Shop Manual

VEBM480104

WA470-3

Wheel Loader

Serial Number

WA470H20051 and up

© 2000 KOMATSU
All Rights Reserved
Printed in Europe 03/2000

KOMATSU®

MidWestTech | Komatsu WA470-3 Wheel Loader Service Manual | Publication VEBM480104

Order the manual at mid-west-tech.com >

CONTENTS

01 GENERAL 01-1

10 STRUCTURE AND FUNCTION 10-1

20 TESTING AND ADJUSTING 20-1

30 DISASSEMBLY AND ASSEMBLY 30-1

40 MAINTENANCE STANDARD 40-1

MidWestTech | Komatsu WA470-3 Wheel Loader Service Manual | Publication VEBM4... Order the manual at mid-west-tech.com >

AIR-CONDITIONER

Contents

Page

General
Introduction 10-453
Summary 10-453
Physical principle 10-453
Properties - R134a 10-453
Physical datas R134a and R12 10-454
New components in R134a circuit 10-454

Function
Refrigeration circuit 10-456
Condenser 10-458
Vaporiser 10-459
Filter with dryer 10-460

Description
Design of the air conditioning 10-462
Installation: WA 270-3 10-462
Installation: WA 320-3, WA 380-3, WA 420-3, WA 470-3 10-463

Security
Handling coolants 10-466
First aid 10-467

Operation
Operating controls 10-470
Operation: WA 270-3 10-471
Operation: WA 320-3, WA 380-3, WA 420-3, WA 470-3 10-472
Settings 10-474

Maintenance
Maintenance timetable 10-475
Maintenance instructions 10-476
Regular maintenance 10-476
Instructions for filling 10-477
Evacuation 10-478
Vacuum test 10-478
Siphoning off coolant 10-478
Filling 10-478
Filling quantities (R134a) 10-478
Checking the coolant level 10-479
Checking the compressor oil level 10-479
Changing compressor oil 10-480
Exchanging magnetic clutch 10-480
Exchanging compressor 10-481
Installing O-ring couplings 10-482
Installing conical nipple connections 10-482

MidWestTech | Komatsu WA470-3 Wheel Loader Service Manual | Publication VEBM4... Order the manual at mid-west-tech.com >

WA470-3 active plus	Wiring diagram Fig. 1				
Sect.	**Description**		**Sect.**	**Description**	
20	STDSW	Switch emergency contr. transm.	2	K 320	Relay Motorstop
6	S 43	Starting switch	109	K 385	Relay back-up alarm
10	S 58	Battery main switch	21	KTDR 1	Relay emergen. contr. transm. 1
14	S 127	Switch parking brake	16	KTDR 2	Relay emergen. contr. transm. 2
22	S 260.1	Switch transmission cut-off	8	K 109	Relay test emergency steering
23	S 260.2	Footswitch transmission cut-off	25	XOP 6	Option 20 km/h
12	S 261	Switch gear selection	26	XRPM	Option engine rpm
25	S 417.1	Kick-down switch	5	G 10	Generator
25	S 417.2	Hold switch	10	G 57	Battery
26	SOP 7	Switch manual shift **	8	M 9	Starting motor
22	A 1	Transmission controller	1	M 320	Engine stop motor
27	P 384	Speed display	4	H 76	Lamp pre-heating
18	P 425	Gear display	14	H 126	Lamp parking brake
3	P 426	Main monitor	23	H 260	Lamp transmission cut-off
17	P 442	Error code display	26	HOP 7	Lamp manual shift **
3	R 12	Flame plug	23	YH	Solenoid High
	RES 1	Resistor manual shift **	22	YS	Solenoid Speed
	V	Diode	20	YM	Solenoid Modulation
	V 118	Diode 5 x	16	Y 236	Solenoid Forward
6	K 106	Relay battery	17	Y 237	Solenoid Reverse
8	K 158	Relay starting motor	26	B 2	Sender speed
14	K 200	Relay parking brake	27	B 228	Engine rpm sender
5	K 208	Relay neutral position	4	B 14	Temp. sender pre-heating
2	K 282	Relay pre-heating	66	B 398	Sender engine oil
3	K 283	Relay pre-heating			
Connectors					
X L		Connector platform	X T		Connector transmission
X C		Connector cab	X R		Connector rear frame
X F		Connector front frame	X FS		Connector fuses
X M		Connector engine			
Fuses					
F...		Fuse			
					470EL1b.tbl

