CEBM017402

Shop Manual

KOMATSU®

WA380-6

WHEEL LOADER

SERIAL NUMBERS **WA380-6** **A53001** and UP

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.

August 2011
Printed in USA

Copyright 2011 Komatsu
DataKom Publications Division

MidWestTech | Komatsu WA380-6 Wheel Loader Service Manual | Publication CEBM017402
Order the manual at mid-west-tech.com >

The affected pages are indicated by using the following marks. It is requested that necessary actions be taken to these pages according to the table below.

Mark	Indication	Action
❍	New page to be added	Add
●	Page to be replaced	Replace
( )	Page to be deleted	Discard

Mark	Page	Rev
●	00-1	②
●	00-2	②
●	00-2-1	②
●	00-2-2	②
●	00-2-3	②
●	00-2-4	②
●	00-2-5	②
●	00-2-6	②
●	00-2-7	②
●	00-2-8	②
●	00-2-9	②
●	00-2-10	②
●	00-2-11	②
●	00-2-12	②
●	00-2-13	②
●	00-2-14	②
●	00-2-15	②
●	00-2-16	②
●	00-3	②
●	00-4	②
●	00-5	②
●	00-6	②
●	00-7	②
●	00-8	②
●	00-9	②
●	00-10	②
●	00-11	②
●	00-12	②
●	00-13	②

Mark	Page	Rev
●	00-14	②
●	00-15	②
●	00-16	②
●	00-17	②
●	00-18	②
●	00-19	②
●	00-20	②
●	00-21	②
●	00-22	②
●	00-23	②
●	00-24	②
●	00-25	②
●	00-26	②
●	00-27	②
●	00-28	②
●	00-29	②
●	00-30	②
●	00-31	②
●	00-32	②
●	00-33	②
●	00-34	②
●	00-35	②
●	00-36	②
( )	00-37	①
( )	00-38	①
( )	00-39	①
( )	00-40	①
( )	00-41	①
( )	00-42	①

Mark	Page	Rev
●	01-1	②
●	01-2	②
●	01-3	②
●	01-4	②
●	01-5	②
●	01-6	②
●	01-7	②
●	01-8	②
●	01-9	②
●	01-10	②
●	01-11	②
●	01-12	②
●	01-13	②
●	01-14	②
●	10-1	②
●	10-2	②
●	10-3	②
●	10-4	②
●	10-5	②
●	10-6	②
●	10-7	②
●	10-8	②
●	10-9	②
●	10-10	②
●	10-11	②
●	10-12	②
●	10-13	②

Mark	Page	Rev
●	10-14	②
●	10-15	②
●	10-16	②
●	10-17	②
●	10-18	②
●	10-19	②
●	10-20	②
●	10-21	②
●	10-22	②
●	10-23	②
●	10-24	②
●	10-25	②
●	10-26	②
●	10-27	②
●	10-28	②
●	10-29	②
●	10-30	②
●	10-31	②
●	10-32	②
●	10-33	②
●	10-34	②
●	10-35	②
●	10-36	②
●	10-37	②
●	10-38	②
●	10-39	②
●	10-40	②
●	10-41	②
●	10-42	②

MidWestTech | Komatsu WA380-6 Wheel Loader Service Manual | Publication CEBM017402 Order the manual at mid-west-tech.com >

Mark	Page	Rev
●	10-43	①
●	10-44	②
●	10-45	①
●	10-46	②
●	10-47	①
●	10-48	②
●	10-49	①
●	10-50	②
●	10-51	①
●	10-52	②
●	10-53	①
●	10-54	②
●	10-55	①
●	10-56	②
●	10-57	①
●	10-58	②
●	10-59	①
●	10-60	②
●	10-61	①
●	10-62	②
●	10-63	①
●	10-64	②
●	10-65	①
●	10-66	②
●	10-67	①
●	10-68	②
●	10-69	①
●	10-70	②
●	10-71	①
●	10-72	②
●	10-73	①
●	10-74	②
●	10-75	①

Mark	Page	Rev
●	10-76	②
●	10-77	②
●	10-78	②
●	10-79	②
●	10-80	②
●	10-81	②
●	10-82	②
●	10-83	②
●	10-84	②
●	10-85	②
●	10-86	②
●	10-87	②
●	10-88	②
●	10-89	②
●	10-90	②
●	10-91	②
●	10-92	②
●	10-93	②
●	10-94	②
●	10-95	②
●	10-96	②
●	10-97	②
●	10-98	②
●	10-99	②
●	10-100	②
●	10-101	②
●	10-102	②
●	10-103	②
●	10-104	②
●	10-105	②
●	10-106	②
●	10-107	②
●	10-108	②

