

Operation & Maintenance Manual

PC3000-1

HYDRAULIC MINING SHOVEL

SERIAL NUMBERS PC3000-1 6193

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1.0 CONTENTS OF THE BINDER

Assembled in this file are the Operation-, Lubrication- and Maintenance Manuals for your KOMATSU Excavator.

1.1 Division of the Binder

Part 1: Operation Manual

Part 2: Lubrication- and Maintenance Manual

Part 3: Depending on the volume of Part 3 a second binder "Volume 2" is being delivered with the Excavator. This binder contains the Excavator Assembly Manual. Technical Data Booklet. Service Literature for the Power Unit (Diesel Engine or Electric Motor) and for Special Equipment. Electrical- and Hydraulic Diagrams.
Refer to the table of contents for details.

Read the Manuals before You Start the Engine.

Before operating the machine, familiarize yourself with its instruments and controls.

Observe the instructions in these manuals for:

- **your Personal SAFETY**
- **Operating SAFETY, and**
- **READY and EFFICIENT PERFORMANCE of your KOMATSU Excavator.**

Periodic preventive inspections and maintenance are the surest means of keeping the machine in proper working order. Prompt detection and correction of minor irregularities, and immediate replacement of worn out or broken parts will prevent failures and avoid expenses.

Replace damaged graphics and symbols.

Observe Safety Precautions to prevent injury and damage.

If you have any questions concerning this literature please contact

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Parts & Service Information

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GERMANY

1.2 Designated Use of the Hydraulic Excavator

1.2.1 This machine has been manufactured in accordance with advanced and up-to-date technology standards including recognized safety rules. Nevertheless, its use may constitute a risk to life and limb of the user or of third parties, or cause damage to the machine and to other material property.

1.2.2 The machine must only be used in technically perfect condition in accordance with its designated use and the instructions set out in the operation manual. Only trained safety-conscious operators who are fully aware of the risks involved should operate the machine. Any functional disorders, especially those affecting the safety of the machine, should, therefore, be rectified immediately.

1.2.3. The hydraulic Excavator is designed exclusively for excavating, i.e. excavation of bulk material and natural soil structure (e.g. earth, clay, sand and stones ashore and off-shore). Observe local and national safety regulations. Special conditions at the worksite require additional safe working precautions, follow your company's safety instructions. Short traveling distances for changing the working site are considered as part of the designated use of the Excavator. Using the Excavator for purposes other than those mentioned above (such as object handling and use as a transport vehicle) is considered contrary to its designated use. The manufacturer/supplier cannot be held liable for any damage resulting from such use. The risk of such misuse lies entirely with the user.

- **Special use of the Excavator beyond its designated use, e.g. object handling operations, require written agreement from the manufacturer and retrofitment of the Excavator with respective safety related equipment before such special applications are permitted.**



Delivery of the Excavator

The Excavator is being delivered disassembled into its main components.

For assembling the Excavator refer to the separate Manual

”Assembly Procedure” in Part 3 of this Service Literature Binder:



- **Personnel entrusted with work on the machine must have read the Assembly Manual, the Operation,- Lubrication- and Maintenance Manual and in particular the section on safety before beginning work. Reading the instructions after work has begun is too late.**

If there are any questions concerning the assembling procedure, contact your local Service Center.

Prior to first operation, inspect the Excavator thoroughly with the Service Engineer responsible for the erection of the machine. Check all fluid levels according to the Lubrication and Maintenance Schedule.

Damages and defects caused by incorrect operation and maintenance are not covered by the manufacturers guarantee.



- **If the Excavator is equipped with a fire suppression system, make sure that the system is ready for operation.**

Spare Parts

For your spare part orders refer to the Parts Catalogue.

In order to keep your Excavator in first-class operating condition use only genuine spare and wear parts.

The use of any part other than the genuine part releases the KOMATSU MINING GERMANY GmbH from any guarantee.

Service

For all questions related to your Excavator please contact your local Service Center.

In all your written or phoned inquiries please indicate the model and serial number of your Excavator.

INTRODUCTION**GENERAL CONTENT****PART 1: OPERATION MANUAL**

Section	Subject
	Table of Contents
1	Foreword
2	Construction of the Excavator
3	Safety Precautions
4	Operator's Cab, Controls
5	Operator's Cab, Monitors
6	Operating Instructions
7	Working Instructions
8	Parking the Excavator
9	Refilling System
10	Exchange of Attachment and/or Components
11	Transportation and Lifting of the Excavator
12	Retrieval Procedure

PART 2: LUBRICATION- AND MAINTENANCE MANUAL

Section	Subject
	Table of Contents
1	Foreword
2	Safety Precautions
3	Fluids and Lubricants
4	Filling Capacities
5	Lubrication and Maintenance Schedule
6	Lubrication and Maintenance Work
7	Excavator Storage
8	Trouble Shooting

PART 3: DIVERSE LITERATURE

- **Depending on the volume of part 3 a second binder will be delivered containing the literature listed below.**

- Excavator Assembly Manual
- Technical Data Booklet
- Engine Operation- and Maintenance Manual
- Lubricant Chart
- Electrical Diagram
- Hydraulic Diagram
- Subcontractor Manuals for Special Equipment, e.g.
 - Air Conditioning
 - Fire Detection and Suppression System
 - Automatic Lubrication Systems, etc.