** SN WA470H21104 and up

MidWestTech | Komatsu WA470-3 Wheel Loader Service Manual | Publication VEBM4... Order the manual at mid-west-tech.com >

3. Using troubleshooting chart for engine-related failure

This troubleshooting chart is divided into three sections: questions, check items, and troubleshooting. The questions and check items are used to pinpoint high probability causes that can be located from the failure symptoms or simple inspeciton without using troubleshooting tools.

Next, troubleshooting tools or direct inspection are used to check the high probability causes to make final confirmation.

[Questions]

Sections Ⓐ + Ⓑ in the chart on the right corresponds to the items where answers can be obtained from the user. The items in Ⓑ are items that can be obtained from the user, depending on the user's level.

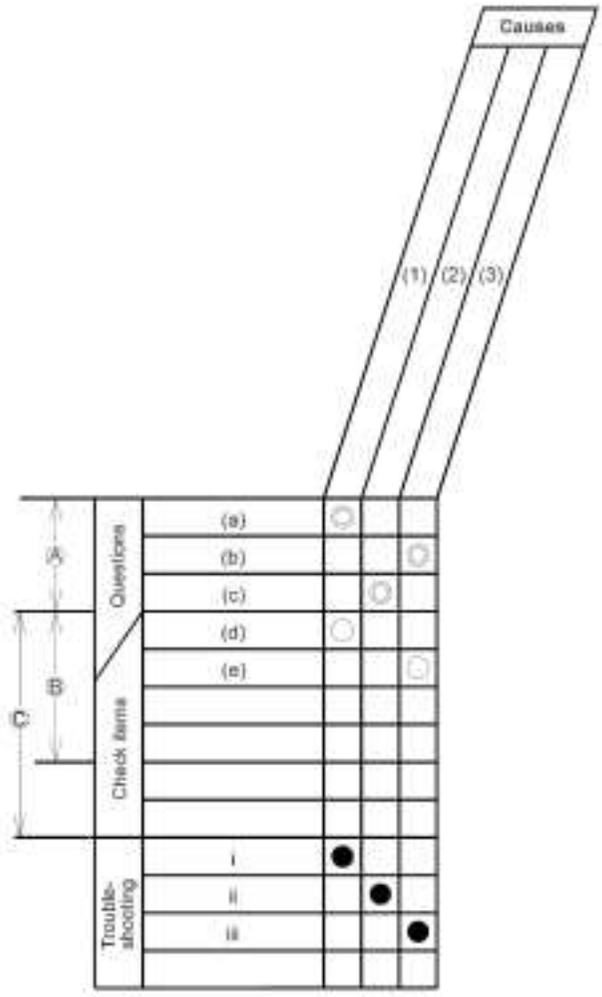
[Check items]

The serviceman carries out simple inspection to narrow down the causes. The items under Ⓒ in the chart on the right correspond to this.

The serviceman narrows down the causes from information Ⓐ that he has obtained from the user and the results of Ⓒ that he has obtained from his own inspection.

