

Operation & Maintenance Manual

VEAM934100

WA150-5H

WHEEL LOADER

SERIAL NUMBERS H50051 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 near the machine for reference and periodically reviewed by all personnel who will come into contact with it.

NOTICE

Komatsu has had the operating and maintenance instructions translated into all the languages of the member states in the European Union. Should you wish to have a version of the operating instructions in another language, please don't hesitate to ask at your local dealer's.

1. Foreword

1.1 Foreword

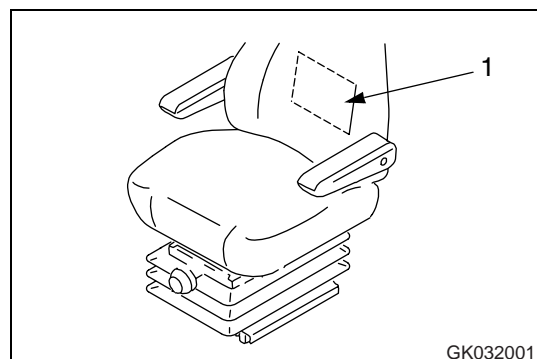
This manual provides rules and guidelines which will help you use this machine safely and effectively. The precautions in this manual must be followed at all times when performing operation and maintenance. Most accidents are caused by the failure to follow fundamental safety rules for the operation and maintenance of machines. Accidents can be prevented by knowing beforehand conditions that may cause a hazard when performing operation and maintenance.



CAUTION

- **Operators and maintenance personnel must always do as follows before beginning operation or maintenance.**
- **Always be sure to read and understand this manual thoroughly before performing operation and maintenance.**
- **Read the safety messages given in this manual and the safety labels affixed to the machine thoroughly and be sure that you understand them fully.**
- **Keep this manual at the storage location for the Operation and Maintenance Manual given below, and have all personnel read it periodically.**
- **If this manual has been lost or has become dirty and cannot be read, request a replacement manual immediately from KOMATSU or your KOMATSU distributor.**
- **If you sell the machine, be sure to give this manual to the new owners together with the machine.**
- **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 devices 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 KOMATSU or your KOMATSU distributor before operating the machine.**

Storage location for the Operation and Maintenance Manual:
Pocket (1) at rear of operator's seat



GK032001

1.1.1 EU Directives

Machines supplied by us fulfil the Directive for Machinery 89/392/EEC and all supplements. If the machine is being used in another country, it is possible that certain safety regulations and specifications may not be fulfilled for use in that country. For example, priority vehicle warning lamps may be used in some countries, but are forbidden in others.

Please contact our dealer before using the machine if you have any questions regarding the fulfilment of standards and regulations in a specific country.

Notes on subsequent installation of electrical and electronic equipment and components

Electrical and electronic equipment and/or components which have been installed subsequently, emit electromagnetic radiation which can influence the function of the electronic components and sections of the machine. This can have an influence on the safety of the machine and endanger persons. For this reason, please ensure that the following safety instructions are observed.

If you are installing electrical or electronic equipment and/or components in the machine and connect them to the vehicle electrical system, you must check at own responsibility that the installations do not cause any disturbance to the vehicle's electronic system or other components. Above all, you must ensure that any subsequently installed electrical and electronic components comply with the EMV Directive 89/336/EEC in its current edition and bear the CE mark.

The following requirements also have to be met for subsequent installation of mobile communication systems (e.g. radio, telephone):

- Only equipment approved by national legislation may be used
- The unit must be fixed in position
- Portable or mobile units may only be used inside the vehicles if they are connected to a fixed outside antenna
- The transmitter unit must be spatially separated from the vehicle's electronic system
- Make sure when installing the antenna that this is installed correctly with good earth connection between antenna and vehicle mass

Also observe KOMATSU and manufacturer's installation instructions for wiring, installation and maximum permitted power consumption.

1.2 Safety information

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.

1.2.1 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.

 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. This word is used also to alert against unsafe practices that may cause property damage.

Example of safety message using signal word

 WARNING

When standing up from the operator's seat, always place the safety lock lever in the LOCK position.

If you accidentally touch the control levers when they are not locked, this may cause a serious injury or death.

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.

NOTE

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

REMARK

This word is used for information that is useful to know.

1.2.2 Safety labels

Safety labels are affixed to the machine to inform the operator or maintenance worker on the spot when carrying out operation or maintenance of the machine that may involve hazard.

For details of safety labels, see "Safety labels (2-2)".

Safety labels using pictogram

Safety pictograms use a picture to express a level of hazardous condition equivalent to the signal word. These safety pictograms use pictures in order to let the operator or maintenance worker understand the level and type of hazardous condition at all times. Safety pictograms show the type of hazardous condition at the top or left side, and the method of avoiding the hazardous condition at the bottom or right side. In addition, the type of hazardous condition is displayed inside a triangle and the method of avoiding the hazardous condition is shown inside a circle.

KOMATSU cannot predict every circumstance that might involve a potential hazard in operation and maintenance. Therefore, the safety messages 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, it is your responsibility to take the necessary steps to ensure safety.

In no event should you engage in prohibited uses or actions described in this manual.

The explanations, values, and illustrations in this manual were prepared based on the latest information available at that time. Continuing improvements in the design of this machine can lead to changes in detail which may not be reflected in this manual. Consult KOMATSU or your KOMATSU distributor for the latest available information of your machine or for questions regarding information in this manual.



1.3 Introduction

This loader is a machine with independent transmission, moving on chains or wheels. Driving in forward direction, the loader can load or dig material using its attachments intended for loading operations (i.e. bucket).

The standard operation cycle of a loader includes filling up and loading of the bucket, transporting the material and emptying the bucket.

