CEBM019803

Shop Manual

KOMATSU®

WA320-6

WHEEL LOADER

SERIAL NUMBERS **WA320-6** **A34001 - A34999**

ENGINE **SAA6D107E-1**

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

Mark	Page	Rev
●	00-1	③
●	00-2	③
●	00-2-1	③
●	00-2-2	③
●	00-2-3	③
●	00-2-4	③
●	00-2-5	③
●	00-2-6	③
●	00-2-7	③
●	00-2-8	③
●	00-2-9	③
●	00-2-10	③
●	00-2-11	③
●	00-2-12	③
●	00-3	③
●	00-4	③
●	00-5	③
●	00-6	③
●	00-7	③
●	00-8	③
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●	00-10	③
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●	00-12	③
●	00-13	③
●	00-14	③
●	00-15	③
●	00-16	③
●	00-17	③

Mark	Page	Rev
●	00-18	③
●	00-19	③
●	00-20	③
●	00-21	③
●	00-22	③
●	00-23	③
●	00-24	③
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●	00-26	③
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●	00-31	③
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●	00-35	③
●	00-36	③
●	00-37	③
●	00-38	③
●	00-39	③
●	00-40	③
●	00-41	③
●	00-42	③
❍	00-43	③
❍	00-44	③
	01-1	②

Mark	Page	Rev
	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
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	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
	10-14	②
	10-15	①

Mark	Page	Rev
	10-16	②
	10-17	②
	10-18	②
●	10-19	③
	10-20	②
	10-21	②
	10-22	②
	10-23	②
	10-24	②
	10-25	②
	10-26	②
●	10-27	③
	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
	10-43	②
	10-44	②

MidWestTech | Komatsu WA320-6 with SAA6D107E-1 Engine Wheel Loader Service Manua... Order the manual at mid-west-tech.com >

Mark	Page	Rev
	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
	10-76	②
	10-77	①

Mark	Page	Rev
	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
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	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
	10-109	②
	10-110	②

Mark	Page	Rev
	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	③
	10-120	②
	10-121	②
	10-122	②
	10-123	②
	10-124	②
	10-125	②
	10-126	②
●	10-127	③
	10-128	②
●	10-129	③
	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
	10-142	②
	10-143	②

Mark	Page	Rev
	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
	10-175	②
	10-176	②

MidWestTech | Komatsu WA320-6 with SAA6D107E-1 Engine Wheel Loader Service Manua... Order the manual at mid-west-tech.com >

Mark	Page	Rev
	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	③
	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
	10-208	②
	10-209	①

Mark	Page	Rev
	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	③
●	10-220	③
●	10-221	③
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●	10-233	③
●	10-234	③
●	10-235	③
●	10-236	③
●	10-237	③
●	10-238	③
●	10-239	③
●	10-240	③
●	10-241	③
●	10-242	③

Mark	Page	Rev
●	10-243	③
●	10-244	③
●	10-245	③
●	10-246	③
●	10-247	③
●	10-248	③
●	10-249	③
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●	10-256	③
●	10-257	③
●	10-258	③
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●	10-267	③
●	10-268	③
●	10-269	③
●	10-270	③
●	10-271	③
	10-272	③
	10-273	③
	10-274	③
	10-275	③

Mark	Page	Rev
	10-276	②
	10-277	②
	10-278	②
	10-279	②
	10-280	②
●	10-281	③
	10-282	②
	10-283	②
	10-284	②
	10-285	②
	10-286	②
	10-287	②
	10-288	②
●	10-289	③
	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
	20-1	②
	20-2	②
●	20-3	③
●	20-4	③
●	20-5	③

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CA145

Coolant Sensor Low error

Action Code	Failure Code	Trouble	Coolant sensor low error (Engine controller system)
E01	CA145		
Contents of trouble	• Low voltage is detected in coolant temperature sensor signal circuit.		
Action of controller	• Fixes engine coolant temperature and continues operation.		
Problem that appears on machine	• Exhaust smoke becomes white. • Overheat prevention function does not function.		
Related information	• The input state (temperature) from the engine coolant temperature sensor can be checked with the monitoring function (Code: ENGINE, 04104, COOLANT TEMP). • The input state (voltage) from the engine coolant temperature sensor can be checked with the monitoring function (Code: ENGINE, 04105, COOLANT TEMP). • Method of reproducing failure code: Turn the starting switch ON.		

