CEBM009605

Shop Manual

KOMATSU®

GALEO

WA450-5L
WA480-5L

WHEEL LOADER

SERIAL NUMBERS	WA450-5L	A36001	and UP
	WA480-5L	A37001	

This material is proprietary to Komatsu America Corp. and is not to be reproduced, used, or disclosed except in accordance with written authorization from Komatsu America Corp.

It is our policy to improve our products whenever it is possible and practical to do so. We reserve the right to make changes or add improvements at any time without incurring any obligation to install such changes on products sold previously.

Due to this continuous program of research and development, periodic revisions may be made to this publication. It is recommended that customers contact their distributor for information on the latest revision.

September 2005
Printed in USA

Copyright 2005 Komatsu
DataKom Publishing Division

MidWestTech | Komatsu Galeo WA450-5L, WA480-5L Wheel Loader Service Manual | Publication CEBM009605 Order the manual at mid-west-tech.com >

Mark	Page	Rev
●	20-1040	⑤
●	20-1041	⑤
●	20-1042	⑤
●	20-1043	⑤
●	20-1044	⑤
❍	20-1045	⑤
❍	20-1046	③
❍	20-1047	⑤
❍	20-1048	③
❍	20-1049	⑤
❍	20-1050	③
	30-1	②
	30-2	②
	30-3	②
	30-4	②
	30-5	②
	30-6	②
	30-7	②
	30-8	②
	30-9	②
	30-10	②
	30-11	②
	30-12	②
	30-13	②
	30-14	②
	30-15	②
	30-16	②
	30-17	②
	30-18	②
	30-19	②
	30-20	②
	30-21	②

Mark	Page	Rev
	30-22	②
	30-23	②
	30-24	②
	30-25	②
	30-26	②
	30-27	②
	30-28	②
	30-29	②
	30-30	②
	30-31	②
	30-32	②
	30-33	②
	30-34	②
	30-35	②
	30-36	②
	30-37	②
	30-38	②
	30-39	②
	30-40	②
	30-41	②
	30-42	②
	30-43	②
	30-44	②
	30-45	②
	30-46	②
	30-47	②
	30-48	②
	30-49	②
	30-50	②
	30-51	②
	30-52	②
	30-53	②
	30-54	②

Mark	Page	Rev
	30-55	②
	30-56	②
	30-57	②
	30-58	②
	30-59	②
	30-60	②
	30-61	②
	30-62	②
	30-63	②
	30-64	②
	30-65	②
	30-66	②
	30-67	②
	30-68	②
	30-69	②
	30-70	②
	30-71	②
	30-72	②
	30-73	②
	30-74	②
	30-75	②
	30-76	②
	30-77	②
	30-78	②
	30-79	②
	30-80	②
	30-81	②
	30-82	②
	30-83	②
	30-84	②
	30-85	②
	30-86	②
	30-87	②

Mark	Page	Rev
	30-88	②
	30-89	②
	30-90	②
	30-91	②
	30-92	②
	30-93	②
	30-94	②
	30-95	②
	30-96	②
	30-97	②
	30-98	②
	30-99	②
	30-100	②
	30-101	②
	30-102	②
	30-103	②
	30-104	②
	30-105	②
	30-106	②
	30-107	②
	30-108	②
	30-109	②
	30-110	②
	30-111	②
	30-112	②
	30-113	②
	30-114	②
	30-115	②
	30-116	②
	30-117	②
	30-118	②
	30-119	②
	30-120	②

MidWestTech | Komatsu Galeo WA450-5L, WA480-5L Wheel Loader Service Manual | Pub... Order the manual at mid-west-tech.com >

Mark	Page	Rev
	30-121	①
	30-122	①
	30-123	①
	30-124	①
	30-125	①
	30-126	①
	30-127	①
	30-128	①
	30-129	①
	30-130	①
	30-131	①
	30-132	①
	30-133	①
	30-134	①
	30-135	①
	30-136	①
	30-137	①
	30-138	①
	30-139	①
	30-140	①
	30-141	①
	30-142	①
	30-143	①
	30-144	①
	30-145	①
	30-146	①
	30-147	①
	30-148	①
	30-149	①
	30-150	①
	30-151	①
	30-152	①
	30-153	①

Mark	Page	Rev
	30-154	②
	30-155	②
	30-156	②
	30-157	②
	30-158	②
	30-159	②
	30-160	②
	30-161	②
	30-162	②
	30-163	②
	30-164	②
	30-165	②
	30-166	②
	30-167	②
	30-168	②
	30-169	②
	30-170	②
	30-171	②
	30-172	②
	30-173	②
	30-174	②
	30-175	②
	30-176	②
	30-177	②
	30-178	②
	30-179	②
	30-180	②
	30-181	②
	30-182	②
	30-183	②
	30-184	②
	30-185	②
	30-186	②