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A	Ampere
AC	Alternating Current
API	American Petroleum Institute
°C	Degree Celsius
CLS	Central Lubrication System
cSt	Centistoke
DC	Direct Current
DIN	German Institute for Standardization
ETM	Electronic Text Monitoring System
FGPS	Front Guard Protective Structure
FOPS	Falling-Object Protective Structure
GL	Gear Lubricant
h	hours of operation
HPF	High Pressure Filter (Hydraulic Oil)
HT	High Tension
LED	Light Emitting Diode
LT	Low Tension
MPG	Multi-Purpose Grease
N	Newton
NLGI	National Lubricating Grease Institute
Nm	Newton meter
ppm	parts per million
PRO	Protocol memory of ETM
PTO	Power Take-Off (Pump Distributor Gear)
SAE	Society of Automotive Engineers
SLS	Slew ring gear Lubrication System
STA	Statistics memory of ETM
V	Volt
1/min	Revolutions Per Minute (RPM)

This Operation Manual contains the instructions for correct operation of your KOMATSU Excavator. It should always be ready for use in the operator's cab.



- **The information in this manual does not replace any safety rules or laws used in your area.**

Special safety regulations are given in the rules for the prevention of accidents. It is your responsibility to observe these rules.

Carefully read the **Safety Instructions** in Section 3 of this Operation Manual.

Before operating the machine, familiarize yourself with its instruments and controls.

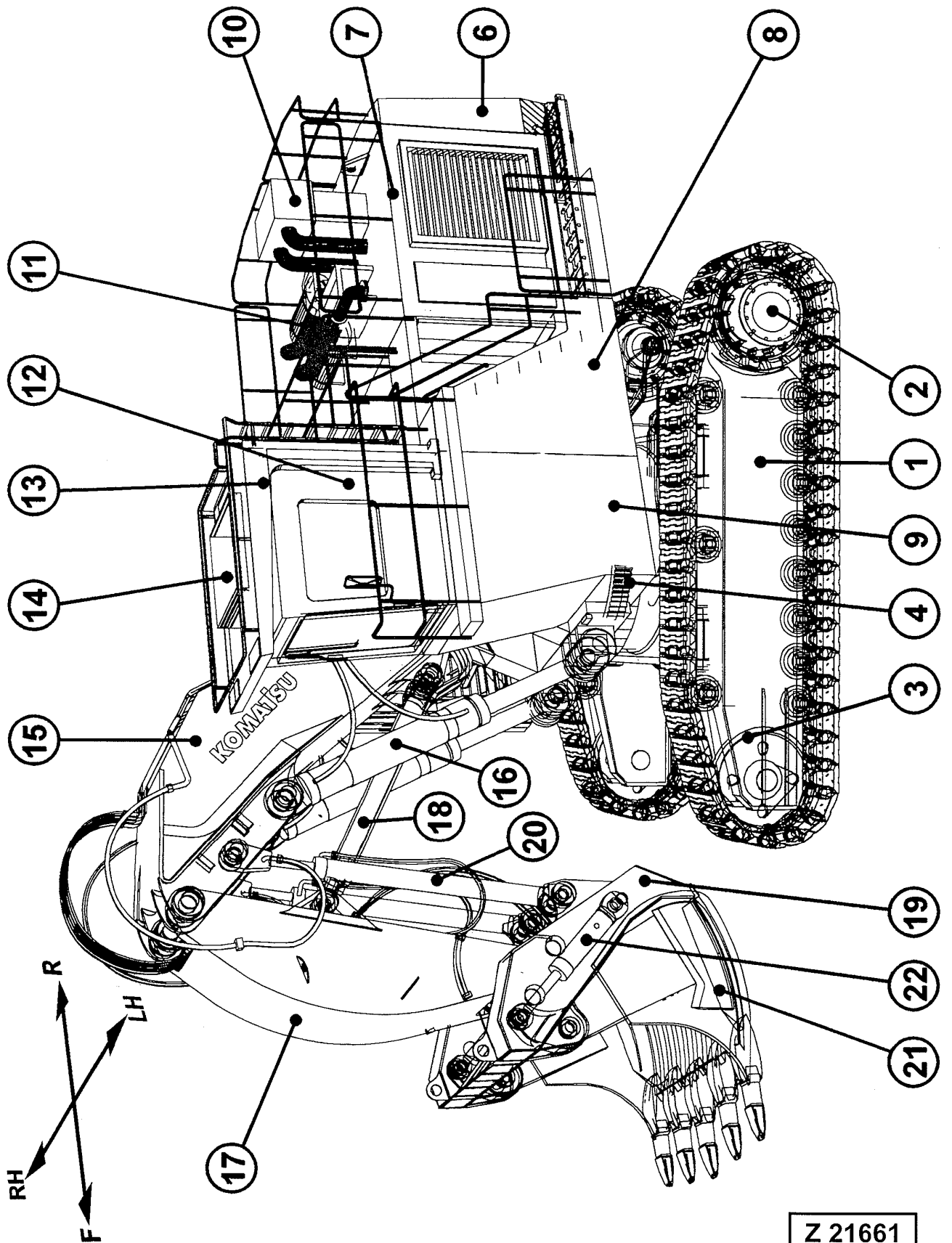
Observe the instructions in this manual for:

- your Personal SAFETY
- Operating SAFETY, and
- READY and EFFICIENT PERFORMANCE of your KOMATSU Excavator.

Improper Operation of this Machine can cause Injury or Death.



- **Optional equipment and accessories are available. Disregard the instructions for equipment not on your excavator**



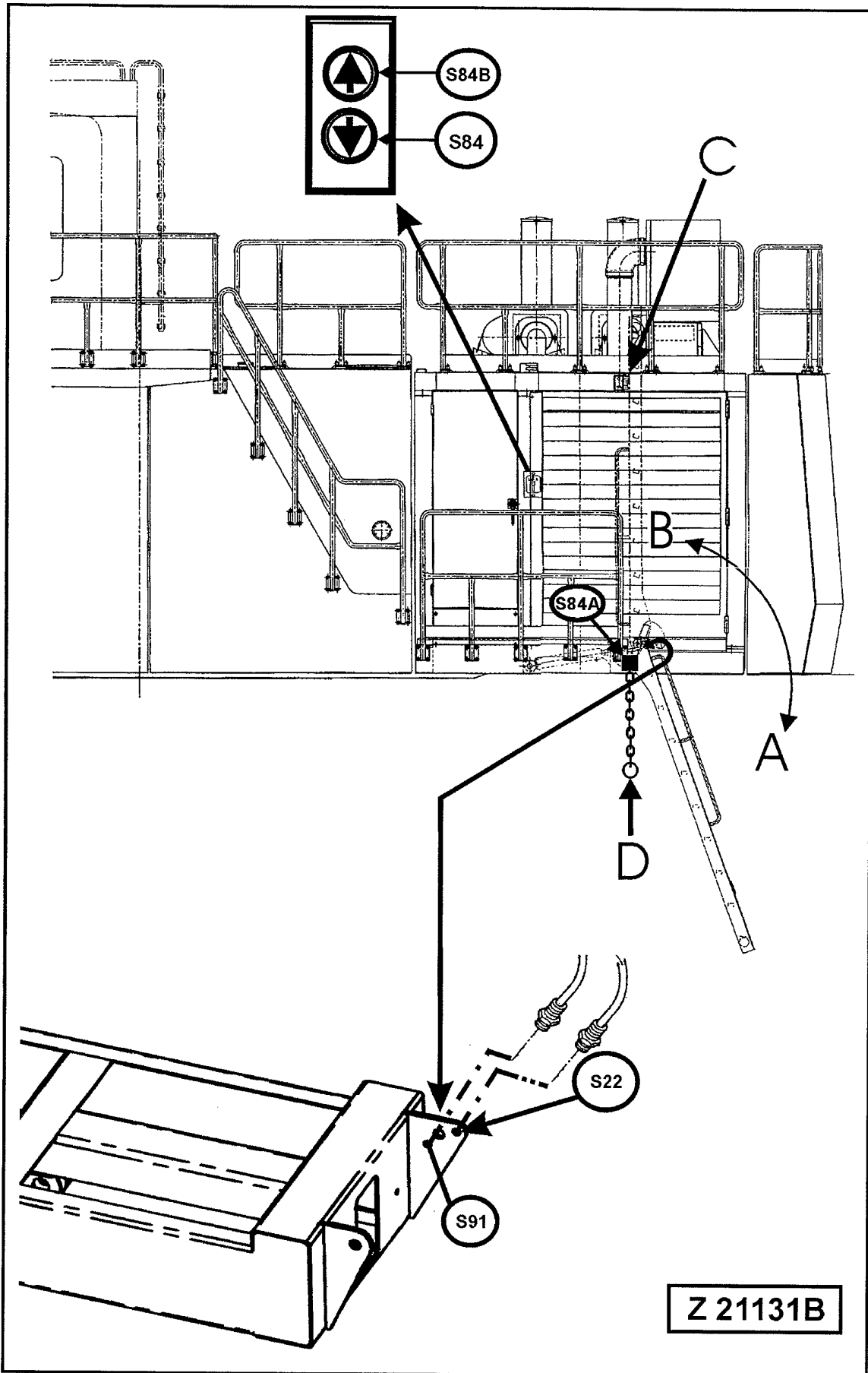
Overall View**Legend for illust. (Z 21661):**

