



Introduction

Section 01-01

Komatsu has made effort to make this manual as accurate as possible based on the information available at the time of publication and printing. Continuous improvement and advancement of product design may cause changes to machines, which may not have been included in this publication. Komatsu reserves the right to make changes and improvements at any time. To ensure the most current information, please contact your service center.

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Customer Responsibilities and Warranty Advisories

P&H wheel loaders are warranted in accordance with the warranty policy provided with the machine. The recommended operating and maintenance procedures set forth shall be followed to ensure warranty coverage is not jeopardized. Failure to comply with recommended operating and maintenance procedures may void machine warranty.

Any questions or problems relating to warranty policy or administration should be directed to Komatsu Service Center. Include the model and serial number, in-service date of the machine, and hour meter reading. **We especially draw your attention to the following safety advisories.**

Safety

This publication contains special instructions that pertain to safety, operation, maintenance, and repair of the machine. Listed below are the signal words and symbols that precede these instructions and their meanings:


DANGER

- The danger label indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

- The warning label indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

- The caution label, used with the safety alert symbol indicates a hazardous situation which, if not avoided, could result in minor or moderate injury (includes the safety alert symbol .

CAUTION

- The caution label (without safety alert symbol) is used to address practices not related to personal injury – only equipment damage.

NOTICE

The NOTICE graphic is to indicate areas of importance to the reader that are not related to personal injury or machine damage.

Safety, Warnings and Cautions



CRUSH HAZARD

- Crush hazards exist if the machine is not operated within the designed parameters of operation. All lift capacities and machine operating characteristics are based on the criteria of the machine being level, on firm supporting ground. When the machine is operated in conditions that deviate from these criteria (e.g. on soft or uneven ground, on slope or when subject to side loads), these conditions shall be considered by the operator. Failure to operate the machine on level, firm ground can cause a tip-over hazard, resulting in serious injury or death.

SPECIAL HAZARDS

- Special hazards may exist in any operating environment. Before operating the equipment, it must be determined if special hazards exist in the operating area, such as toxic gasses, ground (underfoot) conditions, that require special precautions or measures to eliminate or reduce the hazard. Consult all local resources of information about toxic gasses and underfoot conditions before operating the equipment. Failure to identify special hazards could cause crush hazards, inhalation hazards, and other special hazards resulting in crush hazards, toxic gas inhalation, ground sinking, and other special hazards, resulting in serious injury or death.
- Special hazards may exist such as water, gas, or electricity lines, or contaminated areas, or sinking ground or other special conditions. Always follow all local rules, laws, procedures, and regulations when special conditions are identified. Failure to identify special conditions and follow all local rules, laws, procedures, and regulations can cause special hazards which result in serious injury or death.

General Description of Machine

P&H wheel loaders are rugged articulated front-end loaders specifically built for long lasting operation in many environments. The machine's bucket size is determined by the weight (density) of the material to be handled.

A diesel engine and an SR generator provide power to electric traction motors that propel the machine at variable speeds, forward and reverse. This power train is augmented by additional fluid power systems that control all bucket, hoist, and steering operations.

The four drive motors are coupled to planetary gearboxes sometimes referred to as "drivers". Operation of the machine is further enhanced by an SR (Switch Reluctance) drive system.

Braking is accomplished by three separate systems. The primary braking system utilizes characteristics of the drive motors, causing "dynamic braking". The secondary system, the service brake, is an air-operated disc brake attached to each motor shaft. The third system, the parking brake, is a spring-applied, air release brake.

Generation 3 Machines

Generation 3 machines have a Kinetic Energy Storage System (KESS). The KESS is composed of converter panels, fuses, and one or more ESD's (Energy Storage Devices). Typically, an ESD looks like a large motor, mounted on the rear frame. That is the most visual way to identify a Gen 3 machine. Some information within this manual may reference only Generation 3 machines. Before servicing a machine, first determine whether it is a Gen 2 or Gen 3 machine.



Typical (Generation 3) wheel loaders

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P&H Wheel Loader Operating Environment

P&H wheel loaders are designed as rugged all-weather tools for various industries. They are designed as off-highway equipment for use in various applications that are in remote locations. Due to their very large size, they must work in an area with few other machines, and the only proximity to buildings would be for routine maintenance or repair. They are not to be operated near office buildings or residential areas.