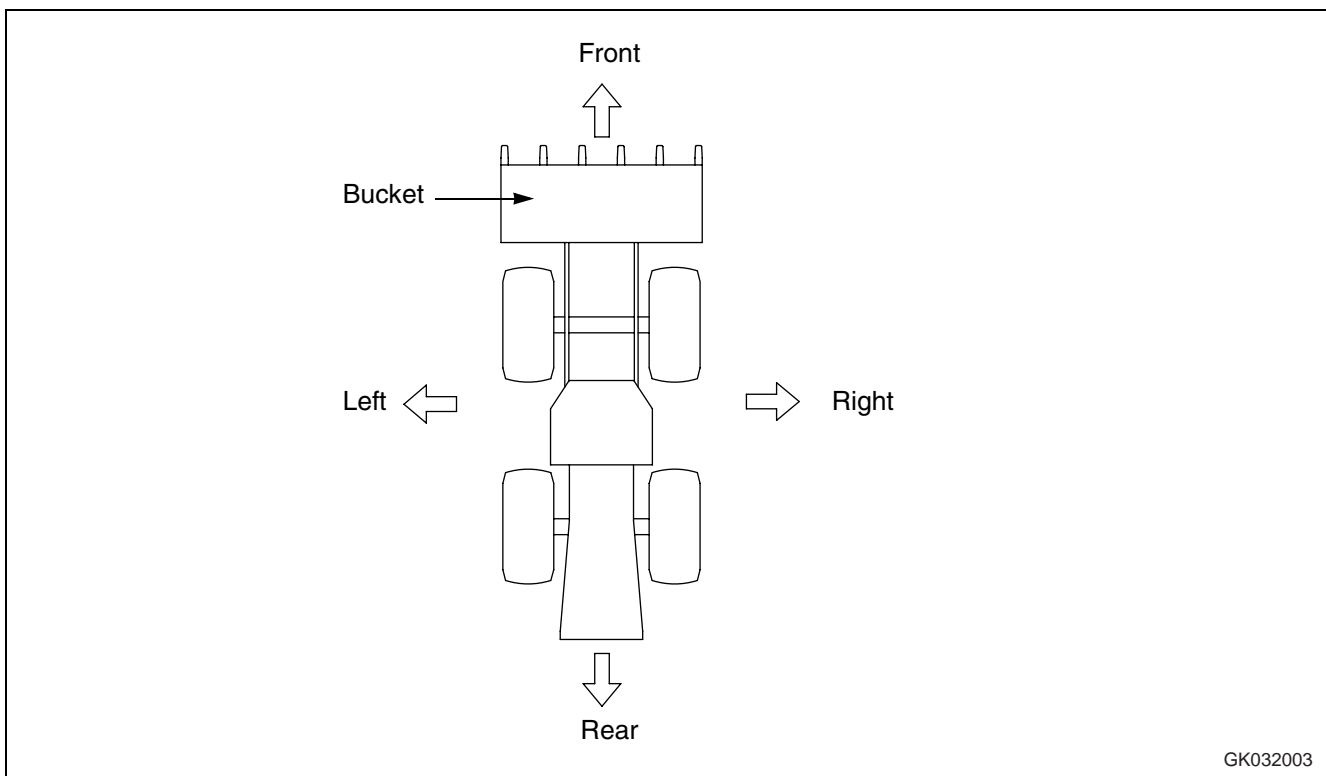
1.3.1 Intended use

If you use the machine for any other purpose than specified above, we will not accept any responsibility for safety. All considerations concerning safety will then be up to the owner or the operating and maintenance personnel. In any case, neither you nor any other person are/is authorised to perform work and functions explicitly prohibited in these operating instructions.

The transport of persons in the work equipment is strictly forbidden!

For details of the operating procedure, see "Work possible using wheel loader (3-85)"

1.3.2 Directions of machine



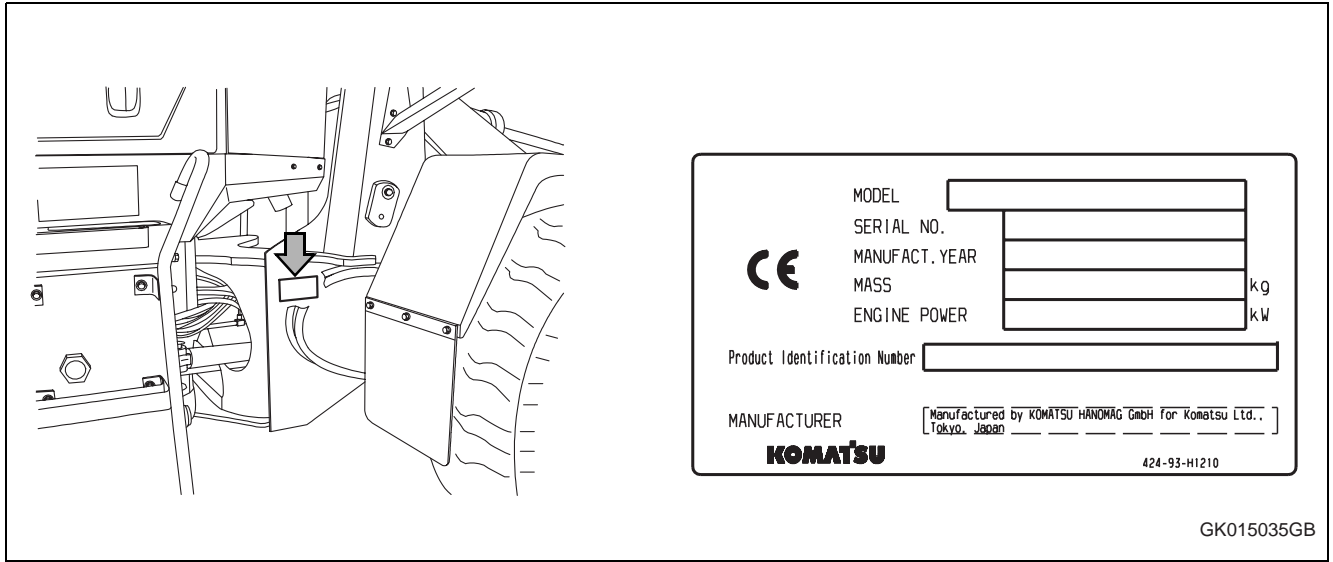
In this manual, the directions of the machine (front, rear, left, right) are determined according to the view from the operator's seat in the direction of travel (front) of the machine.

1.4 Necessary information

When requesting service or ordering replacement parts, please inform your KOMATSU distributor of the following items.