- (F) Front
- (RH) Right side
- (LH) Left side
- (R) Rear
- (1) Undercarriage Crawler Carrier
- (2) Travel Gear with Sprocket
- (3) Guide Wheel
- (4) Slewing Connection
- (6) Counterweight
- (7) Machinery House
- (8) Fuel Tank
- (9) Cab Base
- (10) Engine Air Cleaners
- (11) Exhaust mufflers
- (12) Operator's Cab
- (13) Falling Object Protective Structure (FOPS)
- (14) Air Conditioning for Operator's Cab
- (15) Boom
- (16) Boom Cylinders
- (17) Stick
- (18) Stick Cylinders
- (19) Bottom Dump Bucket
- (20) Bucket Tilt Cylinders
- (21) Bucket Clam
- (22) Clam Cylinders



- **The Excavator Serial Number is located at the Superstructure between boom cylinder foot bearings.**

For the Location of the Engine Serial Number, refer to the separate Engine Operation and Maintenance Manual in Part 3 of this Binder.



2.1 Superstructure

Hydraulically operated Access Ladder

Legend for illustration (Z 21131B)

- (A) Access ladder in lowered position
- (B) Access ladder in upper position (Working position)
- (C) Stop bar
- (D) Pull chain for emergency lowering of the access ladder



- **Use this chain only in emergency cases when the Operator does not respond to other communication signals.**

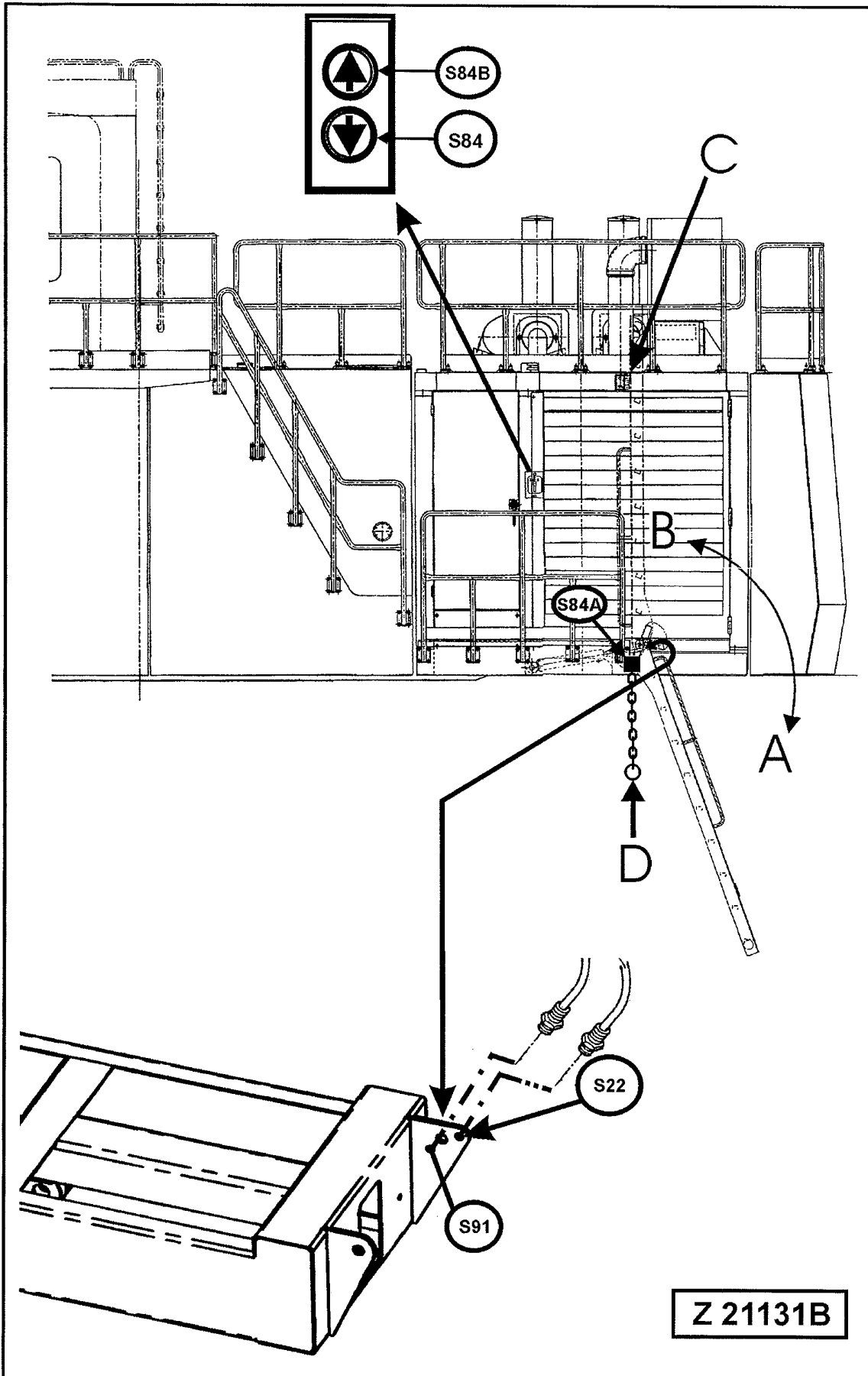
- (S84) Ladder control switch for lowering the ladder
- (S84B) Ladder control switch for lowering the ladder
- (S84A) Safety switch for emergency lowering of the access ladder. When the chain (D) is being pulled down with the engine running the pilot control system is made inoperative, preventing further movements of the excavator.
- (S22) Safety sensor, located on ladder pivot bracket
Function of sensor (S22):
Cut out of the pilot control system and actuation of the hydraulic slew brake with the ladder in lowered position.
- (S91) Monitor and control sensor
Function of sensor (S91):
This sensor monitors the ladder position and controls the moving speed of the ladder. In case the sensor (S22) fails to function properly, the sensor (S91) prevents unintended movement of the ladder.

Operating the hydraulic Access Ladder



- **Make sure the moving range of the ladder is clear of all persons before raising the ladder. Stop raising the ladder by releasing the control switch (S84B) if there are any obstacles within the moving range of the ladder.**
- **Mount the ladder only in completely lowered position. Entering the ladder in any other position can result in serious injury or death.**
- **DO NOT lift persons with the hydraulic access ladder. Death or serious injury can result.**
- **DO NOT lift objects (tools) with the hydraulic access ladder.**





Z 21131B

Operating the hydraulic Access Ladder, illustration (Z 21131B)**Raise the ladder**

Enter the Excavator with ladder in fully lowered position (A).

Start the engine, refer to section 6.2 for starting procedure.

Go back to the ladder control switch (S84B) at the power house door.

Raise the ladder by pressing button (S84B) until the ladder contacts the stop bar (C) in position (B).

Lowering the ladder

Stop the engine, refer to section 6.3 for stopping procedure.

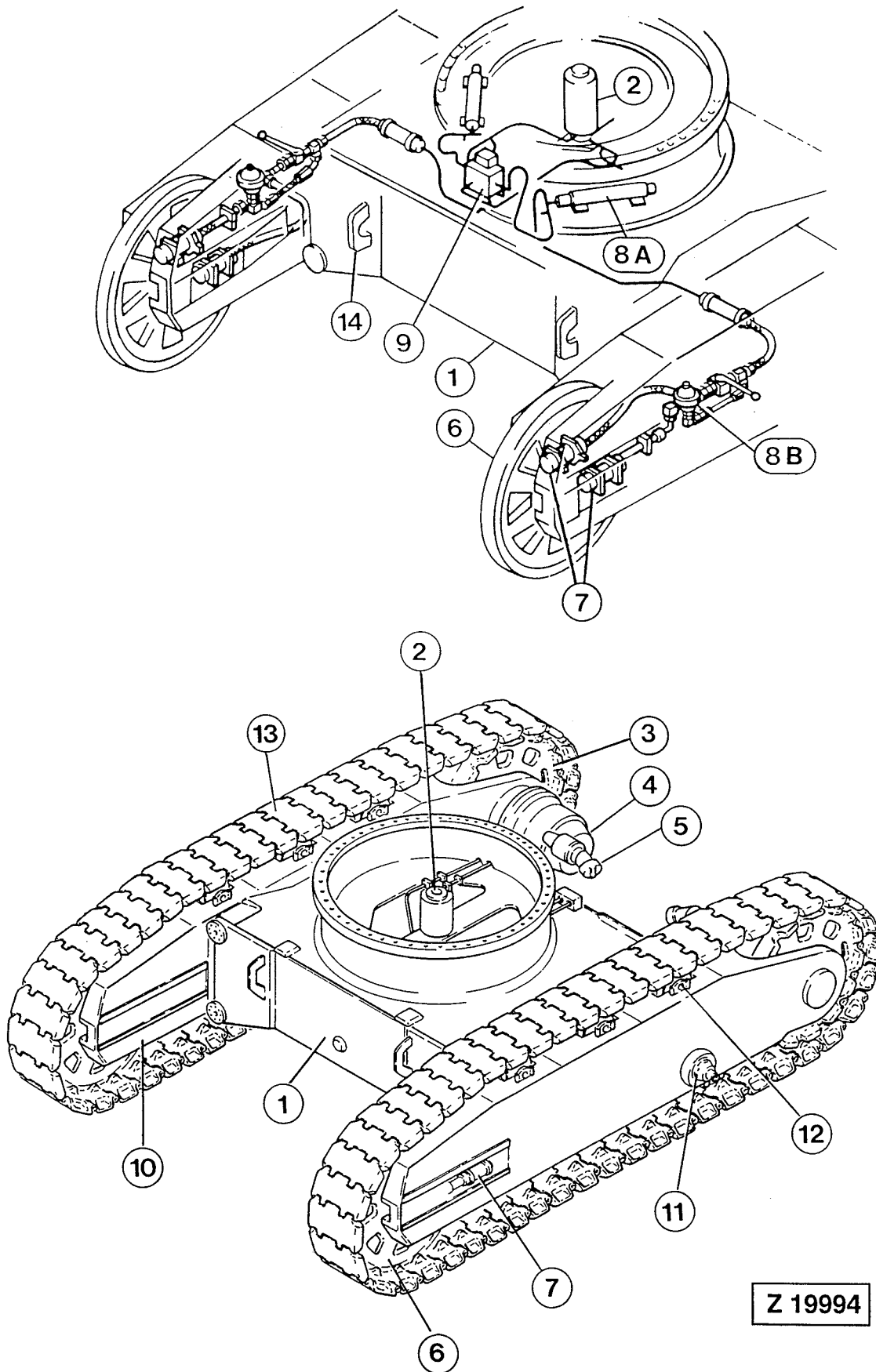
Lower the ladder by pressing push button (S84). If necessary, slightly push the ladder until it starts moving down by its own weight.



- **Make sure the moving range of the ladder is clear of all persons before lowering the ladder.**
- **Enter the ladder only after the ladder is in fully lowered position (A).**



- **Check safety sensor of access ladder for correct function after every 50 operating hours or once a week. Refer to Maintenance Manual, service item No. 16, for checking procedure.**

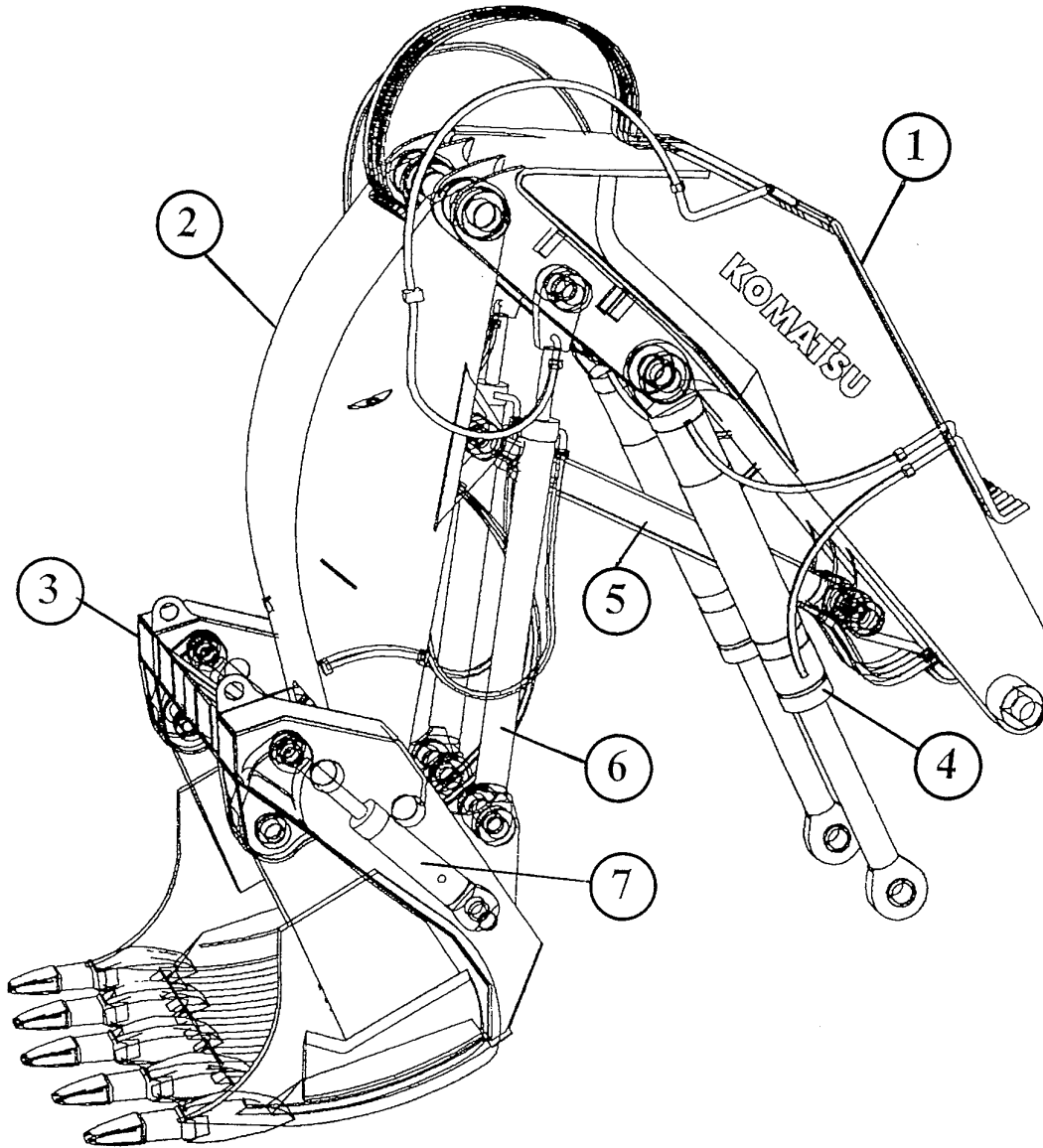


2. 2.2 Undercarriage**Legend for illust. (Z 19994):**

- (1) Undercarriage - central section
- (2) Rotary distributor
- (3) Drive sprocket
- (4) Travel gear
- (5) Hydraulic motors
