OMPC30006224

Operation & Maintenance Manual

PC3000-6

HYDRAULIC MINING SHOVEL

SERIAL NUMBERS PC3000-6 6224

July 2006

KOMATSU®

MidWestTech | Komatsu PC3000-6 Hydraulic Mining Shovel Operation & Maintenance Manu... Order the manual at mid-west-tech.com >

1.6 TABLE OF CONTENTS

1. INTRODUCTION 3

1.1 CONTENTS OF THE BINDER 4

1.2 DIVISION OF THE BINDER 5

1.3 DESIGNATED USE OF THE SHOVEL 6

1.4 DELIVERY OF THE SHOVEL 7

1.5 EXPLANATION OF ABBREVIATIONS 8

1.6 TABLE OF CONTENTS 9

2. SAFETY 15

2.1 SAFETY INSTRUCTIONS 16

2.1.1 WARNINGS AND SYMBOLS 16
2.1.2 BASIC OPERATION AND DESIGNATED USE OF THE HYDRAULIC SHOVEL 16
2.1.3 ORGANIZATIONAL MEASURES 17
2.1.4 SELECTION AND QUALIFICATION OF PERSONNEL - BASIC RESPONSIBILITIES 19
2.1.5 SAFETY INSTRUCTIONS GOVERNING SPECIFIC OPERATIONAL PHASES 20
2.1.6 WARNING OF SPECIAL DANGERS 23
2.1.7 TRANSPORTING AND TOWING -RECOMMISSIONING 25
2.1.8 SPECIAL SAFETY EQUIPMENT 25
2.1.9 SAFETY HARNESS IN CONFORMITY WITH EN 361 (EUROPEAN STANDARD) 29

3. OPERATION 37

3.1 FOREWORD 38

3.2 CONSTRUCTION OF THE SHOVEL 39

3.2.1 OVERALL VIEW 39
3.2.2 UNDERCARRIAGE AND SUPERSTRUCTURE 40
3.2.3 HYDRAULICALLY OPERATED ACCESS LADDER 46
3.2.4 EMERGENCY ESCAPE LADDER 50
3.2.5 EMERGENCY ENGINE SHUTDOWN FROM GROUND MAN OR OPERATOR WARNING SYSTEM 52
3.2.6 OPERATOR'S CAB WITH INTEGRATED FALLING OBJECT PROTECTIVE STRUCTURE (FOPS) 54
3.2.7 ENGINE OIL MANAGEMENT SYSTEM 62

3.3 OPERATOR'S CAB - CONTROLS 70

3.3.1 CONTROLS WITH BACKHOE ATTACHMENT 70
3.3.2 CONTROLS WITH BOTTOM DUMP BUCKET 74

MidWestTech | Komatsu PC3000-6 Hydraulic Mining Shovel Operation & Maintenance Manu... Order the manual at mid-west-tech.com >

3.3.3 OPERATOR'S CONSOLE 79

3.4 ELECTRONIC TEXT MONITORING SYSTEM ETM 86
3.4.1 INTRODUCTION 87
3.4.2 SYSTEM COMPONENTS 91
3.4.3 FUNCTIONS OF THE ETM SYSTEM 93
3.4.4 DISPLAY THE CONTENTS OF THE RECORD (PROTOCOL) MEMORY 97
3.4.5 SEVERAL MESSAGE CONDITIONS OCCUR AT THE SAME TIME 109
3.4.6 SETTINGS OF THE TEXT DISPLAY UNIT 111

3.5 OPERATING THE HEATER, VENTILATION AND AIR CONDITIONING 126

3.6 MACHINERY HOUSE 128
3.6.1 EMERGENCY ENGINE SHUTDOWN SWITCHES 129

3.7 ELECTRICAL EQUIPMENT IN CAB BASE 130
3.7.1 SWITCH BOX (X2) IN CAB BASE 135

3.8 CHECKS BEFORE STARTING THE ENGINE 138

3.9 STARTING THE ENGINE 144
3.9.1 STARTING PROCEDURE 147

3.10 MOVING THE SHOVEL 153
3.10.1 TRAVEL CONTROL WITH FOOT PEDALS 153
3.10.2 TRAVELLING INSTRUCTIONS 156

3.11 SLEWING AND BRAKING THE SUPERSTRUCTURE 157
3.11.1 SLEWING THE SUPERSTRUCTURE 157

3.12 WORKING WITH THE ATTACHMENT 160
3.12.1 MACHINES EQUIPPED WITH"EURO" CONTROL SYSTEM 160
3.12.2 MACHINES EQUIPPED WITH"KMG" CONTROL SYSTEM 161
3.12.3 BOTTOM DUMP BUCKET 162
3.12.4 DROP BALL OPERATION 163
3.12.5 COMBINED OPERATION CYCLES 166