Mark	Page	Rev
●	10-109	②
●	10-110	②
●	10-111	②
●	10-112	②
●	10-113	②
●	10-114	②
●	10-115	②
●	10-116	②
●	10-117	②
●	10-118	②
●	10-119	②
●	10-120	②
●	10-121	②
●	10-122	②
●	10-123	②
●	10-124	②
●	10-125	②
●	10-126	②
●	10-127	②
●	10-128	②
●	10-129	②
●	10-130	②
●	10-131	②
●	10-132	②
●	10-133	②
●	10-134	②
●	10-135	②
●	10-136	②
●	10-137	②
●	10-138	②
●	10-139	②
●	10-140	②
●	10-141	②

Mark	Page	Rev
●	10-142	②
●	10-143	②
●	10-144	②
●	10-145	②
●	10-146	②
●	10-147	②
●	10-148	②
●	10-149	②
●	10-150	②
●	10-151	②
●	10-152	②
●	10-153	②
●	10-154	②
●	10-155	②
●	10-156	②
●	10-157	②
●	10-158	②
●	10-159	②
●	10-160	②
●	10-161	②
●	10-162	②
●	10-163	②
●	10-164	②
●	10-165	②
●	10-166	②
●	10-167	②
●	10-168	②
●	10-169	②
●	10-170	②
●	10-171	②
●	10-172	②
●	10-173	②
●	10-174	②

MidWestTech | Komatsu WA380-6 Wheel Loader Service Manual | Publication CEBM017402 Order the manual at mid-west-tech.com >

Mark	Page	Rev
●	10-175	①
●	10-176	②
●	10-177	①
●	10-178	②
●	10-179	①
●	10-180	②
●	10-181	①
●	10-182	②
●	10-183	①
●	10-184	②
●	10-185	①
●	10-186	②
●	10-187	①
●	10-188	②
●	10-189	①
●	10-190	②
●	10-191	①
●	10-192	②
●	10-193	①
●	10-194	②
●	10-195	①
●	10-196	②
●	10-197	①
●	10-198	②
●	10-199	①
●	10-200	②
●	10-201	①
●	10-202	②
●	10-203	①
●	10-204	②
●	10-205	①
●	10-206	②
●	10-207	①

Mark	Page	Rev
●	10-208	②
●	10-209	②
●	10-210	②
●	10-211	②
●	10-212	②
●	10-213	②
●	10-214	②
●	10-215	②
●	10-216	②
●	10-217	②
●	10-218	②
●	10-219	②
●	10-220	②
●	10-221	②
●	10-222	②
●	10-223	②
●	10-224	②
●	10-225	②
●	10-226	②
●	10-227	②
●	10-228	②
●	10-229	②
●	10-230	②
●	10-231	②
●	10-232	②
●	10-233	②
●	10-234	②
●	10-235	②
●	10-236	②
●	10-237	②
●	10-238	②
●	10-239	②
●	10-240	②

Mark	Page	Rev
●	10-241	①
●	10-242	①
●	10-243	①
●	10-244	①
●	10-245	①
●	10-246	①
●	10-247	①
●	10-248	①
●	10-249	①
●	10-250	①
●	10-251	①
●	10-252	①
●	10-253	①
●	10-254	①
●	10-255	①
●	10-256	①
●	10-257	①
●	10-258	①
●	10-259	①
●	10-260	①
●	10-261	①
●	10-262	①
●	10-263	①
●	10-264	①
●	10-265	①
●	10-266	①
●	10-267	①
●	10-268	①
●	10-269	①
●	10-270	①
●	10-271	①
●	10-272	①
●	10-273	①

Mark	Page	Rev
●	10-274	②
●	10-275	②
●	10-276	②
●	10-277	②
●	10-278	②
●	10-279	②
●	10-280	②
●	10-281	②
●	10-282	②
●	10-283	②
●	10-284	②
●	10-285	②
●	10-286	②
●	10-287	②
●	10-288	②
●	10-289	②
●	10-290	②
●	10-291	②
●	10-292	②
●	10-293	②
●	10-294	②
●	10-295	②
●	10-296	②
●	10-297	②
●	10-298	②
●	10-299	②
●	10-300	②
●	10-301	②
●	10-302	②
●	10-303	②
●	10-304	②
●	10-305	②
●	10-306	②

MidWestTech | Komatsu WA380-6 Wheel Loader Service Manual | Publication CEBM017402 Order the manual at mid-west-tech.com >

TOOLS

Tools for Testing, Adjusting, and Troubleshooting

Testing and Adjusting Item	Symbol		Part No.	Part Name	Qty	Remarks
Testing exhaust gas color	A	1	799-201-9001	Handy smoke checker	1	Bosch index: Level 0 – 9
		2	Commercially available	Smoke meter	1	
Adjusting valve clearance	B	1	795-799-1131	Gear	1	
		2	Commercially available	Clearance gauge	1	
Testing compression pressure	C	1	795-799-6700	Puller	1	For 107E-1 engine
		2	795-502-1590	Gauge assembly	1	0 – 7.0 MPa {0 – 70 kg/cm^2} (0 – 1015.3 psi)
		3	795-790-4410	Adapter	1	For 107E-1 engine
		4	6754-11-3130	Gasket	1	For 107E-1 engine
Testing blow-by pressure	D	1	799-201-1504	Blow-by checker	1	0 – 5 kPa {0 – 500 mmH_2O} (0 – 0.73 psi)
		2	795-790-3300	Blow-by tool		
Testing engine oil pressure	E	1	799-101-5002	Hydraulic tester	1	Pressure gauge: 2.5, 6.0, 40, 60 MPa {25, 60, 400, 600 kg/cm^2} (362.6, 870.2, 5801.5, 8702.3 psi)
			790-261-1204	Digital hydraulic tester	1	Pressure gauge: 60 MPa {600 kg/cm^2} (8702.3 psi)
		2	799-401-2320	Hydraulic tester	1	Pressure gauge: 1.0 MPa {10 kg/cm^2} (145.0 psi)
		3	799-101-5230	Nipple	1	14 × 1.5 mm (0.55 x 0.06 in)
			6215-81-9720	O-ring	1	
Testing intake air (boost) pressure	F		799-201-2202	Boost gauge kit	1	-101 – 200 kPa {-760 – 1,500 mmHg} (14.6 – 29.0 psi)
Testing fuel compression	G	1	799-101-5002	Hydraulic tester	1	Pressure gauge: 2.5, 6.0, 40, 60 MPa {25, 60, 400, 600 kg/cm^2} (362.6, 870.2, 5801.5, 8702.3 psi)
			790-261-1204	Digital hydraulic tester	1	Pressure gauge: 60 MPa {600 kg/cm^2} (8702.3 psi)
		2	6732-81-3170	Adapter	1	10 × 1.0 mm → R1/8
			6215-81-9710	O-ring	1	
		3	799-401-2320	Hydraulic tester	1	Pressure gauge: 1.0 MPa {10 kg/cm^2} (145.0 psi)
		4	795-790-5110	Screw	1	
		5	799-201-2202	Boost gauge kit	1	

MidWestTech | Komatsu WA380-6 Wheel Loader Service Manual | Publication CEBM017402 Order the manual at mid-west-tech.com >

15GLH

ECMV 3rd Clutch: When Command Current is ON, Fill Signal is OFF

Action Code	Failure Code	Trouble	ECMV 3rd clutch: When command current is ON, fill signal is OFF. (Transmission controller)
E01	15SGLH		
Contents of trouble	• When 3rd ECMV solenoid output is turned ON, clutch does not mesh because 3rd ECMV fill switch ON signal is not input and the condition requires to set the engine speed at 500 rpm or below.		
Action of controller	• Judges that the 3rd ECMV fill switch signal is turned OFF. • If problem is removed, system is returned to normal operating state.		
Problem that appears on machine	• The machine may not travel at 3rd speed. • When the 3rd gear speed is changed, a shock or a time lag may occur.		
Related information	• This failure code may be displayed just after the transmission oil was changed. • The output state (current value) to the 3rd clutch ECMV solenoid can be checked with the monitoring function (Code: 31604, ECMV 3 DIR). • The input state (ON/OFF) from the 3rd fill switch can be checked with the monitoring function (Code: 40908, D-IN-28). • Method of reproducing failure code: Start engine; set manual/auto-shift selector switch to MANUAL; set FNR (directional) lever, joystick steering FNR (directional) switch, or right FNR (directional) switch to F (forward), R (reverse); then set shift lever to 3rd speed position.		

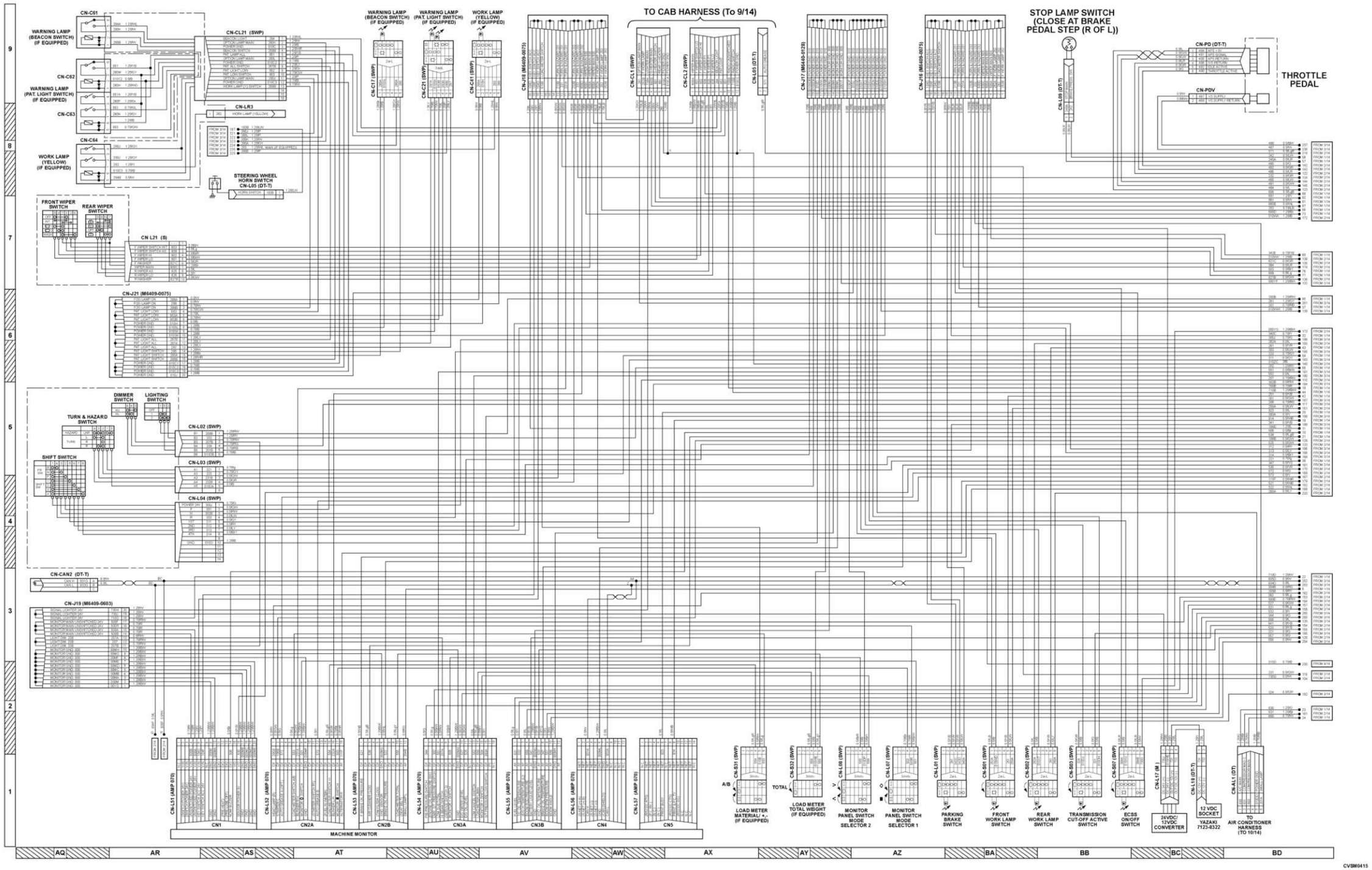
	Cause		Standard value in normal state/Remarks on troubleshooting			
Possible causes and standard value in normal state	1	3rd clutch oil pressure error	This failure code is displayed if 3rd clutch oil pressure were absent when 3rd ECMV solenoid output is turned ON. See *TROUBLESHOOTING H-MODE: Troubleshooting Hydraulic and Mechanical Systems.*			
	2	Defective 3rd ECMV fill switch (Internal disconnection)	★ Prepare with starting switch OFF, then start engine and carry out troubleshooting. • Turn transmission cutoff switch OFF. • Turn parking brake switch OFF. • Keep pressing brake pedal to prevent machine from traveling.			
			3.SW (male)	Shift lever	Resistance	
			Between (1) – chassis ground	3rd (3rd speed)	Max. 1 Ω	
				Other than above	Min. 1 MΩ	
	3	Disconnection in wiring harness (Disconnection or defective contact of connector)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			Wiring harness between L62 (female) (13) – 3.SW (female) (1) and chassis ground		Resistance	Max. 1 Ω
	4	Defective transmission controller	• Prepare with starting switch OFF, then start engine and carry out troubleshooting. • Turn transmission cutoff switch OFF. • Turn parking brake switch OFF. • Keep pressing brake pedal to prevent machine from traveling. • Set the auto-shift and manual shift selector switch in the MANUAL position. • Set the FNR (directional) lever, joystick steering FNR (directional) switch, or right FNR (directional) switch to F (forward) or R (reverse).			
			L62	Shift lever	Voltage	
			Between (13) – chassis ground	3rd (3rd speed)	Max. 1 V	
				Other than above	8 – 10 V	

MidWestTech | Komatsu WA380-6 Wheel Loader Service Manual | Publication CEBM017402 Order the manual at mid-west-tech.com >

	Causes		Standard value in normal state/Remarks on troubleshooting		
Possible causes and standard value in normal state	5	Disconnection in wiring harness (Disconnection in wiring harness or defective contact)	Wiring harness between L171 (male) (2), L172 (male) (2) – EC2 (female) (33)	Resistance	Max. 1 Ω
			Wiring harness between fuse No. 6 of fuse box 1 – L171 (male) (3), L172 (male) (3)	Resistance	Max. 1 Ω
			Wiring harness between L171 (male) (4), L172 (male) (4) – EC3 (female) (3), (4)	Resistance	Max. 1 Ω
			Wiring harness between EC3 (female) (1), (2) – chassis ground	Resistance	Max. 1 Ω
	16	Ground fault in wiring harness (Contact with ground circuit)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Wiring harness between battery relay R04 – starting motor terminal B (E30) and chassis ground	Resistance	Min. 1 MΩ
			Wiring harness between S40 (male) (3) – W60 (female) (3), – circuit branch end and chassis ground	Resistance	Min. 1 MΩ
			Wiring harness between W60 (female) (6) – L116 (female) (5) and chassis ground	Resistance	Min. 1 MΩ
			Wiring harness between S40 (female) (4) – W60 (female) (1) and chassis ground	Resistance	Min. 1 MΩ
			Wiring harness between L116 (female) (3) – L113 (female) (6) and chassis ground	Resistance	Min. 1 MΩ
			Wiring harness between L04 (female) (3) – L116 (female) (1) and chassis ground	Resistance	Min. 1 MΩ
			Wiring harness between L113 (female) (3) – D05 (female) (2) and chassis ground	Resistance	Min. 1 MΩ
			Wiring harness between D05 (female) (1) – E01 (female) (1) and chassis ground	Resistance	Min. 1 MΩ
			Wiring harness between L63 (female) (37) – L113 (female) (1) and chassis ground	Resistance	Min. 1 MΩ
			Wiring harness between S40 (female) (2) – L171 (male) (1) and chassis ground	Resistance	Min. 1 MΩ
			Wiring harness between fuse No. 6 of fuse box 1 – L171 (male) (3), L172 (male) (3) and chassis ground	Resistance	Min. 1 MΩ
			Wiring harness between L171 (male) (4), L172 (male) (4) – EC3 (female) (3), (4) and chassis ground	Resistance	Min. 1 MΩ
	17	Hot short in wiring harness (Contact with 24V circuit)	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.		
			Wiring harness between alternator terminal R E02 (female) (1) – E01 (female) (2), – circuit branch end and chassis ground (Note: if hot short occurs across them, the charging lamp will be lighted as the starting switch is ON.	Voltage	Max. 1 V
	18	Defective transmission controller	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.		
			L63	Joystick control lever	Voltage
			Between (37) and chassis ground	Neutral	Max. 1 V
				Other than above	20 – 30 V

MidWestTech | Komatsu WA380-6 Wheel Loader Service Manual | Publication CEBM017402 Order the manual at mid-west-tech.com >

Electrical Circuit Diagram (4/14)



MidWestTech | Komatsu WA380-6 Wheel Loader Service Manual | Publication CEBM017402

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