

Operation and Maintenance Manual

CK35-1

COMPACT TRACK LOADER

SERIAL NUMBERS **CK35-1** **A40001** and UP

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It is our policy to improve our products whenever it is possible and practical to do so. We reserve the right to make changes or add improvements at any time without incurring any obligation to install such changes on products sold previously.

Due to this continuous program of research and development, periodic revisions may be made to this publication. It is recommended that customers contact their distributor for information on the latest revision.

INTRODUCTION

INTRODUCTION

FOREWORD

This manual describes procedures for operation, handling, lubrication, maintenance, checking, and adjustment. It will help the operator and maintenance personnel achieve peak performance through effective, economical and safe machine operation and maintenance.

Keep this manual handy and have all personnel read it periodically. If this manual is lost, damaged or becomes dirty and cannot be read, request a replacement manual from your local distributor.

If you sell the machine, be sure to give this manual to the new owner.

The information, specifications, and illustrations in this publication are on the basis of information available at the time it was written. Continuing improvements in the design of this machine can lead to changes, which may not be reflected in this manual. Consult your local distributor or for the latest available information on your machine or for questions regarding information in this manual.

This manual may contain attachments and optional equipment that are not available in your area. Consult your local distributor or for those items that you may require.

Punctual periodic notes regarding the maintenance operations that have been carried out are important to have a clear prospect of the situation and to know exactly what has been done and what has to be done after the next maintenance interval. Therefore, it is advisable to consult either the hour meter and/or the maintenance schedule frequently.

Over the years Komatsu distributors have gathered considerable experience in customer service. If more information is needed, do not hesitate to contact your Komatsu distributor. He always knows how to get the best performance from the machine, he can suggest the use of the equipment that is most suitable for specific needs and can provide the technical assistance necessary for any change that may be required to conform the machine to the safety standards and traffic rules. Furthermore, Komatsu distributors also ensure their assistance for the supply of genuine Komatsu spare parts, which alone guarantee safety and interchangeability.

The table included in this manual must be filled in with the machine data, which are the data that must always be indicated to the distributor when requesting assistance and ordering spare parts.

WARNING

Improper operation and maintenance of this machine can be hazardous and could result in serious injury or death.

Operators and maintenance personnel must read this manual thoroughly before operating or maintaining this machine. This manual should be kept near or with the machine for reference and periodically reviewed by all personnel who operate it.

Some actions involved in operation and maintenance can cause a serious accident, if they are not performed in the manner described in this manual.

The procedures and precautions given in this manual apply only to the intended uses of this machine.

If you use your machine for any unintended uses that are not specifically prohibited, you must be sure that it is safe for you and others. In no event should you or others engage in prohibited uses or actions as described in this manual.

KOMATSU delivers machines that comply with all applicable regulations and standards of the country to which it has been shipped. If this machine has been purchased in another country or purchased from someone in another country, it may lack certain safety features and specifications that are necessary for use in your country. If there is any question about whether your product complies with the applicable standards and regulations of your country, consult your local distributor or KOMATSU before operating the machine.

The safety description is given in SAFETY INFORMATION and in the SAFETY section 1.

SAFETY INFORMATION

Most accidents are caused by failure to follow fundamental safety rules for the operation and maintenance of the machine. To avoid accidents, read, understand and follow all precautions and warnings in this manual and on the machine before performing maintenance and machine operations.

To identify safety messages in this manual and on machine product graphics, the following signal words are used:



Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Other signal words

In addition to the above, the following signal words are used to indicate precautions that should be followed to protect the machine or to give information that is useful to know.

Remark

This word is used for precautions that must be taken to avoid actions, which could shorten the life or damage the machine.

The safety precautions are described in **SAFETY** section 1.

KOMATSU cannot predict every circumstance that might involve a potential hazard in operation and maintenance. Therefore the safety message in this manual and on the machine may not include all possible safety precautions. If any procedures or actions not specifically recommended or allowed in this manual are used, you must be sure that you and others can do such procedures and actions safely and without damaging the machine or causing injury. If you are unsure about the safety of some procedures, contact your local distributor.

WARNING

Before starting any maintenance operation, position the machine on a firm and level surface, lower the equipment to the ground, engage the safety locks of the equipment and of the controls and stop the engine.

WARNING

To make the information clearer, some illustrations in this manual represent the machine without safety guards. Do not use the machine without guards and do not start the engine when the engine hood is open, unless this is expressly prescribed for some specific maintenance operations.

WARNING

It is strictly forbidden to modify the setting of the hydraulic system safety valves; Komatsu cannot be held liable for any damage to people, property, or the machine, if this has been tampered with by modifying the standard setting of the hydraulic system.

WARNING

Before carrying out any electrical welding, disconnect the battery and the alternator (see See “ELECTRICAL PRECAUTIONS” on page 1-32).

