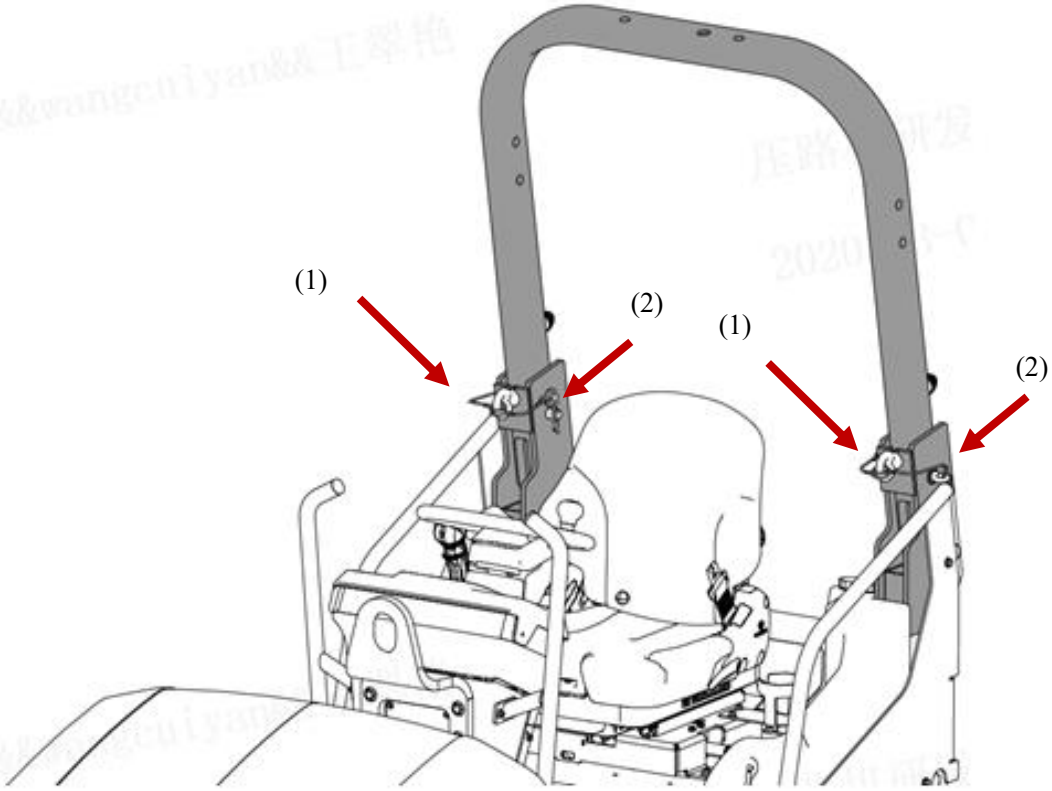


Fig. 4-9: the ROPS must be fixed vertically in all operation processes

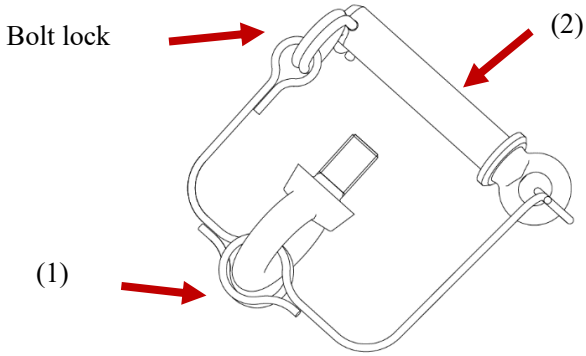


Fig. 4-10: ROPS Fixed Pin

4.5.1.2 Fold the ROPS downward, convenient for transporting

When folding the ROPS, please execute the step for both sides of ROPS
(Reference figure: Fig. 4-8, 4-9 and 4-10)

→ Loosen the eye bolt (1) at both sides of ROPS.

→ Dismantle the fixed pin (2) and then fold the ROPS backward.

→ Re-install the fixed pin and eye bolt to keep the folded ROPS in the proper position, as shown in Fig. 4-8.

Danger! Life Risk!
- If any of ROPS part damaged, please do not operate the machine!

Caution! Injury Risk!
- There is the injury risk on head, arm or fingers in case of folding the ROPS 3!
- Do not enter the ROPS rotating range .

Attention! Rotating may damage the machine!
- If any of ROPS part damaged or lost, please use the part certified by manufacturer and immediately repair it!

4.6 Lighting

4.6.1 Light Layout - Standard Configuration

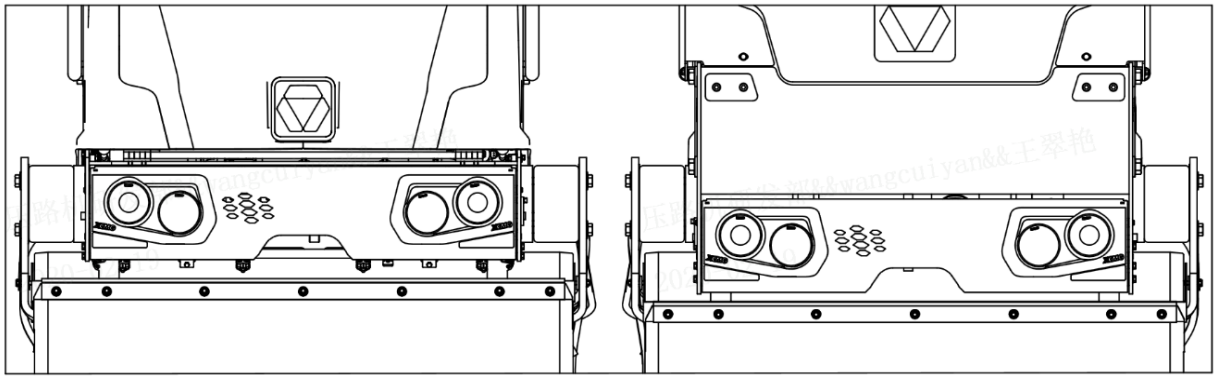


Fig. 4-11: Light Layout (Front and Rear) on Roller

- The light is equipped on the front and rear frame of standard model.

Attention! Accident Risk!
- When driving on public road, please keep the driving light turning on constantly.

4.6.2 Work Light (Optional)

- The work light is optional on ROPS.

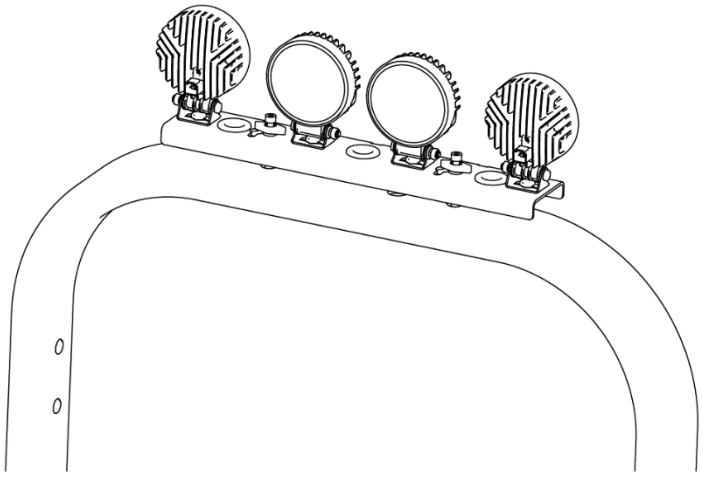


Fig. 4-12: Optional Work Light on ROPS

4.6.3 Light Switch

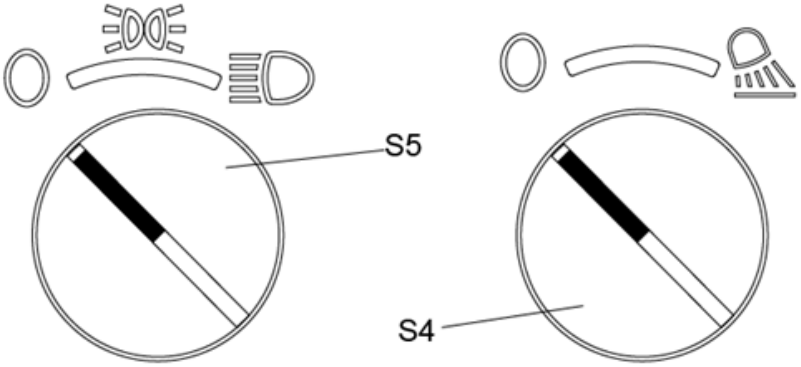


Fig. 4-13: Light Switch: S5 - driving light switch; S4 - work light switch

4.6.3.1 Driving Light Switch

- Switch S5 (driving light) provides three positions: OFF (left), width light (middle) and driving light (right).

- When ignition key switch is at "ON", those lights will work.

When S5 rotates to the correct position, the front and rear red lights will be on and the reversing light at the reversing position of control lever will be on.

Attention! Battery Consumption!
- For prevent the battery from excessively consuming, please turn off all lights when starting the engine as far as possible.

4.6.3.2 Work Light

Caution! Injury Risk!
- Please do not drive the machine on public road under the condition of the traffic lights not connecting.

- When the machine is under working mode, turn the switch (S4) of work light to the right and all optional work lights will be turning on.

4.6.3.3 Steering Indicator Light

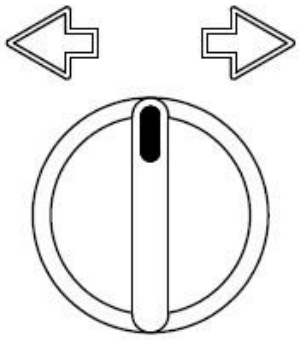


Fig. 4-14: Steering Indicator Light Switch (Switch S7).

- When driving on the accessible public area and before steering, choose the turning direction by using the switch S7.

- When steering ends, turn the switch S7 to middle position.

4.6.3.4 Warning Switch

- If there is the potential danger existing, please turn on the switch S8 to immediately activate warning indicator light (Fig. 4-3).

Fig. 4-15: Warning Indicator Light (S8)

ⓘ Even not turning on the ignition switch, the warning indicator light is still available.

Caution! Injury Risk!
- When engine is not operating, the battery will be consumed if using the warning indicator light and rotating alarm light!
- If the machine is under the stopping state, please make sure the instrument box is covered to avoid mis-operation.

Attention! Warning Light Fault!
- If the main switch of power supply is turned off (see the Fig. 4-6), the warning indicator light will not work.
- When the machine is not in the visible range, please make sure the unauthorized personnel shall not operate the machine.

4.6.3.5 Rotating Alarm Light (Optional)

→ If there is the potential danger existing, please turn on the S6 switch and immediately turn on the rotating alarm light. (See the Fig. 4-3).

Fig. 4-16: Rotating Alarm Light Switch (S6).

ⓘ Even the switch of ignition key is not turned on, the rotating beacon light will still work.

4.6.3.6 Indicator Light of Keeping Control (Optional)

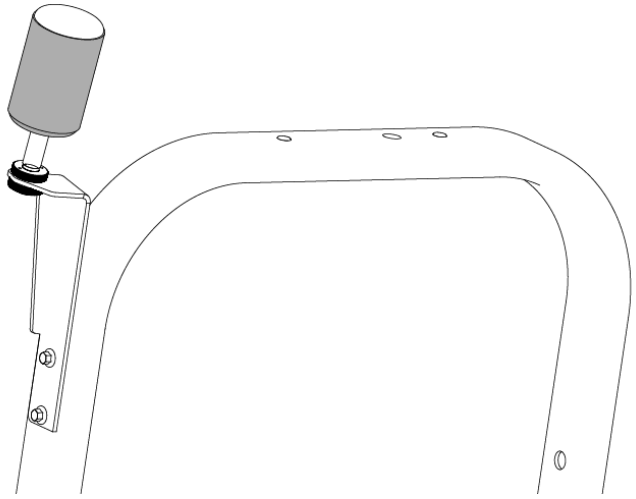


Fig. 4-17: Indicator Light (Optional) on Seat Belt.

When the key switch is at "ON" and seat belt is fastened, the optional indicator light of keeping control will be turning on.

4.6.3.7 Drum Sidelight (Optional)

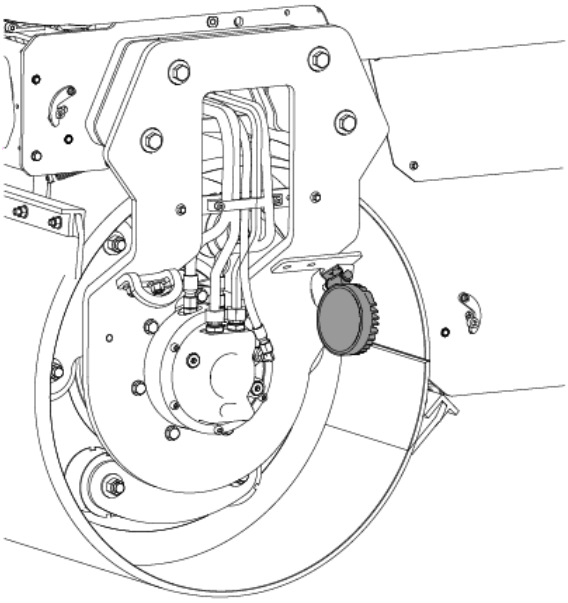


Fig. 4-18: Drum Sidelight (Optional)

ⓘ The drum sidelight (optional) is controlled by work light switch.

4.7 Seat

Danger! Declare Risk!
- When operating the machine, please fasten the seat belt!

4.7.1 Seat Adjustment

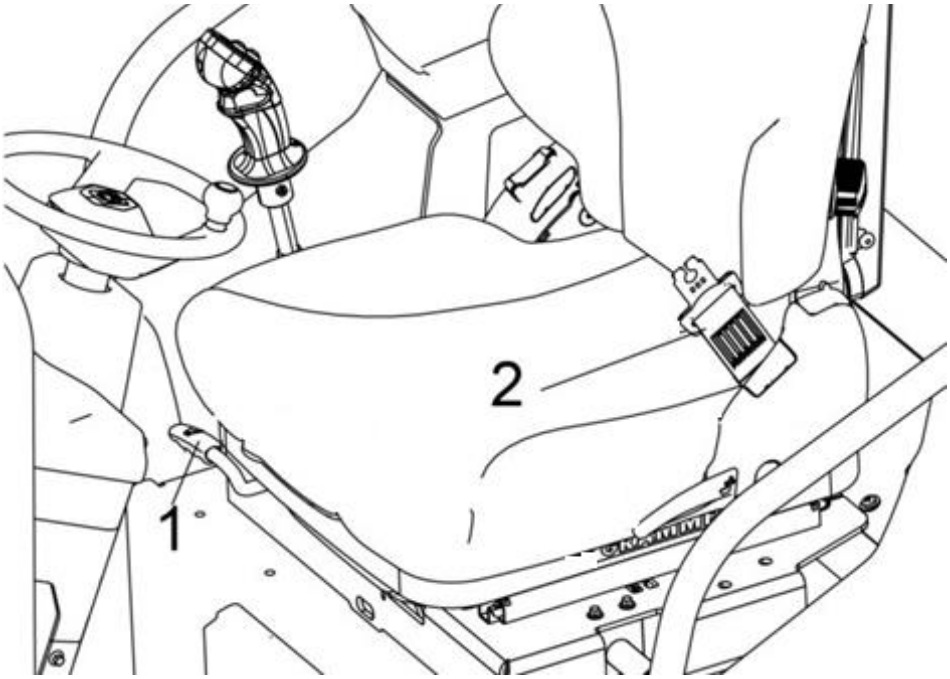


Fig. 4-19: Seat

1. Front and rear seat adjustment lever

2. Seat belt

→ The comfort and safety can be improved when operating machine through adjusting the seat as per requirements.

→ The seat can be unlocked through the control lever (1) shown in Fig. 4-19, and the front and rear position of seat can be adjusted.

- The seat belt of roller equipped with ROPS must be fastened.

4.8 Engine Starting and Stopping

4.8.1 Engine Starting

Warning! Life Risk!
- Before operating the machine, please familiarize with the Operation Manual.

- The roller is equipped with the ROPS therefore before starting the engine and in the whole operation process, you must sit on the driver's seat and fasten the seat belt.

- The seat is equipped with the seat pressure switch which can make sure the engine will not start under the condition of seat not in service and even will not stop.

Before starting the engine, please make sure:

- The main switch of power supply has been turned on.
- The emergency brake switch (1) has been turned on.
- Accelerator is at the low idle gear.
- Propel lever is at the (P) gear.

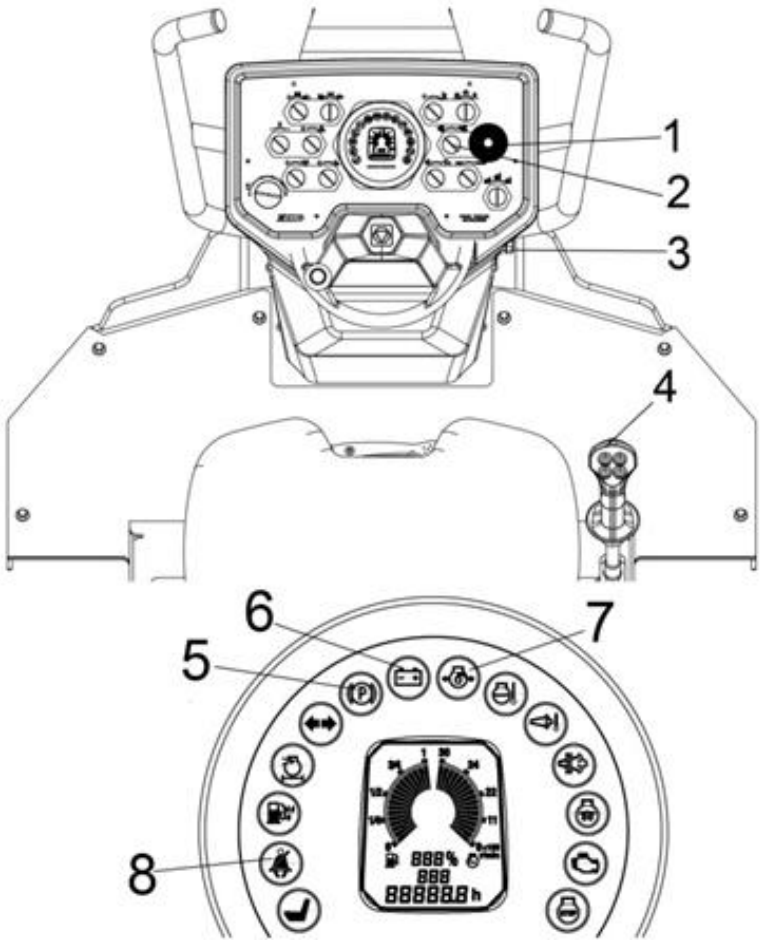


Fig. 4-20: Engine Starting

1. Emergency brake switch (S3)

2. Accelerator switch (S12)

3. Starting key switch

4. Traveling handle

5. Parking brake indicator light (206)

6. Power supply indicator light (207)

7. Oil pressure indicator light (208)

8. Seat occupying switch indicator light (202)

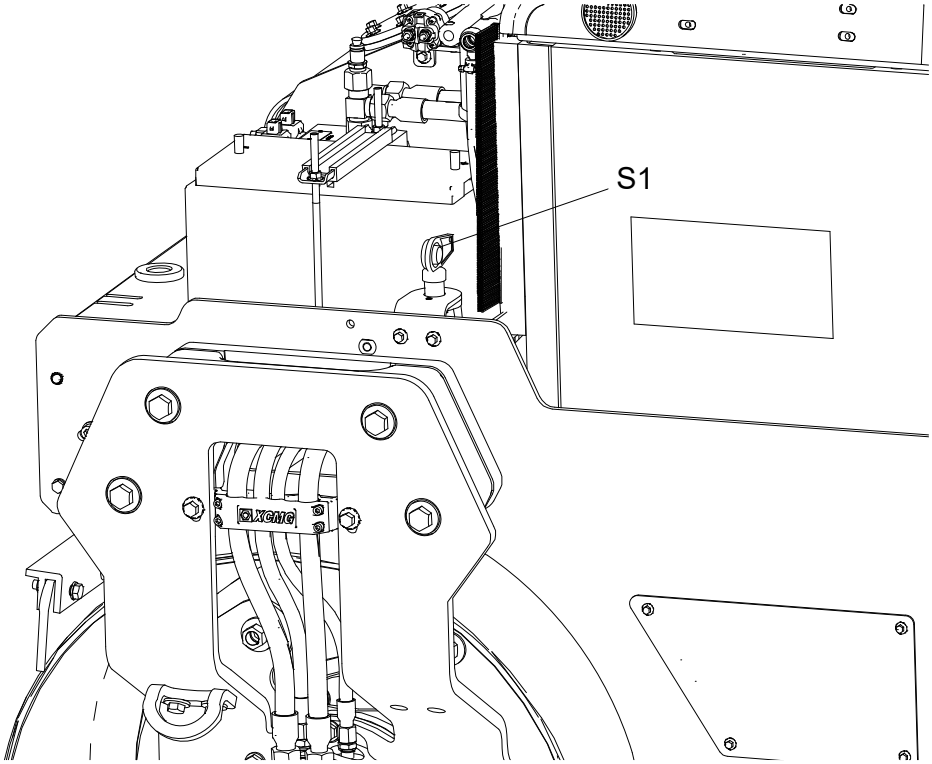


Fig. 4-21: Main Switch of Power Supply

Engine starting

1. Insert the starting key and rotate it to the first position ("ON") clockwise.

① When checking the instrument, please make sure all indicator lights and equipment (LED and LCD) are activated at least for 2s.

① The "Low Engine Oil Pressure" (7), "Battery Indicator Light Under Charging" (6) and "Brake Indicator Light" (5) will light up.

① All residual indicator lights shall light off and the display shall indicate the current fuel level and engine working time in current.

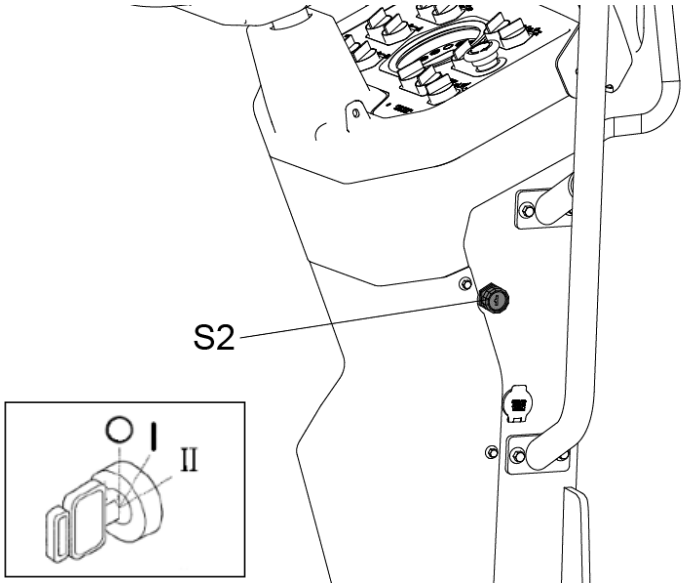


Fig. 4-22: Starting Key

→ Continue to rotate the key to the position of engine starting (II) and start the engine.

2. After starting the engine correctly, immediately release the switch.

3. Check whether all warning indicator lights of dashboard are lighted off.

Warning! Scalding Risk!
- The accidental moving part may lead to scalding or injury.
- Please do not use any aerosol or chemical liquid as the starting auxiliary.

Attention! Machinery Damage Risk!
In case of the following conditions, the engine starter will be damaged:
- The time for one operation exceeds 10s,
- The engine is re-started after continuously operating for twice but not cooling.

→ Please do not try to start the engine through traction to prevent damaging the engine!

→ Under the temperature lower than 15°C, drive it at a proper speed to heat the hydraulic oil after starting the engine.
- If the secondary starting fails, please refer to the Operation Manual of engine.
- If the electricity of starter battery is low, please execute the fast starting once (please refer to clause 4.8.2 for detailed information).
- When starting the engine under low temperature, please refer to the Engine Manual in advance.
- Please contact with the XCMG partner.

4.8.2 Jumping Circuit for Engine Starting

Danger! High voltage will lead to life risk!

- Make sure the terminal of life-saving cable will not contact with each other.

- Firstly turn off the switch of ignition key.

- There are two methods to start engine - from backup battery, charging unit or applying another vehicle battery.

- If the power supply system is another vehicle, please check the battery voltage of auxiliary vehicle.

- Turn off the ignition unit of auxiliary vehicle.

4.8.2.1 Principle of Starting Engine

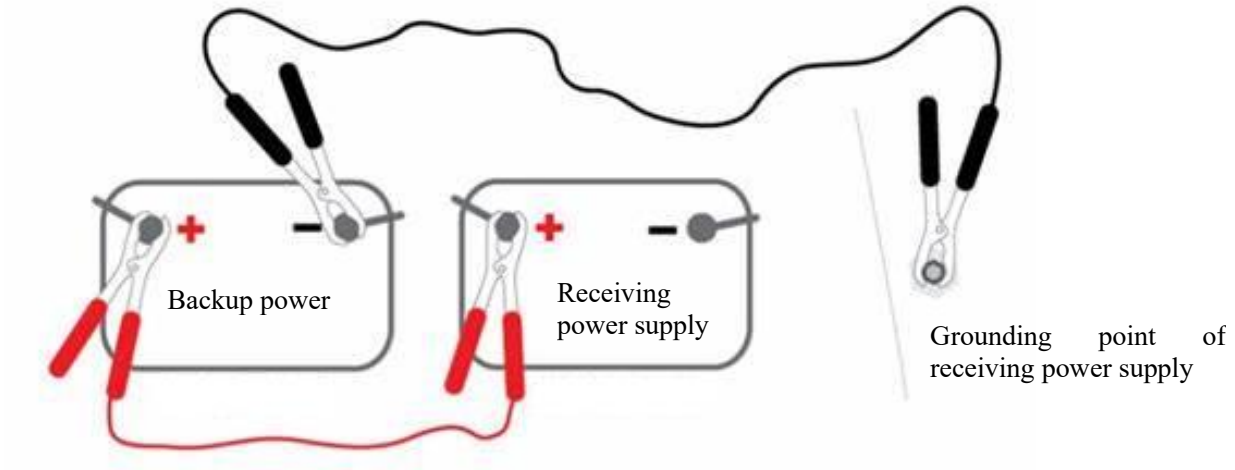


Fig. 4-23: For the connection between backup battery and receiving power supply, the left is backup power supply and the right is receiving power supply of machine.

If the machine is powered off, please connect it with the external power supply. (As shown in Fig. 4-23).

- Make sure the GND grounding point has been connected to the machine frame.

- Make sure the main switch of power supply has been disconnected and all loads on receiving machines have been closed (such as light).

- Provide the jumping circuit for machines for starting and the section area of supporting circuit shall be larger than 25mm² (conforming to DIN 72553 or ISO 6722).

➲ Connect the cables as per the following sequences to reduce dangers to the greatest extent:

1. Connect one end of red circuit to the (+) pole of receiving power supply.

2. Connect another end of red circuit to the (+) pole of backup power supply.

3. Connect the grounding wire of black circuit to the grounding point close to power supply.

4. Connect the another end of black circuit to the (-) pole of backup battery.

5. Before any of starting, please charge the battery at least for 5min.

6. If the engine starts successfully, keep the connecting of circuit for 3min before disconnecting.

7. If the backup power is supplied by another vehicle, please make the engine keep operating during the whole charging process.

Disconnect the backup power supply

1. Before disconnecting, please turn on the light on backup power supply of machine to avoid overloading.

2. Disconnect the circuit in the reverse sequence of connecting above.

3. After disconnecting, please turn off the electric load.

4. Engine works to charge the battery.

Attention! Battery is damaged caused by the temperature impact!
- If discharge is continuous under the temperature lower than 0°C (32°F), the battery may be frozen.
- Before starting to jump the circuit for the machine, please make sure the battery is not frozen.
- For protecting environment, please avoid the unnecessary engine operating as far as possible.

4.9 Roller Driving

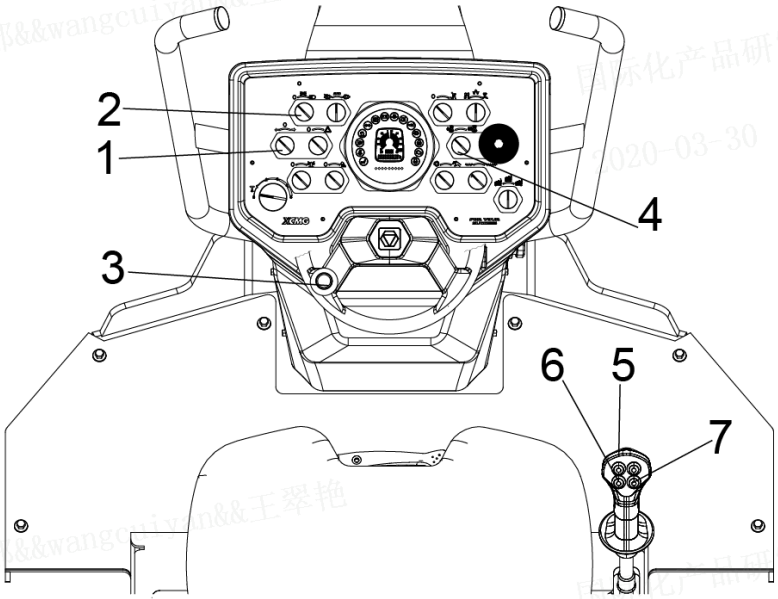


Fig. 4-24: Preparation Works before Driving

1. Steering light switch

2. Driving light switch

3. Steering wheel

4. Engine speed selection switch

5. Propel lever

6. Horn button

7. Backup button

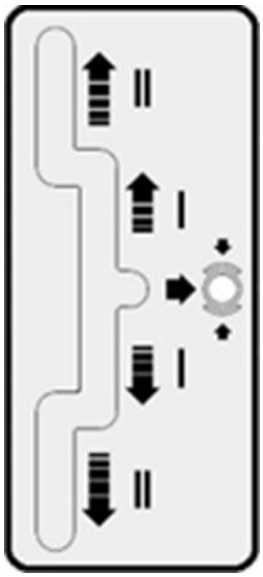


Fig. 4-25: Guiding Slot of Propel lever

I - Low speed area (approx. 5km/h)

II - High speed area (reach the max. speed)

→ When driving it at a maximal speed, use the selection switch (4) to improve the engine accelerator and make the accelerator reach the highest speed.

→ Please make sure there is no bystander on the driving route of machine. (See the Fig. 3-6)

1. Pull the propel lever (5) inward to release the parking brake and confirm the parking brake indicator light is off.

2. Gently push the propel lever to the required direction and carefully operate the machine.

The machine will move as per the selected direction at a speed that is in direct proportion to the angle for pushing the propel lever forward and backward.

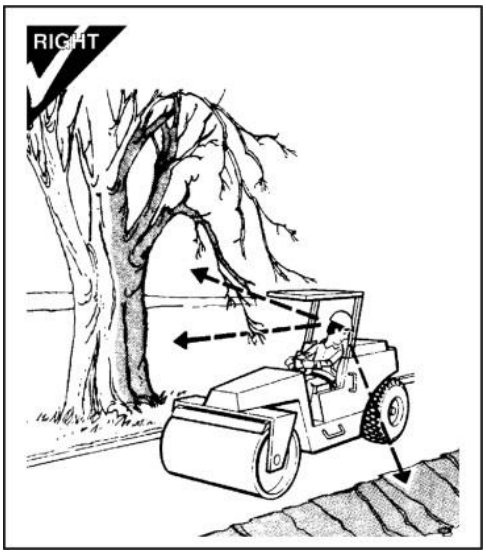


Fig. 4-26: Observe the environmental stability and safety.

Danger! Nearby Personnel's Life Risk!

●When operating machine, please make sure there is no person in dangerous area.
● It only drives on the stable and safe route.
- Tilting risk.
- Adjust the speed of moving forward and backward to adapt to the side slope and steering condition.

Caution! Injury Risk!
● Operate it carefully!
- Please notice and observe it when operating, and it shall be kept in the forward or backward direction constantly in the dangerous area.
- The special attention shall be paid when roller moves backward.
● The distance for stopping will be affected by the temperature of hydraulic oil.
- The distance for stopping will be affected by longitudinal slope.
- Adjust the pushing speed of propel lever.

Attention! Use error will lead to damage risk!
- Under the environment lower than +15°C, the engine needs driving at a low speed after starting to heat the hydraulic oil.
- When engine is under the idling state, pushing the propel lever may lead to engine stopping. The service life of hydraulic pipe and hydraulic assembly may be affected.
● When roller drives through the pothole, it may lead to machine tilting or damage the vibratory drum.
● When under the relative low temperature of hydraulic oil, the parking brake may be delayed to start.

