

Operation & Maintenance Manual

SK1020-5 turbo

SKID-STEER LOADER

SERIAL NUMBER

SK1020-5 turbo 37CTF00432 and up



WARNING

Unsafe use of this machine may cause serious injury or death. Operators and maintenance personnel must read this manual before operating or maintaining this machine.

This manual should be kept inside the cab for reference and periodically reviewed by all personnel who will come into contact with the machine.



1.1 FOREWORD

- This manual is supplied by Komatsu Utility S.p.A. in order to provide customers with all the necessary information on the machine and the safety regulations related to it, together with the use and maintenance instructions that enable the operator to exploit the capacity of the machine with optimal results and to keep the machine efficient over time.
- The operation manual, together with the spare parts catalogue, is an integral part of the machine and must accompany it, even when it is resold, until its final disposal.
- The manual must be handled with the greatest care and always kept on board the machine, so that it can be consulted at any moment; it must be placed in the appropriate compartment, where also the ownership documents and the logbook are usually kept.
- This manual must be given to the persons who have to use the machine and carry out the routine maintenance operations; they must read the contents carefully more than once, in such a way as to clearly understand what are the correct operating conditions and the dangerous conditions that must be avoided.
In case of loss or damage, request a new copy to Komatsu or to your Komatsu Dealer.
- The illustrations contained in this manual may represent machine configurations that are available on request. Komatsu machines are constantly improved in order to increase their efficiency and reliability; this manual sums up all the information regarding the most recent techniques applied at the moment in which the machine is marketed.
For any updated information, contact your Komatsu Dealer.
- Punctual periodic annotations 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 the maintenance plan frequently.
- Over the years Komatsu Dealers have gathered considerable experience in customer service.
If more information is needed, do not hesitate to contact your Komatsu Utility Dealer: 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 Dealers also ensure their assistance for the supply of Komatsu genuine 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 Dealer when requiring assistance and ordering spare parts.



CAUTION

- **Improper use and maintenance of this machine may be hazardous and cause serious injuries and even death.**
 - **Operators and maintenance personnel must carefully read this manual before using the machine or performing maintenance operations.**
 - **Some actions involved in the operation and maintenance of the machine may cause serious injuries or even death, if they are not performed in compliance with the instructions given herein.**
 - **The procedures and precautions described in this manual are valid for application to the machine only when it is used correctly.**
If the machine is used for any purpose or in any way other than those described herein, the operator shall be responsible for his own safety and for the safety of any other person involved.
-

1.2 INFORMATION ON SAFETY

Many accidents are caused by insufficient knowledge of and failure to comply with the safety regulations prescribed for the maintenance operations that must be performed on the machine.

In order to avoid accidents, before starting work and before carrying out any maintenance operation, carefully read and be sure to understand all the information and warnings contained in this manual and given on the plates applied on to the machine.

To enable you to use this machine safely, safety precautions and labels are given in this manual and affixed to the machine to give explanations of situations involving potential hazards and of the methods of avoiding such situations

Signal words

The following signal words are used to inform you that there is a potential hazardous situation that may lead to personal injury or damage.

In this manual and on machine labels, the following signal words are used to express the potential level of hazard.

DANGER

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

WARNING

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

CAUTION

- 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 are useful to know.

IMPORTANT

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

NOTE

- This gives information that is useful to know.

Komatsu cannot reasonably predict every circumstance that might involve a potential hazard during the operation or maintenance of the machine; for this reason, the safety messages included in this manual and applied on to the machine plates may not include all possible safety precautions.

If all the procedures and operations prescribed for this machine are kept to, you can be sure that the operator and the persons in the vicinity of the machine will work in total safety, with no risk of injuries or damage. In case of doubt regarding the safety measures necessary for some procedures, contact Komatsu or your local Dealer.

DANGER

- 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.
-

DANGER

- 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 persons, 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 "2.8.13 PRECAUTIONS CONCERNING THE BATTERY AND THE ALTERNATOR").
-

 WARNING

- Install only authorized additional equipment (see "6.1.4 CHARACTERISTICS OF THE OPTIONAL EQUIPMENT OF THE MACHINE VERSION WITH HIGH FLOW AND SUPER-FLOW HYDRAULIC SYSTEM").
-

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

 DANGER

- It is absolutely forbidden to operate the machine while standing on the ground.
Every single manoeuvre must be carried out by the operator, correctly seated in driving position.
-

1.3 INTRODUCTION

1.3.1 INTENDED USES

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 "6.1 AUTHORIZED OPTIONAL EQUIPMENT".

1.3.2 IMPROPER OR UNAUTHORIZED USES

CAUTION

- This paragraph describes some of the improper or unauthorized uses of the machine; since it is impossible to predict all the possible improper uses, if the machine happens to be used for particular applications, contact your Komatsu Dealer before carrying out the work.

IMPORTANT

- 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 grouped 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 PERSONS.
- USE OF THE MACHINE FOR LIFTING PERSONS 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.

1.3.3 MAIN CHARACTERISTICS

- Simple and easy operation.
- Hydrostatic transmission obtained through a double variable displacement pump and axial piston motors operating epicyclic reduction gears.
- Four driving wheels always engaged through oil-immersed roller chains.
- Main equipment and travel control through servo levers ensuring also combined 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).

1.3.4 RUNNING-IN

Every machine is scrupulously adjusted and tested before delivery.

A new machine, however, must be used carefully for the first 100 hours, in order to ensure proper running-in of the various components.

If the machine is subjected to excessive work load at the beginning of operation, its potential yield and its functionality will be untimely reduced.

Every new machine must be used carefully, paying special attention to the following indications:

- After starting the engine, let it idle for 5 minutes, in such a way as to warm it up gradually before actual operation.
- Avoid operating the machine with the limit loads allowed or at high speed.
- Avoid abrupt starts or accelerations, useless sudden decelerations and abrupt reversals.
- After the first 50 hours of use, carry out the following operations, in addition to those to be performed every 50 hours:
 - 1 - Check the gearing chain tension.
 - 2 - Check the wheel nut tightening.
- After the first 250 hours of use, carry out the following operations, in addition to those to be performed every 250 hours:
 - 1 - Change the hydraulic circuit drain filter.

SYNTHETIC BIODEGRADABLE OIL TYPE HEES

On machines in which the synthetic biodegradable oil type HEES is used, carry out the following operations in addition to the routine maintenance:

- After the first 50 hours of operation, change the hydraulic circuit drain filter.
- After the first 500 hours of operation, change the hydraulic circuit oil.

IMPORTANT

- **When changing the oil filters (cartridges), check their inner part to make sure that there are no deposits. If considerable deposits can be observed, find out what may have caused them before restarting the machine.**
- **The number of operating hours is indicated by the hour meter.**

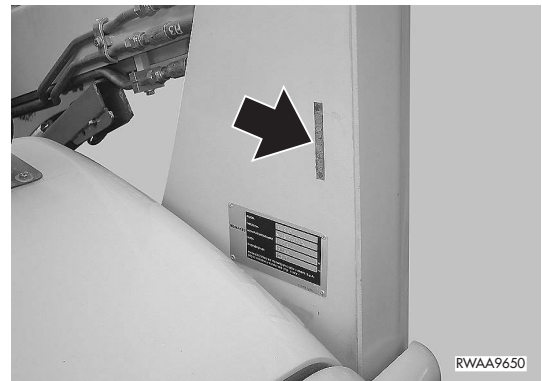
1.4 PRODUCT IDENTIFICATION

The Komatsu COMPACT LOADER and its main components are identified by serial numbers stamped on the identification plates.

The serial number and the identification numbers of the components are the only numbers that must always be indicated to the Dealer when requiring assistance and ordering spare parts.

1.4.1 MACHINE SERIAL NUMBER

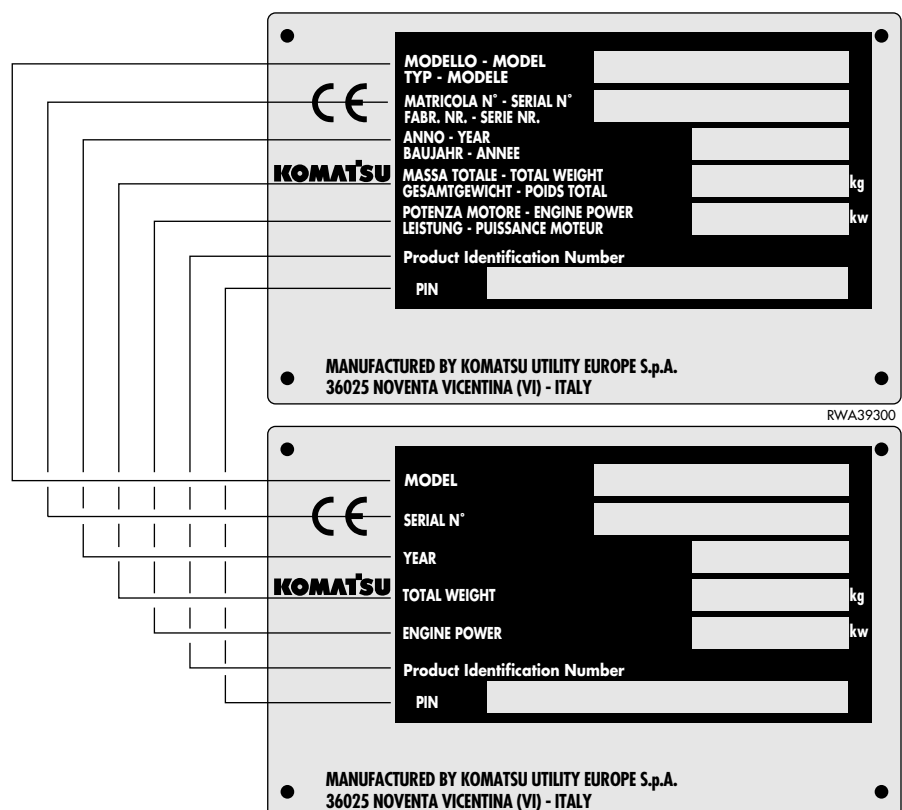
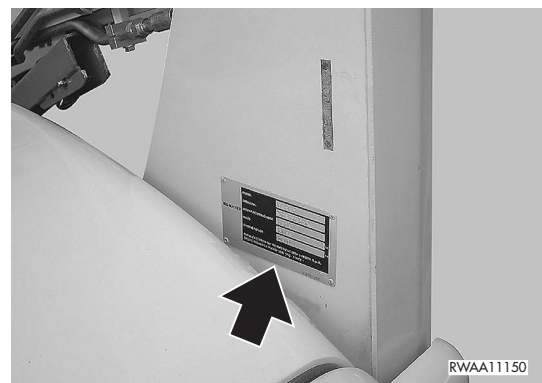
The machine serial number is stamped on the inner wall of the rear right pillar.



1.4.2 MACHINE IDENTIFICATION PLATE AND PRODUCT IDENTIFICATION NUMBER (PIN)

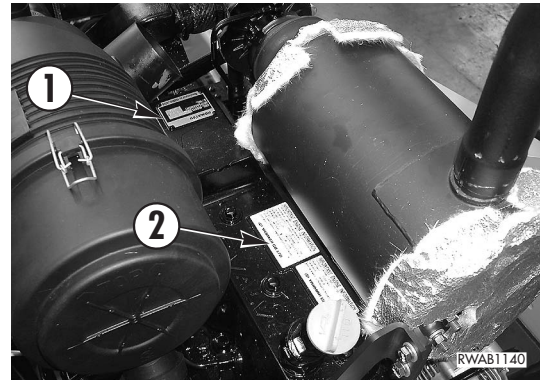
The Komatsu MACHINES described in this manual are provided with the CE mark, which certifies that they are in compliance with the CE harmonized standards.

The plate with the mark is applied on to the inner wall of the rear right pillar.



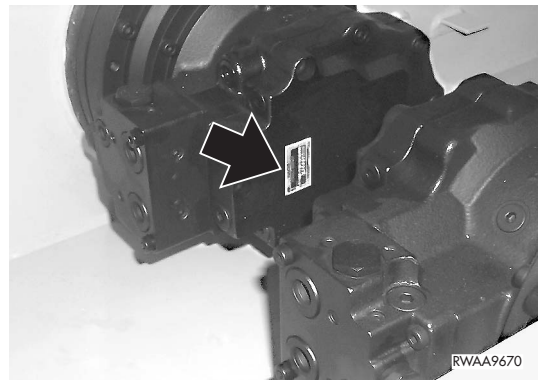
1.4.3 ENGINE SERIAL NUMBER AND EXHAUST GAS EMISSION PLATE

The plate (1) indicating the engine serial number and the exhaust gas emission plate are positioned on the upper side of the tappet cover.



1.4.4 TRAVEL REDUCTION GEAR SERIAL NUMBER

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



1.4.5 CAB SERIAL NUMBER

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



1.4.6 EXCAVATOR IDENTIFICATION PLATE (if installed)

The excavator identification number is stamped on the plate positioned on the left side of the control panel.



1.4.7 SERIAL NUMBERS AND DEALER'S ADDRESS

Machine N° _____ Model _____

Engine N° _____

Product identification number (PIN) _____

Travel reduction gear N° _____

Cab N° _____

Excavator (if installed) N° _____

Dealer:

Address: _____

_____ Tel. _____

Person to contact: _____

NOTES: _____

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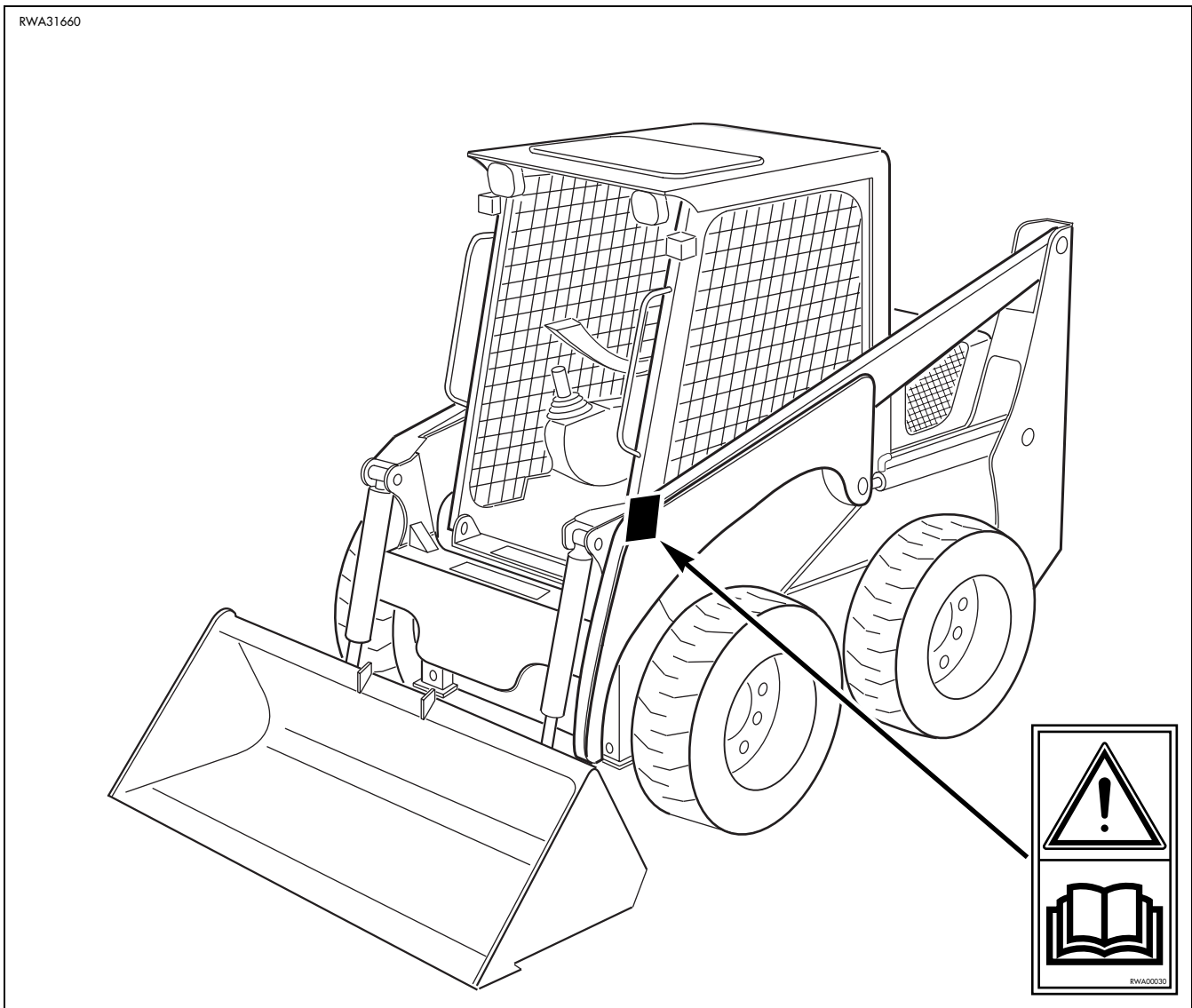
SAFETY AND ACCIDENT PREVENTION

