VEAM940600

Operation & Maintenance Manual

WA65-3

WHEEL LOADER

SERIAL NUMBERS WA65-3 HA940549 – HA940771
WA65-3 H20761 and up

December 2004

KOMATSU®

MidWestTech | Komatsu WA65-3 Wheel Loader Operation & Maintenance Manual | Public... Order the manual at mid-west-tech.com >

TABLE OF CONTENTS

INTRODUCTION

FORWORD **1-2**

SAFETY INFORMATION **1-3**

INTRODUCTION **1-5**
- FEATURES 1-5
- BREAKING IN A NEW MACHINE 1-5

LOCATION OF PLATES, TABLE TO ENTER SERIAL NO. AND DISTRIBUTOR **1-6**
- MACHINE SERIAL NO. PLATE POSITION 1-6
- ENGINE SERIAL NO. PLATE POSITION 1-6
- TABLE TO ENTER SERIAL NO. AND DISTRIBUTOR 1-6

EMISSION CONTROL WARRANTY **1-7**
- EMISSION CONTROL WARRANTY STATEMENT (APPLIES TO CANADA ONLY) 1-7

ENGINE DATA PLATE **1-8**

GARANTIE SUR LE CONTRÔLE DES ÉMISSIONS **1-9**
- ÉNONCÉ DE GARANTIE SUR LE CONTRÔLE DES ÉMISSIONS (APPLICABLE AU CANADA SEULEMENT): 1-9

ENGINE DATA PLATE **1-11**

WHY YOU SHOULD READ THESE OPERATING INSTRUCTIONS **1-12**

NOTES ON SAFETY REGULATIONS **1-14**
- CORRECT USE 1-14
- SAFETY NOTES IN THE OPERATING INSTRUCTIONS 1-14

EQUIPMENT **1-15**

LOADING AND TRANSPORTING THE MACHINE

LOADING AND TRANSPORTING THE MACHINE **2-2**
- SECURING THE ARTICULATED STEERING 2-2
- LIFTING THE MACHINE 2-2
- DRIVING MACHINE ONTO LOADING AREA OF TRANSPORT VEHICLE 2-4
- SECURING THE MACHINE DURING TRANSPORT 2-5
- AFTER TRANSPORT 2-5

SAFETY

GENERAL SAFETY MEASURES **3-3**
- SAFETY INSTRUCTIONS 3-3
- SAFETY DEVICES 3-3
- EMERGENCY EXIT 3-3
- CLOTHING AND PERSONAL PROTECTION 3-4
- MACHINE MODIFICATIONS 3-4
- BEFORE YOU LEAVE THE DRIVER'S SEAT 3-4
- MOUNTING AND DISMOUNTING 3-5
- FIRE PREVENTION AND FIRE FIGHTING 3-6
- FIRE EXTINGUISHER AND FIRST-AID KIT 3-7
- PROTECTION AGAINST ASBESTOS DUST 3-7
- PROTECTION AGAINST INJURIES 3-8
- WORKING AT HIGH TEMPERATURES 3-8
- ROLL-OVER PROTECTION SYSTEM (ROPS) 3-9
- ATTACHMENT FOR PROTECTION AGAINST FALLING OBJECTS (FOPS) 3-9
- ATTACHMENTS 3-9
- BATTERY 3-10

MidWestTech | Komatsu WA65-3 Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >

SAFETY MEASURES DURING OPERATION **3-11**
BEFORE YOU START THE ENGINE 3-11
WORKPLACE SAFETY 3-11
IN THE DRIVER'S CAB 3-11
IN-DOOR OPERATION 3-12
GAS, DUST, AND INFLAMMABLE VAPOURS 3-12
MIRRORS, WINDOWS, AND LIGHTING 3-12
MACHINE OPERATION 3-13
BEFORE YOU START THE ENGINE 3-13
REVERSING 3-13
DRIVING 3-14
DRIVING ON SLOPES 3-14
EMERGENCY LOWERING SYSTEM 3-15
WORKING CLOSE TO OVERHEAD POWER TRANSMISSION LINES 3-15
LOADING 3-16
GOOD VISION 3-16
WORKING ON SNOW 3-16
HEIGHT LIMITATION 3-17
BRAKES 3-17
WORKING ON LOOSE SOIL 3-17
WORKING WITH THE FORKLIFT TRUCK ATTACHMENT 3-18
PARKING THE MACHINE 3-19
TRANSPORT 3-20
LOADING AND UNLOADING THE MACHINE 3-20
TRANSPORT 3-21
SAFETY MEASURES DURING MAINTENANCE **3-22**
PERSONNEL 3-22
PRIOR TO START OF MAINTENANCE MEASURES 3-22
WARNING SIGN 3-22
TOOLS 3-22
SAFETY-RELATED PARTS 3-22
PRIOR TO START OF INSPECTION AND MAINTENANCE 3-23
SECURING THE ARTICULATED STEERING 3-23
SUPPORTING THE BOOM 3-24
DURING MAINTENANCE 3-25
ATTACHMENTS 3-25
WORKING UNDER THE MACHINE 3-25
KEEPING THE MACHINE CLEAN 3-25
SPECIFIC MEASURES 3-25
REFUELING AND TOPPING OFF OIL 3-26
COOLANT 3-26
USE OF LIGHTING 3-27
HIGH-PRESSURE HOSES 3-27
HANDLING HIGH-PRESSURE OIL 3-27
HANDLING OF THE PRESSURE ACCUMULATOR 3-28
FAN AND BELTS 3-28
WASTE MATERIAL 3-28
TIRES 3-29
STORING TIRES 3-30
LABELING **3-31**
POSITION OF SAFETY LABELS 3-31
INFORMATION LABELS 3-33