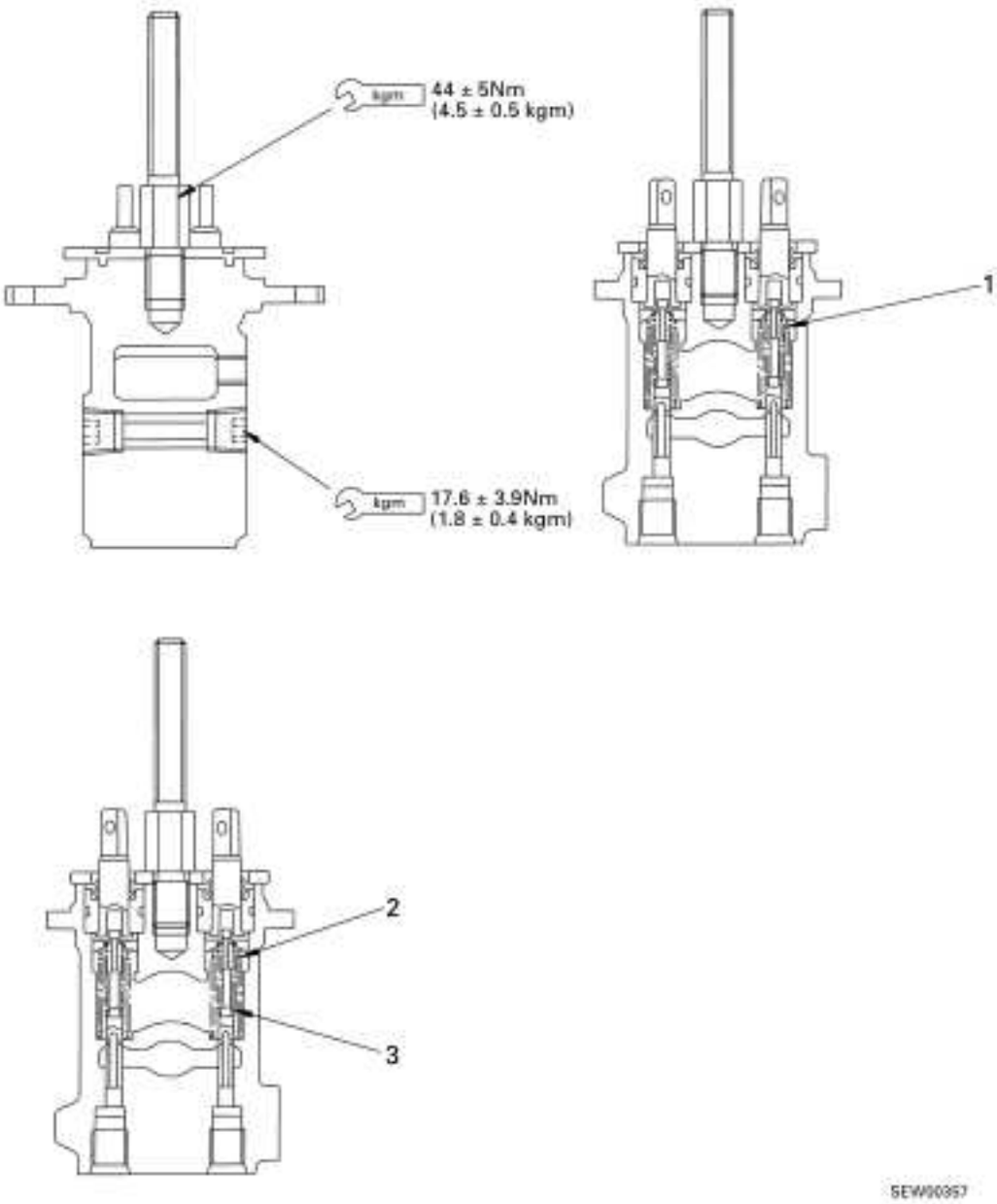
[Troubleshooting]

Troubleshooting is carried out in the order of probability, starting with the causes that have been marked as having the highest probability from information gained from [Questions] and [Check items].



MidWestTech | Komatsu WA470-3 Wheel Loader Service Manual | Publication VEBM4... Order the manual at mid-west-tech.com >