Mark	Page	Rev
	30-187	①
	30-188	①
	30-189	①
	30-190	①
	30-191	①
	30-192	①
	30-193	①
	30-194	①
	30-195	①
	30-196	①
	30-197	①
	30-198	①
	30-199	①
	30-200	①
	30-201	①
	30-202	①
	30-203	①
	30-204	①
	30-205	①
	30-206	①
	30-207	①
	30-208	①
	30-209	①
	30-210	①
	30-211	①
	30-212	①
	30-213	①
	30-214	①
	30-215	①
	30-216	①
	30-217	①
	30-218	①
	30-219	①

Mark	Page	Rev
	30-220	②
	90-1	②
	90-2	②
	90-3	②
	90-4	②
	90-5	②
	90-6	②
	90-7	②
	90-8	②
	90-9	②
	90-10	②
	90-11	②
	90-12	②
	90-13	②
	90-14	②
	90-15	②
	90-16	②
	90-17	②
	90-18	②
	90-19	②
	90-20	②
	90-21	②
	90-22	②
	90-23	②
	90-24	②
	90-25	②
	90-26	②

MidWestTech | Komatsu Galeo WA450-5L, WA480-5L Wheel Loader Service Manual | Pub... Order the manual at mid-west-tech.com >

7. Method of reading matrix-type troubleshooting chart (H mode)

Step 1. Ask operator questions

The questions to ask the operator are given under the problem. If the answer to the question matches the content given, the cause given after the arrow is the probable cause.Keeping the content of the questions in mind, read the matrix and proceed with Step 2 and Step 3 to pinpoint the correct cause.

Step 2. Checks before troubleshooting

Before measuring the oil pressure or starting the troubleshooting, confirm the checks before starting items, check for leakage of oil, or for loose bolts.This will prevent wasting time when troubleshooting. The items given under Checks before troubleshooting are checks that are particularly important to make about the condition of the machine before starting the actual troubleshooting.

Step 3. Method of reading matrix

A. Operate the machine when carrying out troubleshooting of the items in the Troubleshooting column. If any problems occur as the result of the troubleshooting, put a check against the item.

★ When carrying out the troubleshooting, check the easier items first. It is not necessary to follow the number order.

B. Find the matching cause in the Causes column.
If a problem is found, the ❍ marks on the same line as the troubleshooting are the causes. (In Troubleshooting item 2 in the same diagram on the right the cause is c or e.) When there is one ❍ mark. Carry out troubleshooting for the other items marked with ❍ in the same Causes column to check if the problem occurs, then make repairs. When there are two ❍ marks. Go to Step 3) to narrow down the cause.

8. Steering wheel does not turn ← Problem (example)

Ask the operator the following questions.
- Did the problem suddenly start?
  Yes = Equipment related to steering broken
- Was there previously any symptom, such as heaviness of the steering wheel?
  Yes = Wear of equipment related to steering, defective seal

Checks before troubleshooting (example)

- Is the oil level in the hydraulic tank correct? Is the type of oil correct?
- Is there any leakage of oil from the steering valve or Orbit-roll?
- Has the safety bar been removed from the frame?

<Example 1>

No.	Problems & Remedy
1	Steering wheel does not turn in either direction (left and right)
2	In Item 1, movement of work equipment is abnormal
3	Steering wheel turns only in one direction (left or right)
4	Steering wheel is heavy and does not turn

<Example 2>

	Cause				
	a	b	c	d	e
Problems & Remedy	X	C	Δ/X	A	X
1	❍	❍	❍	❍	
2			●		●
3		❍		❍	
4	❍			❍	
5		❍			❍

MidWestTech | Komatsu Galeo WA450-5L, WA480-5L Wheel Loader Service Manual | Pub... Order the manual at mid-west-tech.com >

WRK-21

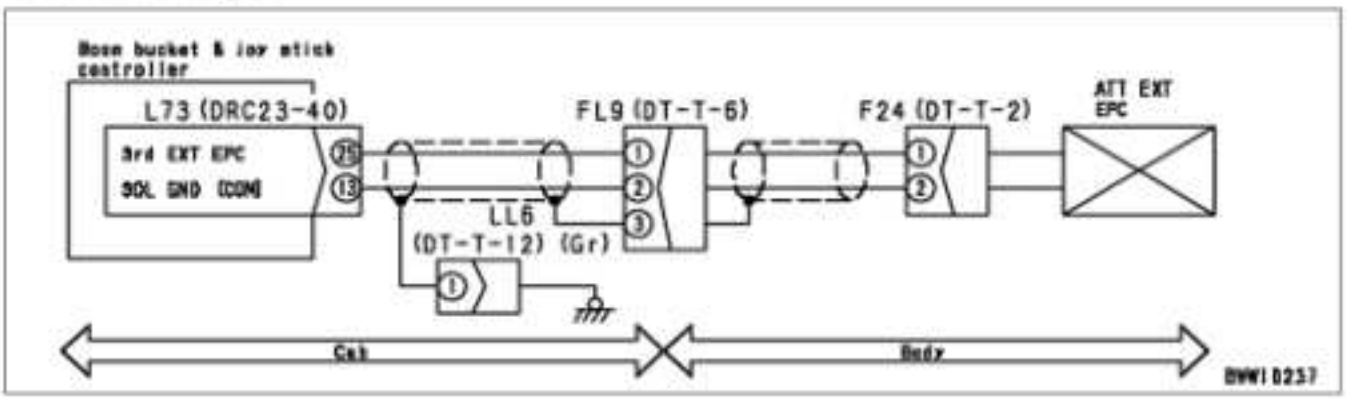
SHORT IN 3RD VALVE EXTENSION EPC SOLENOID SYSTEM