MidWestTech | Komatsu WA65-3 Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >

CONTROLS AND INDICATORS

OVERALL VIEW OF MACHINE **4-2**

CONTROLS AND INDICATORS **4-3**

SWITCHES AND CONTROLS 4-4

INSTRUMENT PANEL 4-5

WARNING LIGHTS 4-6

CONTROL LAMPS 4-9

MEASURING INDICATORS 4-13

SWITCHES 4-15

CONTROL LEVERS, PEDALS 4-22

ARTICULATED STEERING CATCH 4-28

TRACTION DEVICE 4-28

SOCKET 4-28

DOOR UNLOCKING SYSTEM 4-29

ALARM HORN FOR REVERSE DRIVING 4-29

OPERATION

RUNNING IN THE MACHINE **5-2**

PREPARING THE MACHINE START **5-3**

VISUAL CHECKS 5-3

BEFORE YOU START THE ENGINE 5-3

BEFORE STARTING WORKING WITH THE MACHINE 5-3

ADJUSTMENTS PRIOR TO MACHINE START **5-6**

ADJUSTING THE DRIVER'S SEAT 5-6

ADJUSTING THE STEERING COLUMN 5-7

ADJUSTING THE ARMREST 5-7

ADJUSTING THE REAR-VIEW MIRRORS 5-7

ADJUSTING THE HEATING AND VENTILATION SYSTEM 5-8

ADJUSTING THE VENTILATION SYSTEM 5-8

ADJUSTING THE HEATING SYSTEM 5-9

OPERATING THE AIR CONDITIONING 5-10

SWITCHING ON THE AIR-CONDITIONING 5-10

PUTTING ON THE SAFETY BELT 5-12

PUTTING ON THE SAFETY BELT 5-12