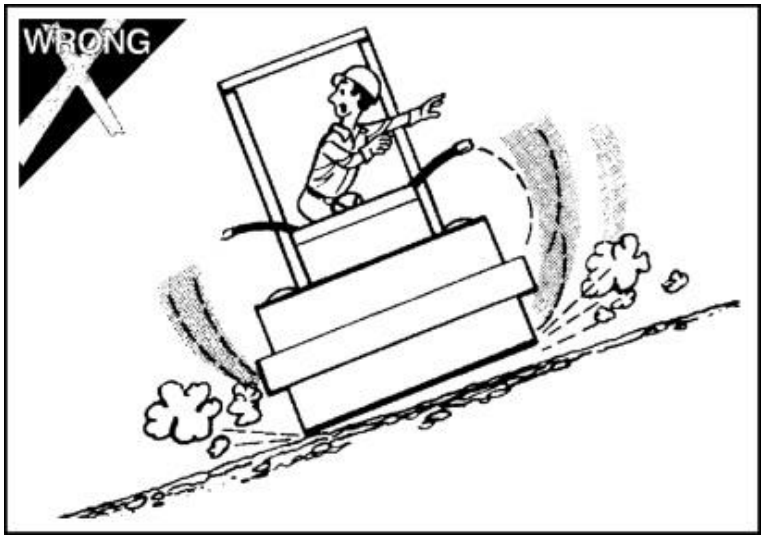


Fig. 4-27: Adjust the driving speed to adapt to the horizontal slope and steering condition

- If the machine is equipped with the reversing alarm, it will make the reversing alarm sounds when the propel lever is pushed backward.

→ When the propel lever is pushed to the high speed guiding slot (II), the speed will increase as shown in Fig. 4-25.

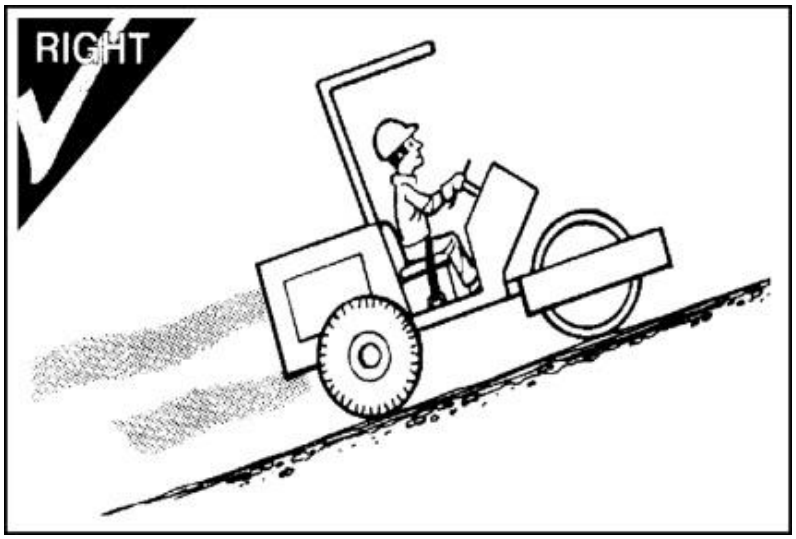


Fig. 4-28: Adjust the pushing speed of propel lever to adapt to the longitudinal slope.

Warning! Life Risk!

● During the process of machine moving forward or backward, please do not leave the seat.

Caution! Injury Risk!

● Please do not drive the machine in the public area but not safe.

- When passing through the public area, please follow the local traffic rules to protect the area.
- The machine's speed is controlled by propel lever for moving forward and backward.
- The emergency stop button can only be used under the potentially emergent condition.
- Turning off the ignition key has the same effect.

Attention! Environmental Damage Risk!

- Please take the necessary safety preventive measures when operating it in public area.

● The machine cannot drive on the unsafe public road without the permission.

4.10 Machine Brake and Stopping

Warning! Life Risk!

● The emergency brake switch can only be used under the emergent condition!

- Stopping the machine by using the emergency brake switch will greatly shorten the service life of parking brake.
- If the seat occupying switch detects the seat is not in service and propel lever is not at the parking position (P), the engine will be turned off and parking brake will be started. (If applicable).

4.10.1 Brake System :

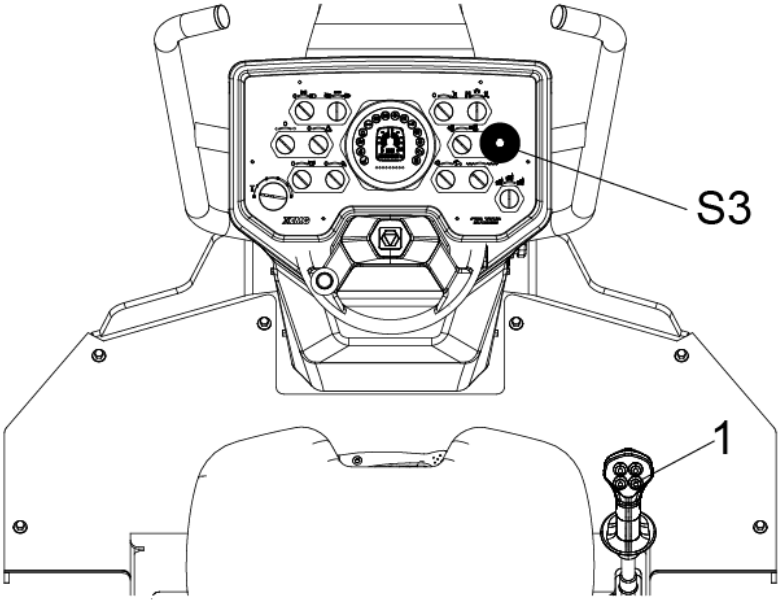


Fig. 4-29: Position of Machine Stopping

S3 – Emergency brake switch

1. Propel lever

The roller has 3 sets of brake system:

- Driving brake
- Auxiliary brake
- Parking brake

- The driving brake adopts the static hydraulic brake and is controlled directly by propel lever. Pull the propel lever to middle position from the oblique position to decrease the machine speed until the machine stops.

- The purpose of auxiliary brake is to make sure the machine is under stopping when driving brake is not working. The function of auxiliary brake is realized by parking brake.

- The parking brake is installed on each vibratory drum, is the unit for spring loading and can only be turned on when engine is working and hydraulic system is running.

- The parking brake unit is integrated on propel lever lever. When the propel lever is at (P) gear, the parking brake will be started.

The propel lever is equipped with spring and the handle lever will automatically move to brake position (P) when in middle position.

- Engine stops working and parking brake will automatically start.

- Press the emergency stop switch to make parking brake automatically work.

4.10.2 Engine Parking and Turning off

4.10.2.1 Machine Stopping

Warning! Life Risk!
- Stop the machine is specified area to prevent any potential accident or unauthorized personnel from operating the machine.
- Take down the ignition key and cover the hood to prevent the mis-operation.

Attention! Accident Risk!
- **When stopping the machine in public area, please comply with the local traffic rules.**
- Stop the machine on a stable ground to avoid any danger or damage.

4.10.2.2 Engine Shutting down

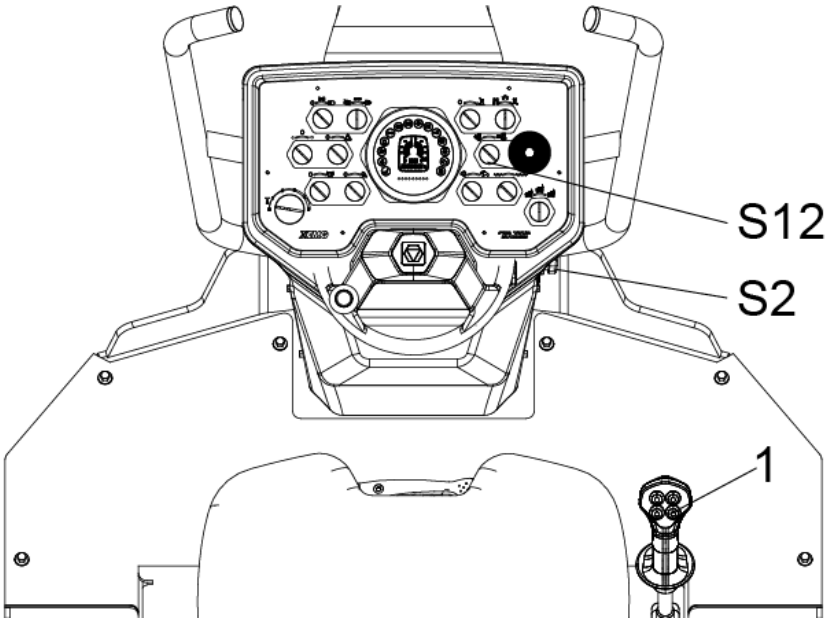


Fig. 4-30: Turning off switches required by engine

1. Propel lever

S2. Ignition key

S12. Engine speed selection switch

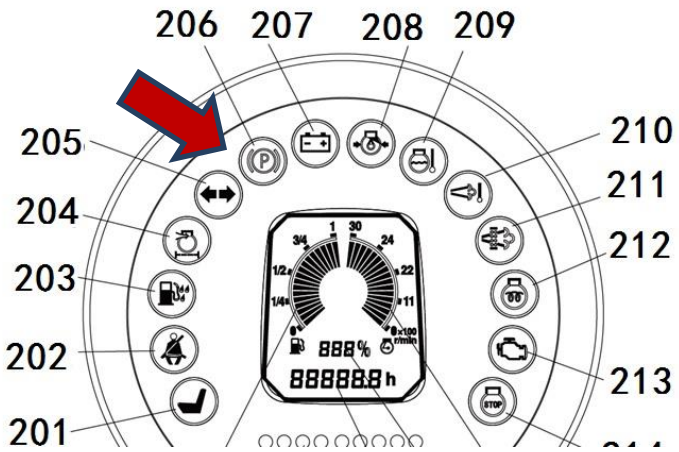


Fig. 4-31: Turning off the display required by engine

206- Parking brake indicator light

- When machine is totally stopped, push the propel lever to brake position (P). The parking brake indicator light (206) on instrument will light up.

- Make sure all equipment (such as: vibration, light etc.) has been turned off and change to engine to low idling state.

- Make sure all equipment installed on the machine are fixed on the machine correctly.

- Turn off the engine when the speed is change to idling and rotate the ignition key anticlockwise.

- When leaving the machine, please pull out the ignition key.

ⓘ If the machine is stopped for a long time (for example, overnight) or unattended, please disconnect the main switch of power supply and cover the control panel by using the light shield or cover plate.

Attention! Treatment error will lead to risk of property loss!
- If turn off the engine under the high speed working, it may shorten the service life of engine.
- Turn off the main switch of power supply to prevent battery from fast discharge.
- Reduce the engine speed to idling.
- Then turn off the engine!

ⓘ If the machine is stopped for a long time (for example, overnight) or unattended, please disconnect the main switch of power supply and cover the control panel by using the light shield or cover plate.

4.11 Work Function

4.11.1 Vibration Function

⚠ **Caution! Injury Risk!**
- Make sure the ground can support the roller vibration.
- Make sure the roller vibration will not damage the pipeline (gas pipe, water pipe, electric cables etc.).
- The enclosing buildings and objects may be damaged and even collapsed.

- The brake distance may be increased when roller vibrating.

Attention! Property and Environmental Damage Risk!

● When the machine is still, please do not use the vibration function.

- The vibration function is allowed only when the engine works at a high speed otherwise it will lead to engine stopping or damage.
- For avoiding damaging the machine, please do not use the vibration function when the roller is not driving or the speed is lower than 0.5km/h approximately.
- When roller vibrating, the gradeability may be reduced.

The vibration system provides two vibration frequencies.

1. Low frequency -63Hz:

The accelerator is controlled by switch and the switch S14 is rotated to left position.

2. High frequency -67Hz:

The accelerator is controlled by switch and the switch S14 is rotated to right position.

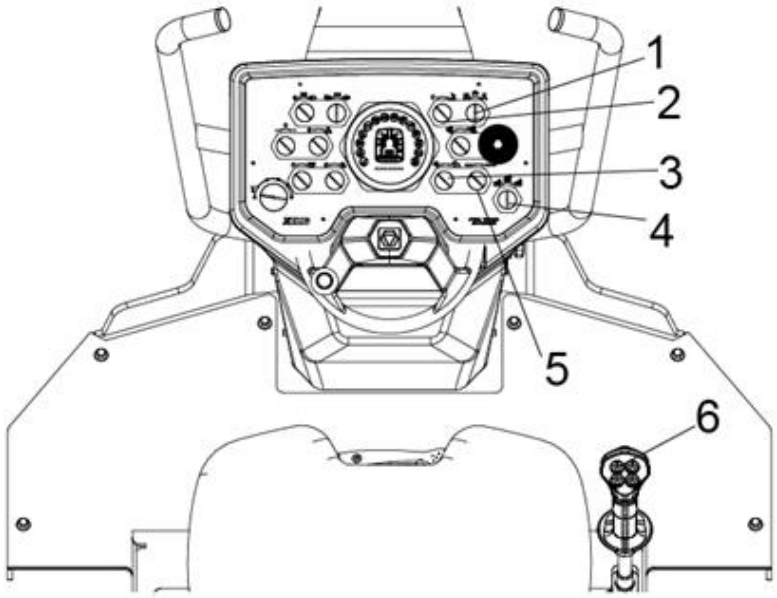


Fig. 4-32: Vibration Operation

1. S16 - working state selection switch
2. S15 - working mode selection switch
3. S9 - auto/manual selection switch (optional)
4. S10 - vibratory drum selection switch
5. S14 - vibration frequency selection switch
6. Vibration control button on the vibration handle

The vibration can be used (switch S15) only when the machine is under working mode.
There are two different operating modes (the function is not applicable for China III emission):

1. Manual Mode (rotate the switch S9 to the right position):

Press the vibration button (6) on the propel lever to start and stop vibration at any time.

2. Automatic Mode (rotate the switch S9 to the left position):

When machine speed reaches a certain value, vibration will start automatically.

When pressing the vibration button (6) on propel lever, vibration may be stopped temporarily or activated.

- Two drums can vibrate at the same time or separately through selecting by switch (S10).

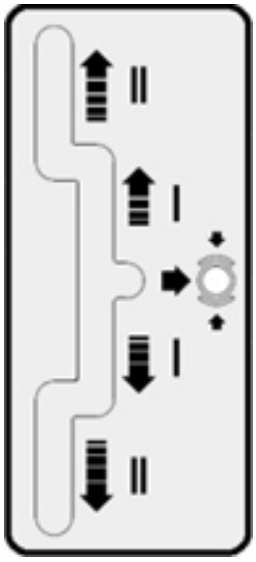


Fig. 4-33: Start vibration (optional) when propel lever is in the speed range (I)

Attention! Property and Environmental Damage Risk!
- The vibration on the ground will affect a large distance and depth.
- When affected by the vibration operating mode, surrounding and underground buildings and objects may be damaged seriously.

4.11.2 ADVib **Operation (Optional)**

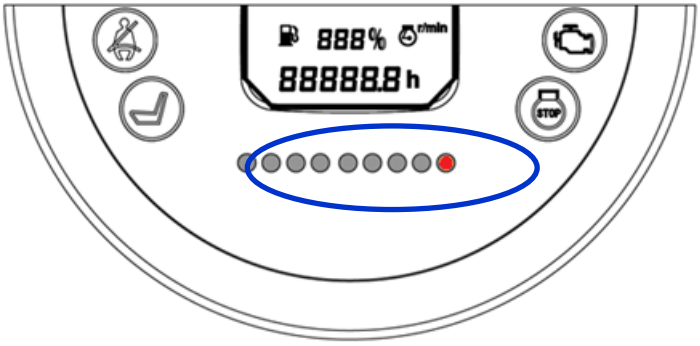


Fig. 4-34: ADVib Indicator Light

ADVib is optional and indicates the compacting progress and compacting hardness state.

- If it has been installed, ADVib shall be turned on constantly when engine is working.

- The sensor is installed on the front drum therefore the system will work only when the vibration of front drum is normal.

- As long as the quantity of green lights keeps increasing, the compactness of ground will increase.

- If there is no green light adding, it indicated the final state.

When red light flashed, the machine shall immediately stop vibrating.

Attention! Property and Environmental Damage Risk!
- There is the risk of damaging the surrounding structure and machine.
- Please turn off vibration during the process of starting jumping. Please contact with your XCMG partner for more information.

4.11.3 Water Sprinkler System

→ When compacting the asphalt surface, keep the surface of vibratory drum uniform and wet to prevent the compact material from adhering to vibratory drum.

→ Controlling the volume of water sprinkling can extend the interval of water sprinkling and avoid the fast cooling when laying the asphalt material.

Attention! Pay attention to working flow!

- Keep the water sprinkling of vibratory drum uniformly and avoid asphalt material adhering on vibratory drum.
- Avoid too much water for sprinkling to prevent the fast cooling of hot asphalt and extend the interval of water sprinkling.
- When machine is not applicable, please turn off the water sprinkler system.

The interval of water sprinkling can be adjusted according to the characteristics (such as asphalt temperature) and other conditions (such as weather condition) on construction site.

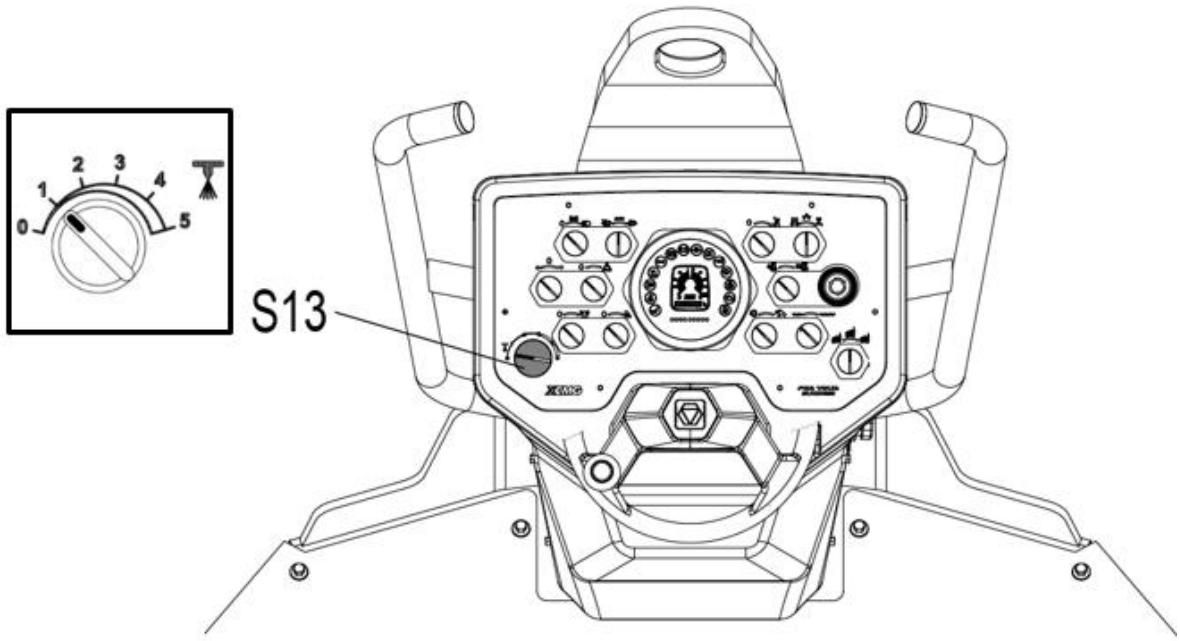


Fig. 4-35: Water Sprinkling Interval Selection Switch (S13)

- When switch is at **"0", turn off the water sprinkling.**
- The sprinkling time will increase as the switch is set from 1-5.
- When it's at **"5"**, no interval is for water sprinkling.
- When roller is not running, water sprinkler system needs stopping work temporarily.
- When pressing the button (S21) on propel lever, the function of water sprinkling will act.

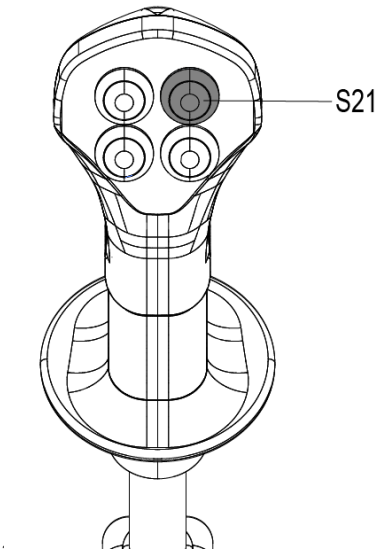


Fig. 4-36: Control Button of Water Sprinkling

Attention! Pay attention to working flow!
- For reducing weight, please drain the water in water sprinkling tank before transporting machine.

4.11.3.1 Refilling Water to Water Sprinkling Tank

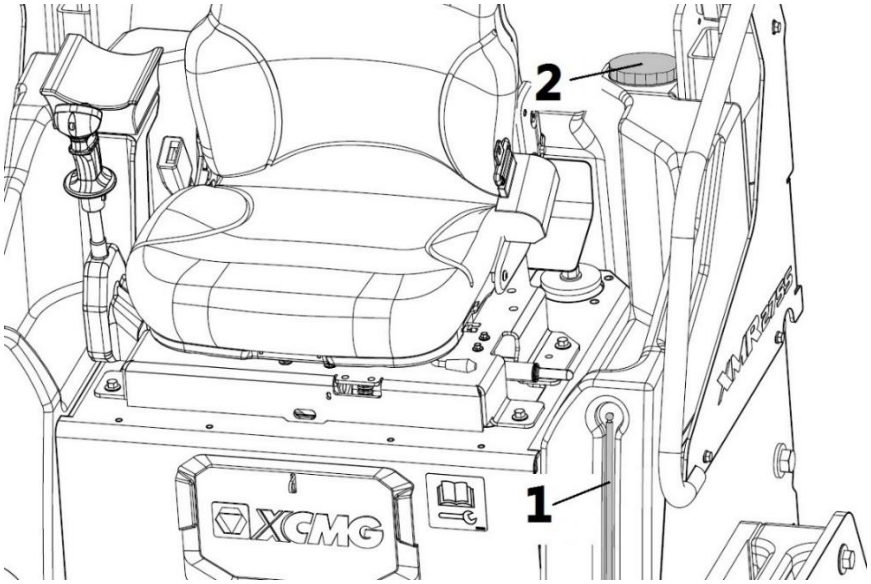


Fig. 4-37: Level Indicator (1) and Water Tank Cover (2) of Water Sprinkler

→ Open the cover of water tank, check the lower filter screen and clean it when necessary.

→ Refill water into water tank and cover the tank.

Attention! Pay attention to working flow!
- When compacting the asphalt material, please make sure the water tank has water.
- For avoiding damaging the component, please refill the clean water.
- When the temperature is lower than 0℃, preventive measures need taking to prevent the water in the tank from freezing (namely make sure there is sufficient anti-freezing agent in water tank).
- When the temperature is possible to decrease to 0℃ below, please drain the water inside the water tank after working to avoid damaging the water sprinkler system.

● The damage of water sprinkler system caused by adding the unclean water or frost is not within the warranty range.

4.11.3.2 Drainage of Water Sprinkling Tank

The water in water tank needs to be drained before transporting the machine or temperature is lower than 0℃ below. The steps are as follows:

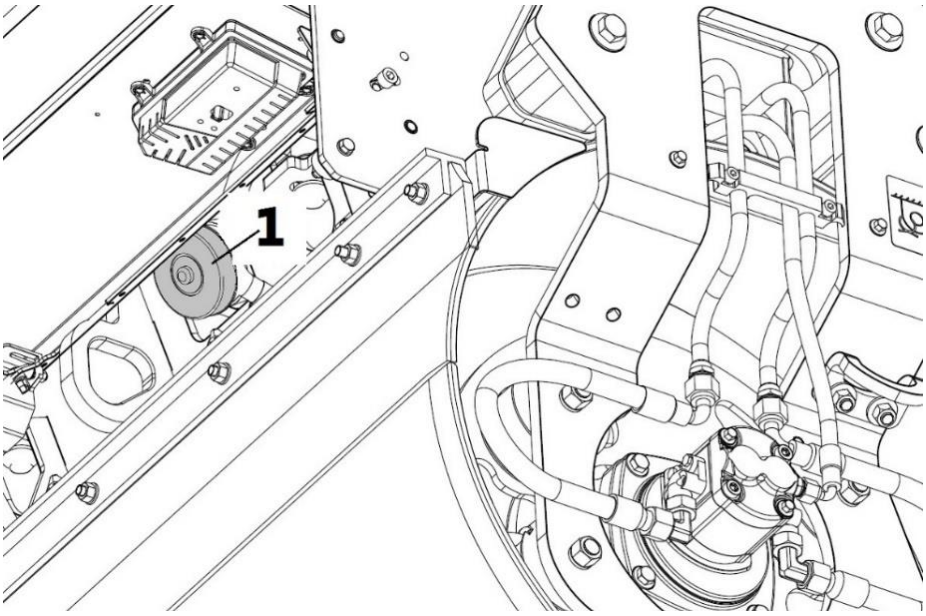


Fig. 4-38: Drainage of Main Water Tank (1).

1. Stop the machine.
2. Turn off the water sprinkling and engine and pull out the ignition key.
3. Open the cover plate on the mud scraper.
4. Unscrew the cover (1) of water outlet of main water tank.
5. Drain the water.
6. Screw the cover (1) after draining the water.

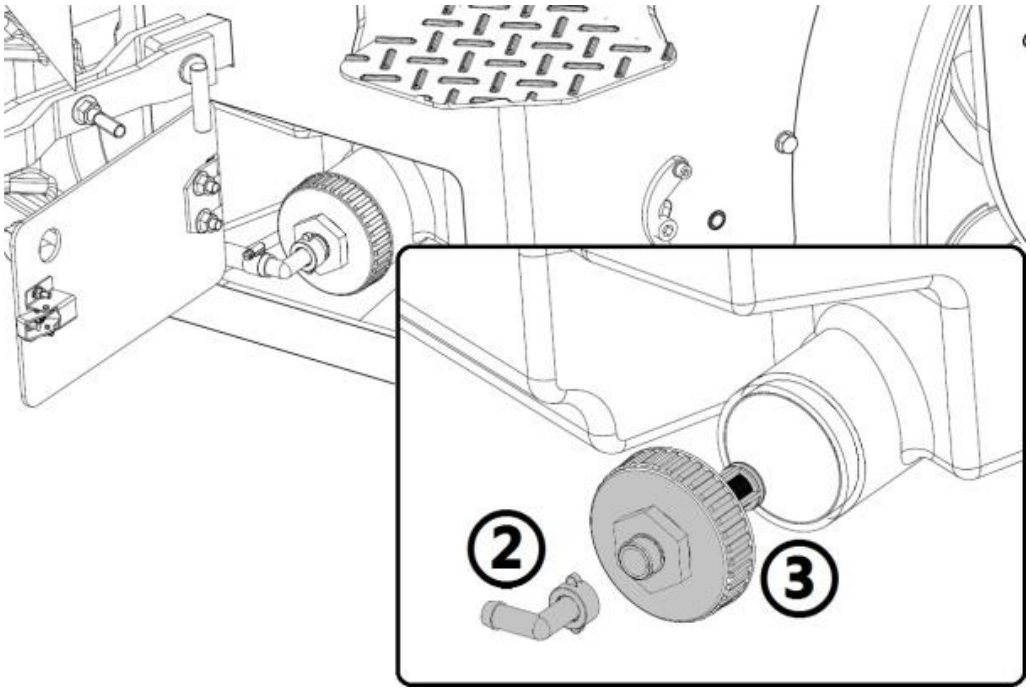


Fig. 4-39: Water Outlet of Lower Water Tank

1. Open the access hole at left side of machine articulation.
2. Unscrew the right angle connector (2).

3. Open the water drainage (3) of lower water tank to drain the water of it.

4. The water in the tank needs to be drained from right angle connector (2).

Please clean the filter screen of water drainage (3) before installing the water drainage (3) and right angle connector (2).

4.11.4 Mud Scraper

Attention! Pay attention to working flow!
- Mud scraper is adjustable.
- Under the working state, mud scraper shall fit with the surface of vibratory drum.

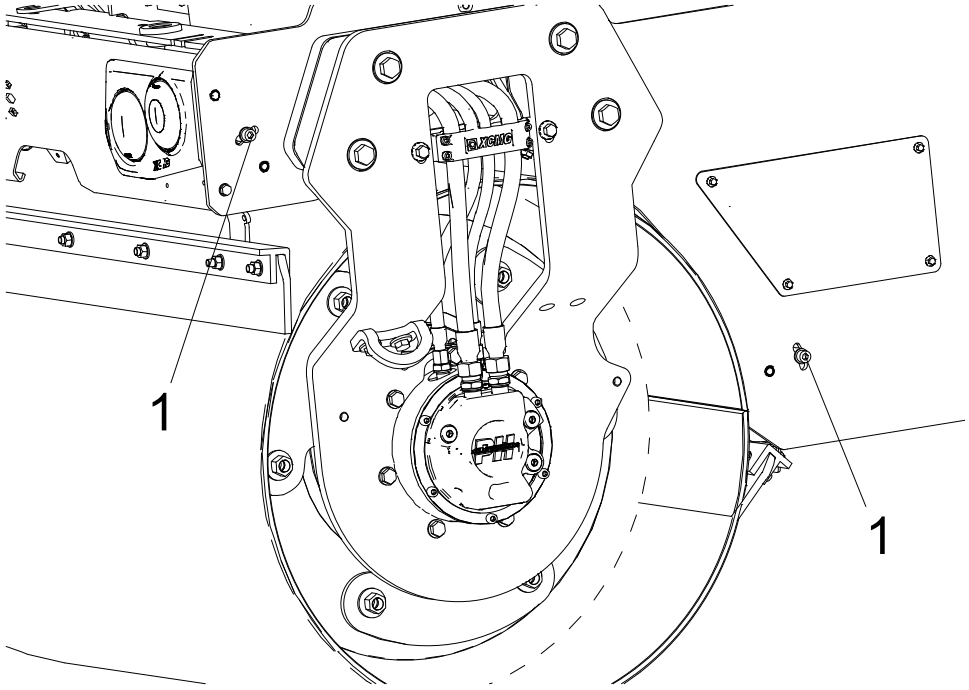


Fig. 4-40: Mud Scraper Adjustment

→ Loosen the adjustable bolt (1) of mud scraper to make it fit with the vibratory drum.

For reducing wear, please pull up the mud scraper from vibratory drum when not working.

4.11.5 Oil Refilling

Caution! Injury and Scalding Risk!

- Pay attention to the high temperature surface of machine!
- The diesel has the risk of leading to fire and scalding!
- Please do not refill oil when engine is working.
- Refill oil after the engine is cooling.
- The diesel is combustible!
- Immediately clean all overflowed oil.
- Please do not smoke or use the open flame when handling the diesel.

Attention! Engine or Parts Damaged!

- Please constantly use the low-sulfur fuel specified in Operation Manual.
- The unclean diesel or dirt will damage the engine.
- All assemblies and systems related to fuel shall be kept in thoroughly clean.

Fig. 4-41: Oil Level Indicator

Attention! Follow Instructions!

- It's prohibited using fuel additive.
- It's suggested that winter diesel (CFPP value of diesel) shall be used as far as possible according to the season temperature in the place where you're.

- If the unconventional fuel is used, the warranty will be invalid.
- It's prohibited using the unapproved fuel.

Only refill the clean fuel!

Carefully refill the oil to avoid overflowing.

- After refilling the oil, please make sure the cover of oil tank has been closed correctly.

Observe the fuel level and do not make engine use up all fuel!

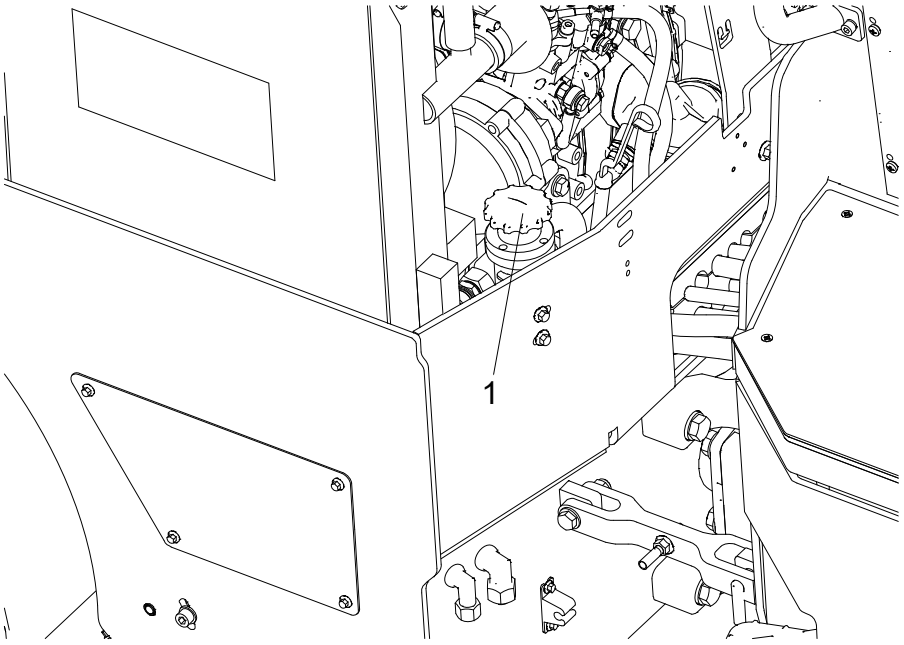


Fig. 4-42: The fuel refilling port is nearby the water inlet of engine under the hood

● Pay attention to observe the oil level and timely refill the diesel.

→ Otherwise, it may need exhausting the gas of fuel system before starting the engine next time.

ⓘ For avoiding the water condensation in oil tank, please make sure the oil tank is refilled with oil when stopping the machine.

5. Maintenance

5.1 General Safety and Prompt

Caution! Maintenance Process

● The improper or wrong maintenance may violate the laws and regulations.