Contents Of Trouble	• Possible short in 3rd. EPC solenoid system. • No reaction. • 3rd. valve cannot extend.

Tools and Procedures	• Digital Volt Ohm Meter. T-adapter kit. • Do not mark on original page of service manual. Remove this page from the service manual and make a copy for recording information while performing these tests. • If you are unable to copy this page, record readings on a separate paper referring to the (**No.**) numbers listed on the right of the procedure. • Follow each step throughout this procedure, do not skip steps, jump ahead or stop when a fault is found unless otherwise instructed to in the procedure. It is important to complete all steps and record information for final analyzing.

Steps	Circuit Diagnostic Procedures For Error Code [WRK-21]		Specifications	No.	Readings
1.	**ATT Extension EPC Solenoid** • With ignition switch in the "OFF" position. • Disconnect (F24) from solenoid and isolate solenoid. • Zero meter leads for proper Ω readings.				
	A. Switch test	Resistance Ω	At solenoid F24, between (1) and (2)	9.0 to 10.2Ω	1	
			At solenoid F24, between (1) or (2) and chassis ground	(OL) open	2	
2.	**Wiring Harness Assembly Test** • With ignition switch in the "OFF" position. • Disconnect (F24) connector from solenoid. • Disconnect (L73) connector from boom, bucket and joystick controller and install T-adapter on (L73) wiring harness connector only. • Zero meter leads for proper Ω readings.				
	A. Short to chassis ground or within harness	Resistance Ω	Between connector F24, (1) and chassis ground	(OL) open	3	
			Between connector F24, (2) and chassis ground	(OL) open	4	
			At connector F24, between (2) and (1)	(OL) open	5	
3.	**Boom, Bucket and Joystick Controller Unit** • No testing procedure for the controller.				
Remark	*If all test results fall within the specifications listed above in the testing procedures, the error may be in your Boom, Bucket and Joystick Controller Unit. Be sure all steps are completed correctly before faulting the controller unit.*				

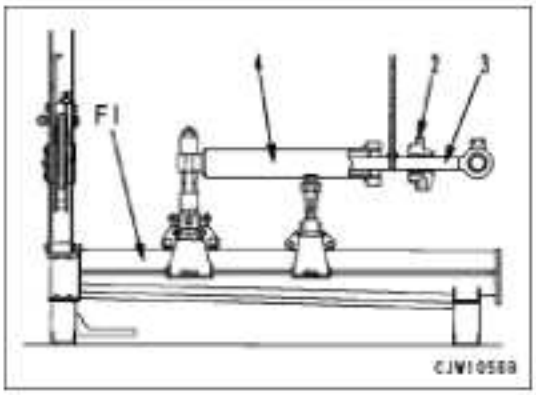
Related circuit diagram



MidWestTech | Komatsu Galeo WA450-5L, WA480-5L Wheel Loader Service Manual | Pub... Order the manual at mid-west-tech.com >

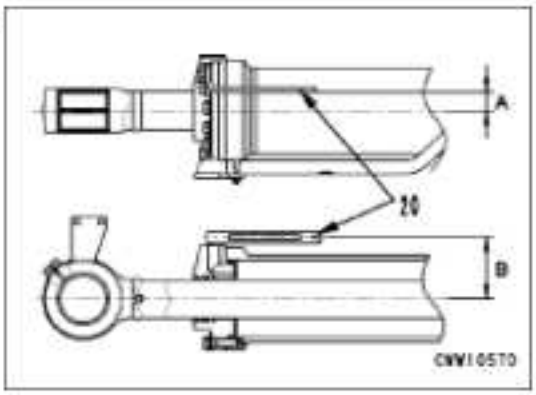
F. Install the cylinder head (2) on the cylinder (4).