WARNING

Install only authorized additional equipment (See “CHARACTERISTICS OF THE OPTIONAL EQUIPMENT OF THE MACHINE VERSION WITH HIGH FLOW AND SUPER-FLOW HYDRAULIC SYSTEM” on page 5-5).

WARNING

Travel on roads is allowed only if the machine is provided with appropriate lighting, signalling and safety devices and properly authorized by the relevant permits.

Before travelling on roads, make sure that the equipment installed on the machine is approved and the safety locks are correctly engaged.

WARNING

It is absolutely forbidden to operate the machine while standing on the ground.

Every single maneuver must be carried out by the operator, correctly seated in the driving position.

APPROVED AND NON APPROVED USES

APPROVED

The Komatsu MACHINES described in this manual have been designed and constructed to be used by duly trained personnel mainly for EXCAVATION and EARTH-MOVING OPERATIONS.

If provided with suitable safety devices, they can be used with authorized optional equipment having the characteristics illustrated at point, See "AUTHORIZED OPTIONAL EQUIPMENT" on page 5-2.

NON APPROVED

- **The instructions regarding the authorized optional equipment are given in the relevant operation and maintenance manuals; if the equipment is supplied by Komatsu, these publications are attached to this manual.**
- **The instructions regarding the assembly of the authorized equipment, the controls requiring special arrangements on the machine and the hydraulic couplings necessary for the operation of the equipment are shown in the final section of this manual.**

Komatsu MACHINES are constructed exclusively for the handling, excavation and treatment of inert materials; therefore, the following uses are absolutely forbidden:

- USE OF THE MACHINE BY MINORS OR INEXPERIENCED PEOPLE.
- USE OF THE MACHINE FOR LIFTING PEOPLE OR OBJECTS.
- TRANSPORT OF CONTAINERS WITH FLAMMABLE OR DANGEROUS FLUIDS.
- USE OF THE BUCKET FOR DRIVING OR EXTRACTING PILES.
- USE OF THE MACHINE FOR TOWING DAMAGED VEHICLES.

INTRODUCTION

PRODUCT INFORMATION

Listed are features and machine identification locations. Komatsu skid steer loader and main components are identified by serial numbers stamped on identification plates or decals attached to the machine or component.

MAIN FEATURES

- ★ Simple and easy operation.
- ★ Hydrostatic transmission obtained through a double variable displacement pump and axial piston motors operating epicyclic reduction gears.
- ★ Two driving tracks always engaged through oil-immersed roller chains.
- ★ Main equipment and travel control through servo levers ensuring combination movements that can be modulated proportionally and continually.
- ★ Foot control for the optional equipment (if installed).
- ★ Foot accelerator.
- ★ Lever accelerator.
- ★ Parking brake control.
- ★ Complete series of instruments visible from the operating position.
- ★ Easy maintenance with simplified intervals.
- ★ Road travel (on request).

BREAK IN PERIOD

Every new machine is properly adjusted and tested before delivery. A new machine must be operated carefully for the first 100 hours to ensure proper run-in time for the various components. If the machine is subjected to excessive or severe work loads at the beginning of its operation, its functions will be greatly reduced or damaged. Every new machine must be used carefully, paying special attention to the following indications:

- ★ After start up, let the engine idle at a low RPM for 5 minutes, to warm up the machine gradually before beginning actual operation.
- ★ Operate the machine with limited loads. Avoid abrupt starts, accelerations, sudden decelerations, abrupt reversals or sudden stops.
- ★ After the first 50 hours, perform the following maintenance, in addition to normal maintenance performed at 50 hours:
 - A. Check the drive chain tension.
 - B. Check the rubber track tension.
- ★ After the first 250 hours, perform the following maintenance, in addition to normal maintenance performed at 250 hours perform:
 - C. Change the hydraulic system filter.

SYNTHETIC BIODEGRADABLE OIL TYPES

On machines in which synthetic biodegradable oil type HEES is used, the following operations are to be performed, besides the standard maintenance operations:

- ★ After the first 50 hours of operation, change the hydraulic system filter.
- ★ After the first 500 hours of operation, change the hydraulic system oil and filter.

PRODUCT IDENTIFICATION

The serial numbers and model numbers on the components are the only numbers that your distributor will need when requiring assistance or ordering replacement parts. It is a good idea to record this information in this manual on page 0-9 (Serial Number and distributor information). All views indicated below are viewed from the operators position.

MACHINE SERIAL NUMBER

The machine serial number is stamped on the inner wall of the right rear pillar.



MACHINE IDENTIFICATION PLATE AND PRODUCT IDENTIFICATION NUMBER (PIN)

The PIN plate is located on the inner wall of the right rear pillar.