- Excessive or poor lubrication may lead to serious damage to machine.
- Please use the lubrication oil and other consumables conforming to or higher than the quality recommended in this Manual.
- It must be maintained by trained or guided personnel.
- Before conducting maintenance, please carefully read this Operation Manual.

● The consequence caused by the improper or wrong maintenance will not be within the warranty range for the product.

- The product needs regular maintenance.
- The requirement for regular maintenance is specified in this Manual.
- If it's required to expand the content of this Manual, please contact with the XCMG representative.
- The Manual specified the machine maintenance cycle under the normal operation.
- The maintenance cycle may shorten according to different application methods.
- The time of maintenance cycle refers to hour meter of machine.
- Please refer to Engine Operation and Maintenance Manual for other specific operations of engine.

Attention! Parts or System Damaged!

- For those matters not specified in the Manual, please contact with your XCMG partner.

● The refitting belongs to the invalid without the approval of XCMG.

5.2 Parts and System Safety

The machine includes several systems directly related to safety. The contents of regular inspection and maintenance is shown as follows:

1. ROPS
2. Seat belt
3. Parking brake
4. Emergency brake

Those units shall be used and maintained in strict accordance with the requirements in the Manual.

5.3 Daily Maintenance

50 hours after the first operation (approx. one week later usually), once daily maintenance is required. The contents of daily maintenance are considered as the supplement for routine maintenance.

- Engine system:

Change the engine oil
Replace the engine oil filter
Replace diesel filter

- Hydraulic component maintenance
Replace hydraulic oil filter

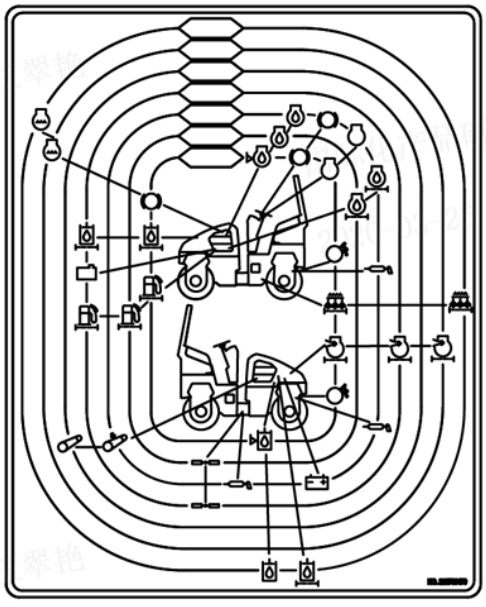
The overview for minimal maintenance requirements is shown in table below:

Attention! Follow Instructions!
● The regular maintenance cycle is 12 months and also is the time interval for replacing the engine lubrication oil while it's not necessary to follow the machine's working time.

5.4 Regular Maintenance and Inspection

After above specified time or operating time, the regular maintenance and inspection shall be conducted no matter what happened.

The contents for relatively long inspection cycle include the contents for short inspection cycle (namely the weekly regular maintenance covers the contents of daily maintenance).



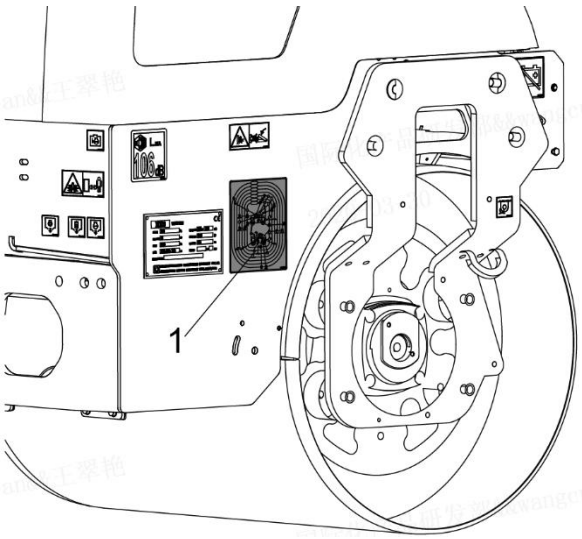


Fig. 5-1: Label of Maintenance Diagram; Fig. 5-2: Maintenance Diagram (1) on Machine

Maintenance Items	Interval hours for regular maintenance							
	8 (days)	250	500	1000	1500	2000	3000	4000
Visual inspection	●							
Check / correct the level of engine fuel	●							
Check / correct the level of engine coolant	●							
Check the radiator	●							
Check / clean the engine air filter	●							
Check / correct the level of hydraulic oil	●							
Check the filter of hydraulic oil	●							
Check / clean the water sprinkling filter	●							
Check / clean the water sprinkling nozzle	●							
Check the parking brake		●						
Check the emergency brake		●						
Moving parts of mud scraper		●						
Lubricating point of articulated grease		●						
Lubricating point of steering cylinder grease		●						
Change the engine oil		●						

Table 5-1a: Maintenance List

Maintenance Items	Interval hours for regular maintenance							
	8 (days)	250	500	1000	1500	2000	3000	4000
Replace the engine filter		●						
Check the tensioning of engine V-belt		●						
Check the engine air intake pipe and replace it when necessary		●						
If necessary, check whether the cooler hose and hose clamp are tightened		●						
Check the control lever			●					
Replace the fuel pre-filter			●					
Check / clean the fuel tank			●					
Replace the V-belt			●					
Clean the overflow tank of radiator			●					
Check / correct the concentration of anti-freezing agent			●					
Check valve clearance of engine				●				
Replace the hydraulic oil, check and clean the hydraulic oil tank when necessary				●				
Replace the hydraulic filter				●				
Check the oil nozzle					●			
Replace oil-water separator					●			
Replace the air intake pipe						●		
Replace the cooling pipe						●		

Table 5-1b: Maintenance List

5.5 On-demand Maintenance

1. Battery appearance: check whether the battery is connected tightly.

2. Hydraulic filter: visually check the filter state and whether the blocking indicator on the top of filter displays the filter needs to be replaced. The checking can be carried out when hydraulic oil is under the normal temperature (the temperature of human hands).

Prompt: replace the filter when replacing the hydraulic oil.

3. Oil and water separator: it shall be replaced according to the indication of pressure gauge. It shall be updated once every 1500h according to the requirement in regular maintenance table.

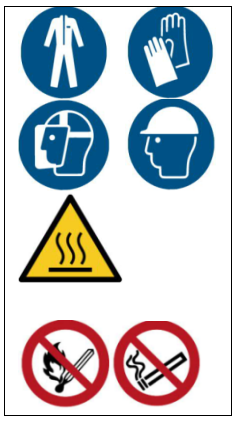
4. Preparation of anti-freezing agent for cooling system: add the anti-freezing agent as per requirements.

5.6 Specific Maintenance Guidance

5.6.1 Prompt

Danger! Life and Injury Risk!

- **There is scalding risk in case of contacting with hot surface!**
- **The personnel protection equipment is required!**



- There is scalding risk in case of contacting with hot surface, fluid, hot vapor, hydraulic oil and waste gas.
- Please firstly turn off the engine and maintain it when it totally cools.
- The cooling system is under the pressure state.
- The hydraulic system may be under the pressure state.

5.6.2 Visual Inspection

The general overview of machine condition shall be provided for visual inspection, namely:

- General maintenance:

Check the integrity and function of articulation lock
Check the integrity and function of ROPS bolt and lock
Wearing of mud scraper
No leakage: Hydraulic oil Coolant Fuel Engine oil Water sprinkling Or other fluids
Condition of pipe and hose: Hydraulic Coolant

Engine inlet pipe Exhaust system Fuel system Water spray system And much more.
Radiator cleaning
Hydraulic oil cylinder leaked or machine is damaged
Bolt and nut are loose (if so, please repair it)
Seat belt condition (if any damage, please replace it)
Safety mark (if any wear, please replace it)
Oil level (instrument display)
level indicator

If any code displayed on the display, please check and maintain it according to information provided in the Manual.

5.6.3 Coolant

Caution! Scalding Risk of Hot Fluid!

There is the scalding risk in hot area!

There is the risk of high pressure and injury existing in the system!

The personnel protection equipment is required!

- Pay attention to protect eyes and wear gloves!
- After the system is cooled, remove the radiator cover!
- Release all pressure before unscrewing the cover and keep cautious during the process!
- The cooling system must be under the vapor pressure and below.

Attention! Follow Instructions!

- Please constantly use the relatively low concentration of anti-freezing agent, namely making the temperature never lower than the freezing point.
- Please do not use the maximal concentration of recommended anti-freezing agent.

5.6.3.1 Coolant Requirement

The water-cooled engine has the special requirement for coolant to avoid overheating or freezing and prevent corroding the engine or radiator and prevent cavitation.

For avoiding damaging the engine or cooling system, regularly observe the coolant level and concentration of anti-freezing agent.

The cooler shall be refilled with the 50% anti-freezing agent when delivering from factory (based on Mono Ethylene Glycol).

Caution! Injury Risk!

- Operate it according to the engine manual and instructions provided by coolant manufacturer .

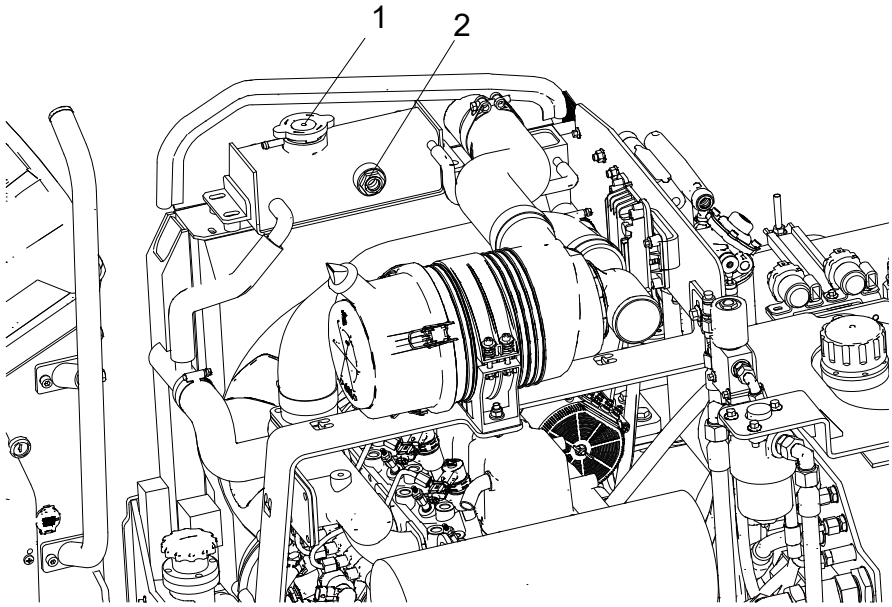


Fig. 5-3: Coolant Diagram

1 - Cover of coolant refilling port

2 - Auxiliary tank body / liquid level indicator

5.6.3.2 Radiator Inspection

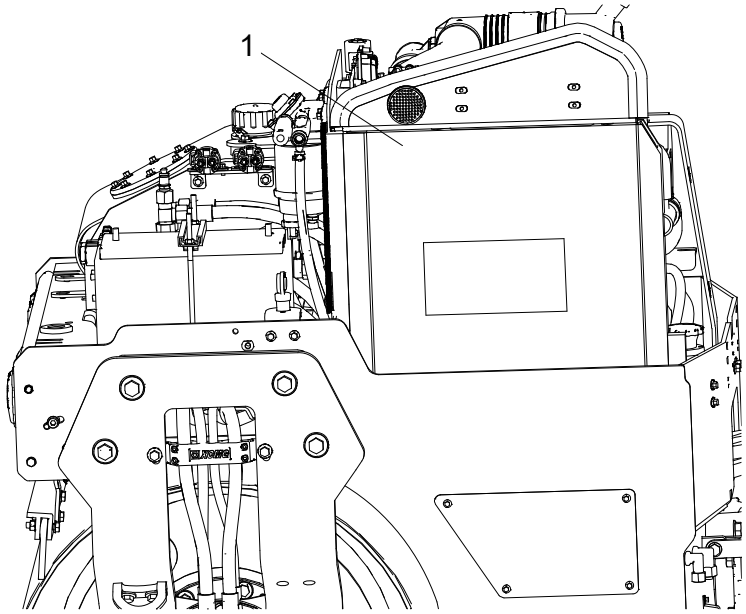


Fig. 5-4: Radiator (1).

→ Turn off the engine, dismantle the ignition key and open the engine hood; when necessary, make the engine and radiator cool.

→ Check the radiator and clean it if any of dirt.

Use the compressed air and only allow cleaning it in the direction from inside to outside.

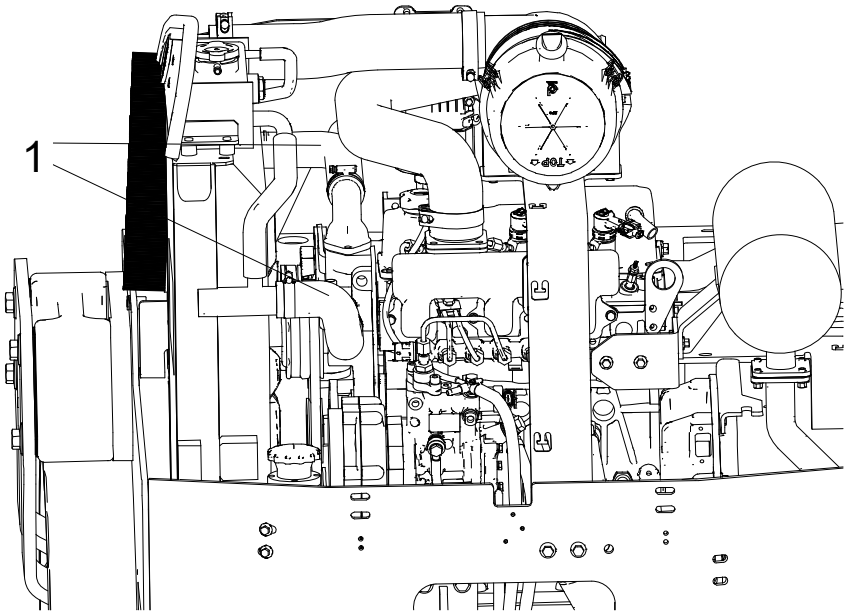


Fig. 5-5: Cooling System Pipeline (1)

→ Regularly check the whether the radiator pipe is cracked and leaked.

→ Replace the damaged pipe and tighten all loos connecting part.

→ Check whether the air intake pipe (1) is aged and broken and whether the hose clamp at the pipe connecting is tightened.

→ When the water inlet pipe (1) is loose, aged, broken or damaged, it shall be tightened or replaced.

5.6.3.3 Coolant Level Inspection

➲ Before maintaining:

1. Turn off the engine, dismantle the ignition key and open the engine hood.

2. The coolant level of auxiliary water tank shall be at the position nearby the middle position of liquid level indicator.

5.6.3.4 Engine Coolant Drainage

Caution! Scalding and Injury Risk!

The personnel protection equipment is required

- When executing the task, please protect eyes and wear gloves.
- After the system is cooled, remove the radiator cover!

Warning - System High Pressure

- Use the clean cloth to cover the seal cap, slowly rotate it to the first resistance and make the surplus pressure in the system reduced.

Do not dismantle the radiator cover before the system reduced pressure and cooled!

- The drained coolant shall be handled environmentally.

Follow the local and efficient disposal regulations.

1. When the cooler is cooled, place a proper container (Fig. 5-8) under the coolant discharge port (3).
2. The container with the volume at least of 12L shall be used to collect the old coolant.
3. Open the radiator cover (1).
4. When the radiator completes the drainage, add 5L of clean water to rinse it.
5. Close the water discharge port, re-fill the qualified coolant into radiator until the coolant level reaches the middle position of liquid level indicator.
6. Start the engine for a little moment and check the coolant level.

→ Continue refilling when necessary.

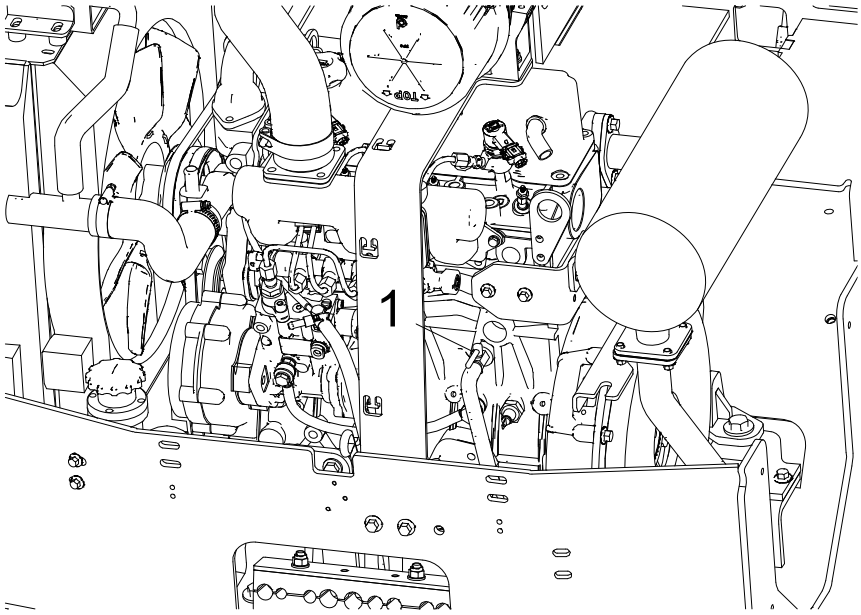


Fig. 5-6: Coolant Discharge Port (3).

5.6.4 Engine Lubrication

5.6.4.1 Engine Lubrication oil

➲ The engine uses the grade-CF 15W-40 oil for refilling when delivering from factory and can adapt to most of weather conditions.

→ For all maintenance works in engine cabin, the engine must be turned off in advance, take out the ignition key to make engine cool.

Attention! Follow Instructions!
- The volume of engine lubrication oil is approximately 7L.
- The engine lubrication oil shall be replaced once every 12 months no matter the maintenance plan is expired.

5.6.4.2 Check the level of engine lubrication oil

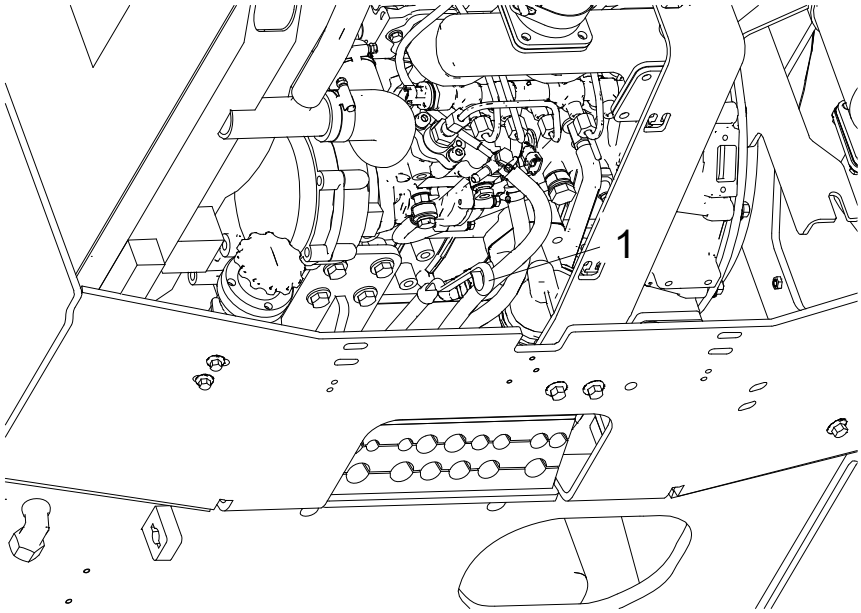


Fig. 5-7: Position of Engine Oil Dipstick

➲ **Check the level of engine lubrication oil:**

1. Stop the machine on the flat ground.
2. Turn off the engine, dismantle the ignition key and open the engine hood.
3. When the engine oil cools, use the oil dipstick to check the level of lubrication oil.
4. If necessary, refill or drain it.

ⓘ The oil level shall be within the marks and it's better to higher than the middle.

ⓘ **Refilling the engine lubrication oil**

Attention! Engine or Parts Damaged!
- The engine has the risk of damage or performance loss.

⚠ It shall be maintained only by using the lubrication oil mentioned in engine manual or specified by the Operation Manual.

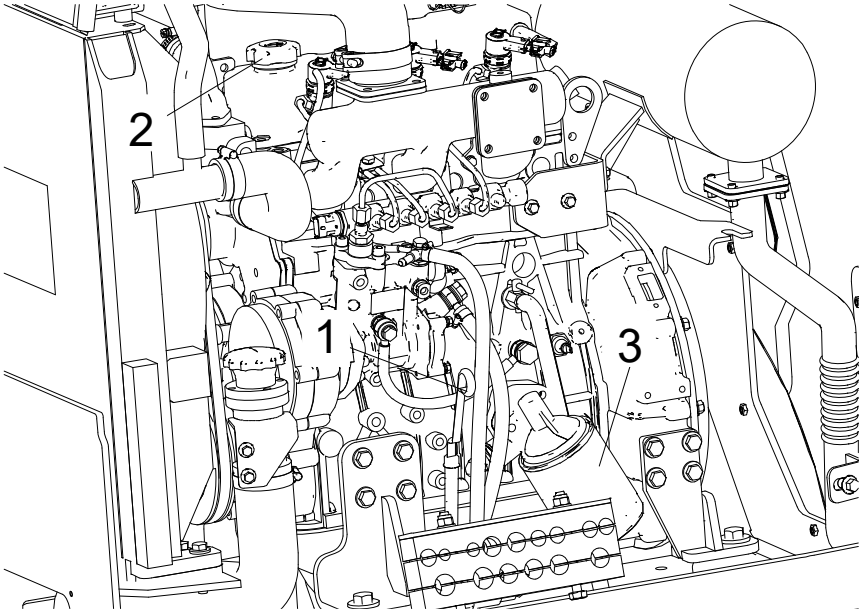


Fig. 5-8: Refilling Port of Engine Lubrication oil (2).

1 - Oil dipstick

2 - Engine oil refilling port

3 - Engine oil filter

4 - Check the oil level (1) on oil dipstick marks

Refilling the engine lubrication oil

1. Supplement the lubrication oil into the engine (Fig. 5-8) through the oil refilling port (2);
2. Immediately turn it off after completing oil refilling;
3. Avoid the engine oil splashing to engine.

5.6.4.3 Drainage of Engine Lubrication oil

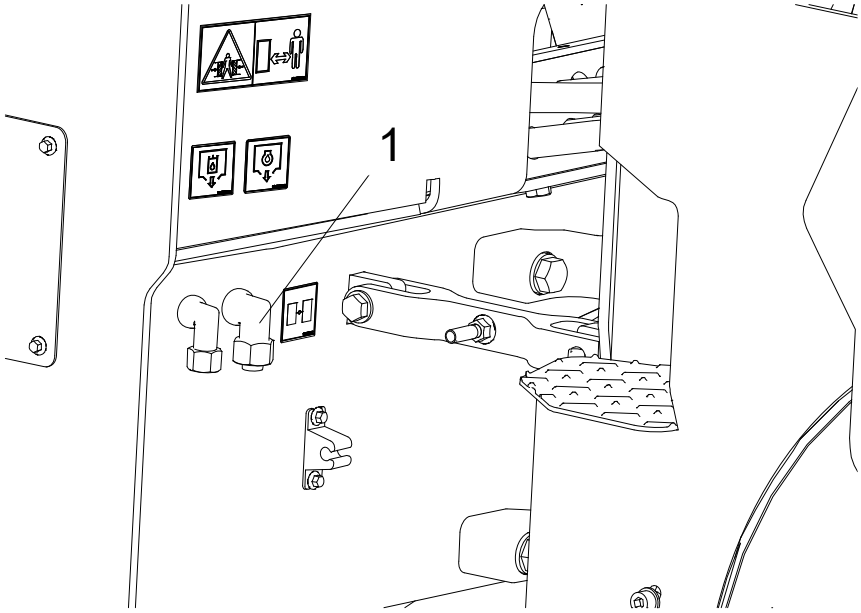


Fig. 5-9: Discharge Point (1) of Engine Lubrication oil

ⓘ See the Fig. 5-9 for sewage outlet of engine lubrication oil.

Attention! Follow Instructions!
- Before draining the engine lubrication oil, operate the engine for several minutes to the highest temperature 30°C and to reduce the viscosity.
- Replace the lubrication oil filter as soon as possible after draining the engine oil.

→ Gently pour oil into the proper container.

→ Close, tighten and clean the water outlet to avoid oil leakage.

→ As specified as above part, re-fill the engine lubrication oil.

5.6.4.4 Replace the filter of engine lubrication oil

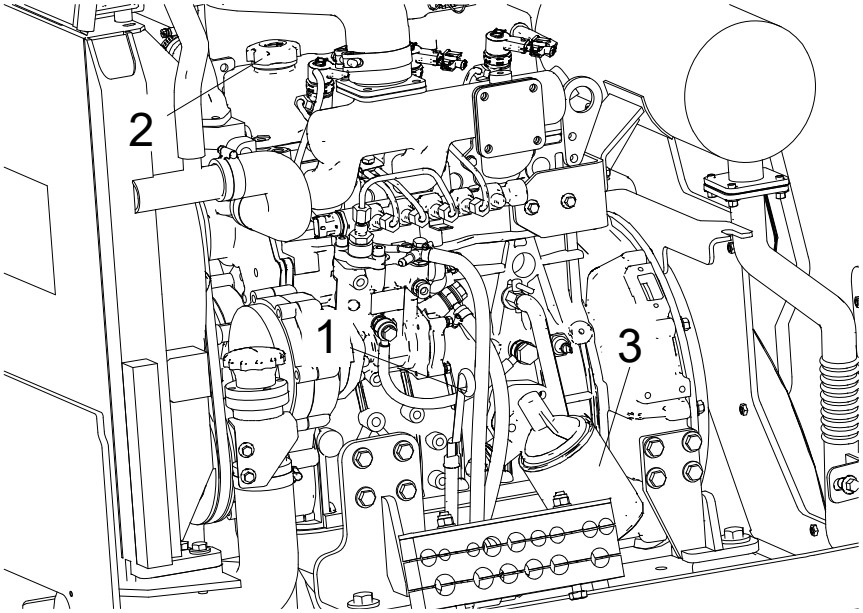


Fig. 5-10: Replacement of Engine Lubrication oil

1 - Oil dipstick - engine lubrication oil

2 - Refilling port of engine lubrication oil

3 - Filter of engine lubrication oil

➲ After draining the engine lubrication oil, replace the filter as per the following steps:

1. Dismantle the filter element assembly (3);
2. Rotate and unscrew the filter element;
3. Wipe the seal surface of filter base and remove the residues on seal ring of engine oil filter;
4. Before installing the engine oil filter, pour the clean lubrication oil into the filter;
5. Apply one oil film on the new seal ring;
6. Screw the new filter element;
7. Install the filter assembly onto engine body.

5.6.4.5 Check the engine throttle valve

⚠ Caution! There is the scalding risk by hot vapor or liquid!
- Please firstly turn off the engine and maintain it when it totally cools.
- Please operate it according to the requirements in Engine Operation Manual.
- Please operate it according to the instructions provided by coolant manufacturer.

Please refer to Engine Operation and Maintenance Guidance for detailed information or contact with your XCMG product manager.

5.6.4.6 Engine Lubrication Hose

Caution! There is the scalding risk by hot liquid!
- Turn off the engine and maintain it after totally cooling.
- Please operate it according to the requirements in Engine Operation Manual.

Attention! Attention - Execute Inspection!
- When air intake system is not assembled correctly, please do not operate engine.

→ Replace the filter hose of engine lubrication oil to prevent wearing or leaking.

ⓘ Please refer to Engine Operation and Maintenance Guidance for detailed information.

5.6.5 Engine Air Intake System

Attention! There is the scalding risk by hot surface!
- Please firstly turn off engine and maintain it after totally cooling.
- Please operate it according to the requirements in Engine Operation Manual.

5.6.5.1 Replace the engine air intake filter

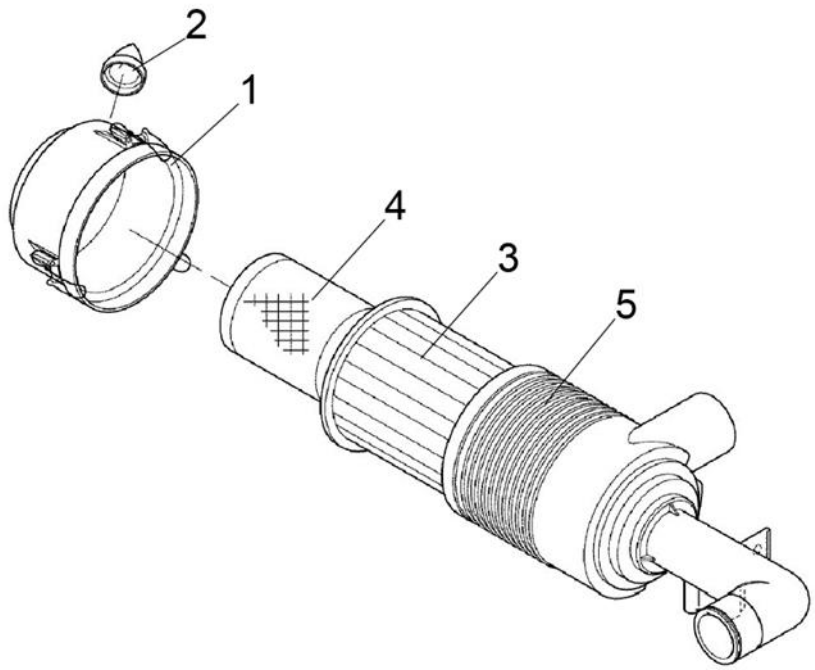


Fig. 5-11: Engine Air intake Filter

1 - Cover of air filter

2 - Dust discharge valve

3 - Main filter element

4 - Safety filter element

5 - Shell of air filter

Replace the air intake filter

1. Turn off engine and remove the ignition key.

2. If necessary, make the engine cool.

3. Open and take down the filter cover (1).

4. Dismantle the main filter element (3).

5. If necessary, clean the discharge component (2) and filter shell (5).

6. Insert the new filter element, close and lock the cover of filter element.

7. If required, the safety filter element (4) needs replacing as well (no later than 2000 working hours).

5.6.5.2 Replace Air Intake Pipe

➲ Replace air intake pipe :

1. If necessary, open the engine hood and make engine system cool.

2. Release the clamp (1) at both sides of air intake pipe, dismantle and replace it with a new clamp for air intake pipe.

3. If clamp is corroded or damaged, it also needs replacing.

4. Tighten the clamp correctly, close and tighten the engine hood.

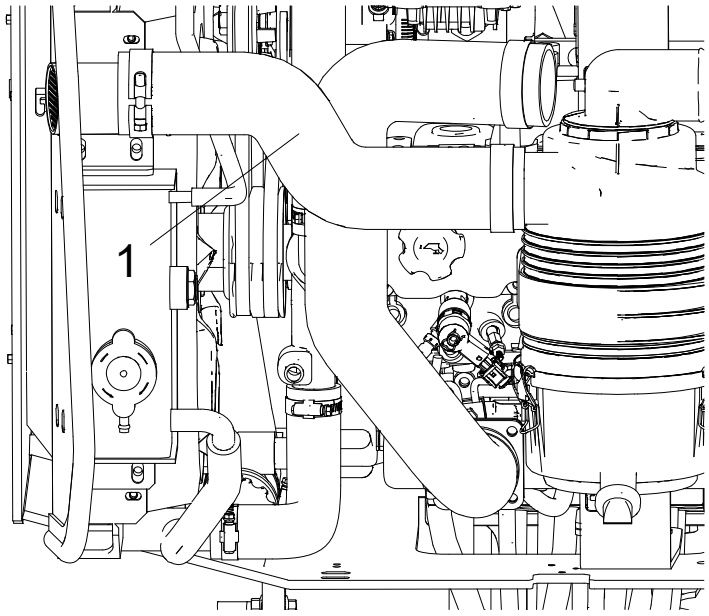


Fig. 5-12: Air intake System
1. Filter pipe of air intake

Attention! Attention - Execute Inspection - Control!
- When air intake system is not assembled correctly, please do not operate engine.
- The filter element shall be replaced with a new one after being cleaned for 6 times.

5.6.6 Engine Fuel System

5.6.6.1 Oil Tank

Warning! Life and Injury Risk!

When repairing the engine system, there is the risk of burning, fire or explosion:

The personnel protection equipment is required!

- After turning it off, maintain the engine after it cools.
- Do not smoke or use open flame.
- Do not inhale the fuel vapour.

Caution! Injury and Environmental Damage Risk!

- Combustible fuel!
- Avoid the fuel leaking to the ground to prevent the risk of fire or environmental pollution!
- When refilling or handling fuel, it's strictly prohibited smoking or close to open flame.
- Handle the leaked oil as environmentally as possible and follow the local and efficient disposal regulations.

5.6.6.2 De-aerating Fuel Pipe

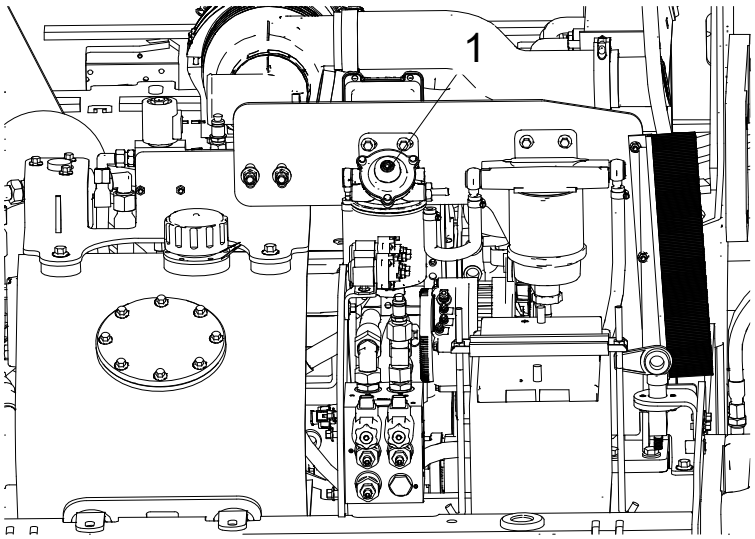


Fig. 5-13: Hand Pump on Fuel Filter

Operate the hand pump of fuel filter to discharge the gas in fuel pipe.

5.6.6.3 Replace the fuel filter

Caution! Diesel will lead to injury risk!

- Combustible fuel!

- Avoid the fuel leaking to the ground to prevent the risk of fire or environmental pollution!
- When refilling or handling fuel, it's strictly prohibited smoking or close to open flame.
- Handle the leaked oil as environmentally as possible and follow the local and efficient disposal regulations.

➲The process of replacing fuel filter is shown as below:

1. Turn off the engine, remove the ignition key and make engine cool.

2. Screw the cylinder of fuel filter (1), Fig. 5-13.

3. Clean the seal surface of filter base;
Use the clean diesel to dip the seal ring of new filter.

4. Pour the clean diesel into a new filter and tighten it onto the filter base.

5. Finally, use the proper tool to rotate it for half a circle and make sure the leak-proof and airtightness.

6. Discharge the gas of fuel system and start the diesel to prevent the fuel leakage.

5.6.6.4 Inspection of Fuel Pipe

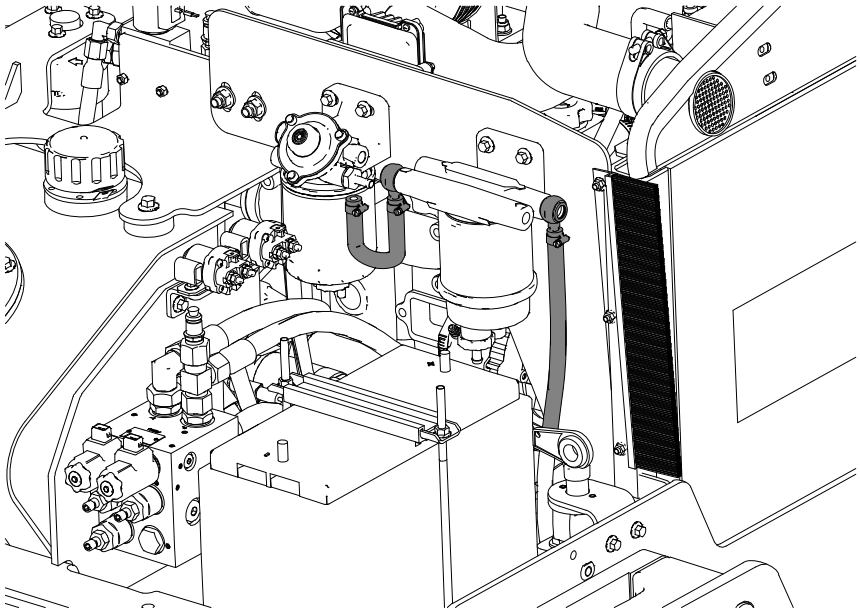


Fig. 5-14: Fuel Pipe

→ Regularly check the fuel supply pipe.

→ If any of damage, please immediately replace it.

→ After replacing it, discharge the gas in fuel supply pipe and start the engine. Make sure there is no leakage during the operating process.

5.6.6.5 Fuel Tank Drainage

⚠ Caution! Scalding and Injury Risk!

- Combustible fuel!
- Do not smoke or get close to open flame when handling the fuel.

- The discharged oil shall be handled as environmental as possible according to the local disposal regulations.

Attention! Follow Instructions!
- Before discharging the oil, reduce the oil level as far as possible.
- Please only refill the clean fuel to oil tank.

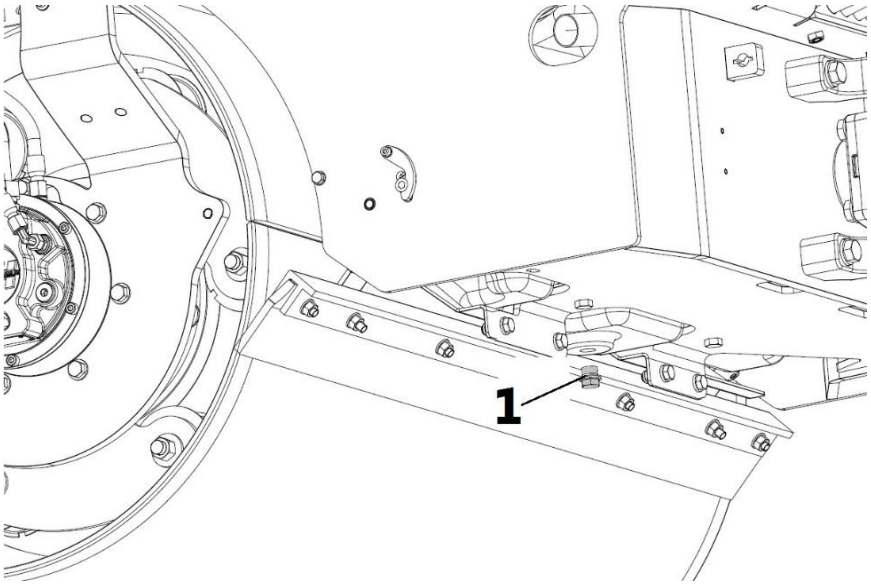


Fig. 5-15: Oil tank discharge plug (1) is set at the lower left of front frame

5.6.7 Engine V-belt

Danger! Life and Injury Risk!
- There is the risk of being cut by rotating parts or squeezing bodies.
- Engine hood shall keep in closing state when engine operating.

Attention! Follow Instructions!
- Please refer to the engine operation manual!

Preparations:

1. Turn off the engine, remove the ignition key and disconnect the main switch of battery.
2. Open the engine hood and make the engine cool if necessary.

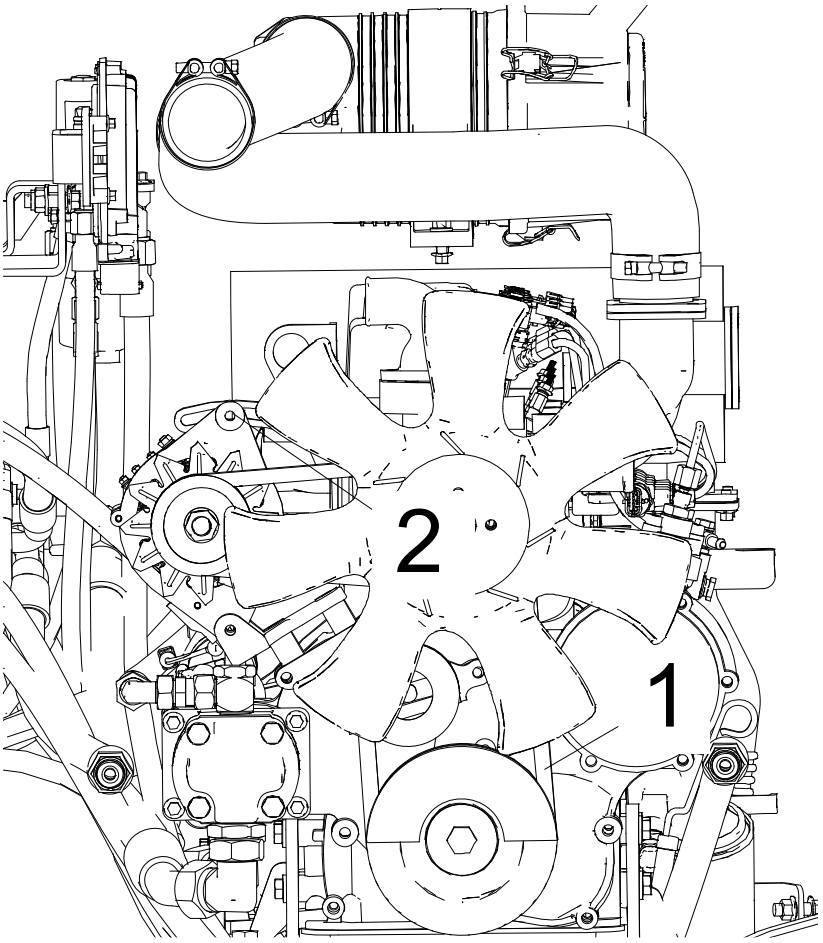


Fig. 5-16: V-belt Installation

1. V-belt
2. Tensioning bolt of engine V-belt

V-belt tensioning

1. Push the V-belt (see the Fig. 5-16) between shaft pulley and AC generator.
2. The maximal shaking amplitude of V-belt keeps under 8mm.

Replace V-belt

1. Unscrew the tensioning bolt (2) of AC generator, see the Fig. 5-16;
2. Rotate the generator alongside the guide rail to engine;
3. Loosen and dismantle the V-belt;
4. Install the new V-belt, use the lever to press the engine

5.6.8 Hydraulic System

Danger! Life and Injury Risk!
- Scalding and high pressure risk!
- Maintain it after the hydraulic oil is cooled.

5.6.8.1 Check the level of hydraulic oil in the tank

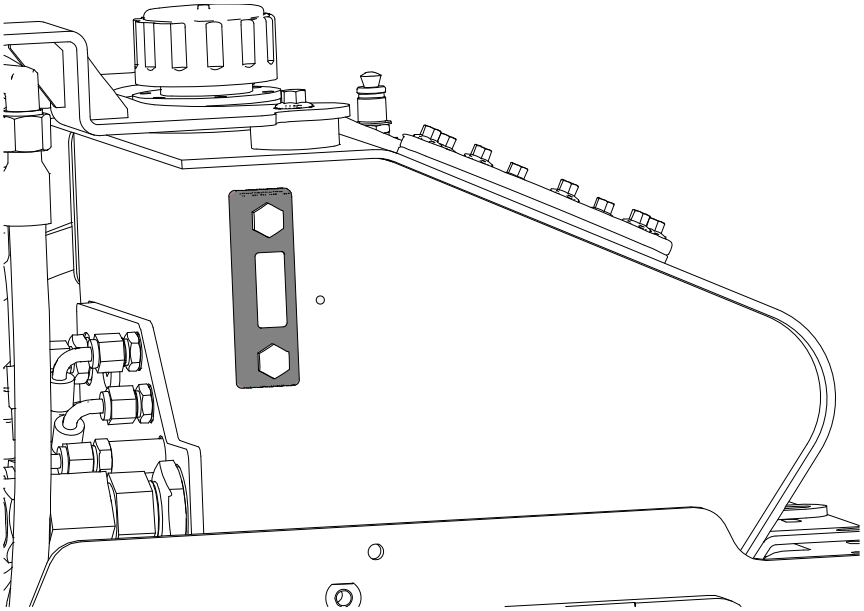


Fig. 5-17: Liquid Level Indicator of Hydraulic Oil Tank

5.6.8.2 Requirements of Hydraulic Oil

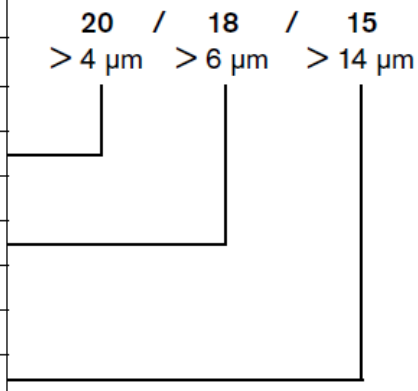
Fill the HVLP 46 mineral oil when delivering the machine from plant.

If it needs to be replaced, it's recommended using the hydraulic oil:

S/N	Model	User environment
1	HVLP 32	Low ambient temperature
2	HVLP 46	Gentle ambient temperature
3	HVLP 68	Too high environment temperature

Table 5-2: The type of recommended hydraulic oil is related to ambient temperature.

Particles per 100 ml		Scale number
More than	Up to and including	
8,000,000	16,000,000	24
4,000,000	8,000,000	23
2,000,000	4,000,000	22
1,000,000	2,000,000	21
500,000	1,000,000	20
250,000	500,000	19
130,000	250,000	18
64000	130,000	17
32000	64000	16
16000	32000	15
8000	16000	14
4000	8000	13
2000	4000	12
1000	2000	11
500	1000	10
250	500	9
130	250	8
64	130	7
32	64	6



Attention! There is the risk of system and component damaged!
- If the hydraulic oil has the relatively high viscosity and lead to delaying the application or releasing the parking brake.
- If the hydraulic oil has the relatively low viscosity, it will lead to leakage adding or overheating caused by cavitation.
- The overheating will further reduce the viscosity and lead to excessive loss and finally result in reducing the lubrication performance of hydraulic oil.
- It may lead to damage to hydraulic component.

⚠ Please use the clean hydraulic oil when refilling to avoid polluting the hydraulic oil tank. The minimal cleanliness grade is 20/18/15 according to the requirement of ISO 4406.

⚠ Please strictly follow the maintenance requirements for hydraulic oil to avoid the damage to machine.

Refilling Hydraulic Oil

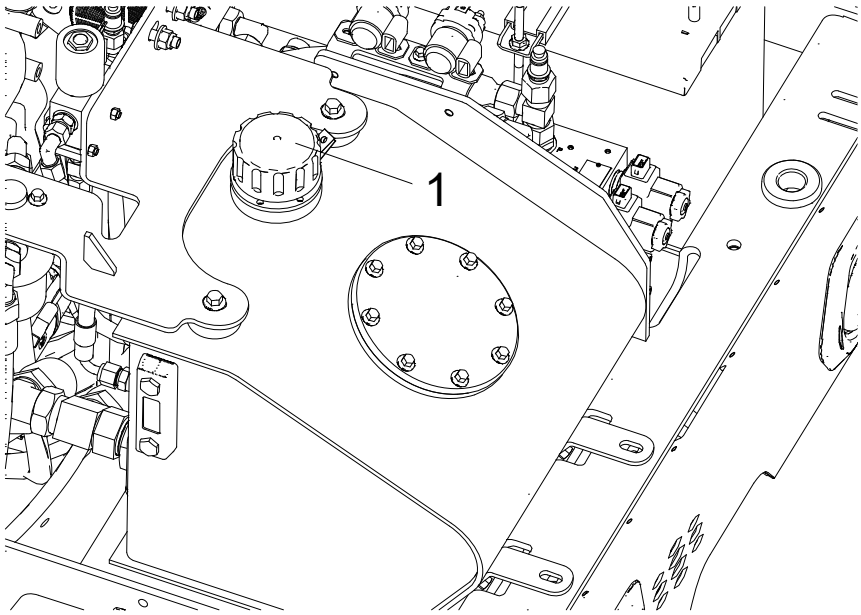


Fig. 5-18: Refilling Port of Hydraulic Oil

Attention! Follow Instructions!
- It's prohibited using other products besides the recommended hydraulic oil.
- It's prohibited using the biologically hydraulic oil.

⚠ The pollution of hydraulic oil is not within the warranty range.

➲ The operation steps of adding or refilling hydraulic oil into oil tank are shown as bellow:

1. Turn off the engine and remove the ignition key.

2. When necessary, make the hydraulic oil cool.

ⓘ The hydraulic oil tank is set at the front right side of the machine and is under the engine hood.

3. Open the cover (1) of oil tank and re-fill the hydraulic oil conforming to specifications until the oil level is between the marks (see the item 5.6.8.1 under above clause **5.6.8**).

4. The level of hydraulic oil cannot exceed the highest indication line.

5. Only the guaranteed hydraulic oil can be used.

→ Discharge the gas when operating under low idling for several minutes and confirm the oil level in the tank is within the specified range.

Attention! Follow Instructions!
- When replacing the hydraulic oil, it's strongly recommended replacing the hydraulic

.

5.6.8.3 Discharge of Hydraulic Oil Tank

Caution! There is the risk of health and environmental damage!

- Combustible liquid!
- When handling the hydraulic oil, it's prohibited smoking or using open flame.
- The discharged hydraulic oil shall be handled according to the local regulations.
- When replacing the hydraulic filter, avoid the hydraulic oil polluting the environment.

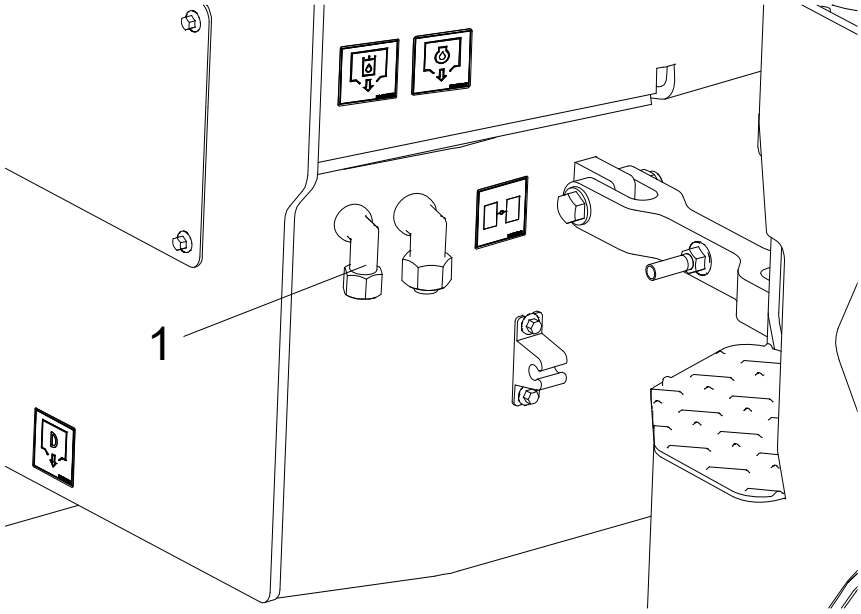


Fig. 5-19: Discharge Port (1) of Hydraulic Oil.

The method of discharging the oil in hydraulic oil tank is described as below:

1. Turn off the engine;
2. Open the engine hood and make the engine totally cool;
3. Place the container with the volume at least of 40L under the oil discharge port;
4. Unscrew the plug and totally discharge the hydraulic oil;
5. Close the oil discharge port and re-fill the hydraulic tank;
6. Close, tighten and clean the oil discharge port and avoid the oil leakage.

5.6.8.4 Cleaning the hydraulic oil tank

Attention! Follow Instructions

- Make sure the hydraulic tank keeps in clean. Any dirt or sundries may directly damage the hydraulic system.

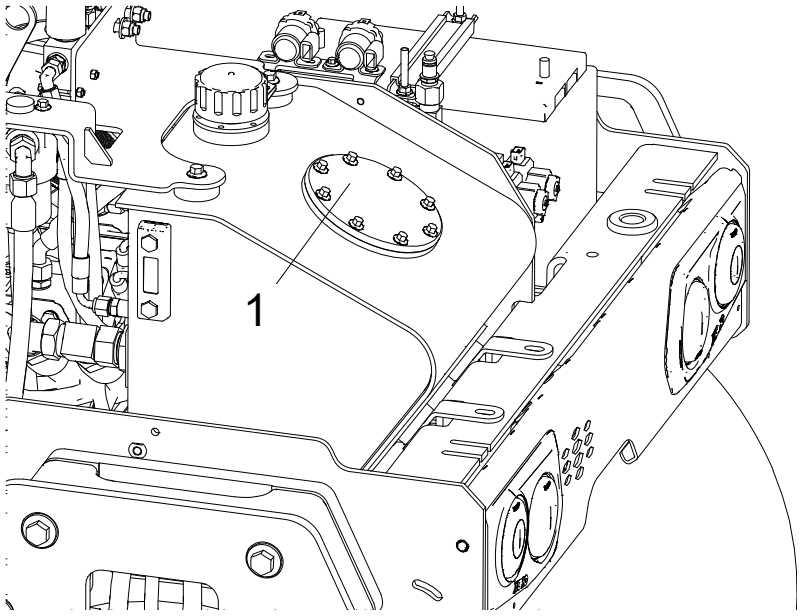


Fig. 5-20: Open the check cover (1) to clean the hydraulic oil tank

1. Open the engine hood and make the hydraulic system cool down.
2. As mentioned above, discharge the hydraulic oil.
3. Open the check over of hydraulic tank.
4. Clean the inside of oil tank.
5. After cleaning, please re-fill the clean hydraulic oil.

5.6.8.5 Hydraulic Hose and Pipe

Danger! There is the risk of serious injury or life!

The damaged hydraulic pipe may lead to high pressure oil spouting out and penetrating the skin and reaching the internal tissues.

- **High pressure oil may lead to serious corrosion or death!**
- If occurred, please immediately consult with doctor!

- Fire risk!
- Prevent the high pressure oil leaking to the environment.

Warning! Injury and / or Life Risk!

- The maintenance of hydraulic pipe shall be only conducted by the qualified personnel.

Attention! Follow Instructions!

- Please constantly follow the rules and regulations related to hose service life.

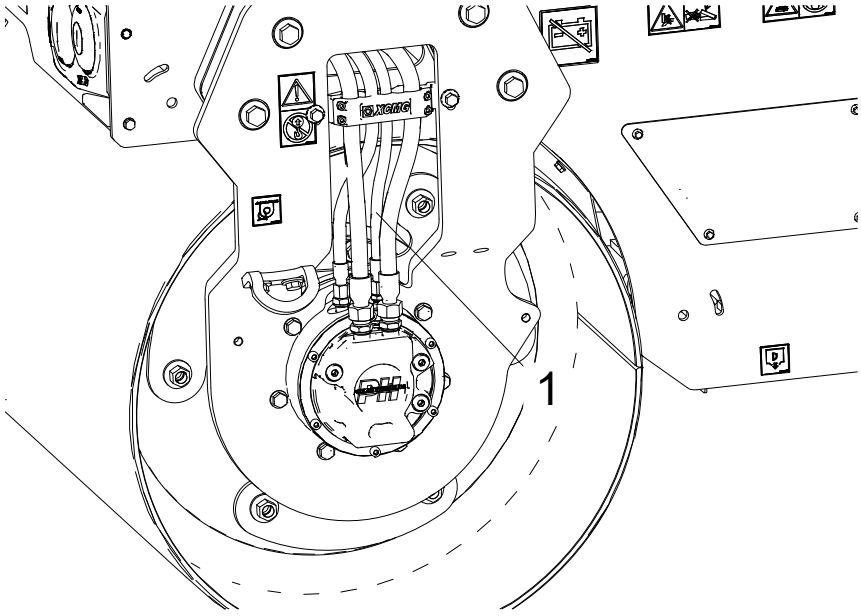


Fig. 5-21: Hydraulic Hose (1) on Vibratory Drum

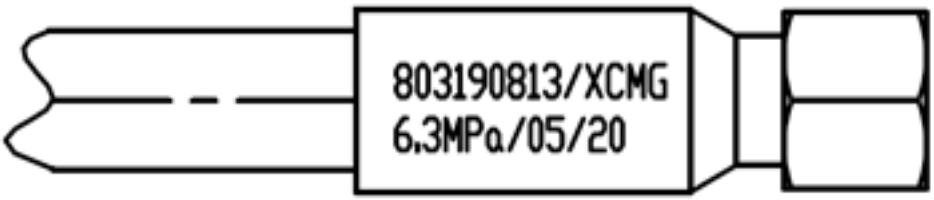
→ Regularly check all circuits, pipes, hoses and whether there is the leakage and visible damage at connections.

The damaged parts must be replaced immediately!

It's prohibited using any hydraulic pipes those may be damaged to operate the machine.

The wear degree of hose is difficult to evaluate. Please replace it 6 years after the production date (namely 113-020 of DIN20066:2018-03, DGUV rules).

- The production date of hose shall be marked on the accessories.



-

Fig. 5-22: Hose Assembly Marks:
Part No. / Manufacturer
Allowable Pressure / Production Date (Month / Year)

The hose with the storage time over 2 years may be prohibited using in some areas.

5.6.8.6 Hydraulic Filter Inspection

Caution! Health and Environmental Damage Risk!

- Combustible liquid!
- When handling the hydraulic oil, it's prohibited smoking or using open flame.
- The discharged hydraulic oil shall be handled according to the local regulations.
- When replacing the hydraulic filter, avoid the hydraulic oil polluting the environment.

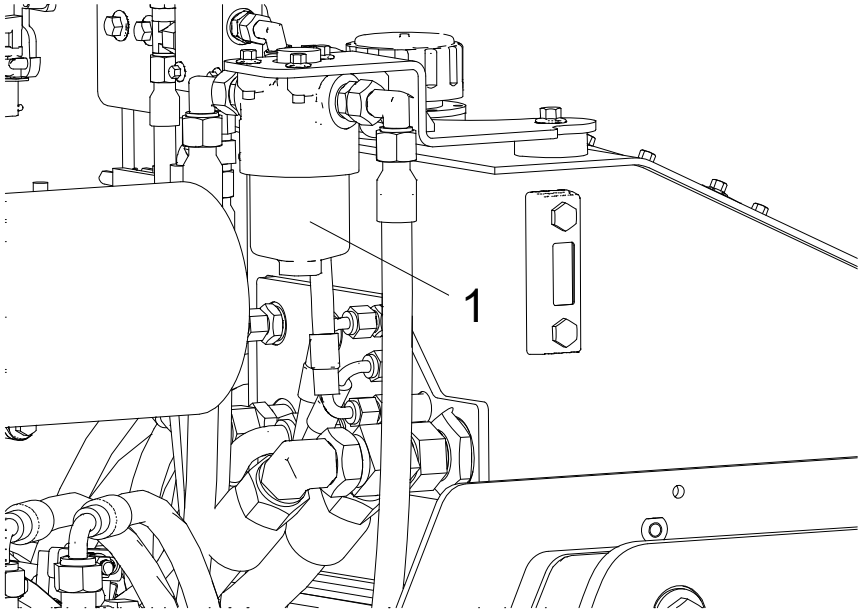


Fig. 5-23: Hydraulic Oil Filter (1)

- The blocking indicator is installed on the top of hydraulic filter.

- When the pressure difference is relative low inside the filter, the indicator light is green. When the pressure is increasing and needs replacing the filter element, the indicator light is red.

- The viscosity of cool hydraulic oil is relatively low and it's recommended operating the machine about 30min and checking it, and then heating the hydraulic oil.

- No matter how is the blocking condition of filter, it's recommended replacing it with the new hydraulic filter when replacing the hydraulic oil.

5.6.8.7 Replace the Hydraulic Filter

➲ The steps of replacing hydraulic oil filter are described as follows:

1. If necessary, turn off the engine, open the engine hood and make the engine and hydraulic oil cool.

2. Unscrew the pipe of hydraulic filter (1) and dismantle the filter element.

3. Install the new filter element and seal ring and use the special tool to tighten it.

4. Make sure the filter is installed without leakage.

➲ Replace the filter element

1. Unscrew the filter cup②.

2. Make sure all seal parts keep intact.

3. Pull out the filter element ① from filter head and clean the filter cup.

4. Insert the new filter element.

5. Rotate it to filter base, tighten it and make sure it's sealed in place.

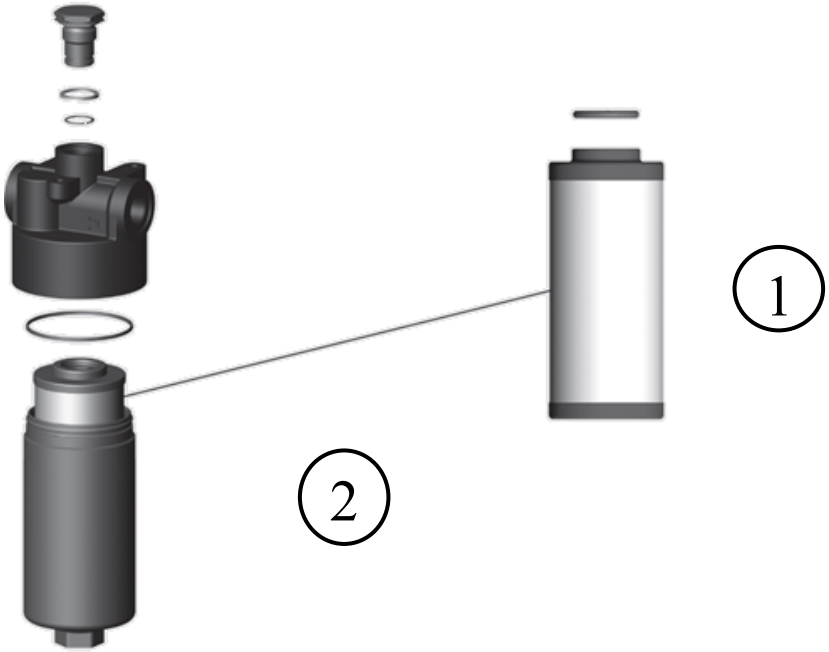


Fig. 5-24: Replace the hydraulic filter element.

5.6.9 Water Sprinkler System

5.6.9.1 Replace the filter screen of water tank

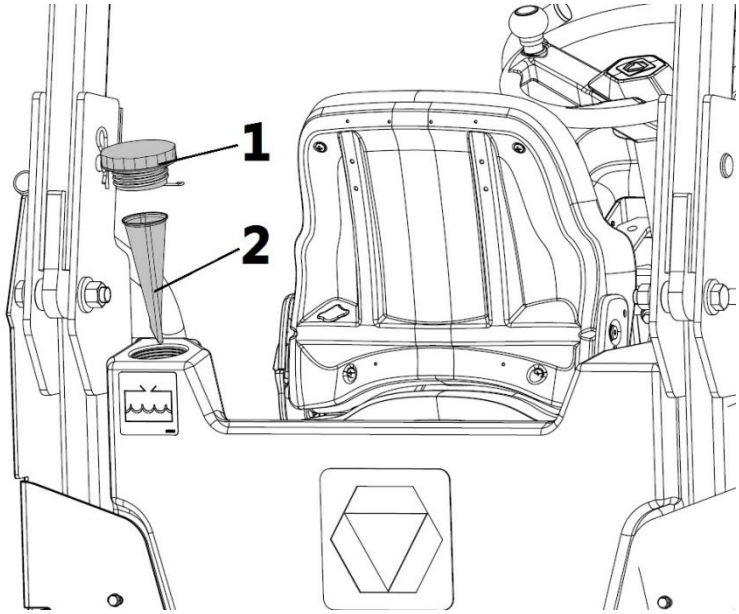


Fig. 5-25: Filter screen (2) is at the water inlet port of water tank

➲ Clean the filter screen of water tank

1. Open the cover (1) of water tank.
2. Take out the filter screen (2) and clean it.
3. Check the damages.
4. Place it to the original position.
5. Tighten the cover of water tank.

→ If necessary, use the routine cleaning agent to clean the filter screen.

→ If filter screen damaged, please replace the filter screen.

➲ Clean the filter screen at outlet of water tank

1. Unscrew the outlet cover (2) of water tank.
2. Pull out the filter screen (1) and clean it.
3. Check its damages.
4. Place it to the original position.
5. Return the outlet cover to the tank.

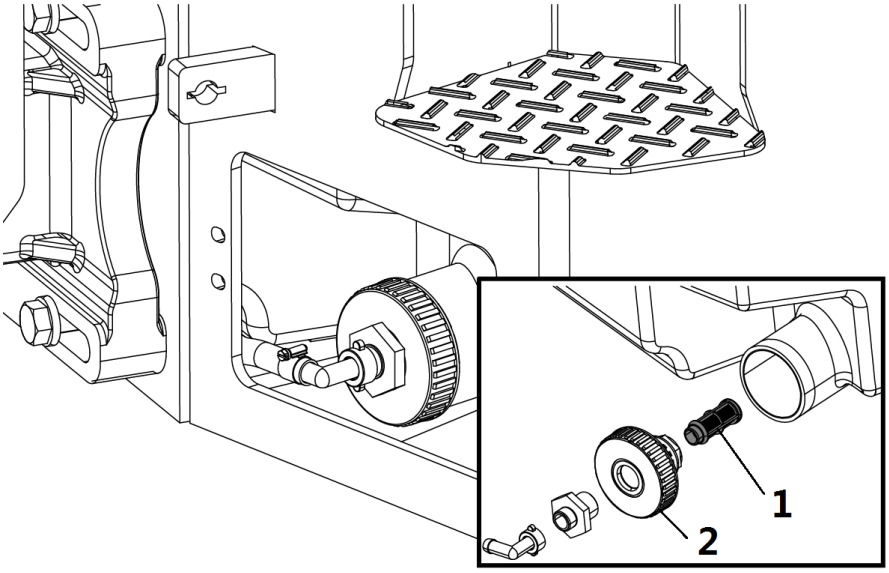


Fig. 5-26: Filter Screen of Water Tank

→ If necessary, use the common cleaning agent to clean the filter screen.

→ If the filter screen damaged, please replace the filter screen.

5.6.9.2 Water Tank Cleaning

ⓘ It's recommended regularly cleaning the water tank.

➲ As shown in followings:

1. Dismantle the filter screen (Fig. 5-25).
2. Open the discharge port under the water tank (Fig. 5-26).
3. Use the pressurized water to clean the possible sundries in water tank.
4. Re-assemble the filter screen and lower discharge port in the original sequence.

5.6.9.3 Check the filter and nozzle

1. Unscrew the nut (3) of nozzle assembly and dismantle the nozzle (2) and filter screen (1).
2. Check whether the nozzle (1) or filter screen (2) is polluted and cleaned. Then re-install it in the original sequence.
3. Replace it when necessary.

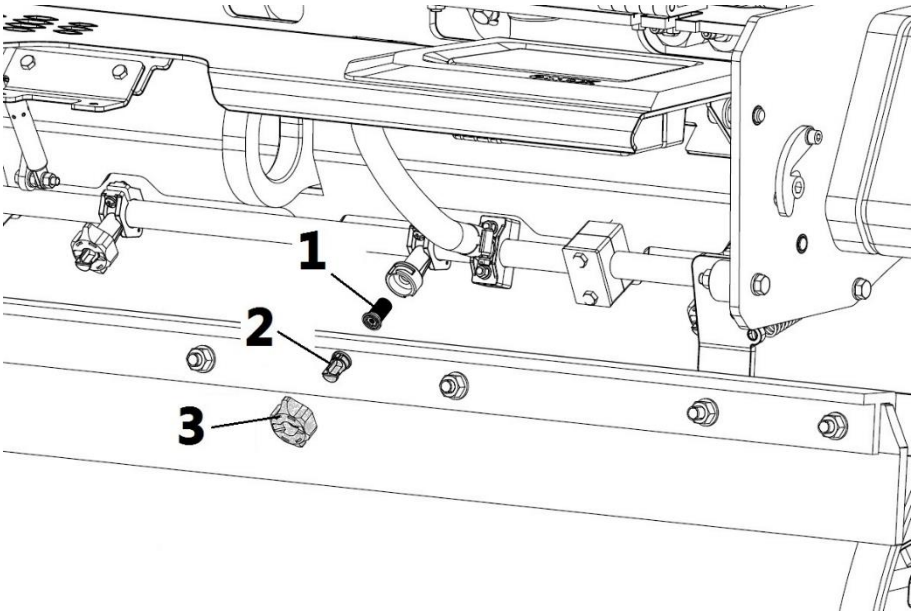


Fig. 5-27: Nozzle Assembly.

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5.6.9.4 Add the anti-freezing solution into water sprinkler system

Attention! Follow Instructions!
- If the ambient temperature reduces under the freezing point, please inject the anti-freezing solution into spraying system and then operate the machine.
- Please choose the environmental anti-freezing solution within the temperature range applicable to where you're.

→ Turn off the engine and disconnect the pipe connector (2) from water sprinkling tank to water pump.

→ Place the pipe connector into the container containing the sufficient anti-freezing solution.

→ Start the water sprinkler system and make the anti-freezing solution can be sprayed through every nozzle.

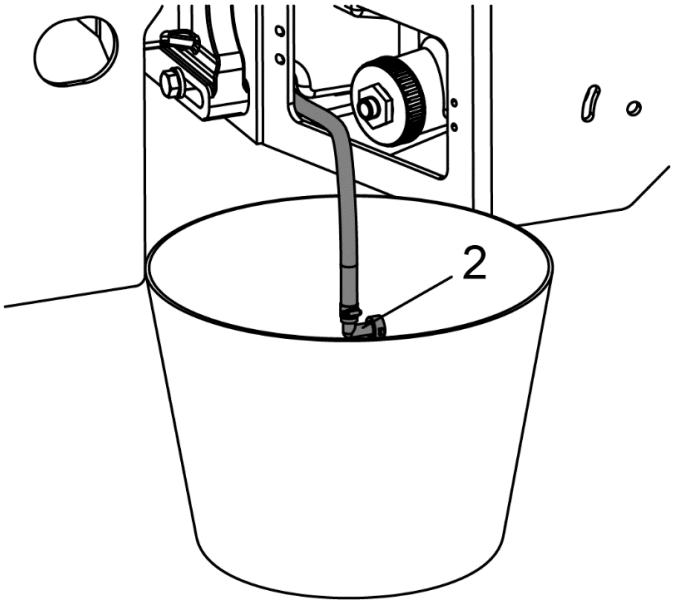


Fig. 5-28: Disconnect the pipe connector (2) and put it into the container containing the anti-freezing solution.

5.6.10 Mud Scraper

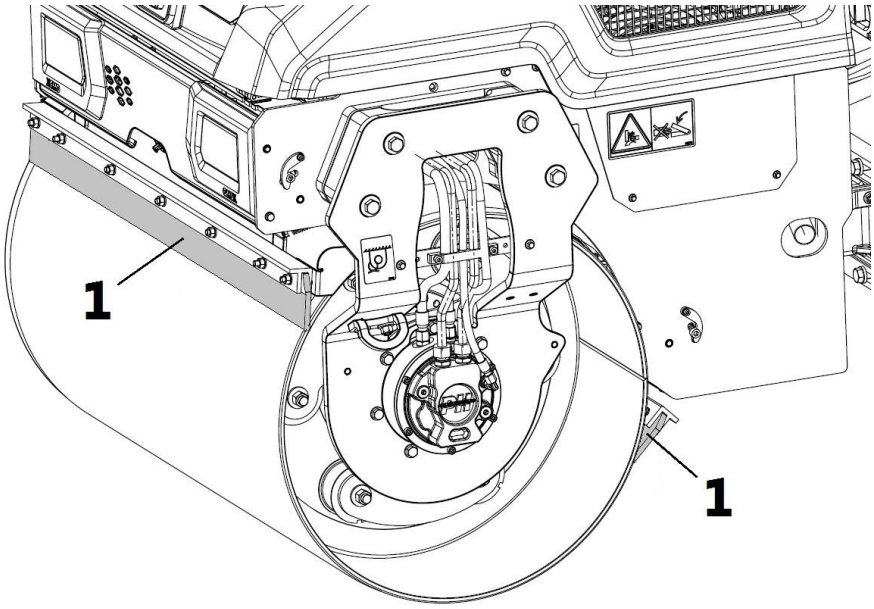


Fig. 5-29: Mud Scraper

ⓘ The machine is equipped with the spring polyurethane scraper.

ⓘ The scraper shall contact with the surface of vibratory drum.

→ If they are worn, immediately replace them.

5.6.11 Vibration Damper

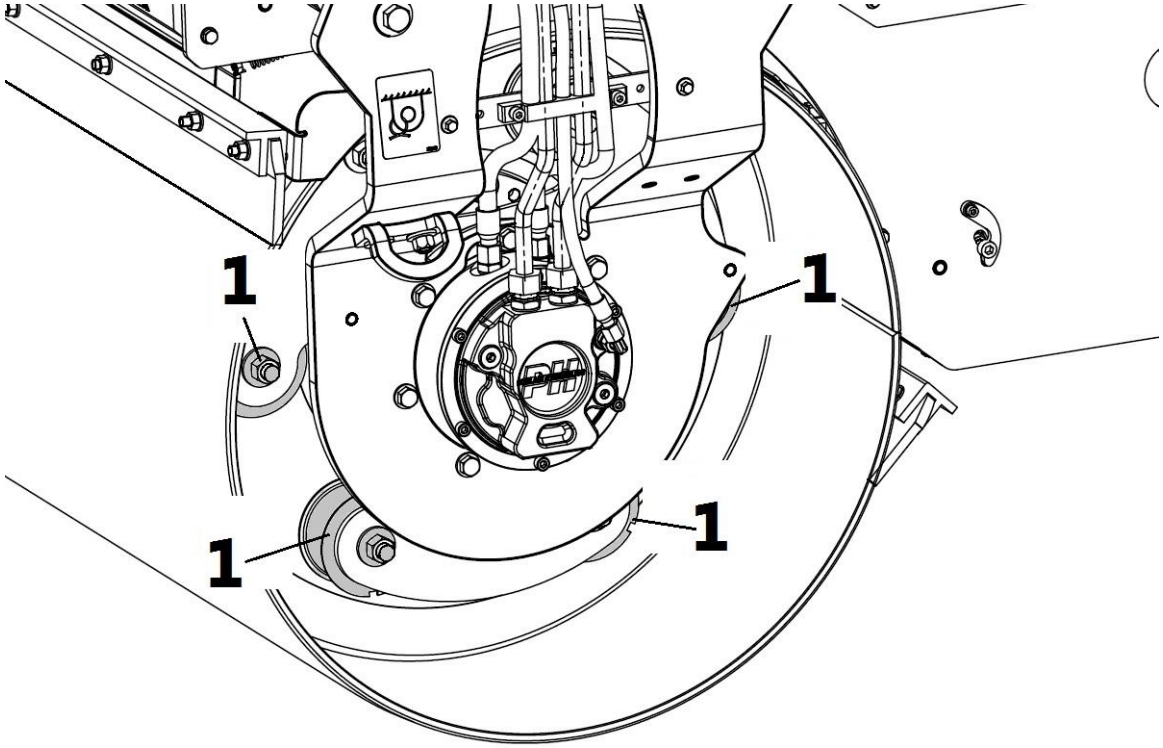


Fig. 5-30: Damper of Vibratory Drum.

→ Turn off the engine.

→ Remove the ignition key!

→ If there is the visible crack (approx. 10mm for the depth) on the damper of the steel drum, please replace the damper (1).

→ If 1/3 of dampers on one side of steel drum are damaged, please replace them all.

→ Regularly check whether the mounting bolts of damper are loose.

5.6.12 ROPS

Danger! Risk Type!

It's prohibited any action for repairing the ROPS!

- It's prohibited drilling or welding ROPS structure.
- If ROPS is damaged or removed, please do not operate machine.

Attention! There is the risk of property or environmental damage!
- If ROPS is damaged or deformed, please contact with the XCMG's product manager.

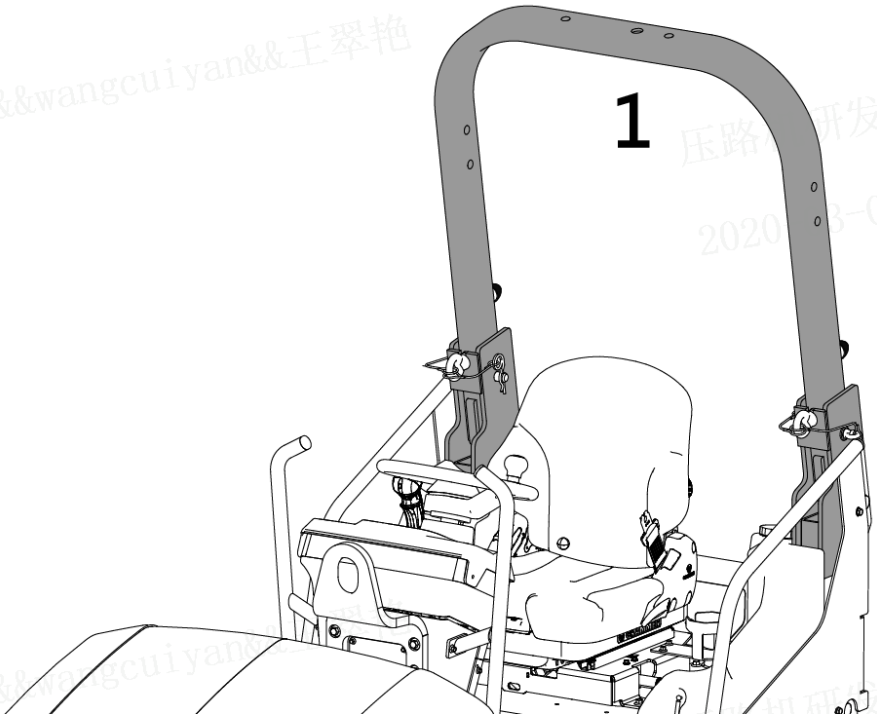


Fig. 5-31: ROPS structure includes the bars (1) at both sides of machine as well as the surrounding brackets.

1. Upper bending beam
2. Rubber pad
3. Pin
4. Supporting leg pin
5. Bolt
6. Gasket
7. Outer bracket plate
8. Press plate
9. *Nut*
10. Pin assembly
11. Undercarriage square tube

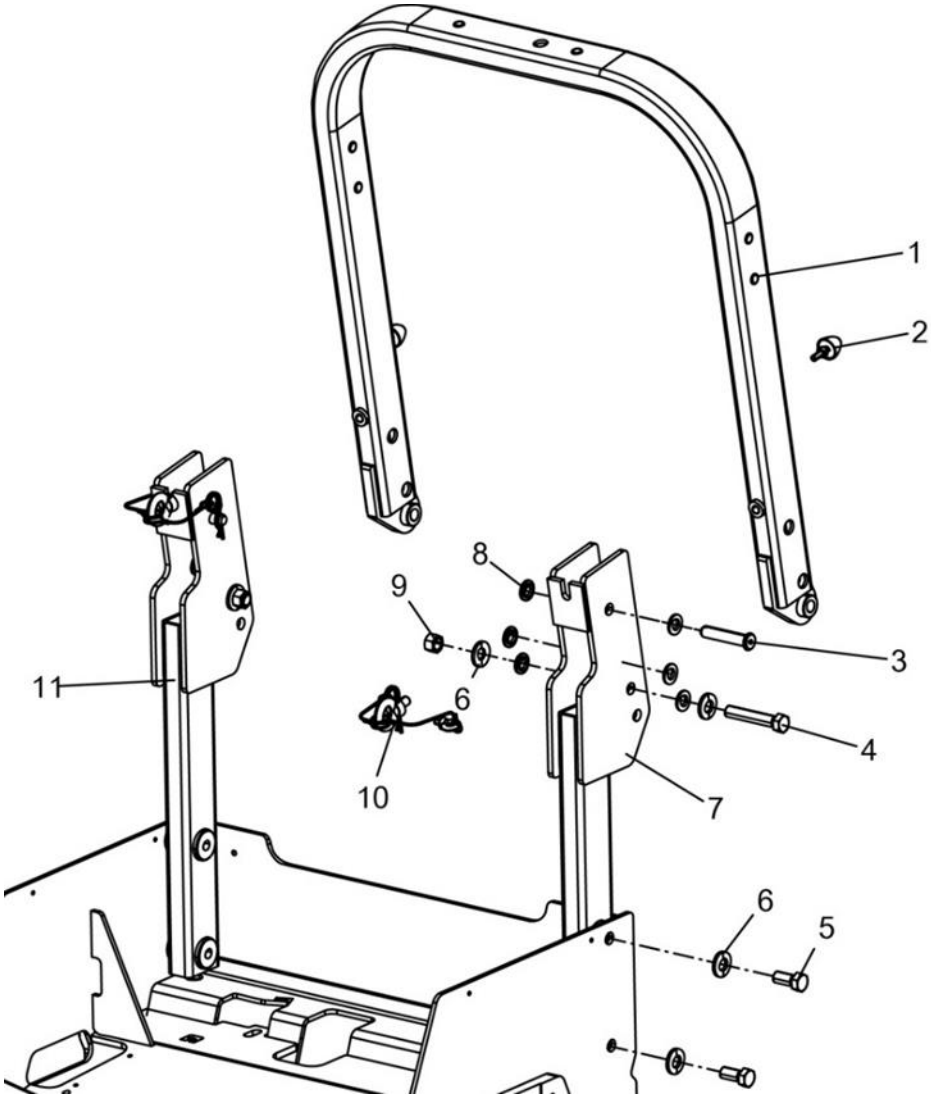


Fig. 5-32: ROPS : all parts used for ROPS position must be intact

→ Thoroughly check the ROPS. Pay attention to rusting, crack and deformation.

→ Make sure all parts required for vertically installing the ROPS are intact.

5.6.13 Electrical System

Caution! Injury Risk!

- The radio communication and accessories not installed improperly may damage the electric components of machine and even lead to the casually moving of machine.
- The electric equipment not installed correctly may lead to fault or accident fire.
- When installing the radio communicator or other electric components or replacing those components, please consult with the appointed distributor.
- Do not try to dismantle or modify any electric or electrical components.
- If it needs replacing or modifying those components, please contact with the appointed distributor.

5.6.13.1 Starting Battery

Warning! Injury or Life Risk!

- The battery may generate the highly combustible and explosive hydrogen during the process of charging!
- Prevent sparks and flame getting close to battery area.
- Keep the storage room of battery in well-ventilated.

Caution! There is the injury risk caused from the inside of battery!

- The battery electrolyte contains the high corrosive sulfuric acid!

Attention! Follow Instructions!

- The machine is equipped with the maintenance-free battery.
- Regularly check the battery capacity to prolong the service life of battery.

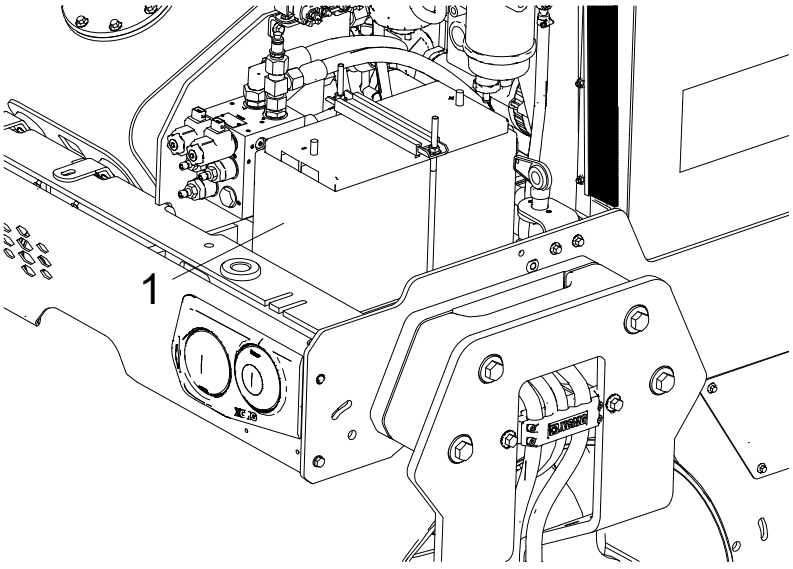


Fig. 5-33: Starting Battery (1)

The battery operation not conforming to the regulations may lead to serious damage to battery, environmental damage or fire risk. Please take the following measures to prevent:

- When operating battery, the operator must wear the goggles and rubber gloves.

- When getting close to battery, it's strictly prohibited smoking or using open flame.

- If the sulfuric acid splashes to cloth or skin, use the water to rinse and clean it thoroughly.

- If the sulfuric acid splashed into eyes, use a large quantity of clean water to rinse and consult with doctor as far as possible.

- During the operating / moving process, please pay attention to any potential sparks generated by battery. Before maintaining / operating, please set the key switch to the position of "Off".

Please maintain it according to the following steps:

1. When dismantling the battery, firstly disconnect the negative pole (grounding side).

2. When installing the battery, firstly connect to positive pole and then the negative pole (grounding side).

3. It's prohibited tools or other metal objects contacting with battery metal terminals or falling to or getting close to the battery.

4. Finally, the battery shall be fixed to the original position after completing maintenance.

ⓘ The machine is equipped with the 110Ah starting battery.

ⓘ The information provided by battery manufacturer can be referred to obtain the further suggestions.

→ In addition, please check the battery connector and corrosion of valve seat and check the lubrication grease at connections at the same time.

→ Circuit control (overcurrent protection)

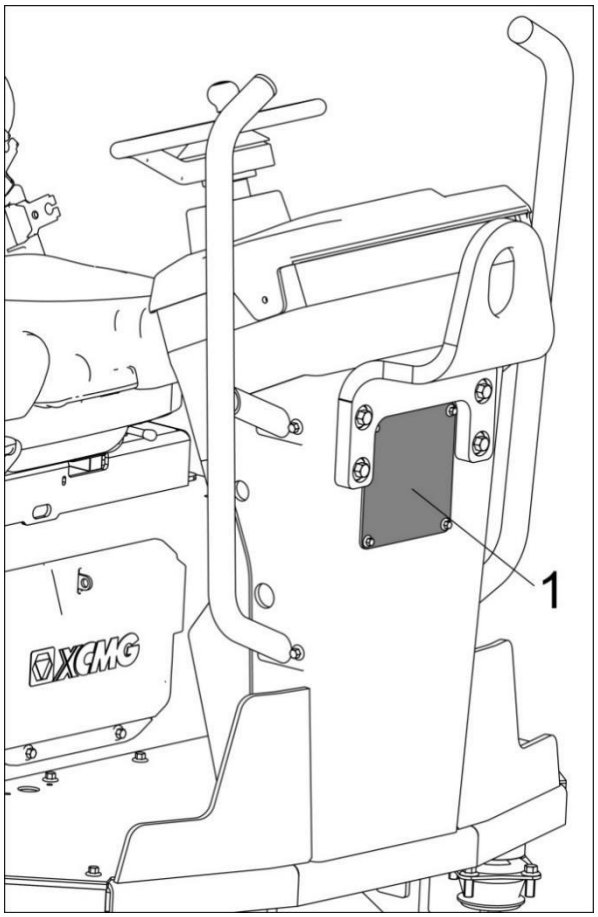


Fig. 5-34: The electric junction box is located at the instrument box.

Prevent the electric fault:

1. Place the button switch to the position of (I).

2. Open the maintenance window (to the direction of engine) in front of instrument box.

① LEDs list and the affected function display can be viewed through the maintenance window.

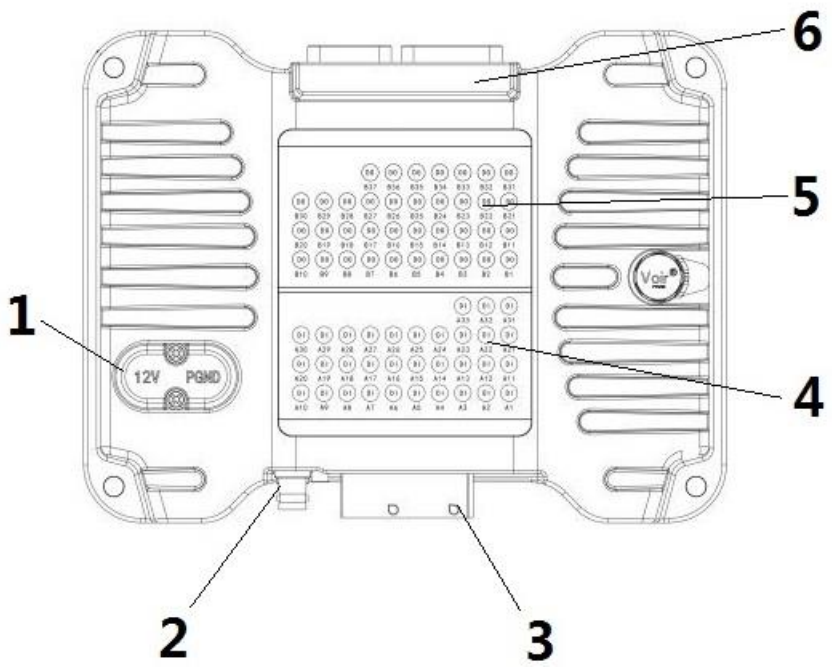


Fig. 5-35: Intelligent Control System:

1. Power supply connector
2. CAN bus connector
3. Input connector
4. Input diagnosis LED
5. Output diagnosis LED
6. Output connector

① The machine is equipped with the intelligent relay system and replaces the traditional fuse.

① The indicator lights are on when it works normally. If any of abnormalities, they will flash.

LEDs List (as shown in table below) and Affected Function.

Input Code	Equipment S/N	Function	Input Code	Equipment S/N	Function
A1	S19	Horn switch (bar)	A9	S9	Vibration instructions Manual switch
A2	S18	Vibration switch (bar)	A10	S9	Automatic vibration switch
A3	S22	Edge cutter Rising switch (bar)	A11	S5	Clearance light switch
A4	S23	Edge cutter Lowering switch (bar)	A12	S2	Ignition key (I position) switch
A5	B03	Seat pressure switch (seat)	A13	S2	Ignition key starter (II position) switch
A6	B04	Seat belt switch (seat)	A14	S14	Engine speed Selection switch
A7	S5	Signal light switch	A15	A03	Power supply ECU
A8	S4	Work light switch	A16	S13	Setting unit for interval of water sprinkler system

Table 5-3: Input list of connecting to intelligent relay equipment.

When the switch is open, LED light will turn on.

Input code	Equipment S/N	Function	Input code	Equipment S/N	Function
A17	B01	Brake switch (bar)	A22	S12	Engine high speed selection switch
A18	B02	Angle sensor (bar) INPUTS	A23		Calibration indicator light
A19	S15	Working mode starting switch	A24	S21	Main switch (bar) of water sprinkler system
A20	S16	Chip spreader starting switch	A25	S20	Anti-slipping function switch (bar)
A21	S16	Edge cutting switch	A26	S26	Edge cutter water sprinkling switch

Table 5-4: Input list of connecting to intelligent relay equipment.

When the switch is open, LED light will turn on.

Input code	Equipment S/N	Function	Input code	Equipment S/N	Function
B1	H11	Horn	B10	H12	Seat belt indication
B2	S3-S8	Control panel 1	B11	H1-H2	Head lamp
B3	S9-S12 S14	Control panel 2	B12	S3	Secondary brake
B4	Y2-Y3	Vibration solenoid valve	B13	S2	Key switch
B5	Y1	Brake solenoid valve	B14	A01	Instrument panel
B6	H5-H6	Rear lamp	B15	H10	Reversing buzzer
B7	Y9	Edge cutting and rising solenoid valve	B16	H1-H2 H5-H6	Steering light relay
B8	Y10	Edge cutting and lowering solenoid valve	B17	M02	Water pump
B9	H13-H16	Optional additional work light	B18	Y12	Spreader

Table 5-5: Output list of intelligent relay equipment.

LED indicator light flashing is the grounding short circuit of output circuit.

Input code	Equipment S/N	Function	Input code	Equipment S/N	Function
B19	H3-H4	Front driving light	B24	B01	Brake pressure sensor switch
B20	H7-H8	Rear driving light	B25	S13	Water sprinkler system setting unit
B21	S17	External power supply	B26	K1	Timer output
B22	K2	Start relay	B27	Y13	Flow divider relay
B23	A03	Engine ECU	B28	Y11	Water sprinkling relay of edge cutting unit

Table 5-6: Output list of intelligent relay equipment. LED indicator light flashing is the grounding short circuit of output circuit.

In case of short circuit, please find out the reason and repair it.

5.6.13.2 Propel Lever Inspection

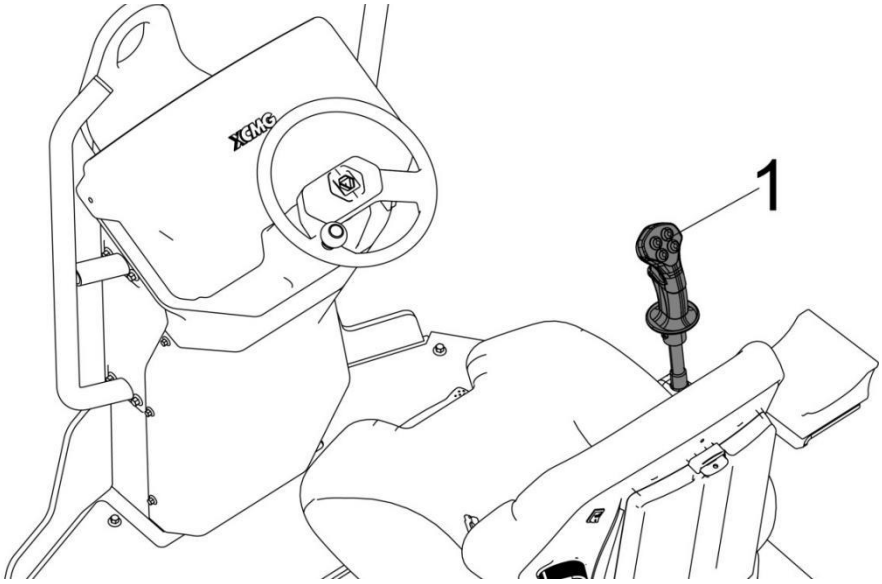


Fig. 5-36: Propel Lever (1)

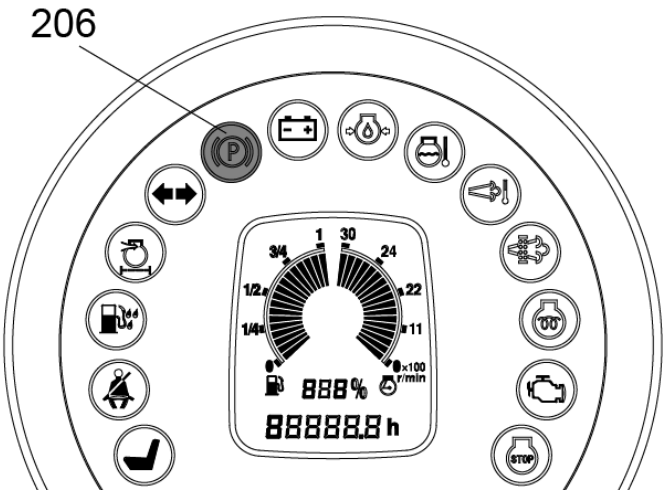


Fig. 5-37: Instrument Display Panel

The resistance of control lever must keep in constant in the whole adjustment area.

The resistance applied to control lever shall be sufficient to keep the position of control lever.

When the engine is working and the control lever is at the position of parking (P), the indicator light of parking brake pressure will turn on (P) (206).

5.6.14 Parking Brake Inspection

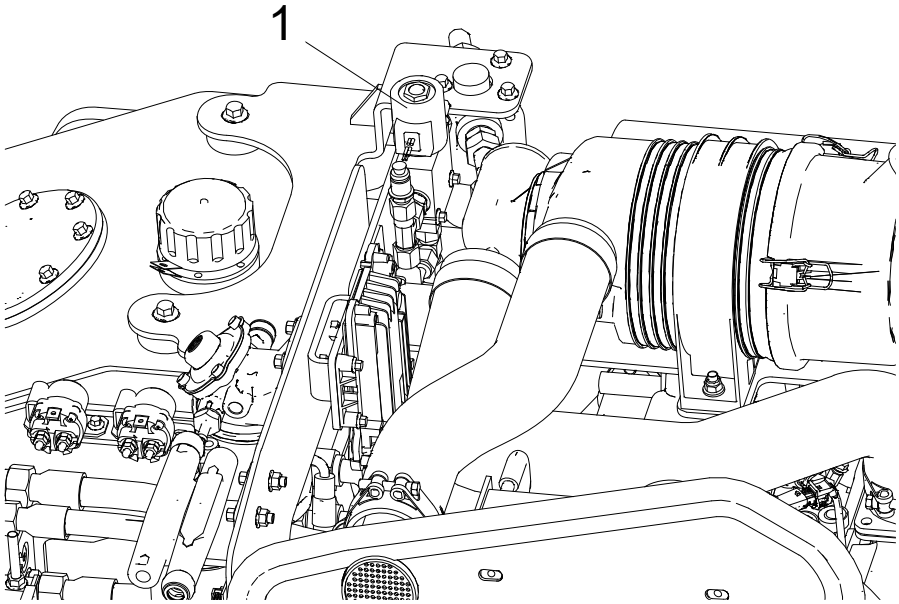


Fig. 5-38: Brake Valve (1)

⚠ Parking brake is one of the most important safety functions of the machine. Regularly check the function according to the maintenance diagram.

o Parking brake is not the only method of making the machine stop during working. Other auxiliary mechanisms can be applicable to stop the machine under the emergency condition of parking brake failure.

o In addition, the parking brake test shall be conducted after using the emergency brake when the machine works each time.

o The parking brake shall be conducted on the flat ground and only can be conducted under the engine is in idling state.

o When conducting the parking brake test, close the vibration function.

➲ It shall be conducted as following steps:

1. Stop the machine on the flat ground;
2. Turn off the engine;
3. Open the engine hood;
4. Disconnect the parking brake relay;
5. Close the engine hood and start the engine;
6. Make the engine operate at idling;
7. Make sure there is no person or barrier around the machine;
8. Gently move it forward or backward.

⚠ Do not move the machine when engine is turned off.

Danger! Brake operation may lead to injury or life risk!
- If the machine moves a little, parking brake may be damaged.
- Do not operate machine and fix it by using wedge block.

1. Return the control lever to parking position.
2. Finally turn off the engine.
3. Re-connect the brake relay.

If the parking brake fails after test, it may require the further measures.

Attention! Follow Instructions!
- If the parking brake test fails, please contact with the XCMG's product manager.

