CEAM003701

Operation & Maintenance Manual

KOMATSU®

WA420-3

WHEEL LOADER

SERIAL NUMBERS WA420-3MC A31001 and up

ENGINE 6D114E-1

April 2016

MidWestTech | Komatsu WA420-3MC Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >

5. TABLE OF CONTENTS

1. FOREWORD 0-2

2. SAFETY INFORMATION 0-3

3. INTRODUCTION 0-4
   - 3.1 INTENDED USE 0-4
   - 3.2 FEATURES 0-4
   - 3.3 BREAKING IN A NEW MACHINE 0-4

4. LOCATION OF PLATES, TABLE FOR SERIAL NUMBER AND DISTRIBUTOR 0-5
   - 4.1 MACHINE SERIAL NO. PLATE POSITION 0-5
   - 4.2 ENGINE SERIAL NO. PLATE POSITION 0-5
   - 4.3 TABLE TO ENTER SERIAL NO. AND DISTRIBUTOR 0-5

6. GENERAL PRECAUTIONS 1-2

7. PRECAUTIONS DURING OPERATION 1-8
   - 7.1 BEFORE STARTING ENGINE 1-8
   - 7.2 OPERATING MACHINE 1-9
   - 7.3 TRANSPORTATION 1-18
   - 7.4 BATTERY 1-19
   - 7.5 TOWING 1-21

8. PRECAUTIONS FOR MAINTENANCE 1-22
   - 8.1 BEFORE CARRYING OUT MAINTENANCE 1-22
   - 8.2 DURING MAINTENANCE 1-27
   - 8.3 TIRES 1-31

9. SAFETY LABELS 1-33

10. GENERAL VIEW 2-2
    - 10.1 GENERAL VIEW OF MACHINE 2-2
    - 10.2 GENERAL VIEW OF CONTROLS AND GAUGES 2-3

11. EXPLANATION OF COMPONENTS 2-4
    - 11.1 MACHINE MONITORS 2-4
      - 11.1.1 WARNING DISPLAYS 2-6
      - 11.1.2 METER DISPLAY PORTION 2-10
    - 11.2 SWITCHES 2-14
    - 11.3 CONTROL LEVERS, PEDALS 2-21
    - 11.4 STEERING COLUMN TILT LEVER 2-26
    - 11.5 CAP WITH LOCK 2-27
      - 11.5.1 METHOD OF OPENING AND CLOSING CAP WITH LOCK 2-27
    - 11.6 SAFETY BAR 2-29
    - 11.7 TOWING PIN 2-29
    - 11.8 GREASE PUMP 2-30
    - 11.9 BACK UP ALARM 2-30
    - 11.10 FUSE 2-31
      - 11.10.1 FUSE CAPACITY AND NAME OF CIRCUIT 2-31
    - 11.11 SLOW-BLOW FUSE 2-32
    - 11.12 STORAGE FOR THIS MANUAL 2-33
    - 11.13 ELECTRIC POWER (with ROPS CAB 2-33

MidWestTech | Komatsu WA420-3MC Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >

12. OPERATION 2-34
12.1 CHECKS BEFORE STARTING 2-34
12.1.1 WALK AROUND CHECK 2-34
12.1.2 CHECK BEFORE STARTING 2-37
12.1.3 ADJUSTMENT BEFORE OPERATION 2-42
12.1.4 OPERATIONS AND CHECKS BEFORE STARTING ENGINE 2-45
12.2 STARTING ENGINE 2-47
12.2.1 COLD WEATHER STARTING 2-48
12.3 OPERATIONS AND CHECKS AFTER STARTING ENGINE 2-49
12.4 MOVING MACHINE 2-50
12.5 CHANGING GEARS 2-52
12.6 CHANGING DIRECTION 2-52
12.7 TURNING 2-53
12.8 STOPPING MACHINE 2-54
12.9 OPERATION OF WORK EQUIPMENT 2-55
12.9.1 STANDARD WORK EQUIPMENT CONTROLS 2-55
12.9.2 MONO-LEVER WORK EQUIPMENT CONTROLS 2-57
12.10 WORK POSSIBLE USING WHEEL LOADER 2-58
12.10.1 DIGGING OPERATIONS 2-58
12.10.2 LEVELING OPERATIONS 2-61
12.10.3 PUSHING OPERATION 2-61
12.10.4 LOAD AND CARRY OPERATIONS 2-61
12.10.5 LOADING OPERATIONS 2-62
12.11 PRECAUTIONS FOR OPERATION 2-63
12.11.1 PERMISSIBLE WATER DEPTH 2-63
12.11.2 IF WHEEL BRAKE DOES NOT WORK 2-63
12.11.3 PRECAUTIONS WHEN DRIVING UP OR DOWN SLOPES 2-63
12.11.4 PRECAUTIONS WHEN DRIVING MACHINE 2-64
12.12 ADJUSTING WORK EQUIPMENT POSTURE 2-65
12.12.1 ADJUSTING BOOM KICKOUT 2-65
12.12.2 ADJUSTING BUCKET POSITIONER 2-66
12.12.3 BUCKET LEVEL INDICATOR 2-66
12.13 PARKING MACHINE 2-67
12.14 CHECKS AFTER COMPLETION OF OPERATION 2-68
12.15 STOPPING ENGINE 2-68
12.16 CHECK AFTER STOPPING ENGINE 2-69
12.17 LOCKING 2-69
12.18 HANDLING THE TIRES 2-70
12.18.1 PRECAUTIONS WHEN HANDLING TIRES 2-70
12.18.2 TIRE PRESSURE 2-70