3.13 WORKING INSTRUCTIONS 168
3.13.1 STABILITY OF THE SHOVEL 168
3.13.2 SHOVEL OPERATION 168

3.14 PARKING THE SHOVEL 171

3.15 STOPPING THE ENGINE 172
3.15.1 RELIEVE PRESSURE IN THE HYDRAULIC SYSTEM 175

3.16 AUTOMATIC LUBRICATION SYSTEMS 176
3.16.1 OPERATION OF THE AUTOMATIC LUBRICATION SYSTEMS 177

3.17 FIRE DETECTION AND SUPPRESSION SYSTEM 180
3.17.1 HIGH LEVEL ALARM "FIRE" 183
3.17.2 ENGINE SHUT-DOWN THROUGH FUEL SHUT-OFF SOLENOID VALVE 183

MidWestTech | Komatsu PC3000-6 Hydraulic Mining Shovel Operation & Maintenance Manu... Order the manual at mid-west-tech.com >

3.17.3 ACTUATION MODES OF THE FIRE SUPPRESSION SYSTEM 183
3.17.4 INDICATION OF OPERATIONAL MODES AT CONTROL MODULE, AFTER AUTOMATIC ACTUATION OF THE FIRE SUPPRESSION SYSTEM 185
3.17.5 LOCATION OF THE EXTINGUISHING AGENT TANK ASSEMBLIES AND EXPELLANT GAS CARTRIDGES ON POWER HOUSE ROOF 187

3.18 CENTRAL REFILLING SYSTEM 188
3.18.1 SYSTEMS CONNECTED TO THE REFILLING SYSTEM 189
3.18.2 OPERATING THE HYDRAULIC SERVICE ARM 191
3.18.3 RECEIVER PANEL WITH MONITOR BOX 193
3.18.4 REFILLABLE GREASE CONTAINERS OF THE AUTOMATIC LUBRICATION SYSTEMS ... 197

3.19 TRANSFER PUMP FOR HYDRAULIC OIL 198
3.19.1 OPERATING THE TRANSFER PUMP 199
3.19.2 FUNCTIONS OF THE TRANSFER PUMP 199

3.20 WORK ON THE LOADER ATTACHMENT 202

3.21 TRANSPORTATION AND LIFTING OF THE SHOVEL 203
3.21.1 DISASSEMBLING OF THE SHOVEL 203
3.21.2 TRANSPORTATION AND LIFTING 203

3.22 RETRIEVAL PROCEDURE 204

3.23 SHOVEL STORAGE 205
3.23.1 PREPARING FOR STORAGE 205
3.23.2 ONE MONTH REPETITIVE SERVICE PERIOD 206
3.23.3 SIX MONTH REPETITIVE SERVICE PERIOD 206
3.23.4 PREPARING FOR OPERATION 207

3.24 TROUBLE SHOOTING 208
3.24.1 ENGINE 208
3.24.2 HYDRAULIC SYSTEM 209
3.24.3 FINAL DRIVES AND SWING GEAR 210
3.24.4 CRAWLER TRACKS 210

4. MAINTENANCE 211

MidWestTech | Komatsu PC3000-6 Hydraulic Mining Shovel Operation & Maintenance Manu... Order the manual at mid-west-tech.com >

GAS, DUST, STEAM AND SMOKE

- Operate internal combustion engines and fuel operated heating systems only on adequately ventilated premises. Before starting the machine on enclosed premises, make sure that there is sufficient ventilation.
  Observe the regulations in force at the respective site.
- Carry out welding, flame-cutting and grinding work on the machine only if this has been expressly authorized, as there may be a risk of explosion and fire.
- Special care must be taken before welding, flame-cutting and grinding operations are carried out on the counterweight. The filling of the counterweight chambers can create explosive gases which will accumulate in the chambers of the counterweight. These gases must be expelled before welding, flame-cutting and grinding operations are carried out on the counterweight. Danger of explosion.
  Follow the instructions given in PARTS & SERVICE NEWS No. AH04518 for expelling the gases from the counterweight chambers.
- Before carrying out welding, flame-cutting and grinding operations, clean the machine and its surroundings from dust and other inflammable substances and make sure that the premises are adequately ventilated (risk of explosion).

HYDRAULIC AND PNEUMATIC EQUIPMENT

- Work on hydraulic equipment may be carried out only by persons having special knowledge and experience in hydraulic systems.
- Check all lines, hoses and screwed connections regularly for leaks and obvious damage. Repair damage immediately. Splashed oil may cause injury and fire.
- Depressurize all system sections and pressure pipes (hydraulic system, compressed-air system) to be removed in accordance with the specific instructions for the unit concerned before carrying out any repair work.
- Hydraulic and compressed-air lines must be laid and fitted properly. Ensure that no connections are interchanged. The fittings, lengths and quality of the hoses must comply with the technical requirements.

NOISE

- During operation, all sound baffles must be closed.
- Always wear the prescribed ear protectors.

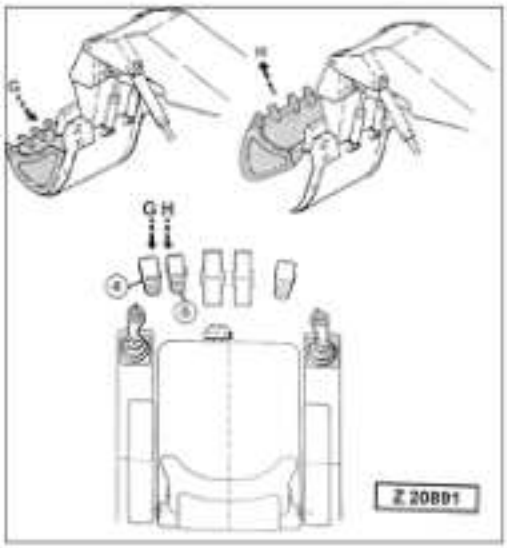
MidWestTech | Komatsu PC3000-6 Hydraulic Mining Shovel Operation & Maintenance Manu... Order the manual at mid-west-tech.com >

3.12.3 BOTTOM DUMP BUCKET

NOTICE
The illustration shows a typical construction of control stand and working attachment.
However, the shown operation- and working movements apply to this machine.

OPERATING THE BUCKET CLAM

G	Closing the bottom dump bucket: Depress LH pedal (4)
H	Opening the bottom dump bucket: Depress RH pedal (5)

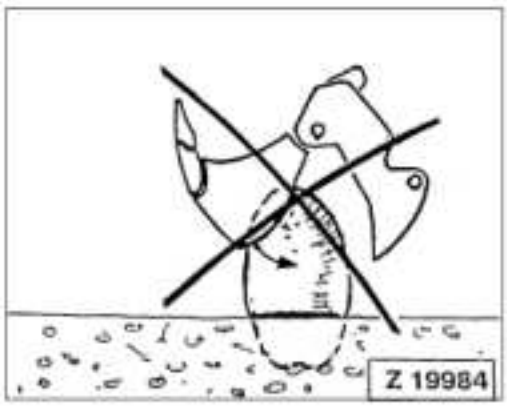


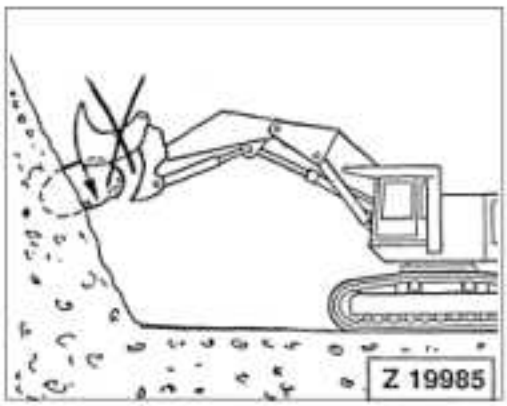
⚠ CAUTION

As soon as the bucket is completely closed, release pedal (4). Otherwise the pressure relief valve of the bucket closing circuit will open resulting in unnecessary loading of the hydraulic system.

⚠ CAUTION

DO NOT use the bucket clam for loosening or removing anchored rocks or other solid objects (illust. Z 19984 and Z 19985), since such operations may result in severe damage to the clam pivot bearings.





MidWestTech | Komatsu PC3000-6 Hydraulic Mining Shovel Operation & Maintenance Manu... Order the manual at mid-west-tech.com >

Service Intervals	Service Point	Service	See
Every 1000 operating hours or every 6 months	High strength bolt connections	Check for correct tightening torque and security	page 305
	Hydraulic system	Replace return and pressure filter elements Clean or replace high pressure filter elements Replace breather filter elements Drain sediments	page 337
	PTO (Pump distributor gear) Swing gear and Travel gears	Oil sample analysis	page 351
	Signal horn compressor	Clean and lubricate	page 353
	Hydraulic track tensioning system	Check pressure accumulators	page 355
	Hydraulic oil cooler doors and machinery house doors	Inspect and lubricate door hinges	page 357
	Engine	Maintenance	(1)
	Fire suppression system	Maintenance	(2)
	Air conditioning	Inspect the complete system	(3)

(1) Perform maintenance according to separate Engine Operation an Maintenance Manual filed in volume 2 binder.

(2) Perform inspections according to the separate Manual "FIRE SUPPRESSION SYSTEM" filed in volume 2 binder.

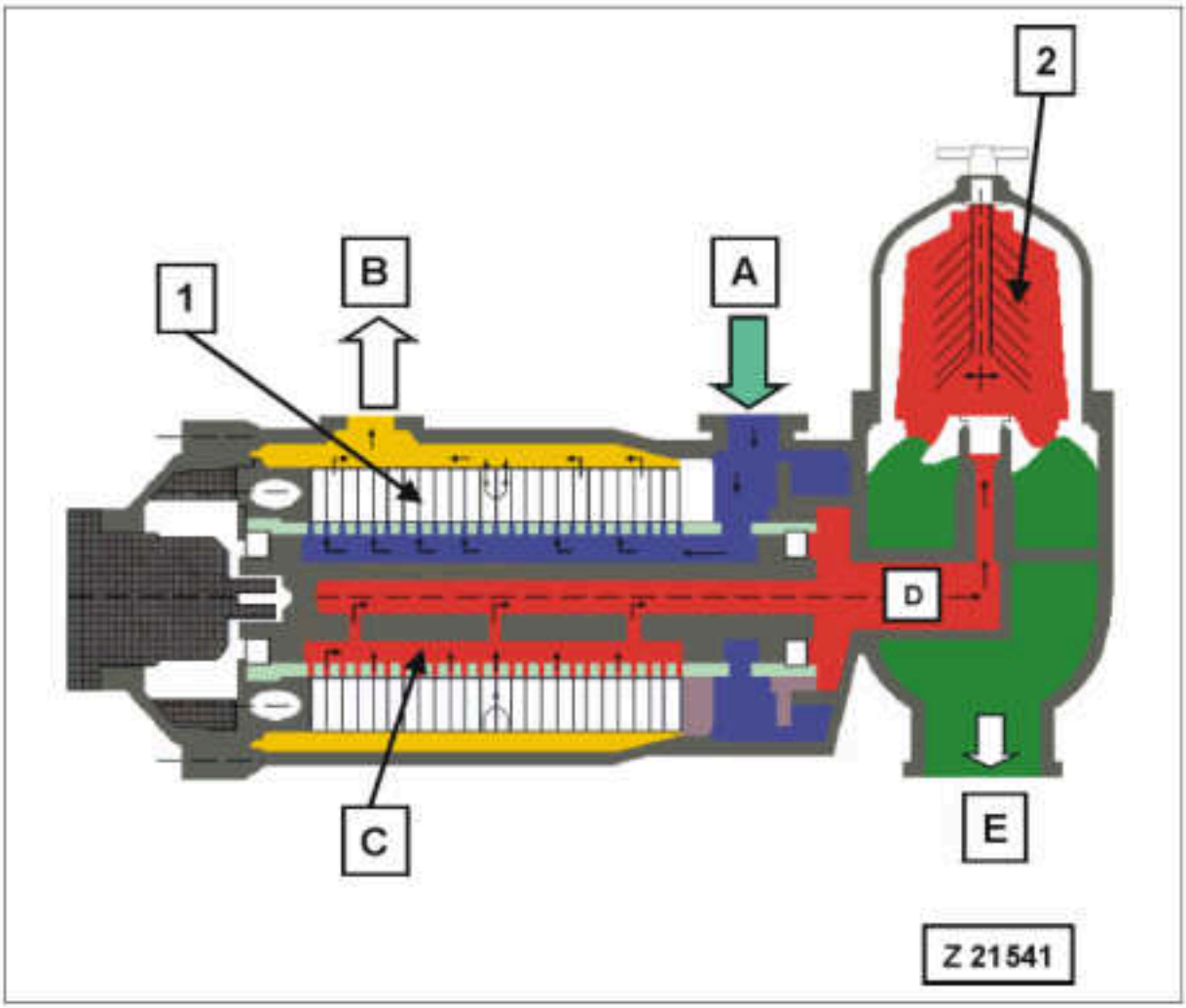
(3) Perform inspections according to the separate Manual "OPERATING INSTRUCTIONS AC" filed in volume 2 binder.

⚠ CAUTION

Carry out initial service according to item 4.6.1.

MidWestTech | Komatsu PC3000-6 Hydraulic Mining Shovel Operation & Maintenance Manu... Order the manual at mid-west-tech.com >

Eliminator Engine Oil Filtration System



Legend for illust. Z 21541 (schematic illustration)

(A) Oil inlet from engine (100%)

(B) Oil outlet to engine (95%)

(C) Backflush oil (5%) for cleaning the filter

(D) Oil flow to centrifuge (5%)

(E) Oil flow to engine oil pan (5%)

(1) Stainless steel filter removes particles as small as 20 µm

(2) Centrifugal separator removes particles up to a size of 2 µm

MidWestTech | Komatsu PC3000-6 Hydraulic Mining Shovel Operation & Maintenance Manu... Order the manual at mid-west-tech.com >