	Causes		Standard value in normal state/Remarks on troubleshooting			
Possible causes and standard value in normal state	1	Defective coolant temperature sensor (Internal trouble)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			COOLANT TEMP (male)	Coolant Temperature	Resistance	
			Between (A) and (B)	0°C (0°F)	30 – 37 kΩ	
				25°C (77°F)	9.3 – 10.7 kΩ	
				50°C (122°F)	3.2 – 3.8 kΩ	
				80°C (176°F)	1.0 – 1.3 kΩ	
				95°C (203°F)	700 – 800 Ω	
			Between (B) and ground	All range	Min. 100 kΩ	
	2	Ground fault in wiring harness (Short circuit with ground circuit)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			Wiring harness between EC1 (female) (15) – COOLANT TEMP (female) (B) and ground		Resistance	Min. 100 kΩ
	3	Short circuit in wiring harness (with another wiring harness)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			Wiring harness among all pins between EC1 (female) (15) – EC1 (female) (With all connectors of wiring harness disconnected)		Resistance	Min. 100 kΩ
	4	Defective wiring harness connector	Connecting parts among coolant temperature sensor, engine wiring harness, and engine controller are suspected. Inspect them directly. • Loose connector, broken lock, broken seal • Corroded, bent, broken, forced-in, or extended pin • Humidity in connector, entry of dirt or dust, poor insulation			

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CA2185

Throttle Sensor Supply Voltage High Error

Action Code	Failure Code	Trouble	Throttle sensor supply voltage high error (Engine controller system)
E03	**CA2185**		
Contents of trouble	• High voltage (min. 5.25V) occurred in throttle sensor power supply circuit.		
Action of controller	• Runs the engine at position of throttle 0% when accelerator pedal is OFF and at 50% when it is ON. • Turns the centralized warning lamp and alarm buzzer ON.		
Problem that appears on machine	• The engine does not reach full throttle.		
Related information	• Method of reproducing failure code: Turn the starting switch ON.		

	Causes		Standard value in normal state/Remarks on troubleshooting		
Possible causes and standard value in normal state			★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
	1	Short circuit in wiring harness (with another wiring harness)	Wiring harness among all pins between EC2 (female) (22) – EC2 (female) (PD1 and 2, too, is disconnected.)	Resistance	Min. 100 kΩ
			Between EC2 (female) (22) – EC3 (female) (3) (PD1 and 2, too, is disconnected.)	Resistance	Min. 100 kΩ
	2	Defective wiring harness connector	Connecting parts among accelerator pedal dial, engine unit wiring harness, and engine controller are suspected. Inspect them directly. • Loose connector, broken lock, broken seal • Corroded, bent, broken, forced-in, or extended pin • Humidity in connector, entry of dirt or dust, poor insulation		
	3	Defective engine controller	If causes 1 – 2 are not detected, engine controller may be defective. (Since problem is in system, troubleshooting cannot be carried out.)		