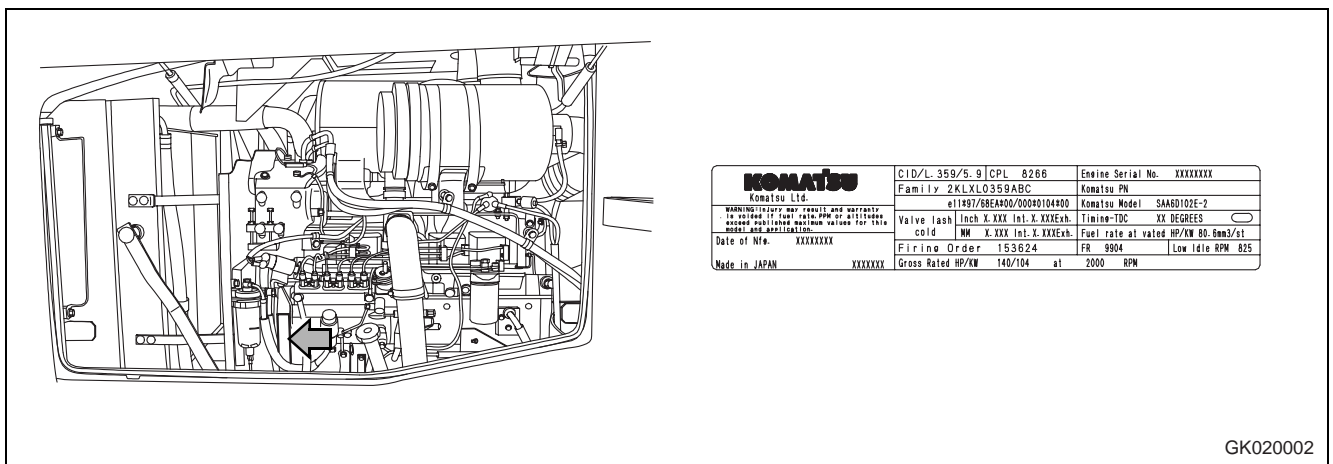
1.4.1 PIN/Machine serial no. plate and position

On the center right of the front frame.



1.4.2 Engine serial no. plate and position

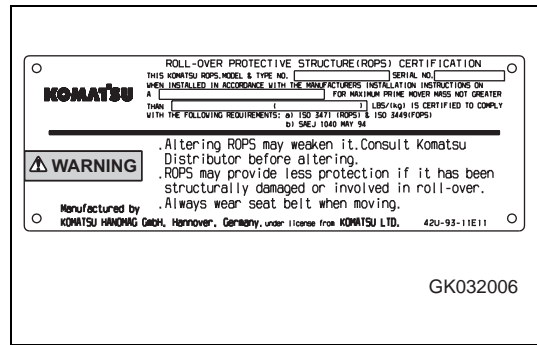
This is on the side face of the engine cover on the right side of the machine.



EPA: Environmental Protection Agency, U.S.A.

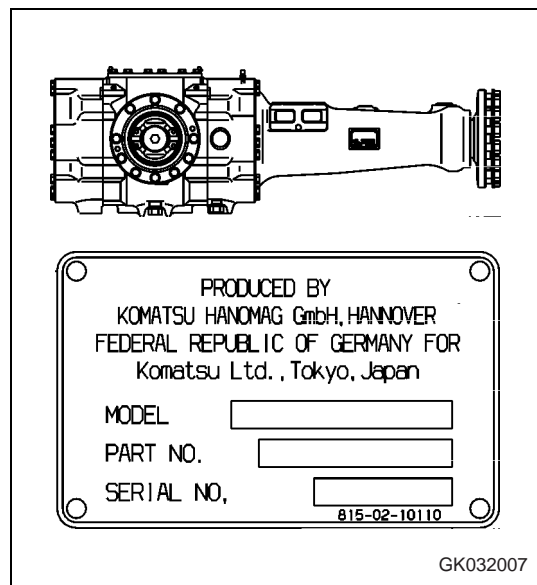
1.4.3 ROPS/FOPS-Cab serial no. plate

This plate is located on the right inside cab on the rear beam.



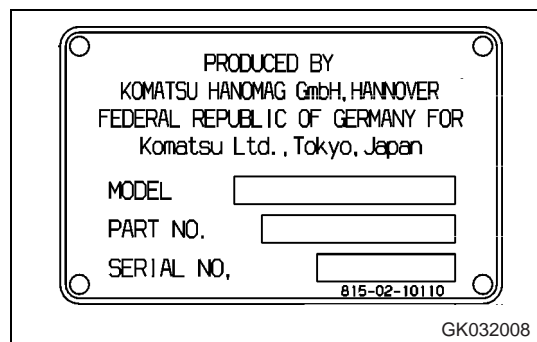
1.4.4 Axle serial no. plate

This plate is located on the right of front axle and on the left of rear axle.



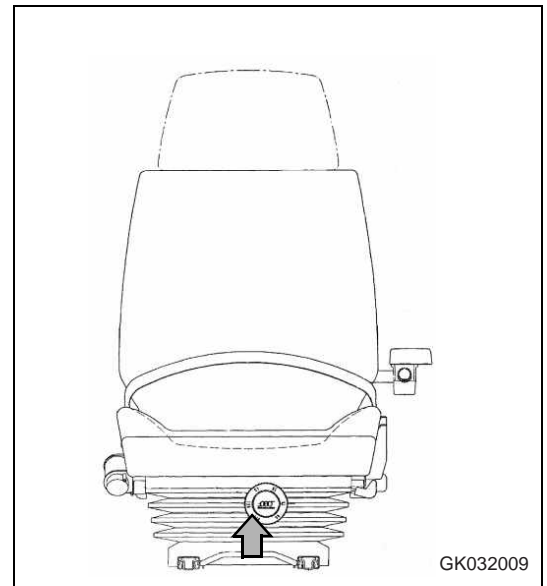
1.4.5 Transmission serial no. plate

This plate is located in travel direction front, above the transmission output.



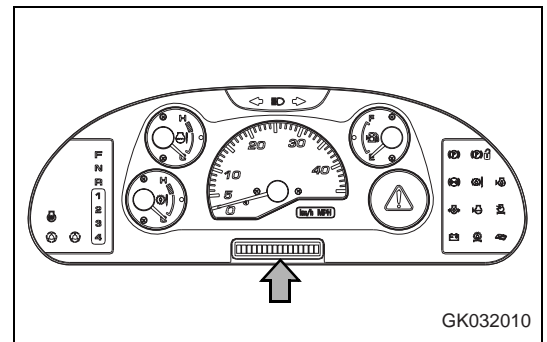
1.4.6 Seat operator serial no. plate

This plate is located in front of seat, covered by the bellows.



1.4.7 Position of service meter

It is at the center bottom of the machine monitor.