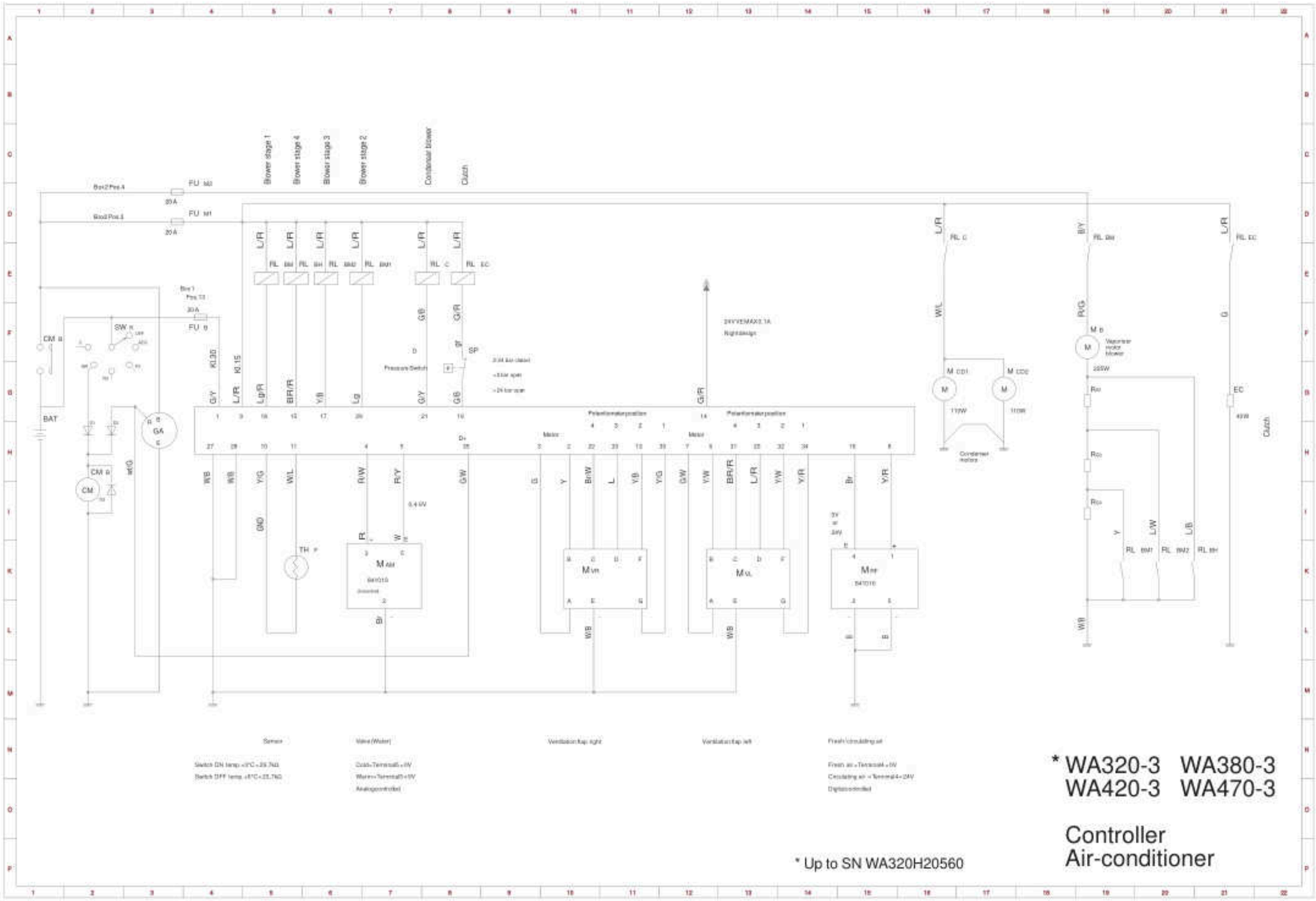
PPC VALVE



Unit: mm

No.	Check item	Criteria					Remedy
		Standard size			Repair limit		
		Free length x O.D.	Installed length	Installed load	Free length	Installed load	
1	Centering spring (bucket DUMP, boom LOWER)	56.5 x 12.2	36.0	19.6 N (2.0 kg)	—	15.7 N (1.6 kg)	Replace spring if damaged or deformed
2	Centering spring (bucket TILT, boom RAISE)	66.8 x 12.2	36.0	29.4 N (3.0 kg)	—	23.5 N (2.4 kg)	
3	Metering spring	31.4 x 7.4	29.4	16.8 N (1.7 kg)	—	13.7 N (1.4 kg)	

MidWestTech | Komatsu WA470-3 Wheel Loader Service Manual | Publication VEBM4... Order the manual at mid-west-tech.com >



MidWestTech | Komatsu WA470-3 Wheel Loader Service Manual | Publication VEBM480104
Order the manual at mid-west-tech.com >