13. TRANSPORTATION 2-72
13.1 LOADING AND UNLOADING 2-72
13.2 PRECAUTIONS FOR LOADING 2-73
13.3 PRECAUTIONS FOR TRANSPORTATION 2-73
13.4 LIFTING MACHINE 2-73
13.4.1 LOCATION FOR LIFTING POSITION DECALS 2-74
13.4.2 WEIGHT TABLE 2-74
13.4.3 LIFTING PROCEDURE 2-75

14. COLD WEATHER OPERATION 2-76
14.1 PRECAUTIONS FOR LOW TEMPERATURE 2-76
14.1.1 FUEL AND LUBRICANTS 2-76
14.1.2 COOLANT 2-76
14.1.3 BATTERY 2-76
14.2 PRECAUTIONS AFTER COMPLETION OF WORK 2-77
14.3 AFTER COLD WEATHER 2-77

15. LONG TERM STORAGE 2-78

MidWestTech | Komatsu WA420-3MC Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >

15.1 BEFORE STORAGE 2-78
15.2 DURING STORAGE 2-78
15.3 AFTER STORAGE 2-78

16. TROUBLESHOOTING 2-79
16.1 WHEN MACHINE RUNS OUT OF FUEL 2-79
16.2 TOWING THE MACHINE 2-80
16.2.1 WITH THE ENGINE RUNNING 2-81
16.2.2 WITH THE ENGINE STOPPED 2-81
16.2.3 RELEASING PARKING BRAKE 2-82
16.2.4 EMERGENCY TRAVEL OPERATION 2-83
16.3 IF BATTERY IS DISCHARGED 2-84
16.3.1 REMOVAL AND INSTALLATION OF BATTERY 2-84
16.3.2 PRECAUTION FOR CHARGING BATTERY 2-85
16.3.3 STARTING ENGINE WITH BOOSTER CABLE 2-86
16.4 OTHER TROUBLE 2-88
16.4.1 ELECTRICAL SYSTEM 2-88
16.4.2 CHASSIS 2-89
16.4.3 ENGINE 2-92

17. GUIDES TO MAINTENANCE 3-2

18. OUTLINES OF SERVICE 3-5
18.1 OUTLINE OF OIL, FUEL, COOLANTS 3-5
18.1.1 OIL 3-5
18.1.2 FUEL 3-6
18.1.3 COOLANT 3-6
18.1.4 GREASE 3-6
18.1.5 STORING OIL AND FUEL 3-7
18.1.6 FILTERS 3-7
18.1.7 FUEL INJECTION PUMP 3-7
18.2 OUTLINE OF ELECTRIC SYSTEM 3-8

19. WEAR PARTS LIST 3-9

20. FUEL, COOLANT AND LUBRICANTS ACCORDING TO AMBIENT TEMPERATURE 3-10
20.1 PROPER SELECTION OF FUEL, COOLANT AND LUBRICANTS 3-10
20.2 ENGINE OIL SPECIFICATIONS 3-11
20.2.1 NORMAL OPERATION 3-11
20.2.2 ARCTIC OPERATION 3-11
20.3 TRANSMISSION, TORQUE CONVERTER, TRANSFER CASE AND OIL COOLER, SERVICE BRAKES AND HYDRAULIC SYSTEM OIL SPECIFICATIONS 3-12
20.4 FINAL DRIVE OIL SPECIFICATIONS 3-12
20.5 DRIVE AXLE OIL SPECIFICATIONS 3-12
20.6 DIESEL FUEL SPECIFICATIONS 3-12
20.7 COOLANT SPECIFICATIONS 3-13
20.7.1 GENERAL 3-13
20.7.2 WATER 3-13
20.7.3 ANTIFREEZE 3-13
20.7.4 SUPPLEMENTAL COOLANT ADDITIVES 3-14