1.4.8 Table to enter serial no. and distributor

Machine serial No.	
Engine serial No.	
Distributor name Address	
Service Personnel Phone/Fax	

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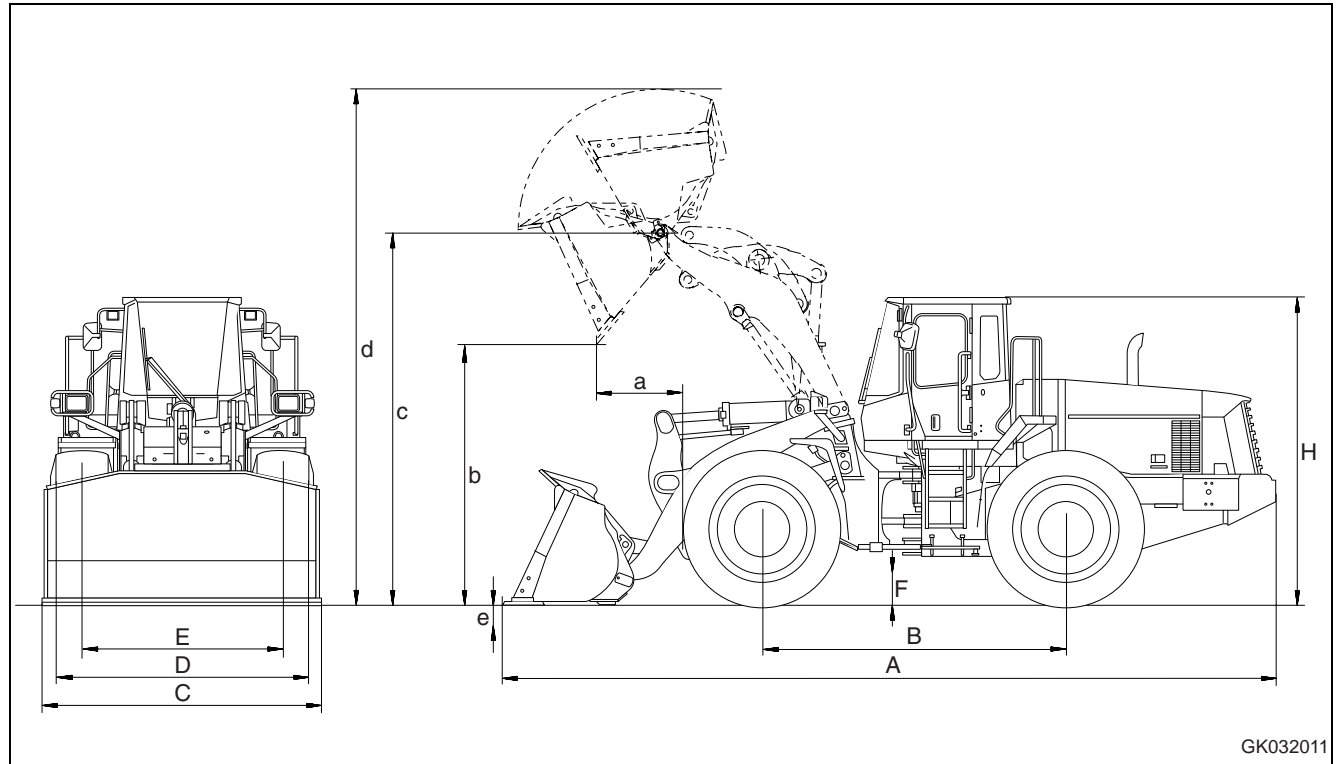
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1.6 Dimensions, weights and operating data

1.6.1 WA150-5H: Dimensions, weights and operating data



GK032011

Measurements, operating data


	Bucket capacity to ISO 7546	m ³	1.5	without teeth and without BOC
	Material density	t/m ³	1.8	
	Bucket weight without teeth	kg	640	
	Static tipping load, straight	kg	6,370	
	Static tipping load, 40° angle	kg		
	Breakout force, hydraulic	kN	76	
	Lifting capacity, hydraulic, on ground	kN	88	
	Operating weight *)	kg	8,090	
a	Reach at 45° discharge	mm	947	
b	Dumping height at 45° discharge	mm	2,731	
c	Lift height, hinge pin	mm	3,504	
d	Height to upper edge of bucket	mm	4,688	
e	Digging depth	mm	80	
A	Overall length, bucket on ground	mm	6,316	
B	Wheel base	mm	2,600	
C	Bucket width	mm	2,400	
D	Width over tyres	mm	2,228	These values refer to machines with 17,5R25
E	Gauge	mm	1,872	
F	Ground clearance	mm	420	
H	Overall height	mm	3,063	*) Machine without additional counterweight

1.7 CE-Conforming equipment

1.7.1 CE-Conforming equipment

CE-Conforming equipment

	1	2	3	4	5	–
	Type	Part No.	Volume m ³	Load Capacity kg	Hydraulic pressure bar	Weight kg
Bucket	WA150-5H	416-71-H2110	1.5	2,700	---	690
		416-71-H2120	1.5	2,700	---	640
		416-71-H2130	1.6	2,880	---	730
		416-71-H2140	1.5	2,700	---	730
		416-71-H2150	1.5	2,700	---	680
		416-71-H2160	1.6	2,880	---	770
		416-71-H2170	1.6	2,880	---	770
		416-71-H2180	1.6	2,880	---	720
		416-71-H2190	1.7	3,060	---	810
		416-71-H2970	1.6	2,880	---	770
		416-71-H2980	1.6	2,880	---	728
		416-71-H2990	1.7	3,060	---	821



KOMATSU HANOMAG
KOMATSU HANOMAG GmbH, Hannover-Germany

Typ Type	①	
Teile Nr. Part number	②	
Volumen Volume	③	m ³
Tragfähigkeit Load Capacity	④	kg
Hyd. Druck Hydr. pressure	⑤	bar

GK032012

1.7.2 Manufacturer-supplied CE-Conforming equipment, according to document 416-93-H1120

The responsibility for observing valid regulations in the case of wheel loaders with "interchangeable equipment" (e.g. bucket or fork-lift) which was not supplied from works lies with the customer which was subsequently fitted to the machine.

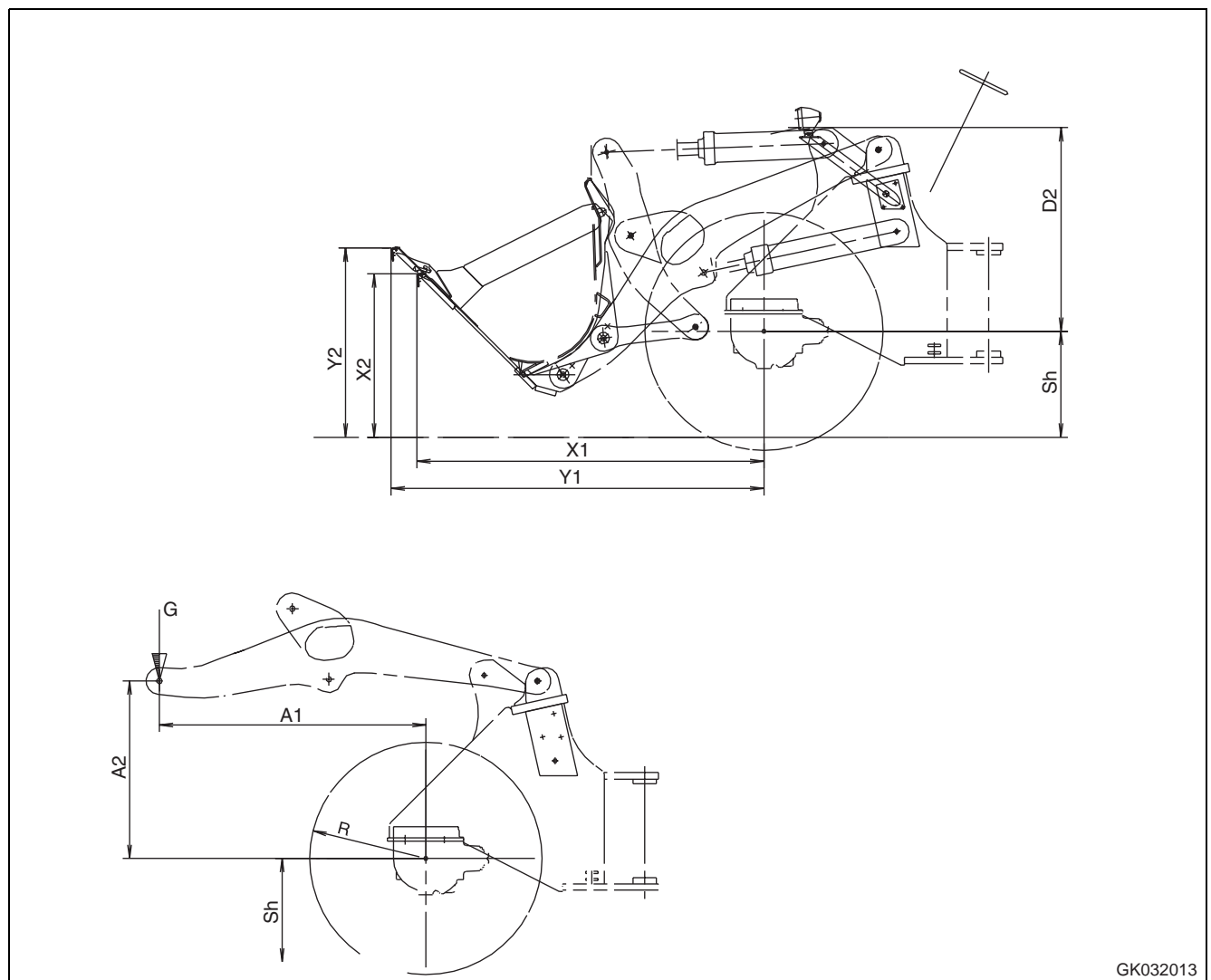
The directives for CE conformity and road-traffic registration are deemed to have been fulfilled when the manufacturer of the equipment confirms fulfilment of the form 416-93-H1120 alongside.

The certification must be sent to the customer and the wheel loader manufacturer. The CE conformity declaration for a specific wheel loader is only legally valid once this has taken place.

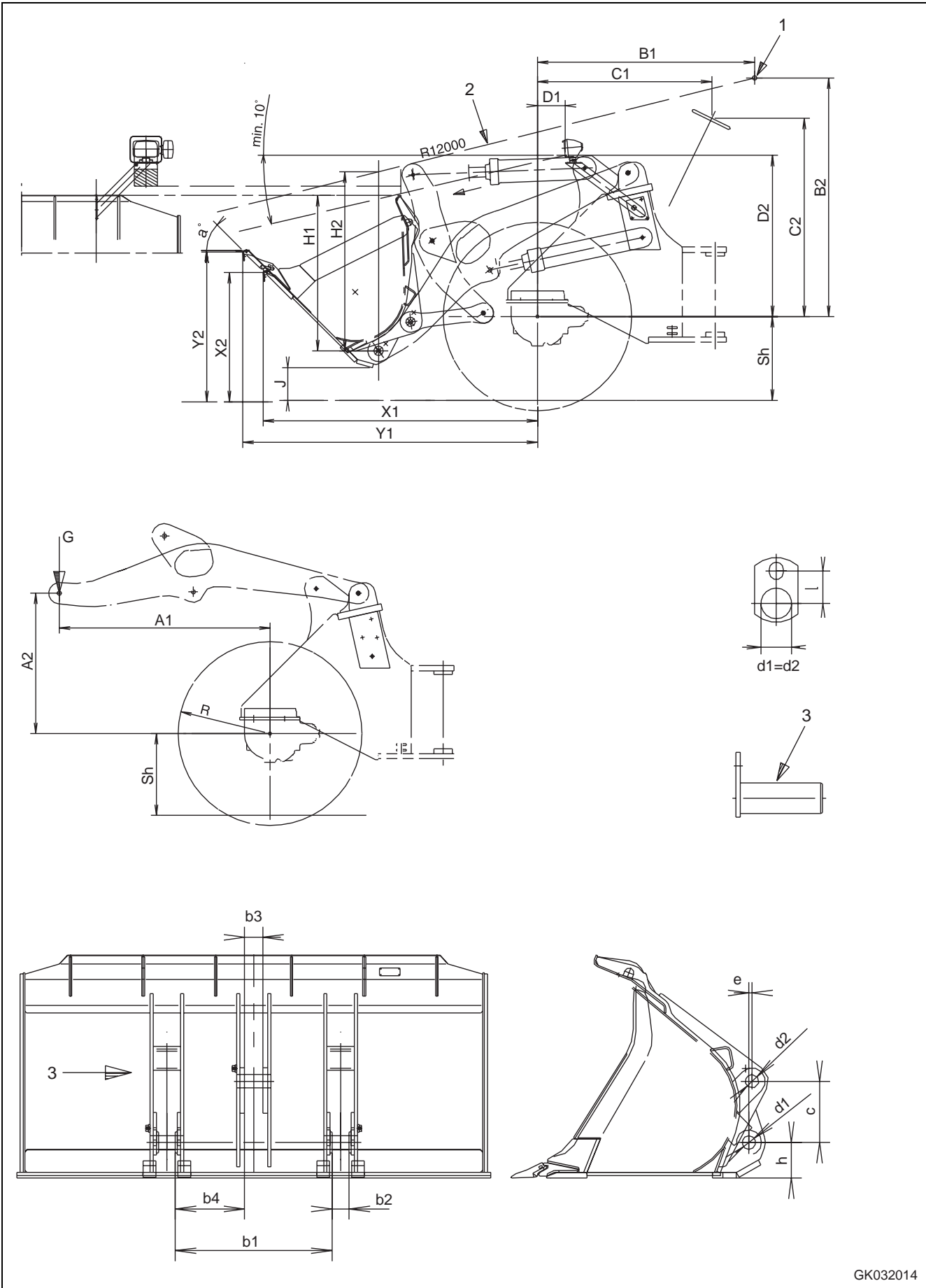
The dimensions X1, X2, Y1 and Y2 must be provided by the customer for approval for use on public roads.

The dimension Sh (smallest tyre radius) must be added to the dimension D2.

The figure G (in kg) represents the maximum load (equipment and operating load) which may act upon this point.



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GK032014

Manufacturer- supplied CE-Conforming equipment, according to document 416-93-H1120

A1	Distance: bucket pivoting point - front axle, horizontal
A2	Distance: bucket pivoting point - front axle, vertical
Sh	Distance: road level - front axle
B1	Distance: driver's eye (1) - front axle, horizontal
B2	Distance: driver's eye (1) - front axle, vertical
C1	Distance: centre steering wheel - centre front axle, horizontal
C2	Distance: center steering wheel - centre front axle, vertical
D1	Distance: headlight - centre front axle, horizontal
D2	Distance: headlight - centre front axle, vertical
G	Weight of equipment and working load
H1	Distance: bucket pivoting point - bucket upper edge, vertical (carrying position)
H2	Distance: bucket pivoting point - vision line, vertical (carrying position)
J	Distance: road level - bucket bottom edge (carrying position)
X1	Distance: cutter protection - front axle, horizontal
X2	Distance: cutter protection - road level, vertical
Y1	Distance: teeth protection - front axle, horizontal
Y2	Distance: teeth protection - road level, vertical
b1	Bucket connection dimension, boom width inside
b2	Bucket connection dimension, boom arm
b3	Bucket connection dimension, tilt rod
b4	Bucket connection dimension, temporary size
c	Bucket connection dimension between d1 and d2, vertical
d1	Bucket connection dimension, bolt (3) for boom
d2	Bucket connection dimension, bolt (3) for tilt rod
e	Bucket connection dimension d1 - d2, horizontally displaced
h	Distance: bucket bottom edge - boom bolt hole
l	Distance: centre of bolt - centre of fastening screw

WA150-5H	416-93-H1120
A1	1,745
A2	1,195
Sh	630
B1	1,812
B2	2,027
C1	1,336
C2	1,686
D1	461
D2	1,170
G	3,340
H1	1,173
H2	1,656
J	270
X1	-
X2	-
Y1	-
Y2	-
b1	884
b2	88
b3	88
b4	398
c	330
d1	50
d2	50
e	0
h	160
l	60
1	Driver's eye
2	Vision line
3	Bolts
Tyres	MICHELIN 17.5R25XHA
Bucket	1,5 m ³ 416-71-H2120

2. Safety



WARNING

Please read and make sure that you fully understand the precautions described in this manual and the safety labels on the machine. When operating or servicing the machine, always follow these precautions strictly.

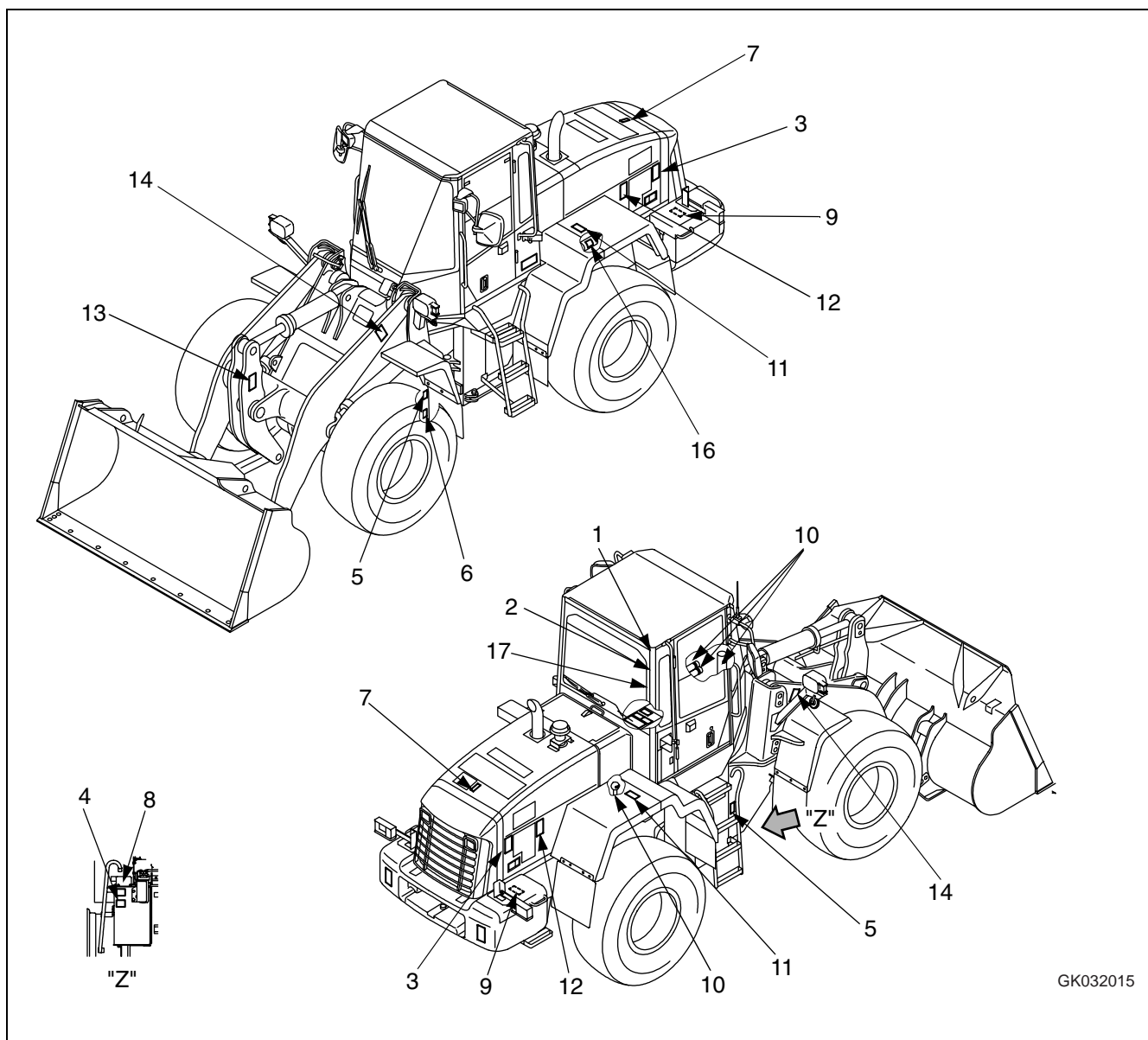
2.1 Safety labels

The following safety labels are used on this machine. Be sure that you fully understand the correct position and content of these safety labels.