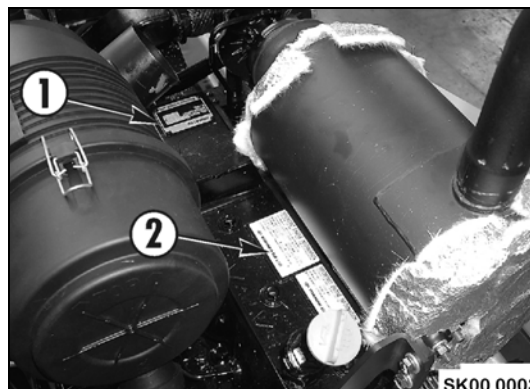
MODEL	
SERIAL No.	
MANUFACTURING YEAR	
MASS	
ENGINE POWER	
MANUFACTURER	
KOMATSU AMERICA CO.	

SK000014

INTRODUCTION

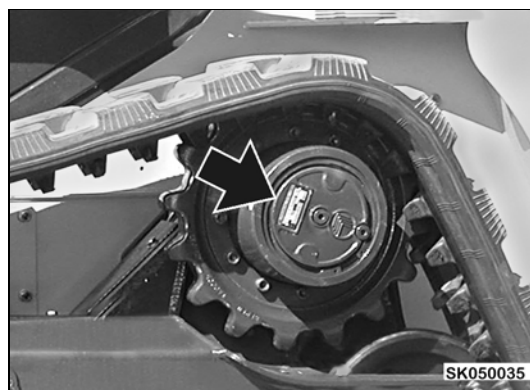
ENGINE SERIAL NUMBER AND EMISSION PLATE

The plate (1) indicating the engine serial number and the exhaust gas emission plate (2) are positioned on the top of the valve cover.



TRAVEL REDUCTION GEAR SERIAL NUMBER

The serial number of the travel reduction gear is stamped on the plate positioned on the hydraulic motor cover.



CAB SERIAL NUMBER

The cab serial number is stamped on the plate positioned on the right side of the base cross member.



SERIAL NUMBERS AND DISTRIBUTOR INFORMATION**MODEL: CK35-1**

Machine #	
Product identification # (PIN)	
Engine #	
Travel reduction gear #	
Cab #	
Excavator # (if installed)	

Distributor:**Address:****Phone #****Contacts:****NOTES:**

INTRODUCTION

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SAFETY



WARNING!

Read and follow all safety precautions. Failure to do so may result in serious injury or death.

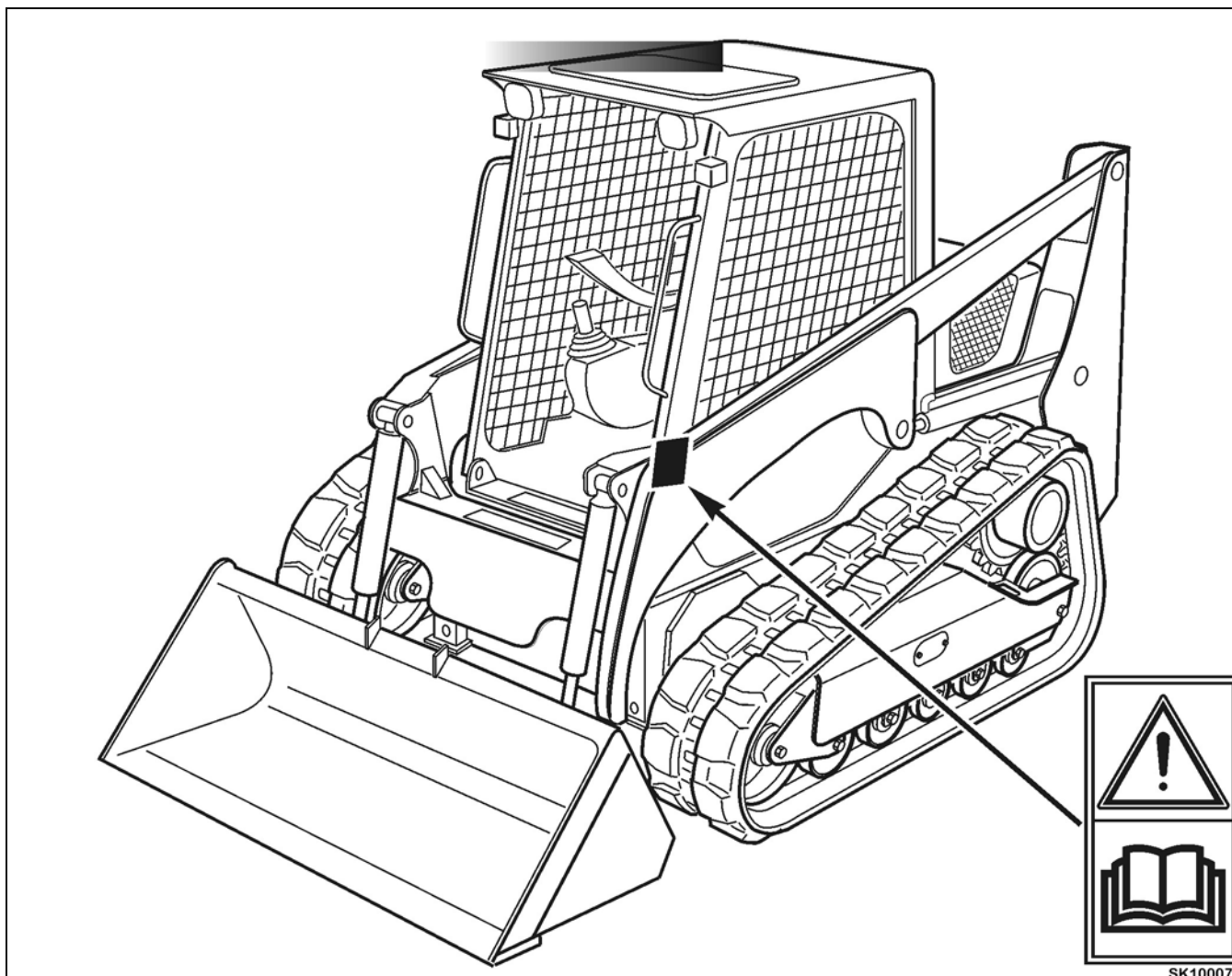
This safety section also contains precautions for optional equipment and attachments made by Komatsu.

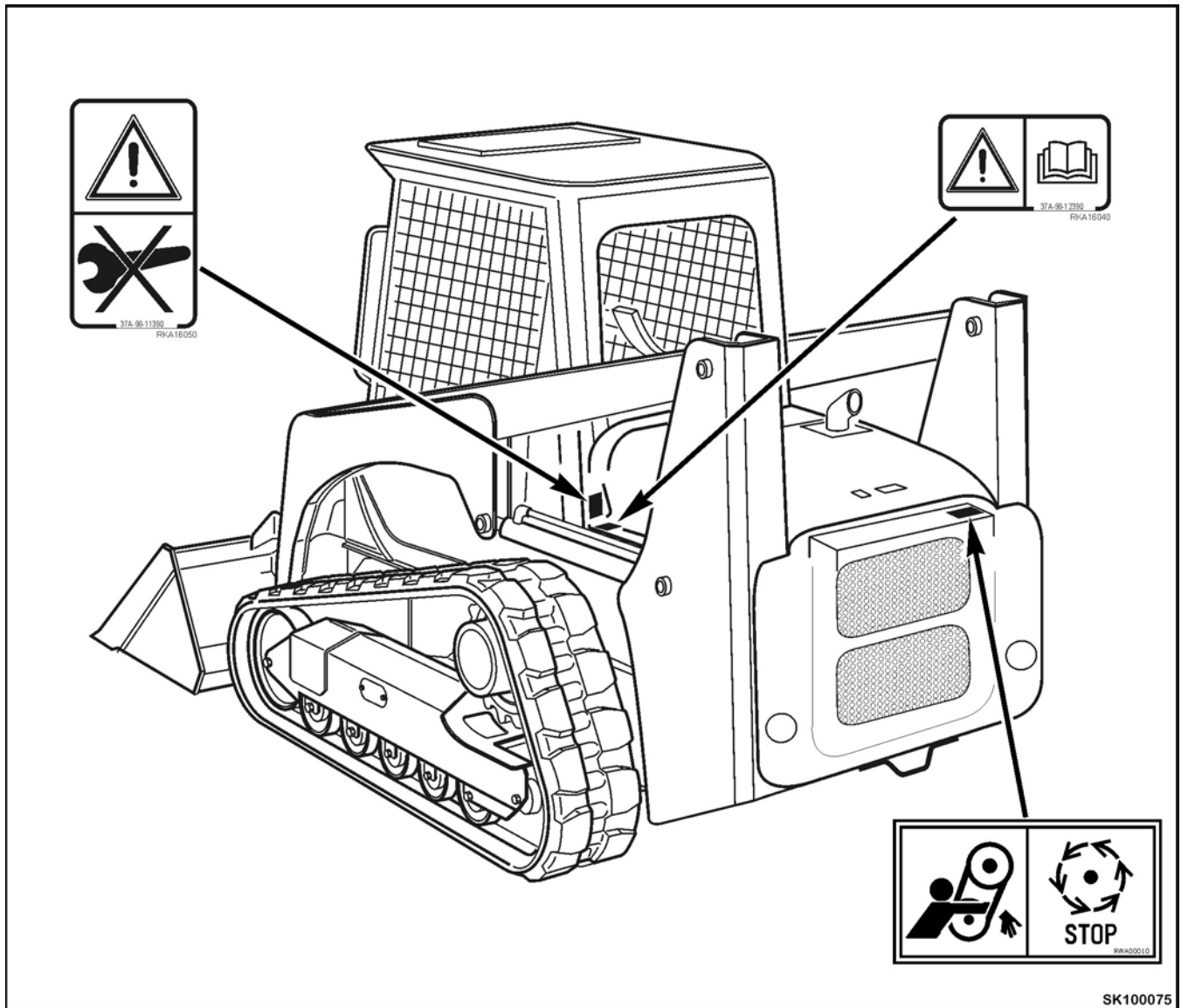
SAFETY

SAFETY AND WARNING DECALS

LOCATION OF THE SAFETY DECALS

- ★ The safety decals must always be legible and in good condition. If they are dirty with dust, oil, or grease, clean them with a solution of water and detergent. Do not use fuel, petroleum based products, or solvents.
- ★ If the decals are damaged they must be replaced before operating the machine.
- ★ When a component provided with a safety decal is replaced, make sure the decal is also applied to the replacement component.
- ★ The machine may be provided with other decals, in addition to those shown below, which must be followed for safe operation.

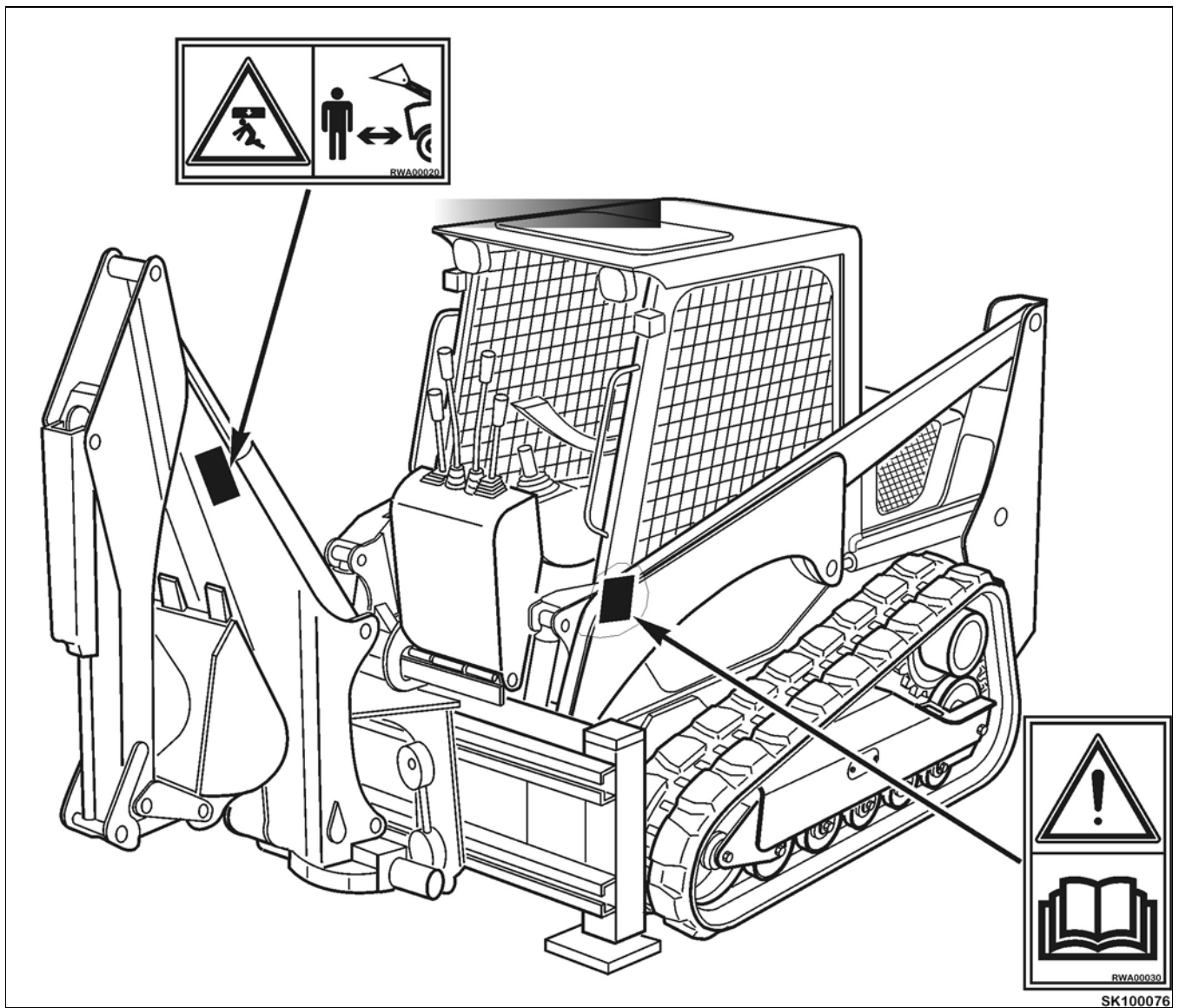


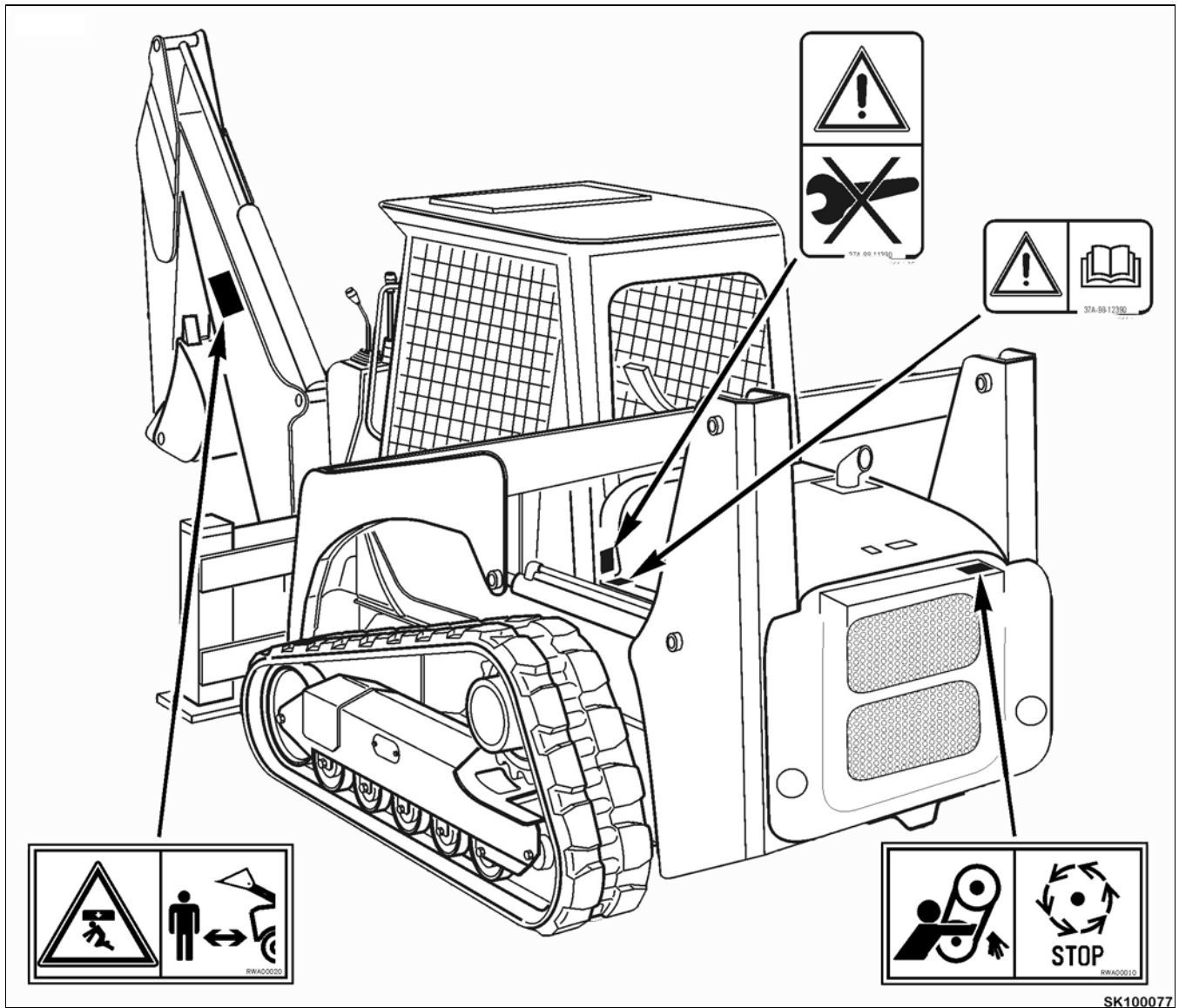


SK100075

SAFETY

SAFETY PLATES FOR MACHINES WITH EXCAVATOR





SK100077

SAFETY

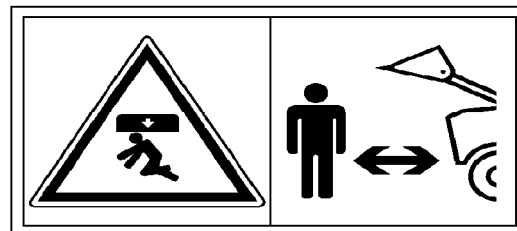
DECALS DEFINED

The warning and danger decals applied to the machine are accompanied or represented by pictograms. The personnel charged with the operation and maintenance of the machine must know the symbols contained in the pictograms perfectly; the following descriptions illustrate what they look like and their respective meanings.