2.1 SAFETY, NOISE AND VIBRATION PLATES

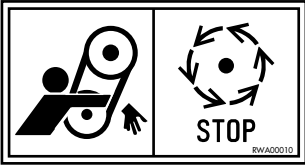
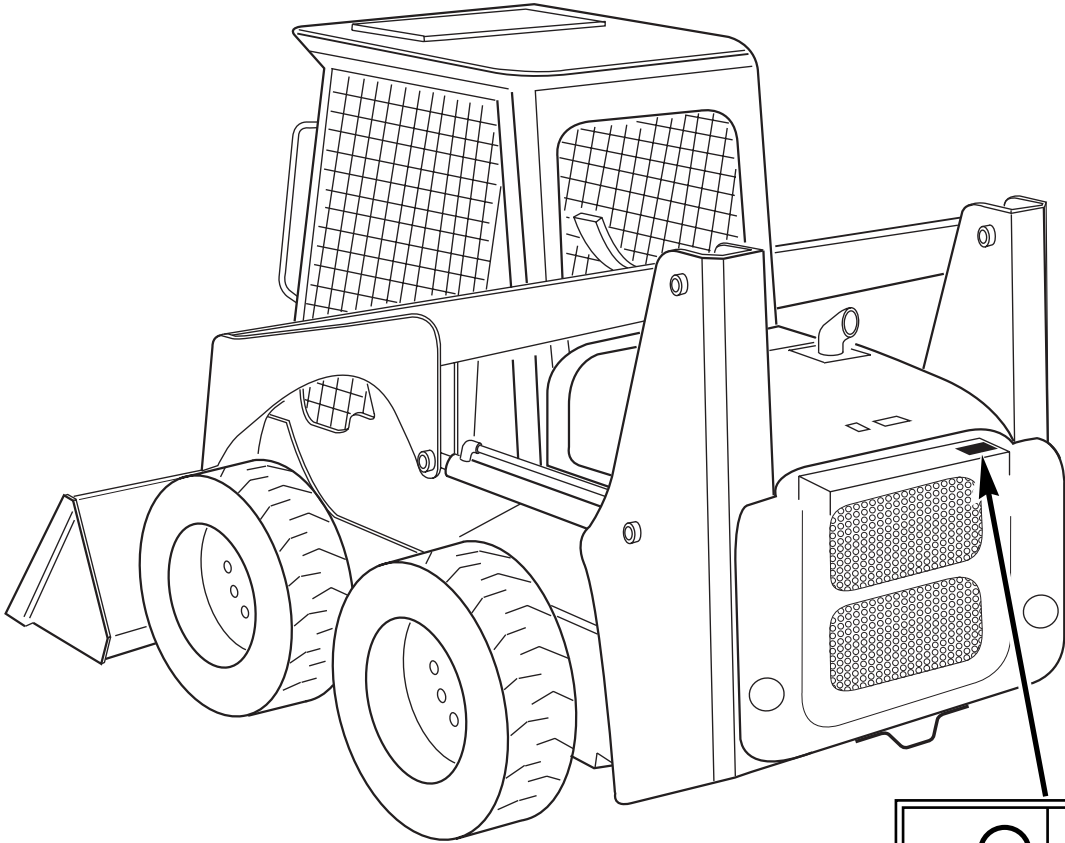
2.1.1 POSITION OF THE SAFETY PLATES

- The safety plates must always be legible and in good conditions; for this reason, if they are dirty with dust, oil or grease, it is necessary to clean them with a solution made of water and detergent. Do not use fuel, petrol or solvents.
- If the plates are damaged, ask for new ones to Komatsu or to your Komatsu Dealer.
- In case of replacement of a component provided with a safety plate, make sure that this plate is applied also on the new part.
- The machine can be provided with other plates in addition to those indicated below; in any case, keep also to the instructions given in the additional plates.

2.1.1.1 SAFETY PLATES



RWA31670



SAFETY, NOISE AND VIBRATION PLATES

2.1.1.2 SAFETY PLATES FOR MACHINES WITH EXCAVATOR