- (6) Guide wheel
- (7) Hydraulic track tensioning cylinders
- (8A) High pressure accumulators of the hydraulic track tensioning system
- (8B) Medium pressure accumulators of the hydraulic track tensioning system
- (9) Valve block of the hydraulic track tensioning system
- (10) Crawler carrier
- (11) Track roller
- (12) Carrier roller
- (13) Crawler track
- (14) Transport hooks for central section



- **DO NOT use hooks (14) for towing.**

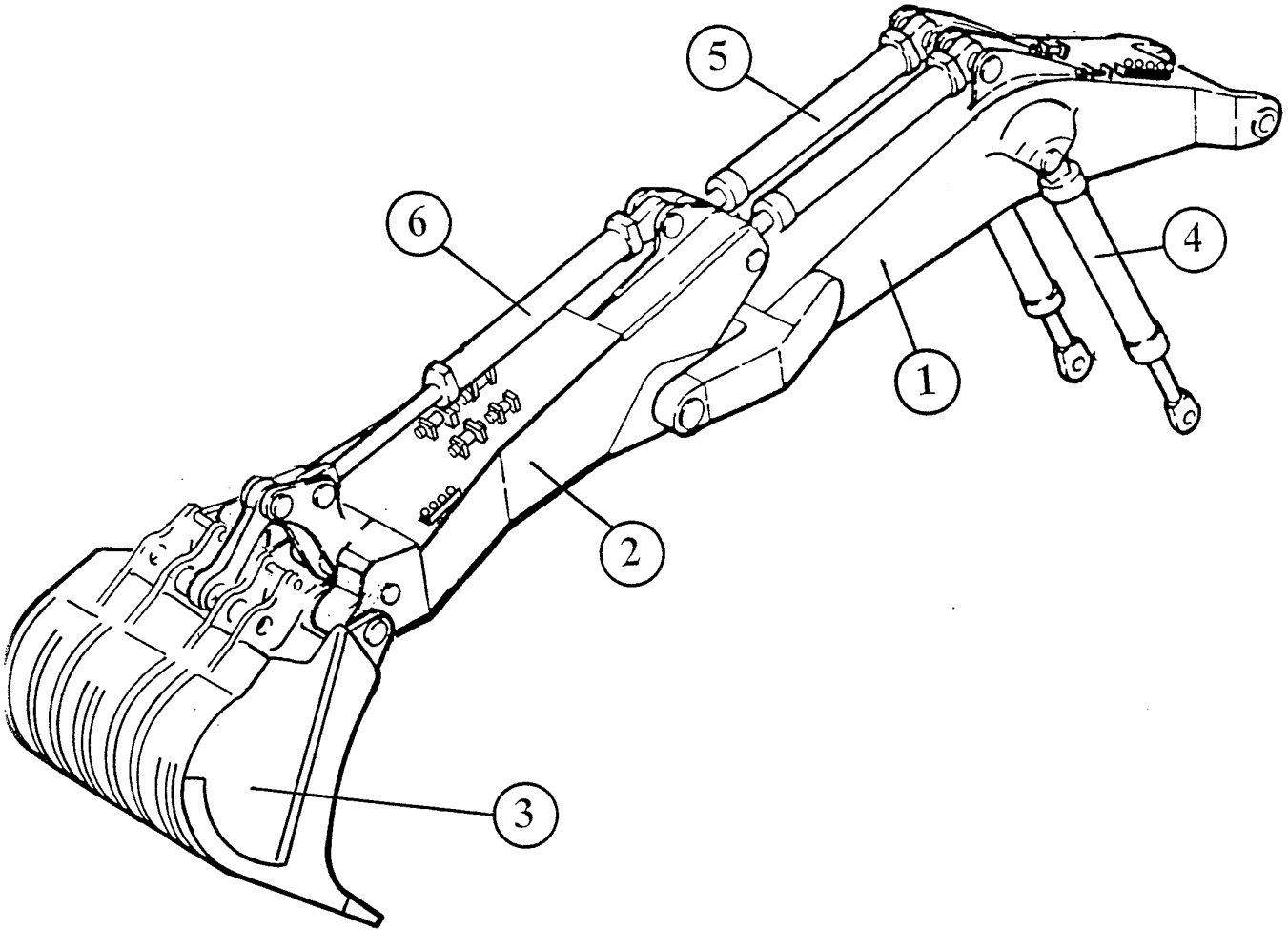


2.3 Attachment

2.3.1 Loader attachment with bullclam bucket or loader bucket.

Legend for illust. (Z 20888):