21. STANDARD TIGHTENING TORQUE FOR NUTS AND BOLTS 3-19
21.1 INTRODUCTION OF NECESSARY TOOLS 3-19
21.2 TORQUE LIST 3-20

22. PERIODIC REPLACEMENT OF SAFETY CRITICAL PARTS 3-21

23. MAINTENANCE SCHEDULE 3-25
23.1 SCHEDULED MAINTENANCE CHART 3-25

MidWestTech | Komatsu WA420-3MC Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >

7. BRAKE PEDALS

⚠ WARNING

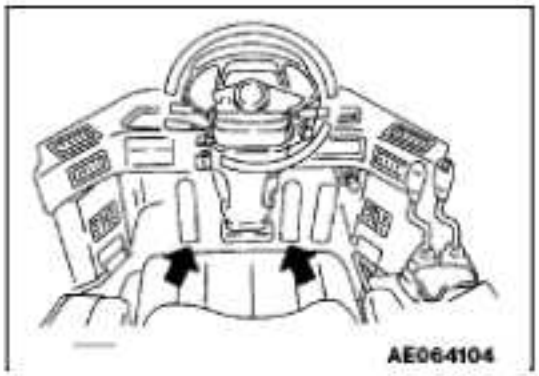
When traveling downhill, use the engine as a brake, and always use the right brake pedal.
Do not use the brake pedals repeatedly unless necessary.
Do not put your foot on this pedal unless necessary.

Right brake pedal

The right brake pedal operates the wheel brakes, and is used for normal braking.

Left brake pedal.

The left brake pedal operates the wheel brakes, and if the transmission cut-off switch is at ON, it also returns the transmission to neutral.
If the transmission cut-off switch is at OFF, the left brake pedal acts in the same way as the right brake pedal.

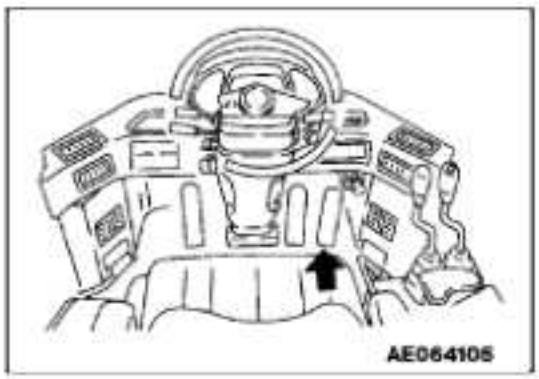

AE064104

REMARKS:
When the accelerator is being used for operating the work equipment, always use the left brake pedal to slow or stop the machine after putting the transmission cut-off switch to the ON position.

8. ACCELERATOR PEDAL

This pedal controls the engine speed and output.

The engine speed can be freely controlled between low idle and full speed.


AE064105

MidWestTech | Komatsu WA420-3MC Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >

SERVICE ITEM	PAGE
EVERY 250 HOURS SERVICE (continued)	
	3-51
	3-51
	3-51
EVERY 500 HOURS SERVICE	
Replace fuel filter cartridge	3-52
Replace transmission oil filter element	3-54
Replace coolant corrosion resistor	3-55
EVERY 1000 HOURS SERVICE	
Change oil in transmission case, clean strainer	3-56
Clean transmission case breather	3-57
Lubricate	3-57
	3-57
	3-57
	3-57
	3-57
Check and adjust engine valves	3-59
Check tension of drive belt	3-62
Check drive belt tensioner bearing and fan hub bearing	3-62
EVERY 2000 HOURS SERVICE	
Cooling system, replace coolant and flush the system	3-64
Change oil in hydraulic tank, replace hydraulic filter element	3-68
Replace hydraulic tank breather element	3-70
Change axle oil	3-71
Check brake disc wear	3-71

frequently or the brakes make noise, change the oil after a shorter interval.

MidWestTech | Komatsu WA420-3MC Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >

26. OPTIONAL PARTS AND ATTACHMENTS

NAME	SPECIFICATION, USE
Excavating bucket	Capacity 3.1 m^3 (4.0 yd^3)
Light material bucket	Capacity (for light duty work, with bolt-on cutting edge) 4.6 m^3 (6.0 yd^3)
Bucket tooth	Bolt-on tooth Tip tooth, Super V
Cutting edge	Bolt-on edge

The following attachments are also available.

ROPS canopy

ECSS (Electronic Controlled Suspension System)

Emergency auxiliary steering

Rear full fenders

Seat belt

Tires

Air conditioner with cold box

Air suspension seat with retractable seat belts

Mono-lever loader control

Radio with cassette stereo, auto tuning

Counterweight

Engine precleaner

Heater and defroster

MidWestTech | Komatsu WA420-3MC Wheel Loader Operation & Maintenance Manual | P... Order the manual at mid-west-tech.com >