NOTICE

The operators of this machine are advised not to approach within 328 yards (300 meters) of local residences or business establishments; to prevent interference with television and radio reception.

Loaders: The primary function of the loader is to load or move loose material (i.e. blasted rock, crushed stone, sand, coal, overburden etc.) into hauling units such as mining trucks and rail trains. A typical application would be loading end-dump mining trucks from a bank of blasted rock. It is intended to be operated on firm, stable ground.

NOTICE

A loader should never be used as a dozer. The dozer is specifically designed to push materials, whereas the loader is designed to lift and move loose material.

The machines can withstand and are fully functional in temperatures ranging from -40° F to +122° F (-40° C to +50° C), 0-100% humidity, and in all forms of precipitation, day or night. Operating elevation is limited by the restrictions placed on the diesel engine power unit. The machine operating elevation can exceed 14,260 ft. (4500 meters).

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Service Manual and Parts Manual

The Service Manual provides instructions for operating, safety and preventive maintenance, troubleshooting, and repair. Each publication has its own table of contents that lists the individual topics under the major subheadings.

The Operator's Handbook provides a **limited version** of machine specifications and basic safety and operating instructions as a supplement to the Service Manual.

The Parts Manual contains part numbers, illustrations, and schematics to aid in ordering parts from Komatsu to service and repair the machine.

Verify numbers of parts, tools, or material by using the Parts Manual, or contact your authorized Komatsu Service Center for assistance. **Do not order parts from the Service Manual (excluding some tools and special items not found in the Parts Manual).**

Items described as "Optional" may not be available on all models.

NOTICE

Komatsu cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this publication and labels on the product are therefore not all inclusive. These rules will not apply to all situations. If a tool, procedure, work method, or operating technique is used, the owner must be satisfied that it is safe for all personnel. Also, ensure that the product will not be damaged or made unsafe by the operation, lubrication, maintenance, or repair procedures chosen. Operating the machine on different job sites and under various environments can create safety hazards unique to that specific situation. If a dangerous situation develops under these circumstances, only the alertness of the operator and proficiency in operating the machine are available to cope with the situation.

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Thank You for Choosing Komatsu

We believe you will be delighted with the machine's performance, and feel sure that the payback on your investment will be a rapid one. Should you need to discuss some aspects of the design as it relates to the capability of your machine, your Komatsu representative will be glad to assist you. If additional information is needed, the representative will contact the factory. In the unlikely event you are unable to obtain the information in this manner, contact the Komatsu Product Support Group in Longview, Texas. Be sure to have available the model, serial number, hour meter reading, and in-service date of the machine.

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Safety and Operational Advisory

The instructions provided in this publication are for operating the machine on firm, stable ground. As each workplace, terrain, operating situation, or condition might differ from worksite to worksite, Komatsu cannot anticipate all circumstances that might require additional safety precautions or modifications in machine operation in addition to those covered in this publication. Therefore, it is essential to become familiar with situations (especially if extreme or unusual) that might be unique to the workplace that might warrant a modification of the instructions contained herein. Contact an authorized Komatsu representative or the Komatsu Product Support Group, for assistance about any operating or maintenance practice needed to accommodate the working environment that requires a departure from the instructions contained in this publication.

WARNING

Crush hazards exist if the machine is not operated within the designed parameters of operation. All lift capacities and machine operating characteristics are based on the criteria of the machine being level, on firm supporting ground. When the machine is operated in conditions that deviate from these criteria (e.g. on soft or uneven ground, on slope or when subject to side loads), these conditions shall be considered by the operator. Failure to operate the machine on level, firm ground can cause a tip-over hazard, resulting in serious injury or death.

WARNING

Special hazards may exist in any operating environment. Before operating the equipment, it must be determined if special hazards exist in the operating area, such as toxic gasses, and ground (underfoot) conditions, that require special precautions or measures to eliminate or reduce the hazard. Consult all local resources of information about toxic gasses and underfoot conditions before operating the equipment. Failure to identify special conditions could cause crush hazards, inhalation hazards, and other special hazards resulting in serious injury or death.

WARNING

Special hazards may exist such as water, gas, or electricity lines, or contaminated areas, or sinking ground or other special hazards. Always follow all local rules, laws, procedures, and regulations when special hazards are identified. Failure to identify special hazards and follow all local rules, laws, procedures, and regulations can cause special hazards which result in serious injury or death.

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