5.6.15 Emergency Brake Inspection

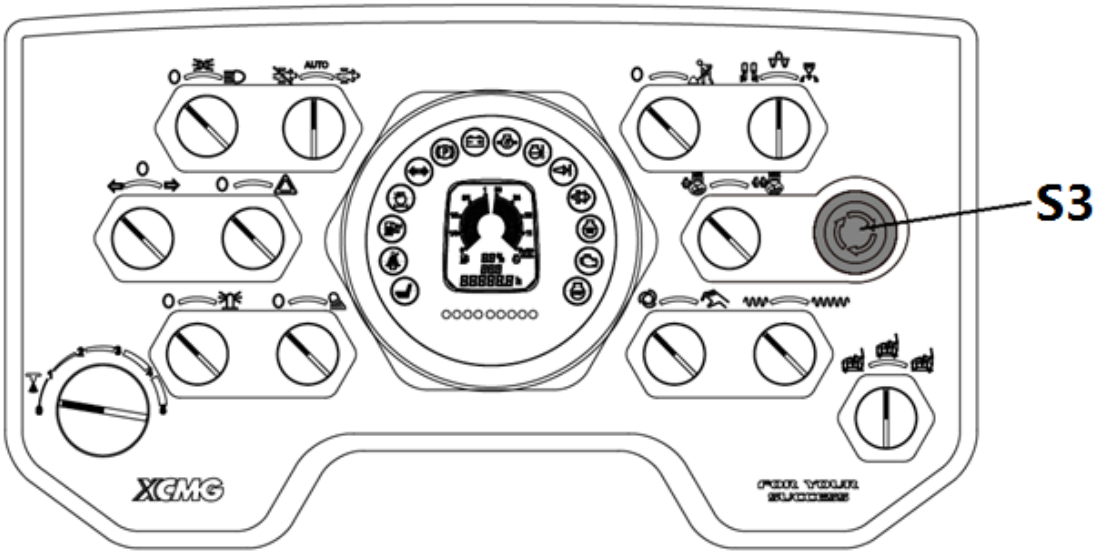


Fig. 5-39: Emergency brake button on the upper right of control console

Emergency brake button is one of the safety components of machine. Regularly check the function according to maintenance diagram.

1) Make the engine operate at idling, stop the machine at original place and turn off other functions.

2) Press the brake button.

3) The engine and electrical system shall be turned off immediately.

4) If they are not turned off, then the emergency brake operation fails and needs immediately repairing. Please contact with your XCMG's product manager for the further supporting.

Danger! The emergency brake has the risk of injury and life!
If emergency brake test fails, please do not operate the machine!

Attention! Follow Instructions!
- If emergency brake test fails, please contact with your XCMG's product manager.

5.7 Recommendation Table of Fuel and Lubrication Oil

Symbol	Description	Specification	Quantity	Description
	Lubricating grease	0# Molybdenum Disulfide Lithium Grease KP2P-30	Based on the on-site requirement	It's used for hydraulic pump and motor spline shaft, eccentric shaft of vibratory drum and transmission shaft spline
	Hydraulic oil	DIN 51524-3	35L (Volume of hydraulic oil tank)	HVLP 32/46/68 depends on the ambient temperature. The machine to be delivered is installed with the HVLP 46 inside.
	Engine lubrication oil	Summer: 15W/40 CF-4 Winter: 5/W30 CF-4	5L	The lubrication oil suitable for water-cooled engineering machinery diesel engine shall be used.
	Coolant	Mono ethylene glycol with the concentration of 50%.	6L (Coolant)	The ambient temperature is lower than -35°C, increase the medicament concentration.
	Diesel	0 # diesel oil (filling before leaving factory) -20# Diesel	35L	The ambient temperature is higher than 0℃ The ambient temperature is lower than -10℃

Table 5-7: Recommendation Table of Fuel and Lubrication oil

5.8 Welding Instructions

① Premise:

1) Turn off the engine and remove the ignition key.

2) Wait for 30s.

3) Firstly disconnect the main switch of battery and then the positive pole of battery.

4) Unplug all plugs of electric parts.

5) Clear all damaged parts caused by welding heat and make sure all combustible materials (such as: fuel, oil etc.) will not be affected by welding operation.

→ Stick the negative pole of welding unit to the preset weld seam as far as possible and make sure the oil paint and coating at this position are cleared.

→ The welding wire shall be away from the machine harness.

→ In case of unavoidable contact, please avoid arranging the welding wire parallel with the machine harness in any case but take the normal cross arrangement.

→ Except contacting with the welding seam, the welding rod shall not contact with any other parts of machine.

→ After completing the welding, please re-connect all plugs.

⓵ It's recommended conducting the anti-rust treatment for clearing the paint or coating peeling.

5.9 Bolt Tightening Torque

Attention! Parts or Machine Damaged Risk!

⚠ When operating it by using bolt, screw etc., make sure the tightening torque is correct.

Model of standard part	Size of socket spanner mm	Size of socket head wrench, mm	Tightening torque, Nm	
			Class 10.9	Class 8.8
M8	13	6	30	20
M10	16	8	70	50
M12	18	10	120	90
M14	21	12	195	140
M16	24	14	300	210
M18	27		410	300
M20	30	17	600	400
M22	34		800	550
M24	36	19	1000	700
M27	41		1500	1050
M30	46	22	1850	1450
M36	55	27	3000	2450

Table 5-8: Bolt / Spanner Size and Required Tightening Torque.

6. Transportation, Storage and Prevention

6.1 Requirement of Transportation Safety

Warning! Personnel Injury!
- It's strictly prohibited professional personnel loading, transporting or unloading equipment otherwise it may lead to personnel injury, death or equipment property loss.

6.1.1 Personnel Safety

During the transporting process, fold the ROPS and tighten it by using ropes.

The driver can operate the equipment only after completing the installation of ROPS and driver sit down correctly.

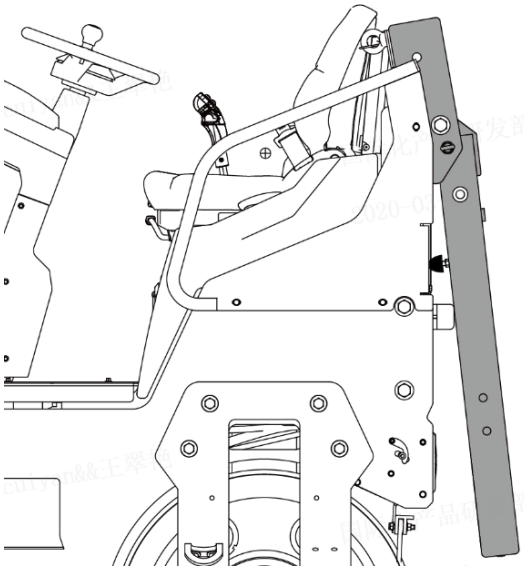


Fig. 6-1: ROPS Folding and Transporting State

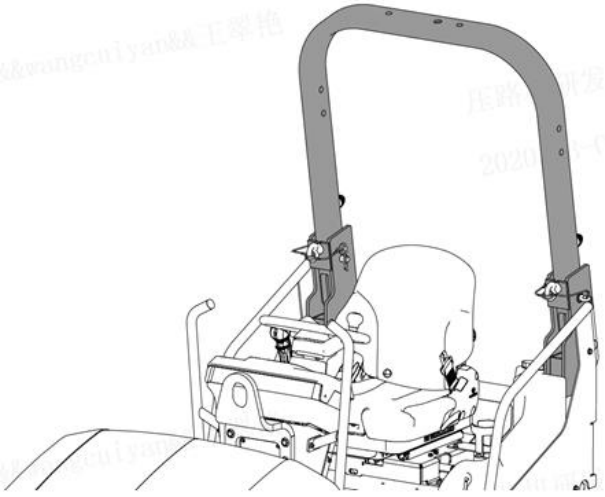


Fig. 6-2: ROPS must be in vertical state during the operation process

Make sure the equipment safety during the transport process.

6.2 Highway Transport

6.2.1 General

Danger! Personnel Injury! Transport Danger!
- Serious Injury or Death Risk!
- Properly protect the machine during the transport process!

Warning! Danger Type! Service Personnel!
- Do not hire the personnel not trained or with insufficient qualification to load and unload the machine.

→ The common transport tools include truck, trailer or semi-trailer.

→ The machine safety must be ensured no matter what transport tools are used.

→ Obey the traffic rules and make sure goods safety.

→ The personnel who take charge of loading, transporting and unloading machine must be fully trained and have the qualification of executing tasks.

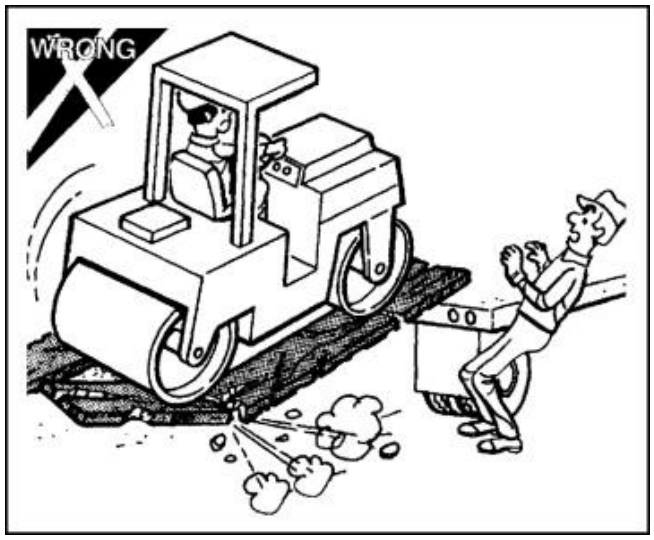


Fig. 6-3: Vehicle and fixing unit shall conform to the condition of transporting machine

Attention! Obey Traffic Rules!
- The legally binding (demonstrative) regulations related to vehicle machine safety shall be applicable.
- Additional or other regulations may be suitable for local area.

→ Make sure the machine is stable and fixed firmly before transporting.

→ Make sure the machine is bundled firmly to prevent the following conditions:

o Emergency brake.

o Sudden action.

o Road bumping.

→ The transport machines are not applicable to following conditions:

o Lashing facility is used improperly or damaged.

o Invalid or loose lashing.

o Transport vehicle is not proper or fails.

o The personnel unqualified and not trained participate in transporting.

Warning! Personnel Injury! Overload!
- The transport vehicle is prohibited for overloading.

Attention! Important Prompt!
- The company or personnel take charge of transporting shall be responsible for equipment transport safety.

6.2.2 Loading Instructions

Danger! Personnel Injury! Loading and Unloading Risk!
- Death risk.
- The machine may tilt on the open and smooth slope out of control.
- Make sure the slope space is sufficient to ensure the safely load and unload.

Warning! Load may lead to personnel injury!
- Reasonably control the load distribution of transport vehicle.

→ Before the truck, trailer or semi-trailer transporting, make sure it will not exceed the allowable weight and size of overload vehicle.

→ Lay the anti-slipping plate on the slope or wooden plate.

→ Do not clamp on the smooth metal slope.

- Do not remove sundries (such as grease, dirt, ice block etc.) on the slope, wooden plate, loading area and vibratory drum of machine to avoid slipping down.

- If the pavement is wet and slipping, the anti-slipping pad shall be used.

➲ Load machine:

1. Lost machinery parts shall be fixed or dismantled for storage separately.

2. When driving the machine on slope edge, the machine shall be parked stably on the slope.

3. When driving the machine on slope, the machine shall be driven at a low speed with caution.

4. When stopping machine, pay attention to the gravity position.

5. During the transport process, the articulation lock rod shall be ensured in the locking state between front and rear frame.

6.2.3 Transport Requirement

Caution! Injury Risk!
- The transport task must be executed by the personnel who have the rich experience and are well trained, and master the relevant knowledge in static hydraulic transmission and spring brake.
- Remove the articulation lock before driving the machine.

6.2.3.1 Machine Gravity

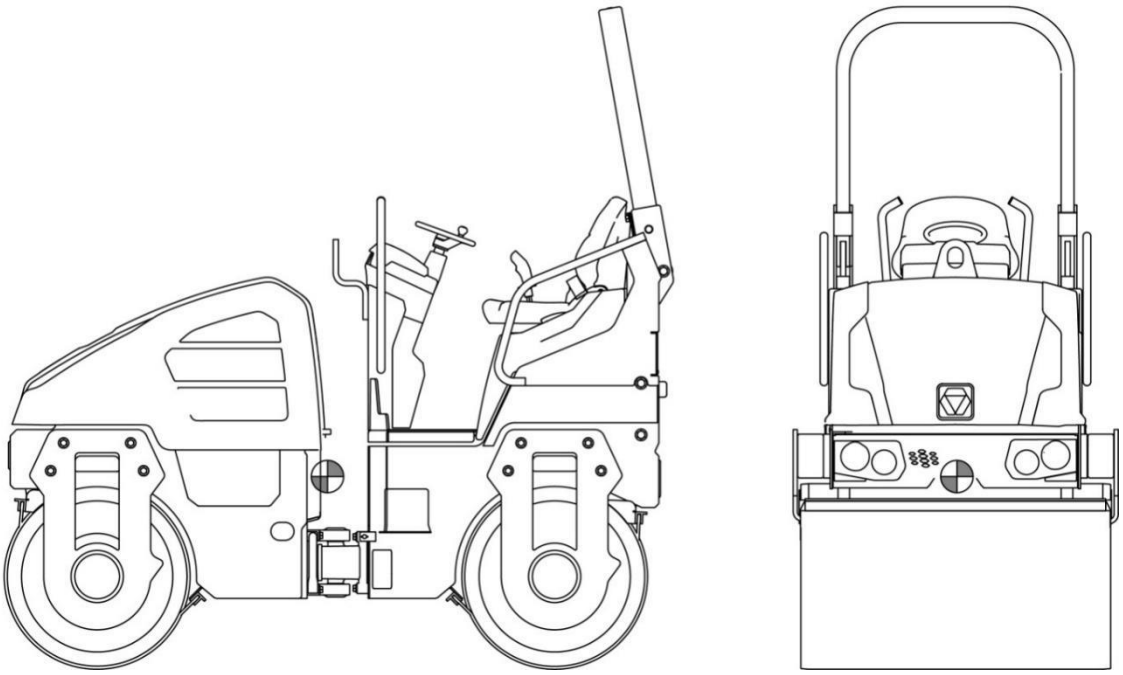


Fig. 6-4: Machine Gravity

→ Folding the ROPS may reduce the height of machine transport.

6.2.3.2 Transport Lashing

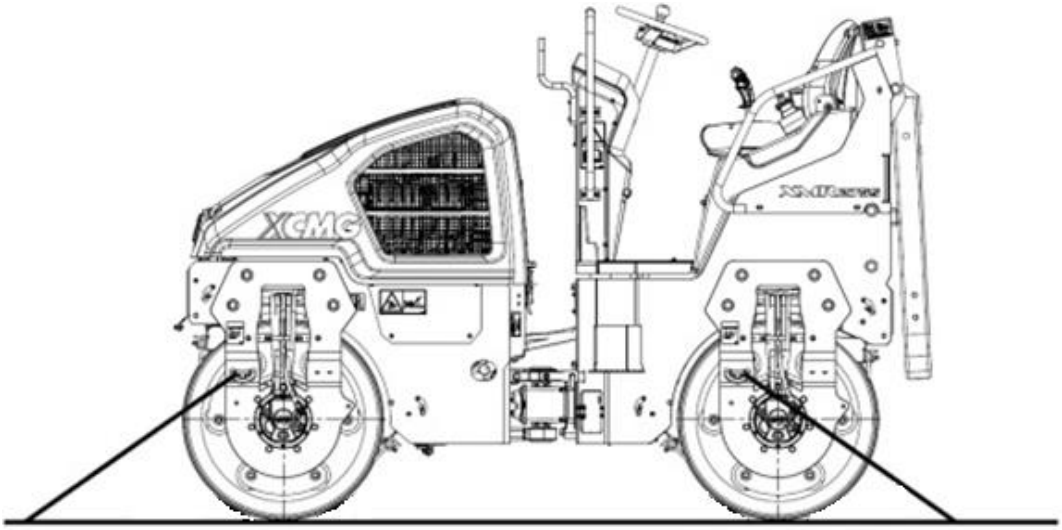


Fig 6-5: Lashing and fixing, one lashing method

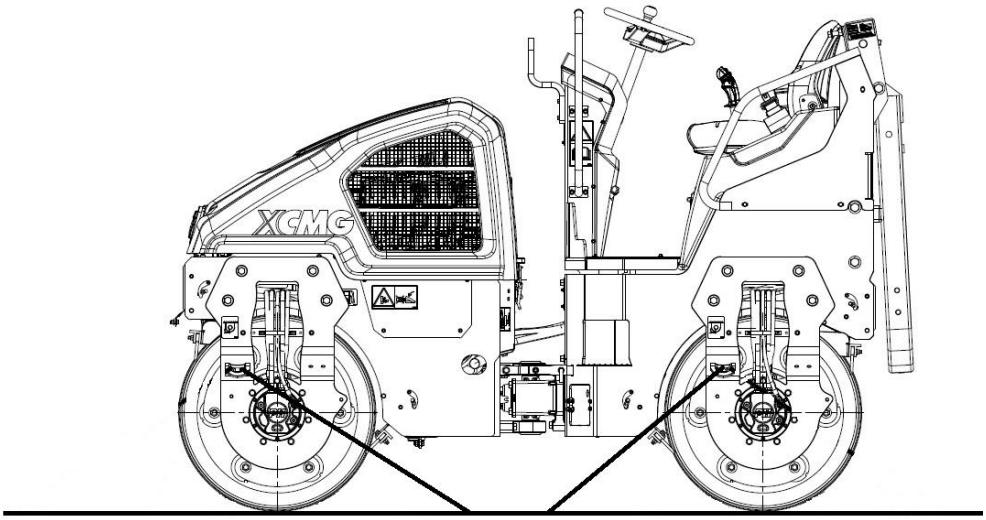


Fig 6-6: Lashing and fixing, another lashing method

→ Execute the above reverse steps to dismantle machine.

Caution! Injury Risk!
- Remove the articulation lock before driving the machine.

6.2.4 Crane Lifting Machine

Danger Personnel Injury!
- Follow the crane regulations for hoisting!
- Do not overload: follow the loading requirements of crane!
- Do not stand under the goods or crane hanger rod!
- Articulation lock must be in locking state!

Warning! Personnel Injury!
- Before safety measures not reached, it's strictly prohibited hoisting machine.

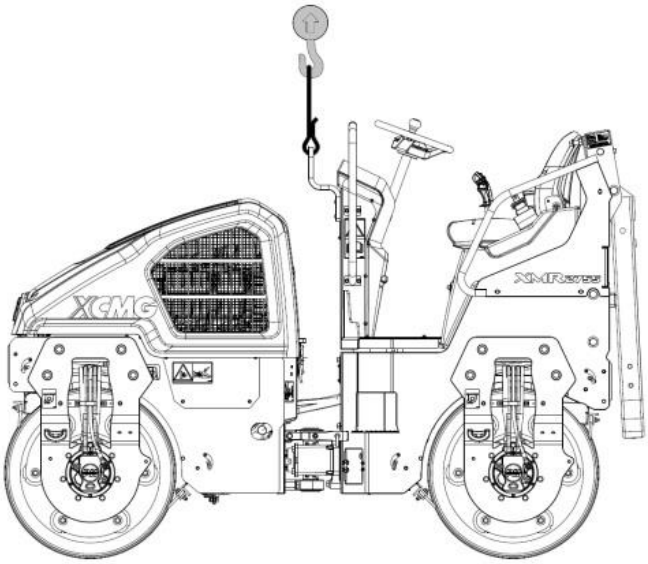


Fig. 6-7: Crane Lifting Machine.

Hoisting steps:

1. Place the machine to designated position.

2. Lock the articulation lock and fold ROPS when necessary.

3. Make sure all safety measures (including the fixing safety area within the range of turning radius) mentioned in crane manual are implemented in place.

→ Use the proper tool, convex lug, wire etc. and make sure the stability of crane in floor area.

→ The machine weight must conform to the table of crane hoisting load.

Towing Machine

Danger! - Personnel Injury or Death Risk!
- In case of brake failure during the traction process, the machine may move without sign.
- Use the wedge block to fix machine and prevent machine damage or personnel injury.
- Tow the machine on slope:
- Use the wedge block to fix the machine.
- It's only allowed to be towed along the upward direction of slope.

⚠ The personnel who execute the traction task need to master the relevant knowledge in static hydraulic transmission and spring brake.

Attention! Follow Instructions!
- When towing the machine, the following regulations shall be followed:

- Maximal traction distance: 200m.
- Maximal traction speed: 1km/h.
- When necessary, take the traction measures.

6.2.5.1 Towing Preparation

➲ For correctly and safely towing the machine, please comply with the following steps:

1. Control lever is at the neutral position;

2. Engine shall be in powering off state;

3. Traction vehicle shall be placed at designated position.

→ Before using, check the towline, steel ropes or connecting rods are worn or damaged.

→ Relevant tools shall be prepared completely.

6.2.5.2 Releasing Pressure of Driving System

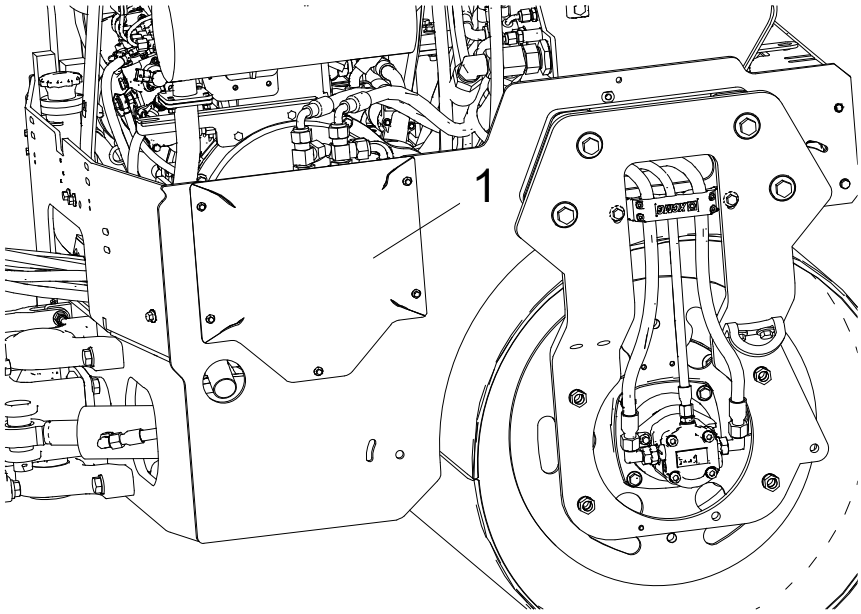


Fig. 6-8: End Cover

→ The operation steps for reducing pressure of multi-functional valve of hydraulic system is as followings:

- Traveling pump is behind the end cover.

- There are two multi-functional valves on the pump, one for the hydraulic system of moving forward and one for the hydraulic system of moving back.

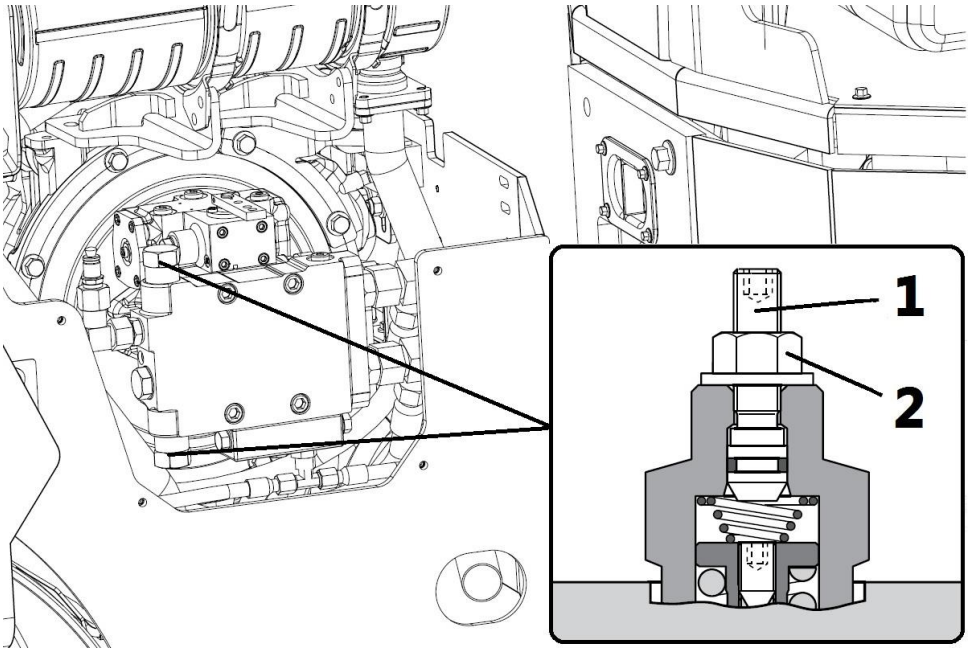


Fig. 6-9: Bypass Multi-functional Valve

1 - Bolt

②—Nut

Specific operation steps:

1. Remove the cover plate (1) at left side of frame;
2. Use the pinchers to dismantle the plastic protection cap of multi-functional valve;
3. Use the 13mm spanner to rotate the nut (2) for half a circle anticlockwise;
4. Use the 4mm socket head wrench to rotate the bolt (1) until you feel the resistance;
5. Continue rotating the bolt (1) for half a circle;
6. Re-tighten the nut (2) anticlockwise with the tightening torque of 22 N.m.

Attention! Follow Instructions!
- When dismantling, the plastic protection cap of multi-functional valve may be damaged.
- The damaged plastic protection cap must be replaced.

6.2.5.3 Releasing Parking Brake

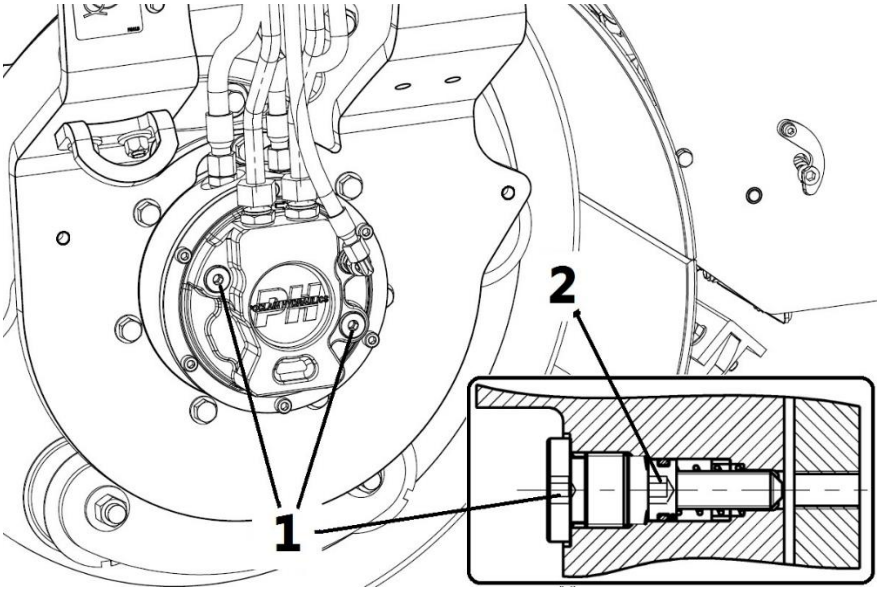


Fig. 6-10: Manual Releasing of Parking Brake

1 - Plug

2 - Bolt

→ Manually release the parking brake of two motors (one for steel drum) after open the multi-functional valve bypass.

1. Make sure the machine is placed stably and cannot be moved randomly;

2. Remove two plugs (front and rear, see 1 in Fig. 6-10) at the outside of motor;

3. Rotate the bolt (2 in Fig. 6-10) by using socket head wrench, and screw two bolts alternatively until tightening them.

4. Re-screw two plugs (see 1 in Fig. 6-10) at outside of motor with the tightening torque of 22N.m.

6.2.5.4 Towing Steps

Danger! Personnel Injury and Death Risk!
- Please use the qualified traction device.

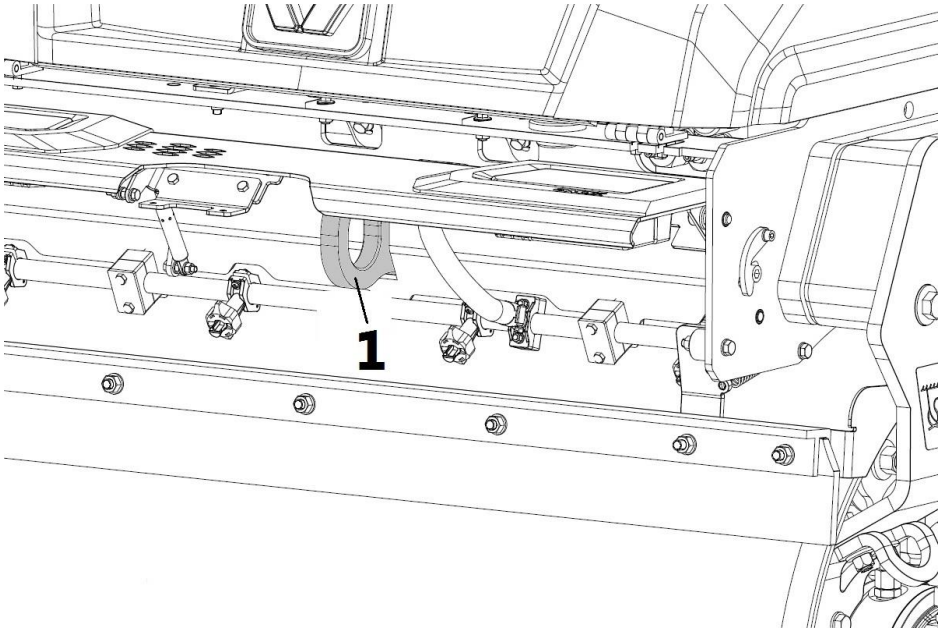


Fig. 6-11: Traction Ring (1)

Please follow the following traction steps:

1. Open the front or rear cover plate of machine and use the traction ring for towing (see Fig. 6-11);
2. Use the traction device (such as traction rope, chain, rod etc.) applicable to the machine weight;
3. Make sure the traction rope or traction chain in tensioning state;
4. Pay attention to remove the limit device of steel drum;
5. Maximal traction distance: 200m and maximal traction speed: 1km/h;
6. After reaching the destination, immediately use wedge block to fix the machine to prevent machine moving by themselves;
7. After completing traction, immediately recover the parking brake function;
8. After completing traction, immediately recover the hydraulic traveling system.

6.2.5.5 Restoring Parking Brake Function

Caution! Injury Danger!
- Make sure to recover the brake function of two steel drum;

→ After completing traction, please take the inverse operation steps:

1. Use the wedge block to stabilize the machine;
2. Use the socket head wrench to remove two plugs (front and rear) at outside of motor (see Fig. 6-10);

3. Alternatively screw two bolts of motor anticlockwise until the bolts pops up automatically;

4. Re-installing two plugs at outside of motors (front and rear) with the tightening torque of 22 N.m

6.2.5.6 Recovering Hydraulic Driving System

→ After recovering the parking brake, then recover the hydraulic driving system:

1. Rotate the nut (see 2 in Fig. 6-9) on the multi-functional valve anticlockwise;

2. Rotate socket head bolts (see 1 in Fig. 6-9) anticlockwise and unscrew it as far as possible;

3. Tighten the nut (see 2 in Fig. 6-9) on multi-functional valve clockwise;

4. Install the cover plate (see 1 in Fig. 6-8) on rear frame of hydraulic travelling pump.

Attention! Follow Instructions!
- When dismantling, the plastic protection cap of multi-functional valve may be damaged.
- The damaged plastic protection cap must be replaced.

6.2.5.7 Operations after Completing Traction

ⓘ After recovering the parking brake and hydraulic driving system:

1. Disconnect the brake solenoid valve;

2. Turn on the engine, make it idling operate for at least 5s, stop it for 3min and recover it;

3. Conduct the parking brake test;

4. Re-connect the connector of brake valve;

5. Close the hood.

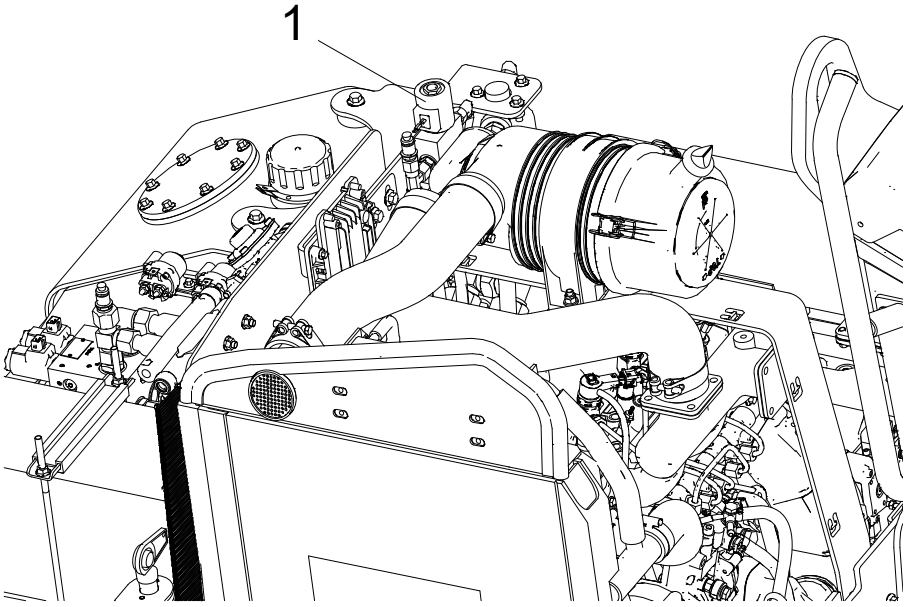


Fig. 6-12: Brake Valve (1).

6.3 Parking, Storage and Prevention

Caution! Personnel Injury!
- Unlock the articulation lock before driving machine.

6.3.1 General

Attention! Follow Instructions!
- Disconnect the switch of power supply.
- The machine storage time, battery condition, ambient temperature and other factors affect the starting of engine.