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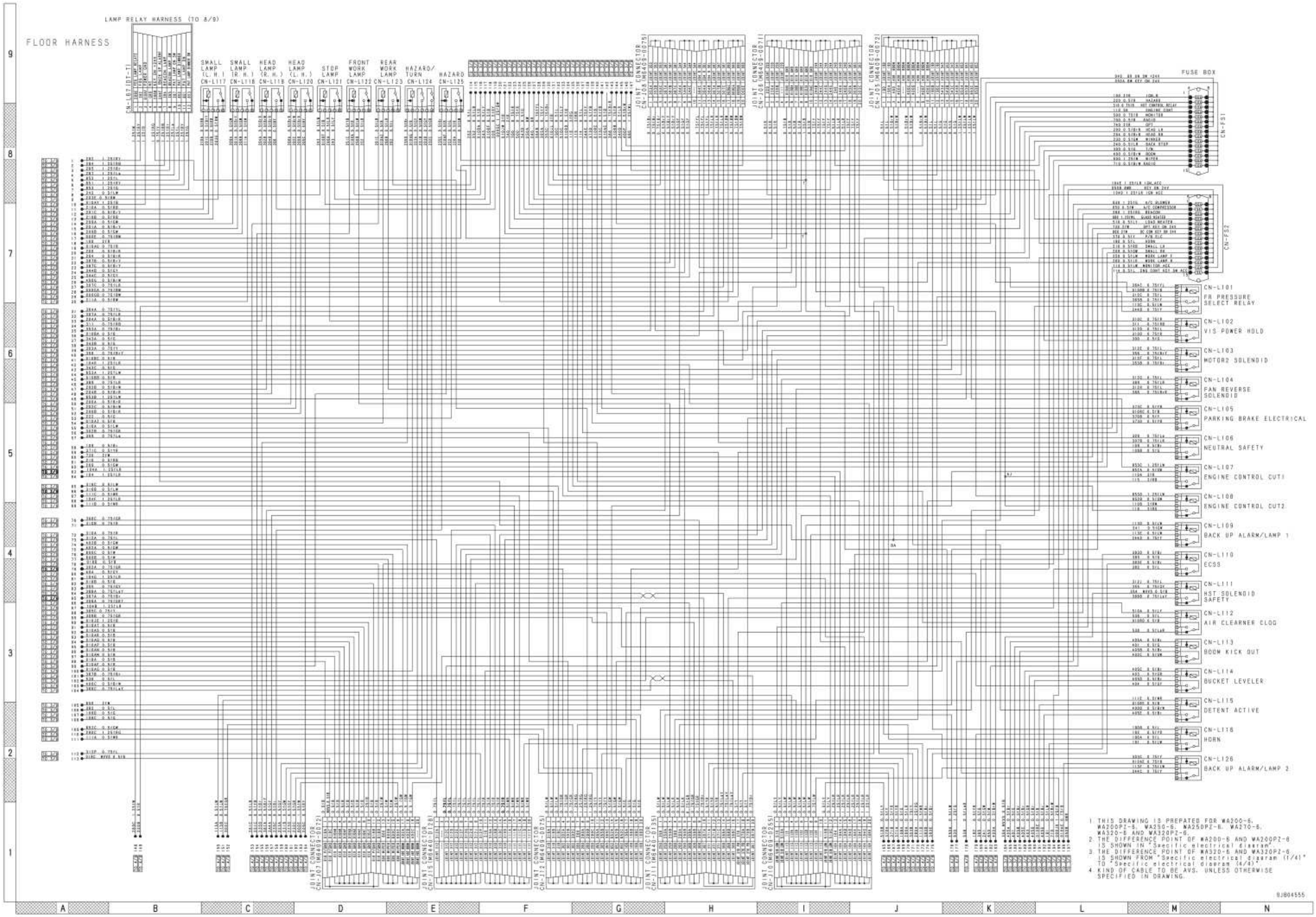
DW7BKZ

Fan Reverse Solenoid Circuit: Disconnection/Ground Fault

Action Code	Failure Code	Trouble	Fan reverse solenoid circuit: Disconnection/Ground fault (HST controller system)
E01	DW7BKZ		
Contents of trouble	• Fan reverse solenoid relay cannot be controlled because of disconnection or ground fault in fan reverse solenoid relay output system.		
Action of controller	• Keeps output to fan reverse solenoid turned OFF and stops fan reverse control function. • Even if problem disappears, system does not reset itself until starting switch is turned OFF.		
Problem that appears on machine	• Manual reverse function and automatic reverse function do not work. • Fan always turns forward (when there is disconnection). • Fan always turns in reverse (when there is ground fault).		
Related information	• Output state (ON/OFF) to fan reverse solenoid relay can be checked with monitoring function. (Monitoring code: HST – 40980 – D-OUT-17) • Method of reproducing failure code: Turn starting switch ON.		

	Causes		Standard value in normal state/Remarks on troubleshooting		
Possible causes and standard value in normal state	1	Defective fan reverse solenoid relay (Internal defect)	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.		
			Replace fan reverse solenoid relay (L104) with another relay.	Condition becomes normal.	Relay (L104) is defective.
				Condition does not become normal.	Relay (L104) is normal.
			★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Between L104 (male) (1) – (2)	Resistance	200 – 400 Ω
	2	Defective VIS power supply holding relay (Internal short circuit)	★ Prepare with starting switch OFF, then start engine and carry out troubleshooting.		
			Replace VIS power supply holding relay (L102) with another relay.	Condition becomes normal.	Relay (L102) is defective.
				Condition does not become normal.	Relay (L102) is normal.
			★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Between L102 (male) (1) – (2)	Resistance	200 – 400 Ω
	3	Disconnection in wiring harness (Disconnection in wiring or defective contact in connector)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Wiring harness between HST (female) (37) – L104 (female) (2)	Resistance	Max. 1 Ω
			Wiring harness between L104 (female) (1) – L102 (female) (3)	Resistance	Max. 1 Ω
	4	Ground fault in wiring harness (Contact with GND circuit)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Between wiring harness HST (female) (37) – L104 (female) (2) and ground	Resistance	Min. 1 MΩ

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