Nm Mounting bolt:
343 ± 34.3 Nm (252.9± 25.2 lbf ft)
(Lift cylinder)
490 ± 49.0 Nm (361.4 ± 36.1 lbf ft)
(WA450-5L bucket cylinder)
622 ± 73.5 Nm (458.8 ±54.2 lbf ft)
(WA480-5L bucket cylinder)



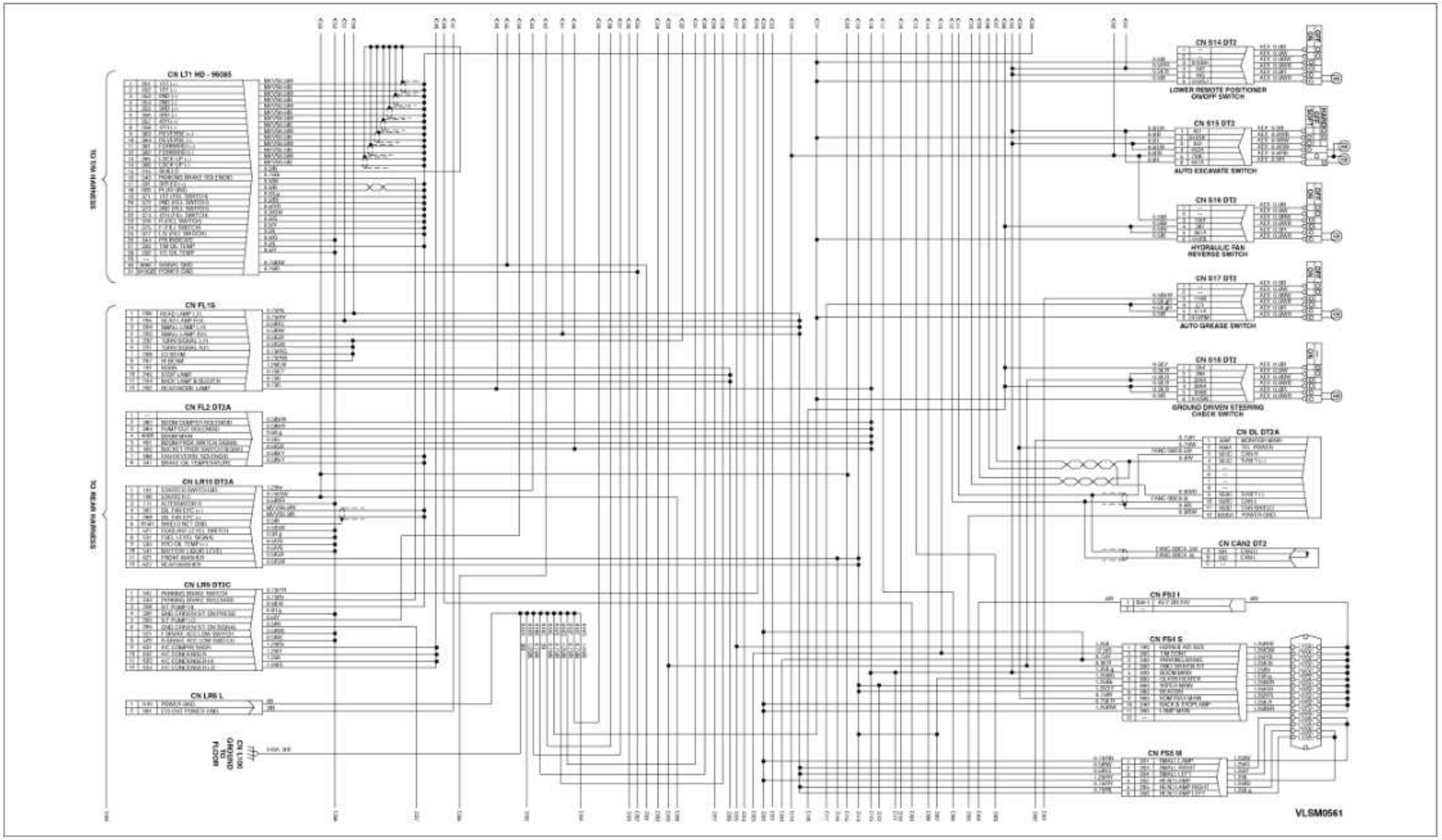
★ For the leveler plate (20) of the bucket cylinder, tighten the bolt to the following dimensions.

- Dimensions **A**: 48.5 ± 1 mm
  B: 160 ± 2 mm (WA450-5L)
  177 ± 2 mm (WA480-5L)



G. Remove the cylinder assembly (1) from the tool **F1**.

MidWestTech | Komatsu Galeo WA450-5L, WA480-5L Wheel Loader Service Manual | Pub... Order the manual at mid-west-tech.com >



MidWestTech | Komatsu Galeo WA450-5L, WA480-5L Wheel Loader Service Manual | Publication CEBM009605

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