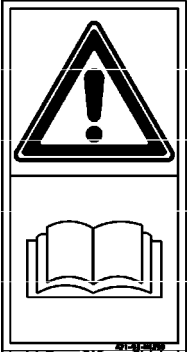
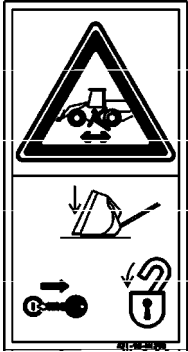
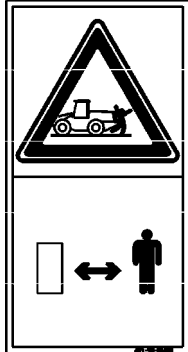
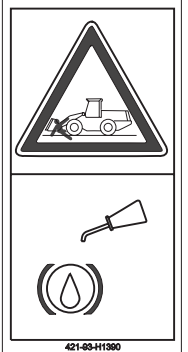
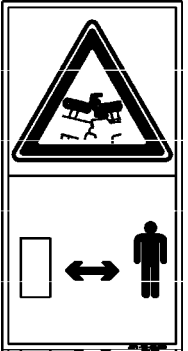
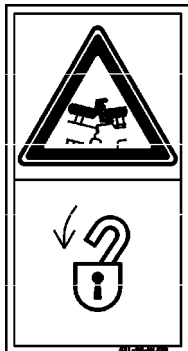


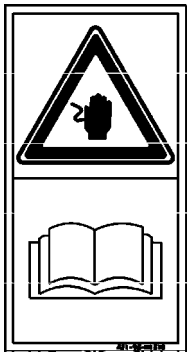

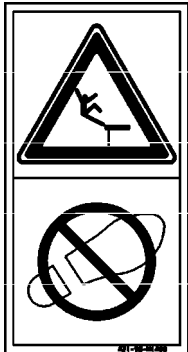
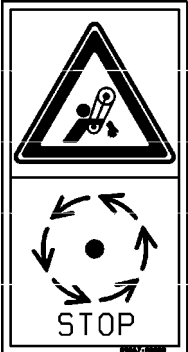
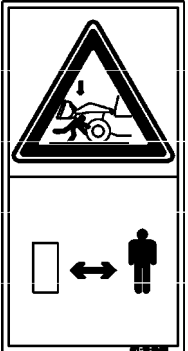



Always keep all safety labels clean. When cleaning them, use soap and water. Do not use organic solvents or gasoline. These may cause the safety labels to peel off.

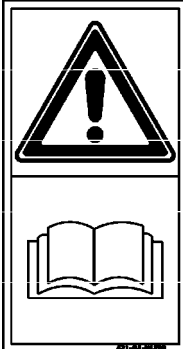
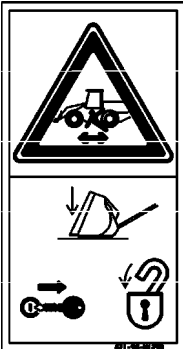
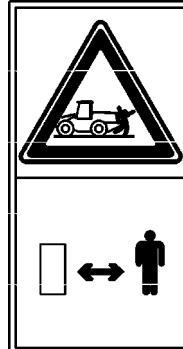
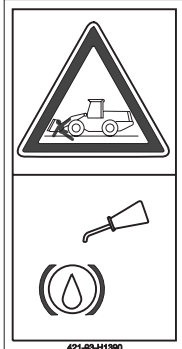
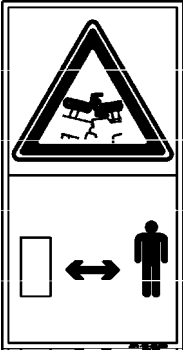



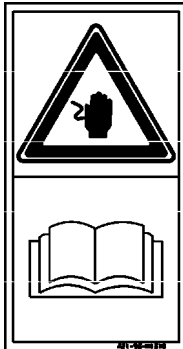

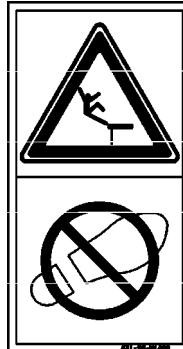
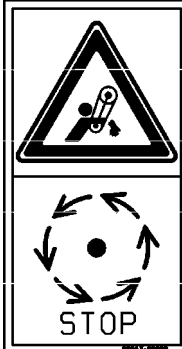
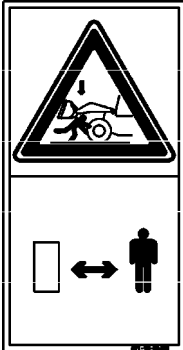



Missing or damaged safety labels must be replaced. Order the new part from your KOMATSU distributor.

2.1.1 Location of safety labels



2.1.2 Presentation of safety labels

<p>1</p>  <p>GK032016</p>	<p>2</p>  <p>GK032017</p>	<p>3</p>  <p>GK032018</p>	<p>4</p>  <p>GK032019</p>
<p>5</p>  <p>GK032020</p>	<p>6</p>  <p>GK032021</p>	<p>7</p>  <p>GK032022</p>	<p>8</p>  <p>GK032022</p>
<p>9</p>  <p>GK032023</p>	<p>10</p>  <p>GK032024</p>	<p>11</p>  <p>GK032025</p>	<p>12</p>  <p>GK032026</p>
<p>13</p>  <p>GK032027</p>	<p>14</p>  <p>GK032028</p>	<p>16</p>  <p>GK032029</p>	<p>17</p>  <p>GK032030</p>

<p style="text-align: center;">1</p>  <p style="text-align: center;">GK032016</p>	<p style="text-align: center;">2</p>  <p style="text-align: center;">GK032017</p>	<p style="text-align: center;">3</p>  <p style="text-align: center;">GK032018</p>	<p style="text-align: center;">4</p>  <p style="text-align: center;">GK032019</p>
<p style="text-align: center;">5</p>  <p style="text-align: center;">GK032020</p>	<p style="text-align: center;">6</p>  <p style="text-align: center;">GK032021</p>	<p style="text-align: center;">7</p>  <p style="text-align: center;">GK032022</p>	<p style="text-align: center;">8</p>  <p style="text-align: center;">GK032022</p>
<p style="text-align: center;">9</p>  <p style="text-align: center;">GK032023</p>	<p style="text-align: center;">10</p>  <p style="text-align: center;">GK032024</p>	<p style="text-align: center;">11</p>  <p style="text-align: center;">GK032025</p>	<p style="text-align: center;">12</p>  <p style="text-align: center;">GK032026</p>
<p style="text-align: center;">13</p>  <p style="text-align: center;">GK032027</p>	<p style="text-align: center;">14</p>  <p style="text-align: center;">GK032028</p>	<p style="text-align: center;">16</p>  <p style="text-align: center;">GK032029</p>	<p style="text-align: center;">17</p>  <p style="text-align: center;">GK032030</p>