DANGER IN THE WORK AREA

(Only for machines with the excavator)

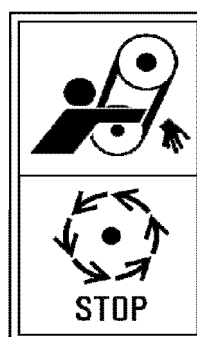
Do not approach or stand near the work equipment operating radius when the boom and the bucket of the excavator are raised.



WB10 0033

MOVING PARTS IN ENGINE COMPARTMENT

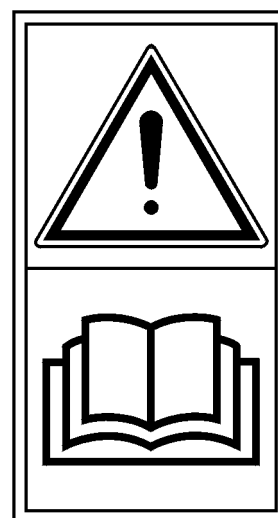
Keep clear of moving parts inside engine compartment.



WB10 0034

CONSULT THE MANUAL

Carefully read the contents of the manual before using the machine or performing maintenance operations.



SK10 0034



DO NOT LOOSEN THE BOLTS

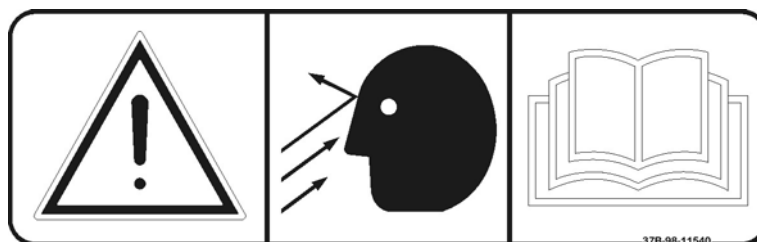
Do not loosen or remove the fastening bolts of the rear damping supports of the cab.



SK100079

DANGER! TRACK TENSIONER ADJUSTMENT

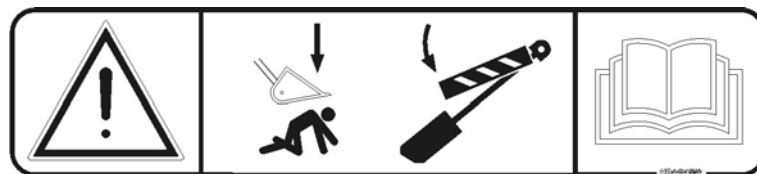
Carefully read the contents of this manual before adjusting the track tensioner unit.



SK100080

DANGER! LOADER ARM RAISED

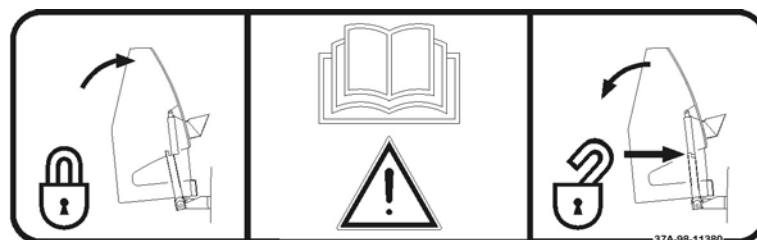
Always engage the safety lock before carrying out maintenance operations, checks, or adjustments with loader arm raised. Carefully read the instructions contained in this manual.



SK100081

OPENING AND CLOSING THE ENGINE HOOD

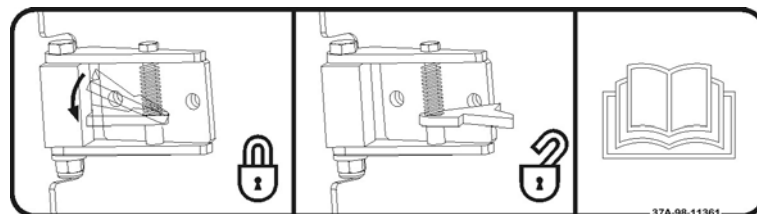
Always engage the safety lock before carrying out any maintenance operation with the hood open. Carefully read the instructions contained in this manual.



SK100082

OPENING THE REAR PANEL

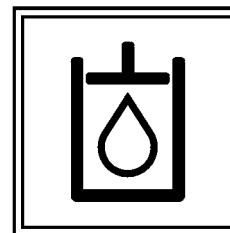
For correct use of the rear panel safety lock, follow the instructions contained in this manual.



SK100083

SAFETY

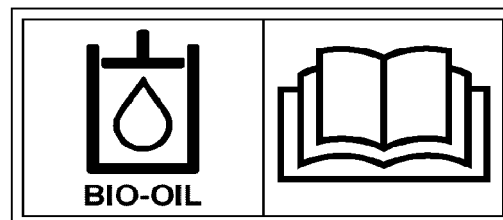
HYDRAULIC OIL FILL CAP



SK10 0035

FILL THE SYSTEM WITH HEES TYPE OIL

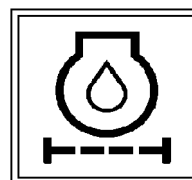
HEES is a synthetic, biodegradeable type oil that is used only in the hydraulic oil tank.



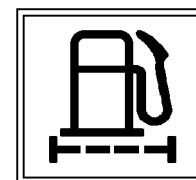
WB10 0035

ENGINE OIL FILTER

FUEL TANK FILLER TUBE



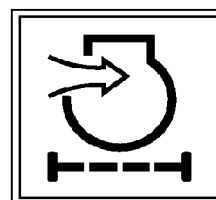
WB10 0036



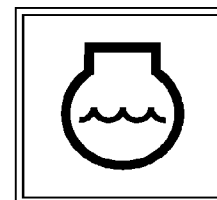
WB10 0037

ENGINE AIR FILTER CLOGGING WARNING

ENGINE COOLANT LEVEL



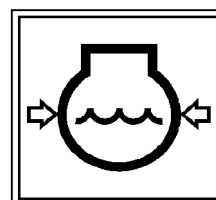
WB10 0038



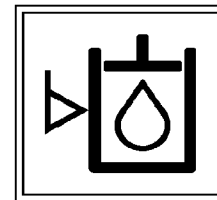
WB10 0039

ENGINE COOLANT PRESSURE

HYDRAULIC OIL LEVEL



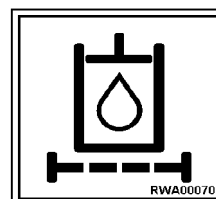
WB10 0040



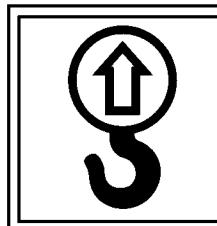
WB10 0041

HYDRAULIC OIL FILTER

LIFTING POINT



WB10 0042

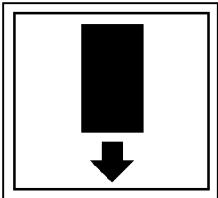


SK10 0036

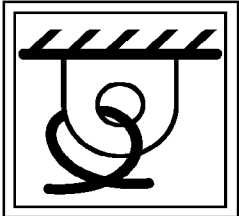
FUEL FILTER
ELECTRIC OUTLET



EMERGENCY EXIT.....
ANCHOR POINT



WB10 0046



WB10 0045

SAFETY RULES AND PRECAUTIONS

GENERAL SAFETY RULES

Only trained and authorized personnel are allowed to operate and service this machine.

Before operating this machine it is important to study the operator's manual thoroughly and become familiar with all controls and safety decals. Keep this manual with your machine at all times for easy reference.

Safety must always be the operator's most important concern. Never operate a machine that is unsafe or in poor operating condition. Always perform a pre-operational check on your machine before operating it.

If the machine is equipped with a seat belt and rollover protective structure, OSHA law requires the operator remain within the confines of the rollover protective structure, with the seat belt fastened snugly around their waist before operating the machine.

OSHA law states if your equipment is designed for operation by one person, it is for one person only, never allow other personnel to ride on your machine.

Never leave your machine running and unattended. Always park the machine in a level area, lower any work equipment to the ground, set the parking brake, lock the controls and turn the engine off before exiting the operator's compartment.

Be sure that all personnel are at least 12 m (13 yd) away from any point on the machine before moving or operating the machine. Never allow anyone to stand near the machine while it's operating. Remember, the larger the machine the more restricted your visibility will be.

If pedestrians are in the area proceed slowly and sound your horn. Keep in mind, pedestrians have the right of way, and a loaded or smaller machine has the right of way over an unloaded machine.

Never use your machine for tasks it was not designed for, damage to the machine or injury to the operator may result.

Follow all safety rules, precautions, and instructions when operating or performing maintenance on the machine.

It is the owner and/or operator's responsibility to replace any safety or warning decals if they are defaced or removed from the machine.

Think before you act, study the job carefully. Careful operator and service personnel are the best insurance against accidents.

The operator of this machine must be alert, physically fit, and free from the influences of alcohol, drugs, or medications that might affect his/her eyesight, hearing, or reactions.

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