- (1) Boom
- (2) Stick
- (3) Bucket
- (4) Boom cylinder
- (5) Stick cylinder
- (6) Bucket cylinder
- (7) Clam cylinder



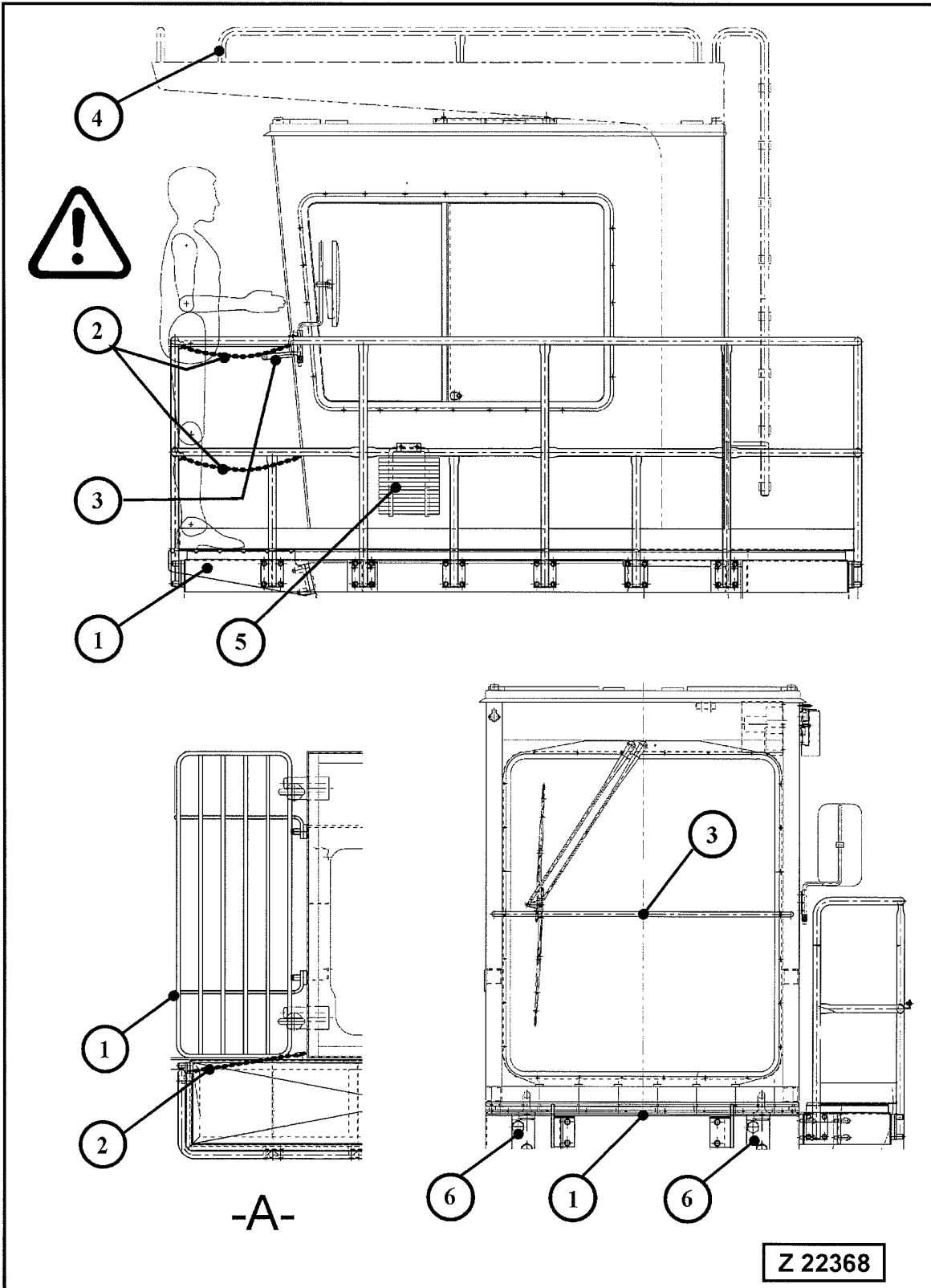
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2.3 Attachment

2.3.2 Backhoe attachment

Legend for illust. (Z 20889):

- (1) Boom
- (2) Stick
- (3) Bucket
- (4) Boom cylinder
- (5) Stick cylinder
- (6) Bucket cylinder





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