1	Precautions before starting operation, inspection and maintenance (421-93-H1250) WARNING Read the Operator's Manual before starting operation, inspection, maintenance or transportation.
2	Precautions before leaving the machine (421-93-H1290) Sign indicates a hazard of unexpected moving of stopped machine. Lower working device to ground, move safety lever to lock position and take engine key with you before leaving machine.
3	Precautions when traveling in reverse (421-93-H1360) Sign indicates to prevent severe injury or death Honk to alert people nearby. Be sure no one is on or near machine. Use spotter if view is obstructed.
4	Use KOMATSU oil only (421-93-H1390)
5	Do not enter (421-93-H1320) Sign indicates a crush hazard between the articulating parts of the vehicle. Keep away from the vehicle when it is moving.
6	Precautions for safety bar (421-93-H1330) Sign indicates a crush hazard between the articulating parts of vehicle. Lock vehicle with lock bar to avoid movement during maintenance, inspection and transportation.
7	Precautions when coolant is at high temperature (421-93-H1280) Sign indicates a burn hazard from spurting hot water if radiator is uncapped while hot. Allow coolant to cool before removing cap.
8	Precautions when oil is at high temperature (421-93-H1280) Sign indicates a burn hazard from spurting hot oil if hydraulic oil tank is uncapped while hot. Allow hydraulic oil to cool before removing cap.
9	Precautions when handling battery cable (421-93-H1310) Sign indicates an electric hazard from handling the cable. Read manual for safe and proper handling.
10	High pressure warning (421-93-H1300) There is a hazard of explosion injury. Do not disassemble the accumulator, make holes in it, weld it cut it, hit it, roll it or bring it near flame.
11	Do not climb on fender (421-93-H1400) Sign indicates a hazard of falling. Do not stand on this place here.
12	Do not open when engine is running (09667-A0880) Sign indicates a hazard of rotating parts, such as belt. Turn off engine before inspection and maintenance.
13	"Do not come under machine" sign (421-93-H1370) Sign indicates a hazard of being run over by moving vehicle. Keep a safe distance from vehicle when it is moving.
14	"Do not go under work equipment" sign (421-93-H1380) Sign indicates a crush hazard from falling off of working device. Keep away when the working device is raised.
16	Only start machine from driver's seat (09842-A0481)
17	Safety measures before starting work (421-93-H1340)

2.2 General precautions

Safety rules

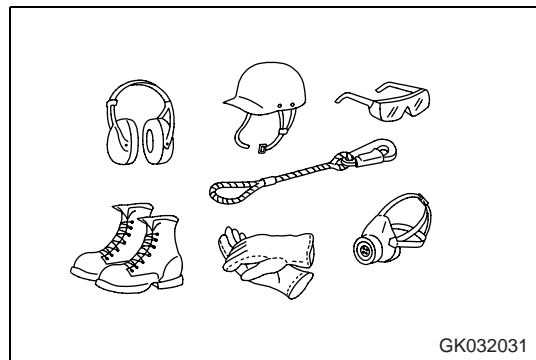
- Only trained and authorized personnel can operate and maintain the machine.
- Follow all safety rules, precautions and instructions when operating or performing maintenance on the machine.
- If you are under the influence of alcohol or medication, your ability to safely operate or repair your machine may be severely impaired putting yourself and everyone else on your job-site in danger.
- When working with another operator or with a person on worksite traffic duty, be sure that all personnel understand all hand signals that are to be used.

If abnormalities are found

If you find any abnormality in the machine during operation or maintenance (noise, vibration, smell, incorrect gauges, smoke, oil leakage, etc., or any abnormal display on the warning devices or monitor), report to the person in charge and have the necessary action taken. Do not operate the machine until the abnormality has been corrected.

Clothing and personal protective items

- Do not wear loose clothing and accessories. There is a hazard that they may catch on control levers or other protruding parts.
- If you have long hair and it hangs out from your hard hat, there is a hazard that it may get caught up in the machine, so tie your hair up and be careful not to let it get caught.
- Always wear a hard hat and safety shoes. If the nature of the work requires it, wear safety glasses, mask, gloves, ear plugs, and safety belt when operating or maintaining the machine.
- Check that all protective equipment functions properly before using it.



GK032031

Fire extinguisher and first aid kit

Always follow the precautions below to prepare for action if any injury or fire should occur.

- The fire extinguisher can be fastened to the inside cabin wall on the left.
- If, in the course of certain operations, there is danger of fire, fire extinguishers must be at hand. Familiarise with the use of the fire extinguishers.
- Inform yourself on measures to be taken in the event of a fire.
- The first-aid kit can be positioned on the right of the cabin's interior.
- Make sure that you know all telephone numbers of the persons that you need to contact in an emergency.

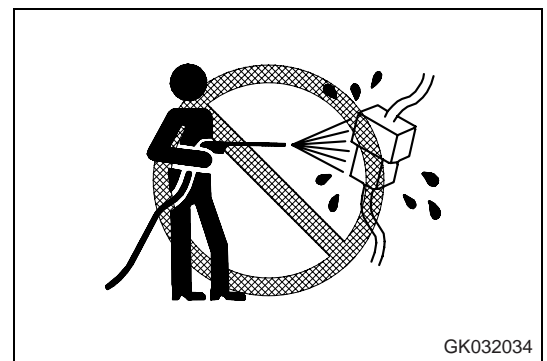


Safety features

- Be sure that all guards and covers are in their proper position. Have guards and covers repaired immediately if they are damaged.
- Understand the method of use of safety features and use them properly.
- Never remove any safety features. Always keep them in good operating condition.

Keep machine clean

- If water gets into the electrical system, there is a hazard that it will cause malfunctions or misoperation. Do not use water or steam to wash the electrical system (sensors, connectors).
- If inspection and maintenance is carried out when the machine is still dirty with mud or oil, there is a hazard that you will slip and fall, or that dirt or mud will get into your eyes. Always keep the machine clean.



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