1. Drain the water in water tank and make sure there is no residue in spraying pipeline;

2. Stop the machine on the flat ground;

3. If it has to be stopped on slope, stone, wooden block etc. shall be used to stop the front and rear steel drum (see the Fig. 6-13);

4. Make sure the control lever is set in idling gear and engine is turned off.

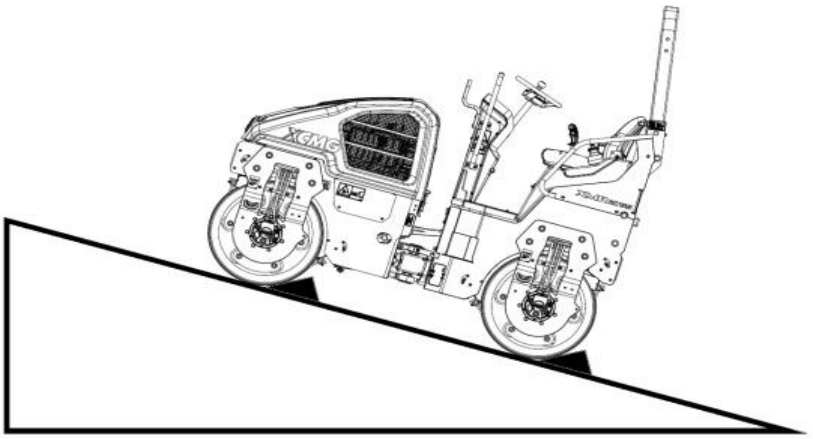


Fig. 6-13: Parking on slope and stopping the machine

6.3.2 Short-term Storage

Attention! Follow Instructions!
- Before stopping the roller in winter (0°C below) and drain the water in radiator to prevent the freezing and cracking.

The short-term storage refers to the storage period not exceeding two months and shall be paid attention to:

→ Clean the dirt and dust on machine, especially pay attention to clean the engine, generator, starting motor, fuel injection pump, fuel injector, hydraulic pump and motor as well as cleaning the hydraulic pipe and surface. The dry and soft cloth must be used to wipe those areas.

→ Drain the water in water tank and make sure there is no residue in spraying pipeline;

→ Use the kerosene to wipe the external surface of each part and refill grease into all lubricating hole

6.3.3 Long-time Storage

The long-term storage refers to storage period exceeding two months. The long-term storage shall note:

a. Storage site

→ In general, it shall be stored in ventilated and dry warehouse;

→ If equipment is stored in open air, it shall be stopped on easily-drained concrete ground, cover and fix the canvas or canopy cover, store it in a place where it will not be affected by natural disasters without corrosive and hazardous substance and gas;

→ If the storage period over two months, the battery shall be removed and stored separately.

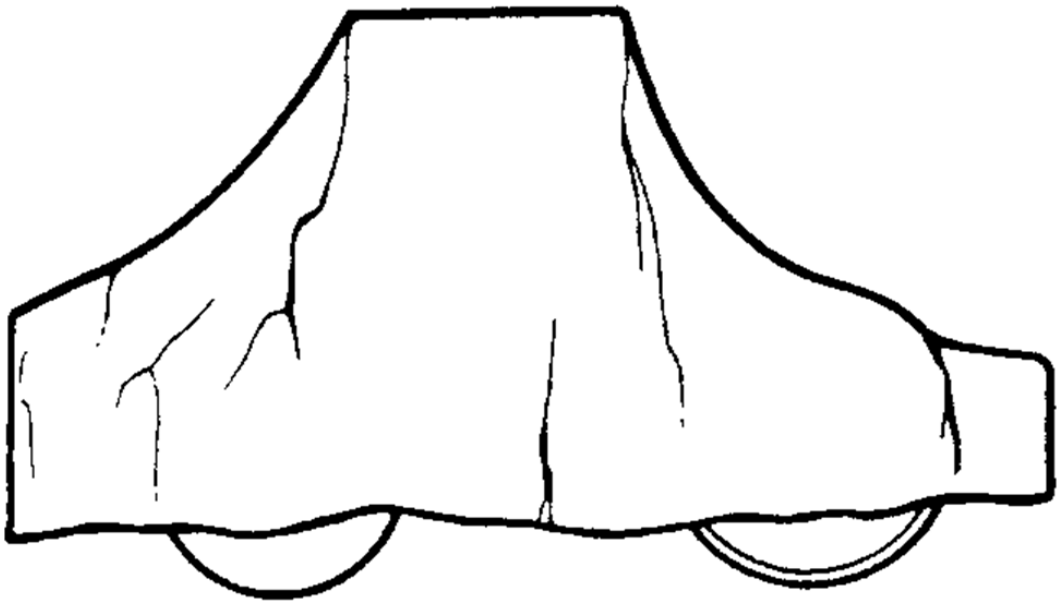


Fig. 6-14: Cover the roller in a open air

b. Measures taken before storage:

- Jack the frame to make vibration damper not be pressed.

- Cut off power supply and turn off the battery switch;

- Take out the ignition key;

- Close and lock the door, window, engine hood and other devices with door and lock;

- Wash the equipment, make sure the surface is clean and reaches no corrosion, oil dirt or other pollutant and conduct the drying treatment;

- Apply the protective layer on bare parts for prevent rusting, thoroughly lubricate equipment and use the grease to handle the unpainted surface, such as piston rod of exposed hydraulic cylinder etc.

- Refilling the fuel tank and hydraulic oil tank to the highest mark and replace it if getting bad;

- Check the performance of anti-freezing solution and correct drainage water flow;

- Dismantle the negative pole of battery and cover the battery box, or dismantle the battery from vehicle and store it separately

- Add the anti-freezing solution into cooling water of radiating system in all seasons.

- Use the safety lock, locking control lever and articulation locking lever of front and rear frame, and then pull the parking brake.

- All parts with locks shall be locked fully and pull out the key and keep it properly.

- Drain the water in water sprinkler system.

- c. Inspection during storage period:

- Check it once every six months in warm seasons and areas, and check it once every three months in tropical areas, temperate areas in cold winter and coastal areas;

- Regularly check the appearance quality of equipment, condition of protective surface and preserver;

- Start it once every month, run it at low speed for half an hour, make all systems of roller can be lubricated and apply grease on all nozzles.

- Charge the battery once every month.

d. Preparation for use after storage:

- Remove the covers;

- Remove the protective materials applying on exposed parts;

- Charge the battery, install and connect it;

- Drain the oil in engine crankcase and reducer and replace with new oil;

- Drain the sundries and mixing water from working oil tank and fuel tank;

- Apply lubricating grease at articulation sites.

- Refill the cooling water as required amount;

- Conduct the inspection before operation and refer to operation part for relevant inspection regulations.

7. Machine Cleaning

Caution! Injury Danger!
- Avoid waste water polluting environment.

Attention! Follow Instructions!
- When using high pressure water gun to wash the machine, please note to avoid the electrical element, harness and connector.

→ Adopt the moderate pressure water flow to wash machine.

→ When necessary, use the cleaning agent for disposing.

→ Use the biodegradable emulsion to remove the residual asphalt.

8. Technical Specifications and Dimensions

8.1 Dimensions

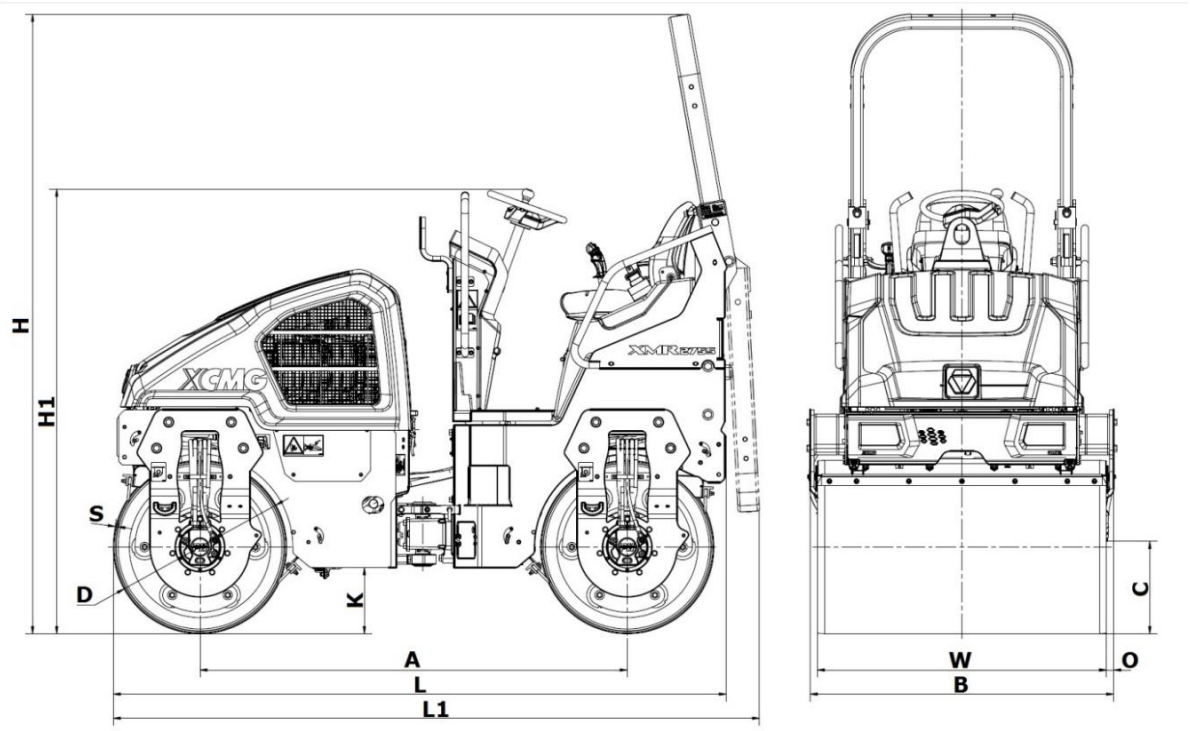


Fig. 8-1: Dimensions

A	B	C	L	L1	H	H1	D	S	W	K
1773	1295	350	2610	2685	2575	1845	720	11	1200	275

*Unit: mm

8.2 Main Parameters

Items \ Product Model		XD120
Quality	Operating weight kg	2900
	Distributing weight of front drum (kg)	1450
	Distributing weight of rear drum (kg)	1450
Traction parameters	Driving speed (km/h)	0-11
	Theoretical gradeability (%)	30
	Minimum turning radius (internal/external)	2250/3450
	Horizontal swing angle	±8°
	Steering angle	±32°
Compaction parameters	Static line pressure, N/cm	120/120
	Nominal amplitude（mm）	0.5
	Vibration frequency（Hz）	67/63
	Exciting force (kN)	41/36
Engine	Model	3B2-413
	Lubrication oil (L)	5
	Type	In-line, three-cylinder, water-cooled
	Rated power (kW)	28
	Rated speed(r/min)	2600
Electrical system	Voltage (V)	12

Table 8-1a: Main Parameters of Machine

Hydraulic system	Steering system(MPa)	16
	Oil refilling pressure (MPa)	2.5
	Traveling System (MPa)	34.5
	Vibration system(MPa)	25
Capacity	Hydraulic oil tank(L)	35
	Engine lubrication oil mark(L)	5
	Fuel tank(L)	35
	Water tank (L)	150+50
User environment	Ambient temperature(℃)	–10～+40
	Applicable altitude (m)	≤2000
Noise	Noise limits L_{WA}(dB(A))	108

Table 8-1b: Main Parameters of Machine

–

8.3 Equipment Nameplate

8.3.1 General

→ Record all part numbers correctly for future maintenance or reference.

→ Make sure to send the part number file to the distributor.

→ If a copy of the operation and maintenance manual is kept on the machine, the part number shall be kept at a separate position.

ⓘ This makes it easier to find the relevant document when the machine breaks down.

ⓘ All numbers collected on this page are unique identification numbers (serial and part numbers) for each machine and hydraulic part!

→ These identification numbers shall be refilled in where appropriate for a quick overview if necessary.

8.3.2 Machine Nameplate

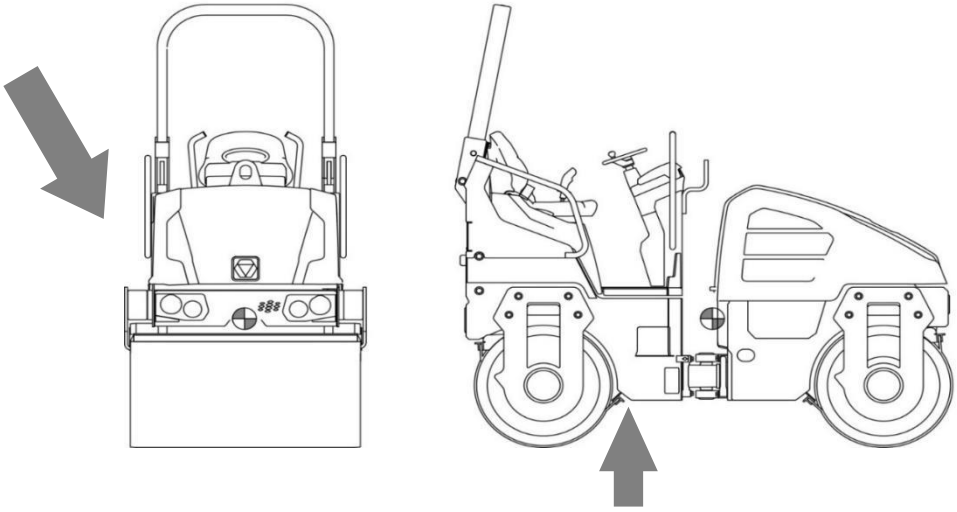
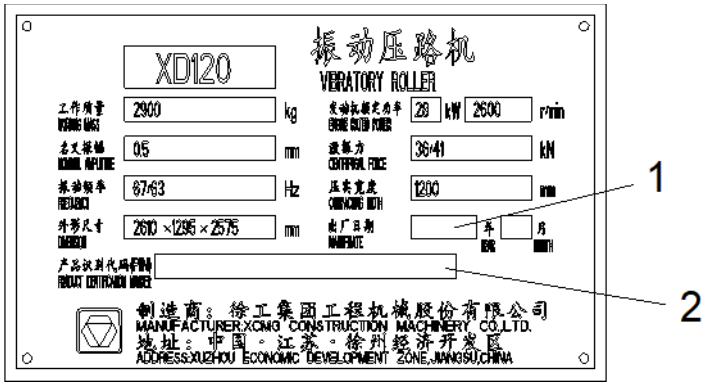


Fig. 8-2: Machine Nameplate

1 - Ex-factory Date

2- Product identification number



8.4 Hydraulic Schematic Diagram

S/N	Items	Parameters
1	Driving pump	32ml/r
2	Brake solenoid valve	/
3	Anti-slipping valve	/
4	Driving motor	408ml/r
5	Filter	10μm
6	Steering gear	125ml/r
7	Steering cylinder	40/70/368mm
8	Vibration pump	17ml/r
9	Steering pump	10ml/r
10	Vibration motor	8ml/r
11	Vibration valve	/
12	Radiator	/
13	Fuel tank	35L

Table 8-2: Hydraulic Schematic Diagram: List of Main Component.

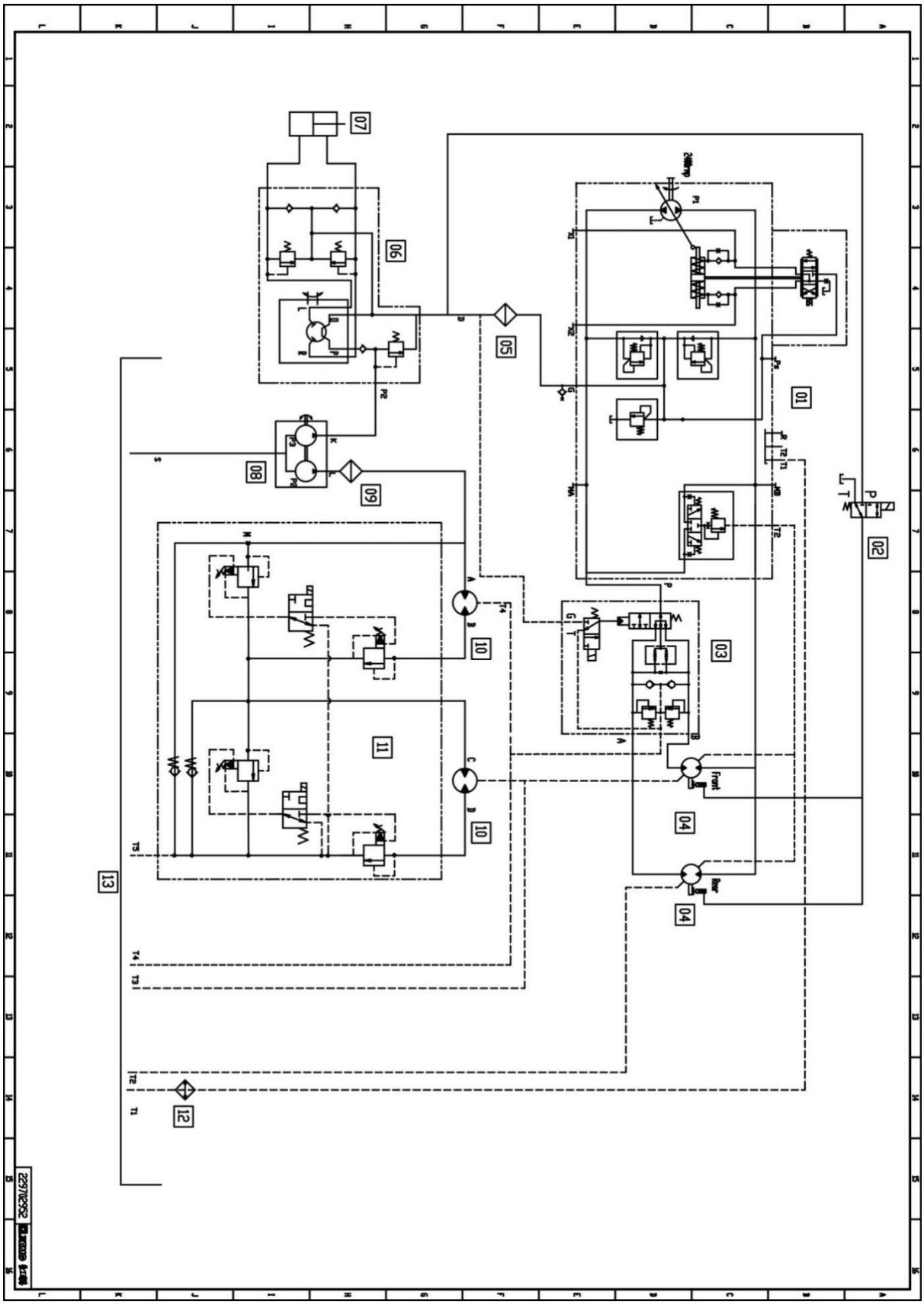


Fig. 8-3: Hydraulic Schematic Diagram 1: General Drawing

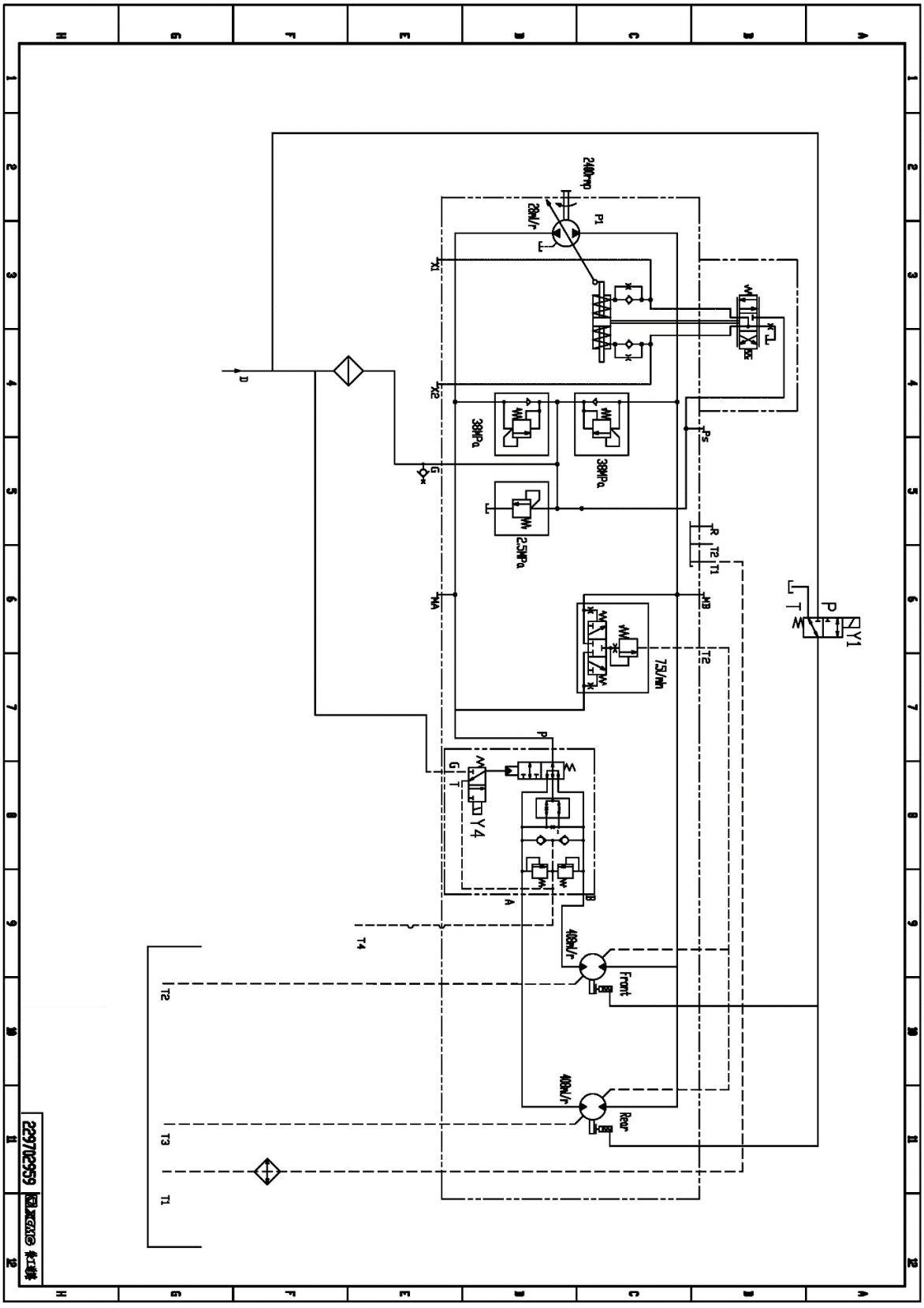


Fig. 8-4: Hydraulic Schematic Diagram 2: Travelling System

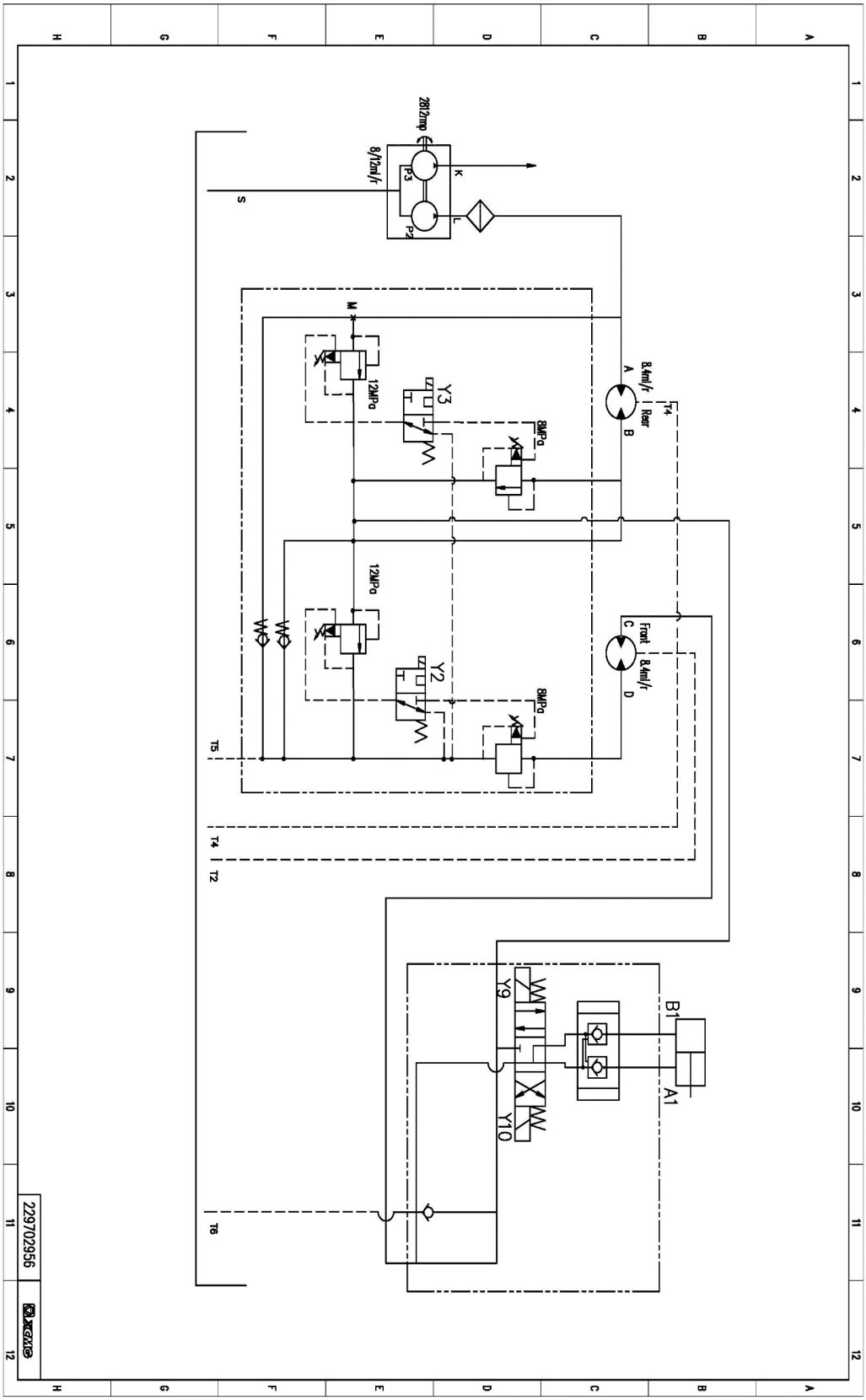


Fig. 8-5: Hydraulic Schematic Diagram 3: Vibration and Edge Cutting System

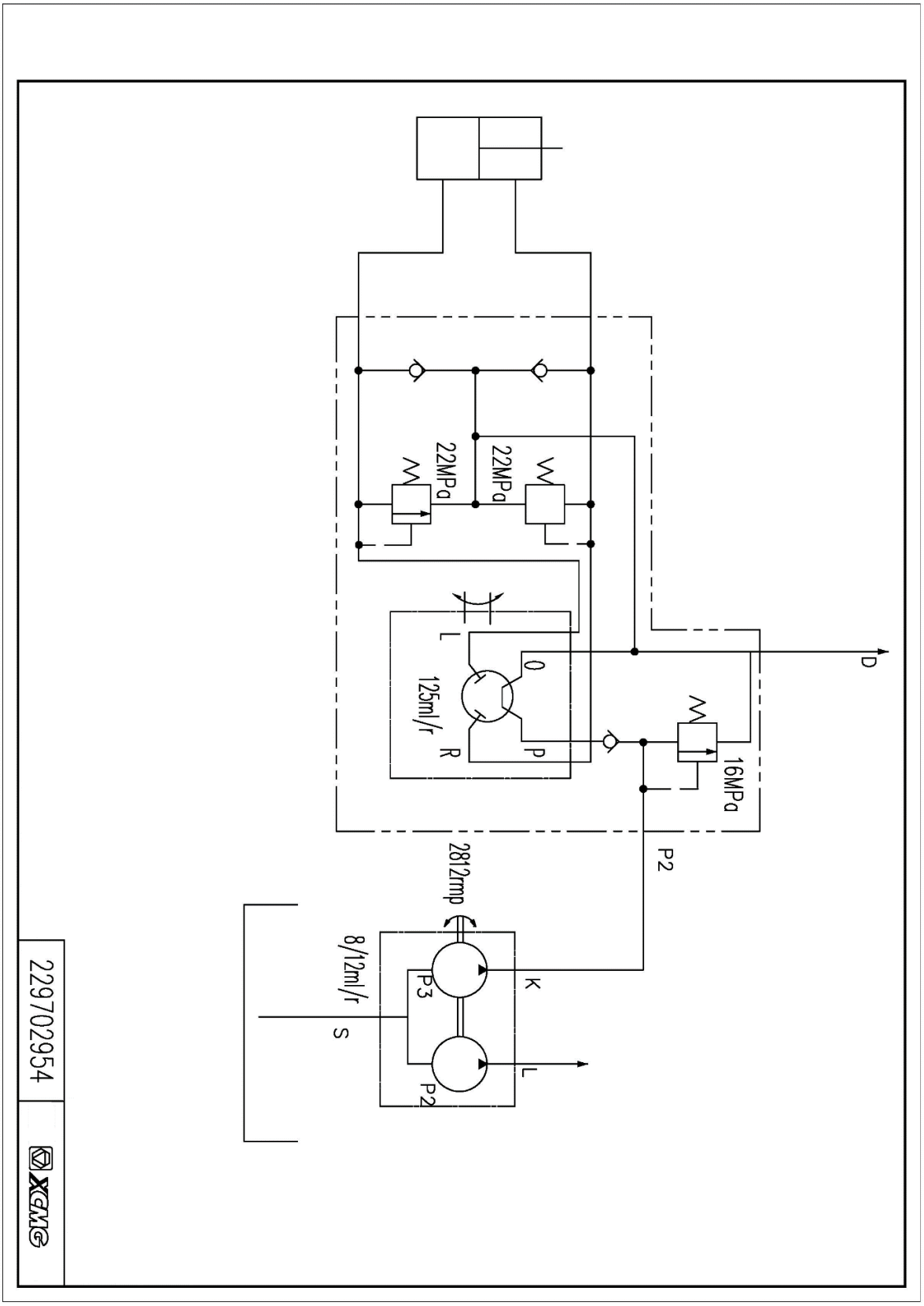


Fig. 8-6: Hydraulic Schematic Diagram 3: Steering System

8.5 Electrical Schematic Diagram

Code	Function
S2	Ignition key switch
S17	Power supply output 12V
S9	Vibration mode selection switch
S10	Vibration drum selection switch
S14	Vibration frequency selection switch
S12	Engine speed selection switch
S11	EGR regeneration switch
S15	Working mode selection switch
S16	Water sprinkling mode selection switch
A02	Relay box

Table 8-3: Electrical Schematic Diagram 2: Components List

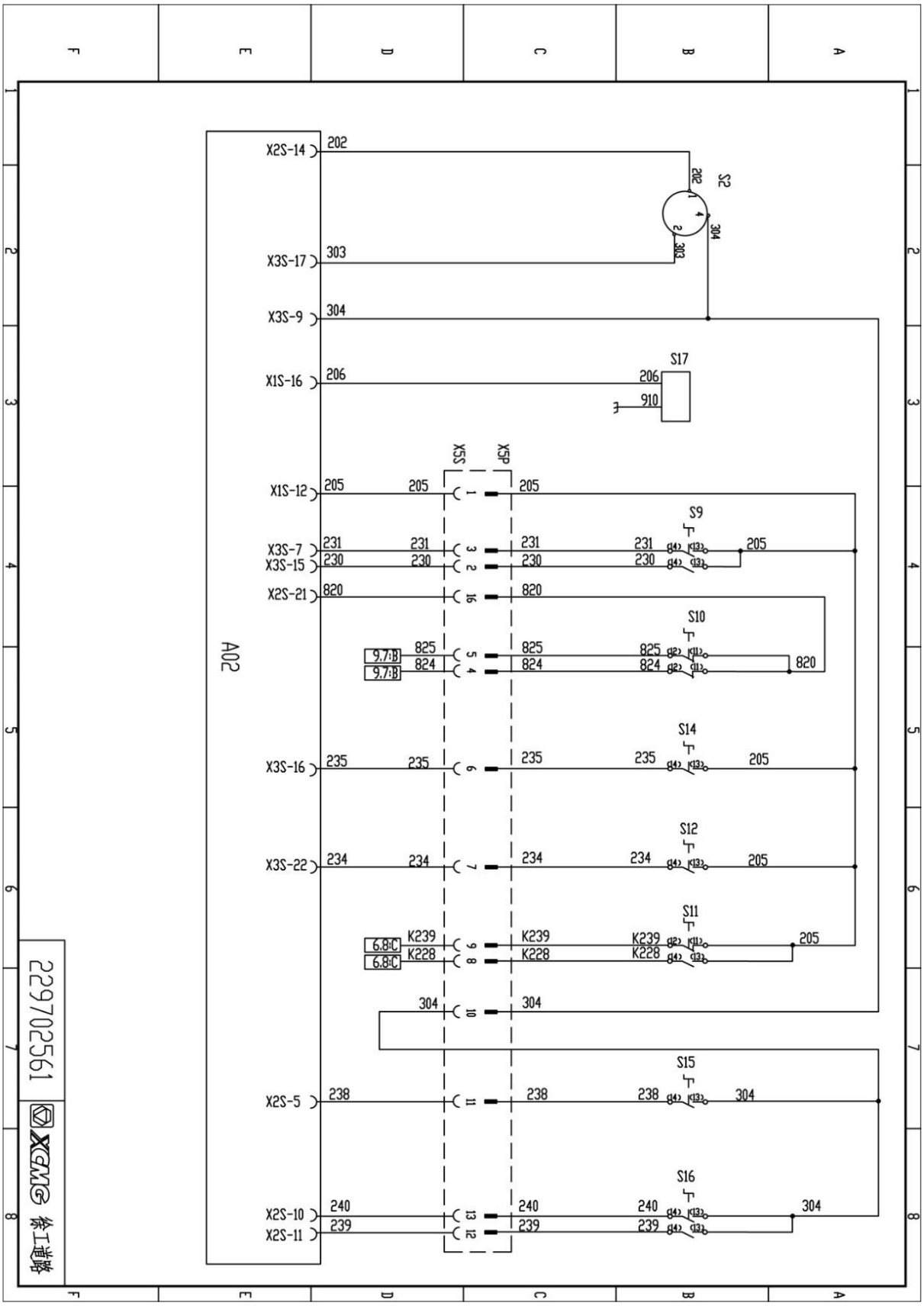


Table 8-7: Electrical Schematic Diagram 2.

Code	Function	Remarks
K1	Delay relay	
S3	E-stop switch	
S4	Work light switch	
S5	Traffic light switch	
S6	Rotary beacon switch	Optional
S7	Steering signal light switch	
S8	Flash light switch	
S13	Intermittent water sprinkling switch	
S16	Water sprinkling mode selection switch	
A02	Relay box	

Table 8-4: Electrical Schematic Diagram 3: Components List.

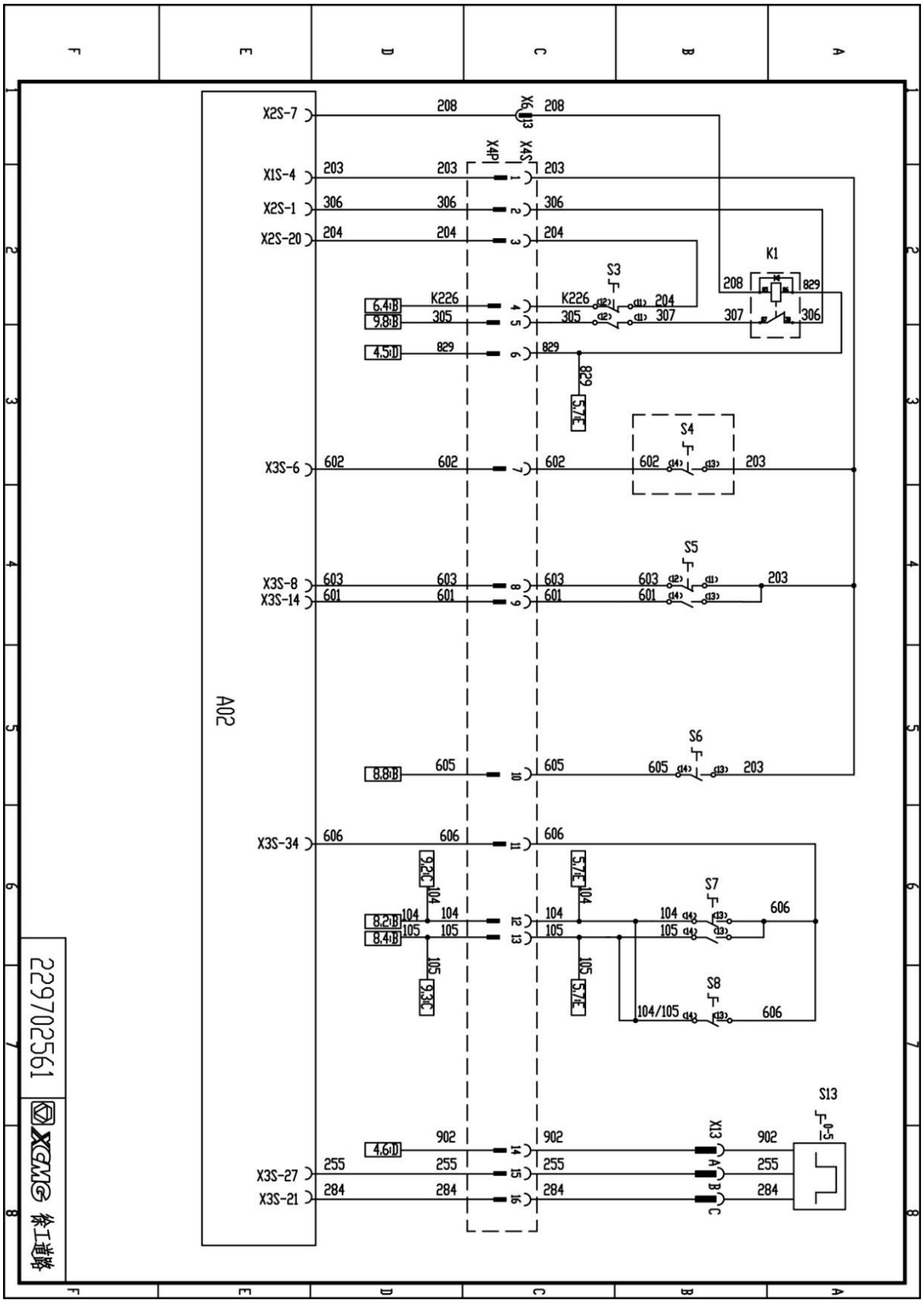


Fig. 8-8: Electrical Schematic Diagram 3

Code	Function	Remarks
S18	Vibration button	
S19	Horn button	
S20	Anti-slipping button	Optional
S21	Water spray button	
S22	Adjustment knob	
B01	Brake pressure switch	
B02	Angle sensor	Optional
B03	Seat position switch	Optional
A02	Relay box	

Table 8-5: Electrical Schematic Diagram 4: Components List.

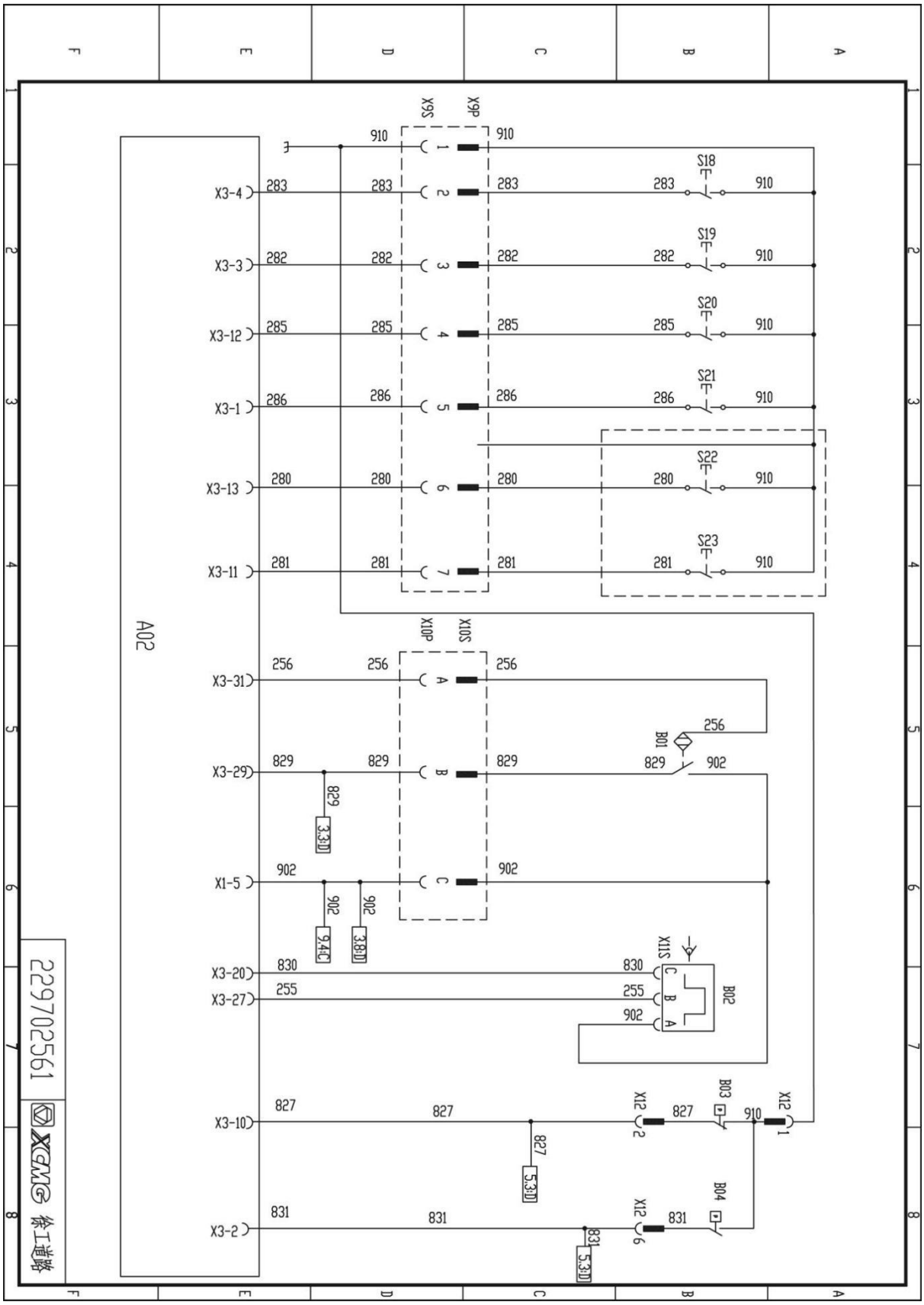


Fig. 8-9: Electrical Schematic Diagram 4.

Code	Function
A01	Instrument panel
A02	Relay box

Table 8-6: Electrical Schematic Diagram 5: Components List.

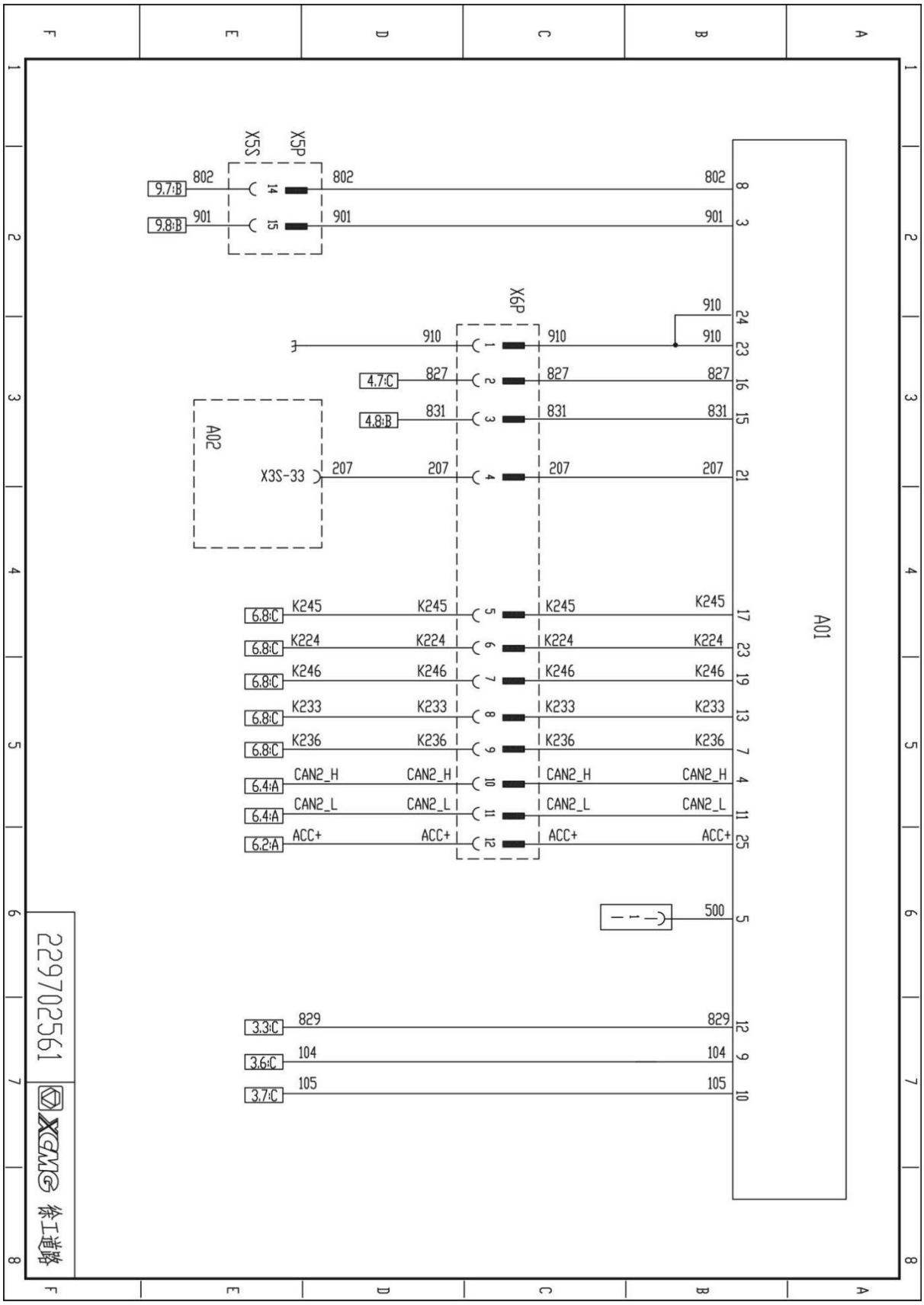


Fig. 8-10: Electrical Schematic Diagram 5.

Code	Function
G02	Alternator
M01	starting motor
A02	Relay box
A03	Engine control unit
R3	Air intake sensor
M03	Fuel suction pump
F1	Main fuse 1
F2	Pre-heat fuse 2
K2	Start relay
K3	Preheat relay
G01	Battery
S1	Power supply disconnecting switch
R1	Preheating
Y4	Engine nozzle 1
Y5	Engine nozzle 2
Y6	Engine nozzle 3

Table 8-7: Electrical Schematic Diagram 6: Components List.

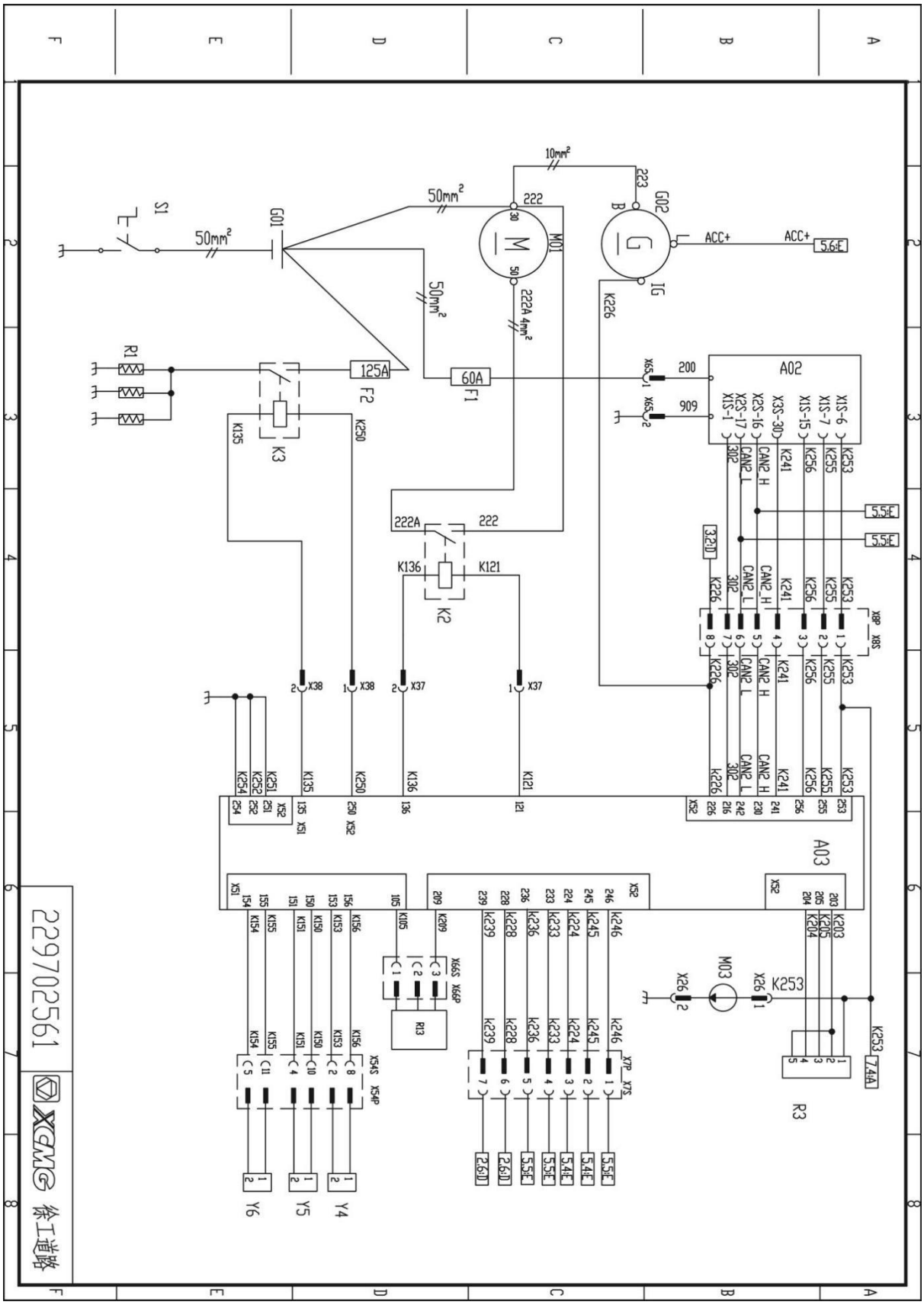


Fig. 8-11: Electrical Schematic Diagram 6.

Code	Function	Remarks
Y7	Engine EGR valve	Suitable for EU V emission model
Y8	Engine air intake throttling valve	
R4	Engine crankshaft angle sensor	
R5	Engine camshaft angle sensor	
R3	Engine air intake sensor	Suitable for EU V emission model
M04	burner pump	
R6	Coolant temperature sensor	Suitable for EU V emission model
R7	Engine track pressure sensor	Suitable for EU V emission model
R8	Engine speed sensor	
A03	Engine control unit	
R9	Engine pressure difference sensor	Suitable for EU V emission model
R10	DPF temperature sensor T0	Suitable for EU V emission model
R11	DPF temperature sensor T1	Suitable for EU V emission model
R12	DPF temperature sensor T2	Suitable for EU V emission model
B05	Engine oil pressure sensor	

Table 8-8: Electrical Schematic Diagram 7: Components List.

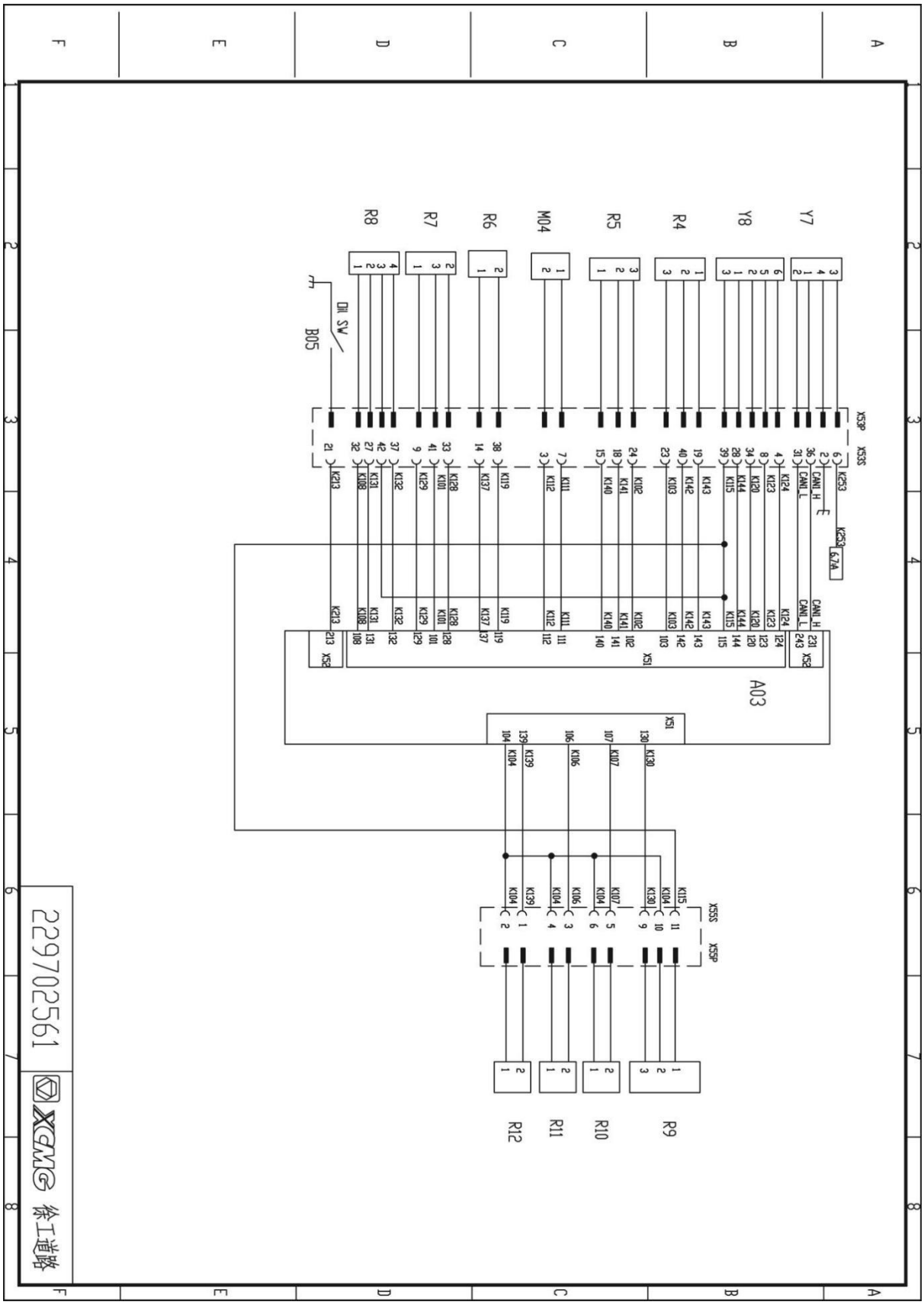


Fig. 8-12: Electrical Schematic Diagram 7.

Code	Function	Remarks
A02	Relay box	
H5	Left lower combination light	
H6	Right lower combination light	
H7	Left lower reversing light	
H8	Right lower reversing light	
H9	Rotary beacon	Optional
H10	Reversing buzzer	
H12	Seat belt prompt light	Optional
H13	ROPS work light	Optional
H14	ROPS work light	Optional
H15	ROPS work light	Optional
H16	ROPS work light	Optional
M02	Water pump	

Table 8-9: Electrical Schematic Diagram 8: Components List.

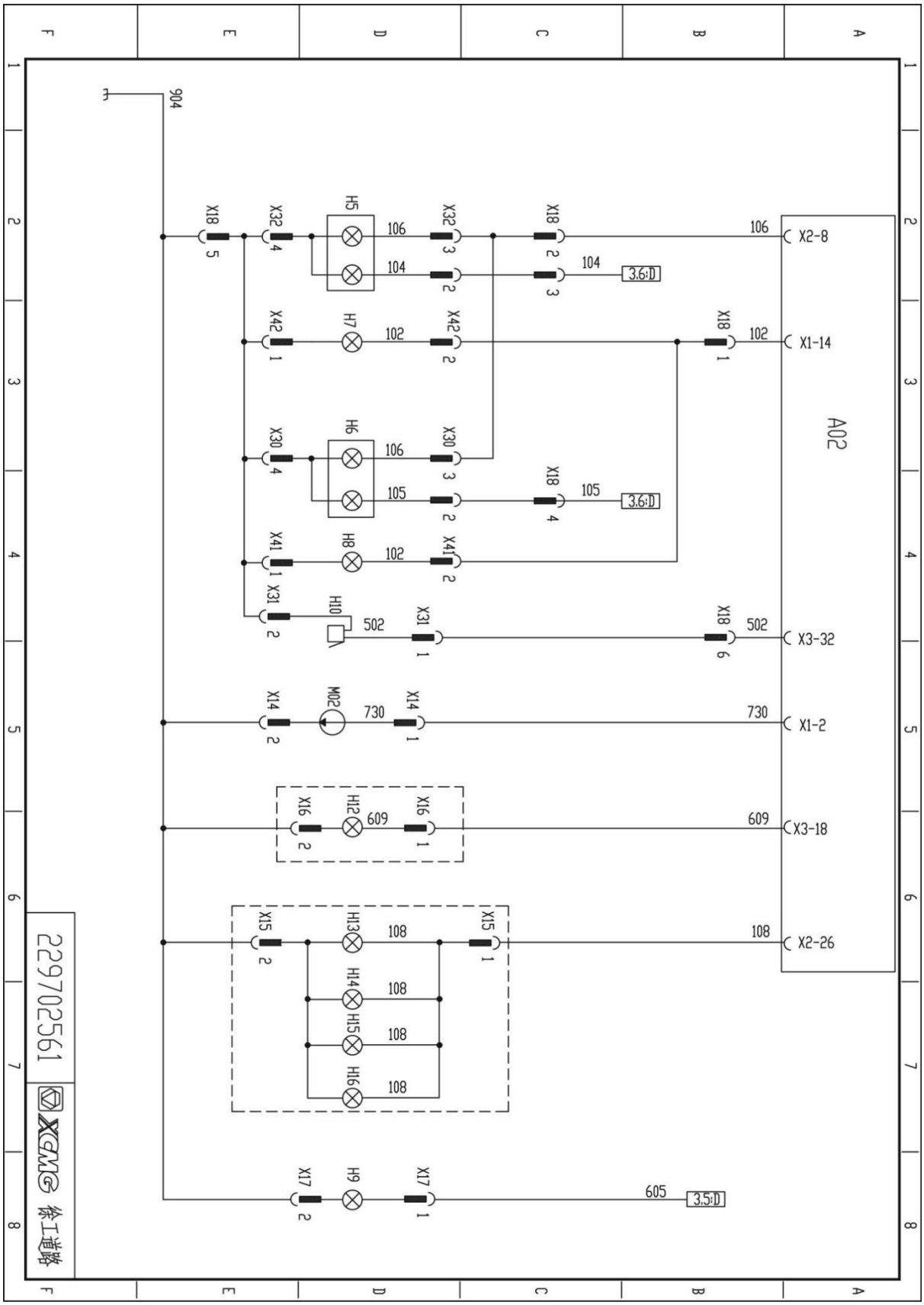


Fig. 8-13: Electrical Schematic Diagram 8.

Code	Function	Remarks
A02	Relay box	
B06	Edge cutting and water sprinkling limit switch	Optional
R2	Fuel level sensor	
Y1	Brake valve	
Y2	Front drum vibration valve	
Y9	Lifting valve of edge cutting unit	Optional
Y10	Lowering valve of edge cutting unit	Optional
Y11	Water sprinkling valve of edge cutting unit	Optional
Y12	Water sprinkling valve	Optional
Y13	Anti-slipping valve	Optional
H1	Left front combination light	
H2	Right front combination light	
H3	Front left head light	
H4	Front right head light	
H11	Buzzer	

Table 8-10: Electrical Schematic Diagram 9: Components List.

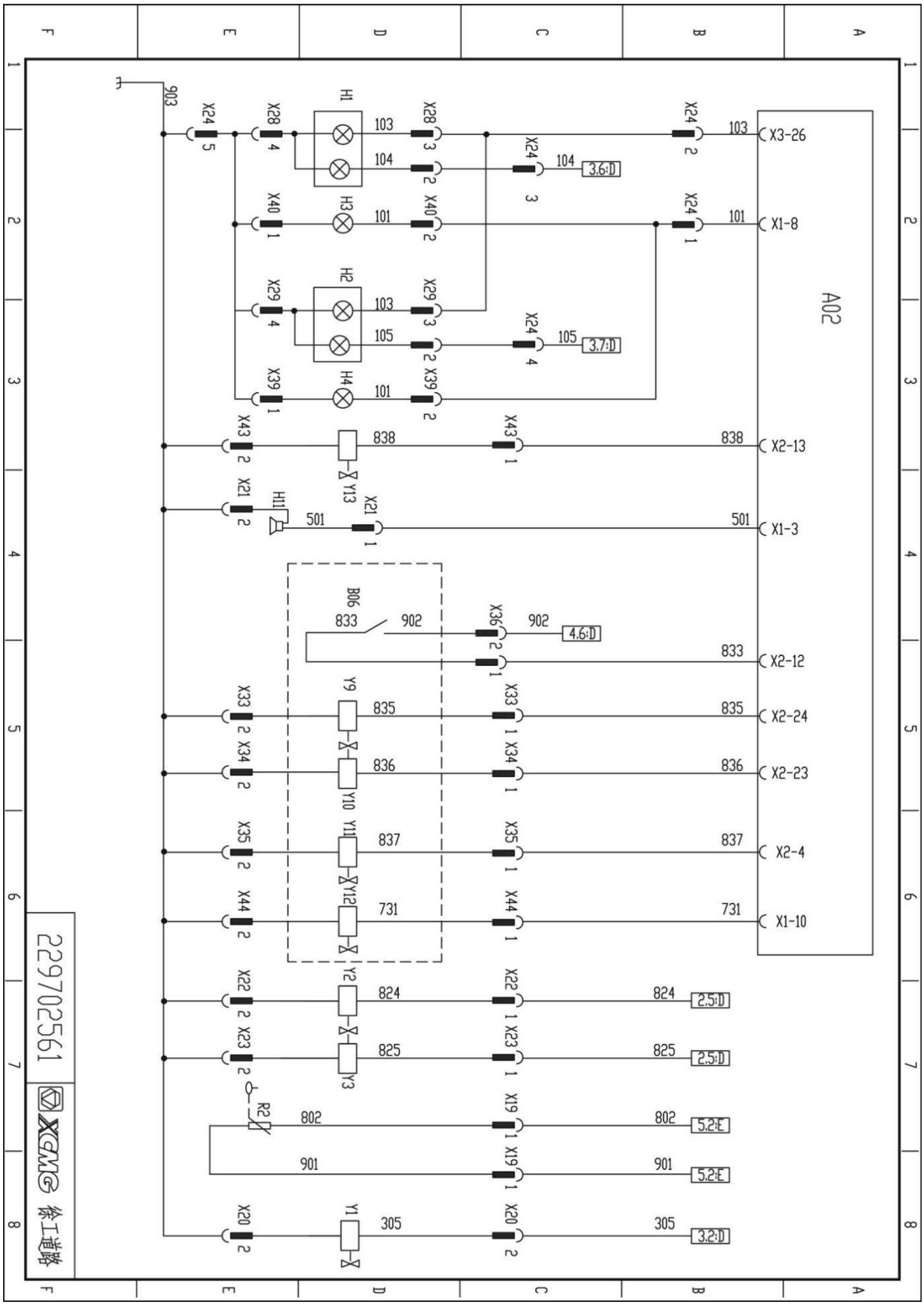


Fig. 8-14: Electrical Schematic Diagram 9.

9. Scrapping

9.1 Guidance for Scrapping Treatment

Warning! - Personnel Injury Risk!
- The improper dismantling may lead to accident!
→ Please contact with XCMG Construction Machinery CO., LTD. for correct machine scraping treatment.
→ Please follow the instructions of XCMG Group to dismantle the separate components.

9.2 Material Disposal

Attention! - Protect environment!
- Focus on environmental safety and environmental protection.
- During the process of disposing package material, cleaning agent, consumables and spare parts, avoid environmental disruption.

Please comply with the regulations applicable to where you're and dispose materials in a professional, safe and unpolluted manner.

Note:

Dispose the materials properly and convenient for recovery.

10. Warranty

ⓘ The warranty terms of equipment are specified in contract for details.

Attention!-

- The machine fault caused by the following factors is not within the warranty range: operation error or operate it not following the guidance of this Manual.

- Wrong consumables are used.
- Improper maintenance.
- The wrong maintenance of service personnel without authorization of XCMG.
- The genuine spare parts of XCMG are not used.
- Modify the machine without approval of XCMG Group.
- The damage caused by maintenance or repairing not according to requirements.

Without the written permission of XCMG Construction Machinery CO., LTD., do not duplicate or translate the Manual in whole or in part.

XCMG Construction Machinery CO., LTD. will continuously develop the latest technology and improve product and the numbers and instructions in this Manual may need modifying. Those numbers and instructions do not reflect the delivered products and not attached on those machines.

The technical data, size and weight are only for reference. XCMG will not bear the responsibility for any error or missing.

The appearance molding of machine may include the optional devices, and the illustration, figure, table and symbol show it's different from actual product.

The Manual and other revisions must be placed to vehicle working position and the possible revision shall be recorded at the end of Manual.

XCMG Construction Machinery CO., LTD.

Address: No. 1 Zone of Xuzhou Economic Development Zone, Jiangsu Province, China
Sales Tel.: +86-516-87928888
Sales Fax: +86-516-87638888
Service Tel.: +86-516-87932222
Service Fax: +86-516-85857433
Spare Parts Tel.: +86-516-87938878
Spare Parts Fax: +86-516-83363922
Technical Service: 0516-87938756
Post Code: 221004
Service Hotline: 400-110-9999
Website: http://www.xcmg.com/xgdl

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