TAKING OFF THE SAFETY BELT 5-12

STARTING AND SWITCHING OFF THE ENGINE **5-13**

STARTING THE ENGINE 5-13

WARMING UP THE ENGINE 5-14

SWITCHING OFF THE ENGINE 5-15

DRIVING **5-16**

START-UP 5-16

STARTING THE MACHINE ON SLOPES 5-18

CHANGING THE DRIVING DIRECTION 5-18

REVERSE DRIVING 5-19

TURNING 5-19

TURNING ON SLOPES, EMBANKMENTS OR HILL FLANKS 5-19

BRAKING **5-20**

PULLING THE PARKING BRAKE 5-20

RELEASING THE PARKING BRAKE 5-20

BRAKING WITH THE SERVICE BRAKE 5-20

IF THE SERVICE BRAKE BREAKS DOWN 5-21

BRAKING ON SLOPES 5-21

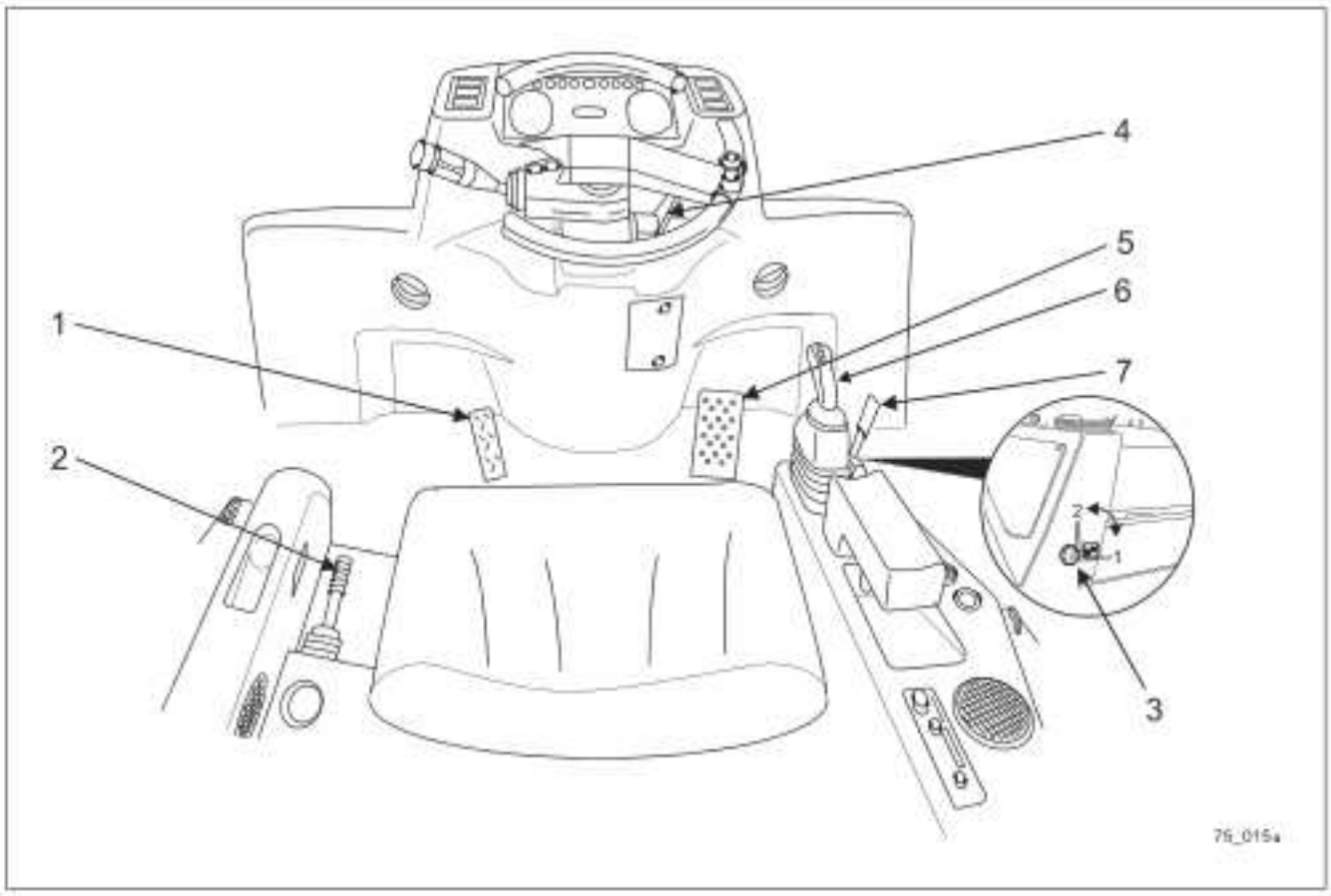
STOPPING 5-22

PARKING THE MACHINE ON A SLOPE 5-22

LONGER-DISTANCE DRIVING 5-23

MidWestTech | Komatsu WA65-3 Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >

CONTROL LEVERS, PEDALS



1. Brake pedal
2. Parking brake
3. Safety lever to close or open the work hydraulic system
4. Steering column adjustment
5. Accelerator pedal
6. Multifunctional lever
7. Control lever for special equipment
8. Switching lever for bucket (without fig.)

MidWestTech | Komatsu WA65-3 Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >

TABLE OF LUBRICANTS AND OPERATING AGENTS

WA65-3	LUBRICANTS AND OPERATING AGENTS BI-CODES*), SPECIFICATIONS, AND FILLING VOLUMES					
	Lubricants and Service Fluids	BI-Codes	Quality Classes	Temperature Ranges	Viscosity Classes	Filling Volume in Litres approx.
Engine	Engine Oil EO	EO 1540 A EO 1030 A NRS	CCMC D4 or, if not available: API CE or API CF-4²)	-15° to 45° C -20° to 30° C -15° to 20° C	SAE 15W-40 ¹) SAE 10W-30 SAE 05W-30	9.4
Transfer Gear Box	Gear Oil GO	GO 90 LS	API-GL5 +LS or MIL-L-2105D+LS	-	SAE 90LS	1
Front Axle	Gear Oil GO	GO 90 LS	API-GL5 +LS or MIL-L-2105D+LS	-	SAE 90 LS ³) SAE 85W-90LS SAE 80W-90LS	Planet Gear: 2 x 0.9 Differential: 4.3
Rear Axle	Gear Oil GO	GO 90 LS	API-GL5 +LS or MIL-L-2105D+LS	-	SAE 90 LS ³) SAE 85W-90LS SAE 80W-90LS	Planet Gear: 2 x 0.9 Differential: 4.3
Hydraulic System, Steering	Hydraulic Oil HYD	HYD 0530 HYD 1030 HYD 1540	HVLP HVLP D	15° to 20° C -20° to 30° C -15° to 45° C	ISO VG 46 ¹) ISO VG 68 ISO VG 100	70
	or Engine Oil EO	EO 1540 A EO 1030 A NRS	CCMC D4 or, if not available: API CE or API CF -4²)	-15° to 45° C -20° to 30° C -15° to 20° C	SAE 15W-40 ¹) SAE 10W-30 SAE 05W-30	
	or Hydraulic Oil BIO-E-HYD	BIO-E-HYD 0530	HEES (acc. to VDMA fluid technology)	-15° to 20° C	ISO VG 46	
Service Brake	Automatic Transmission Gear Oil	ATF	ATF, Type A, Suffix A	-	-	0.6
Cooling System	Long-Time Coolant	SP-C	Antifreeze and Corrosion Protection	Proportion of Mixture: 50% Coolant: 50% Water Min. Freeze Proofing: -34° C		10
Fuel Tank	Diesel Fuel³)	CFPP Class B CFPP Class D CFPP Class E CFPP Class F	DIN-EN 590	up to 0°C up to -10°C up to -15°C up to -20°C		77
Grease Nipple	Lithiumsoap-Based Multi-Purpose Grease	MPG-A	KP2N-20	-	NLGI 2	
Air conditioning	Coolant Refrigerating machine oil	NRS NRS	R134a (CFC-free) PAG (Polyalkylenglycol)			1500 g 150 cm³

The specified filling volumes represent approximate values; the testing devices are binding. The selection of a viscosity class depends on the ambient temperature prevailing over a longer period of time. The temperature limits are to be regarded as guiding values; for a brief period, the actual temperature may be higher or lower than these guiding values.

¹)Factory filling

²) If engine oil of either the API CE or the API CF - 4 specification is not available, engine oil of either the API CC or the API CD specification may be used. In these cases, the oil change intervals must be cut in halves.

³) If fuels with a sulphur content between 0.5 and 1.0 % are used, the oil change intervals for the engine must be cut in halves; if the sulphur content exceeds 1.0 %, the oil change intervals must be quartered.

*) BI-codes are the "standard lubricants" (Regelschmierstoffe) for construction machinery and vehicles of the Hauptverband der Deutschen Bauindustrie e.V. (BI) (head association of the German construction industry). The brochure "Regelschmierstoffe für Baumaschinen- und Fahrzeuge" (standard lubricants for construction machinery and vehicles" can be obtained from bookstores or the German Bauverlag GmbH Wiesbaden und Berlin under the ISBN-No. 3-7625-3102-1.

MidWestTech | Komatsu WA65-3 Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >

MAINTENANCE EVERY 500 OPERATING HOURS

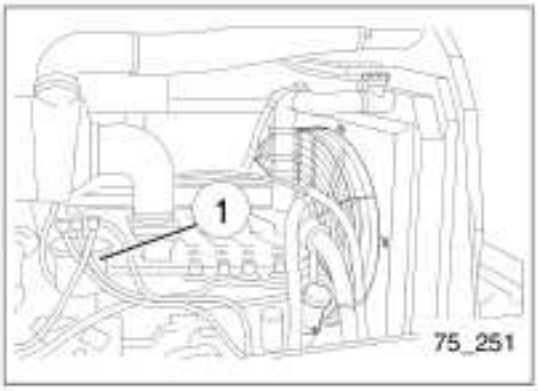
All maintenance operations to be performed after 10, 50, 100 and 250 hours of operation also fall into this maintenance category.

CHANGING THE FUEL FILTER AND FILTER ELEMENT

DANGER

- **Danger of fire! Fuel may ignite on hot surfaces! Only change the filter elements if the engine has sufficiently cooled down. Stay away with open fire or sparks while handling with fuel. Do not smoke.**

1. For maintenance operations, park and secure machine as described in chapter "Preparing the Machine for Maintenance".
2. Clean the area around the fuel filter (1).
3. Unscrew the filter element counterclockwise with the filter screwdriver.
4. Clean the filter head.
5. Fill up the new filter element with clean fuel.
6. Lubricate the sealing faces of the filter element lightly with engine oil.
7. During reassembly, re-tighten the filter element manually, until the seal is fitting. Then re-tighten the filter element. (Consider the specifications of the filter manufacturer on the filter).
8. Then purge the fuel system. (see section "Bleeding the Fuel System").
9. Start the engine and check for leaks.



MidWestTech | Komatsu WA65-3 Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >