PART NO. TTNEE-EN-00

HITACHI

Reliable solutions

Technical Manual

Troubleshooting

ZW

220-5B

Wheel Loader

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TONEE-EN
Technical Manual (Troubleshooting)	: Vol. No.TTNEE-EN
Workshop Manual	: Vol. No.WNEE-EN

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SECTION 4

OPERATIONAL PERFORMANCE TEST

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Monitor Controller (Information) Fault Code List

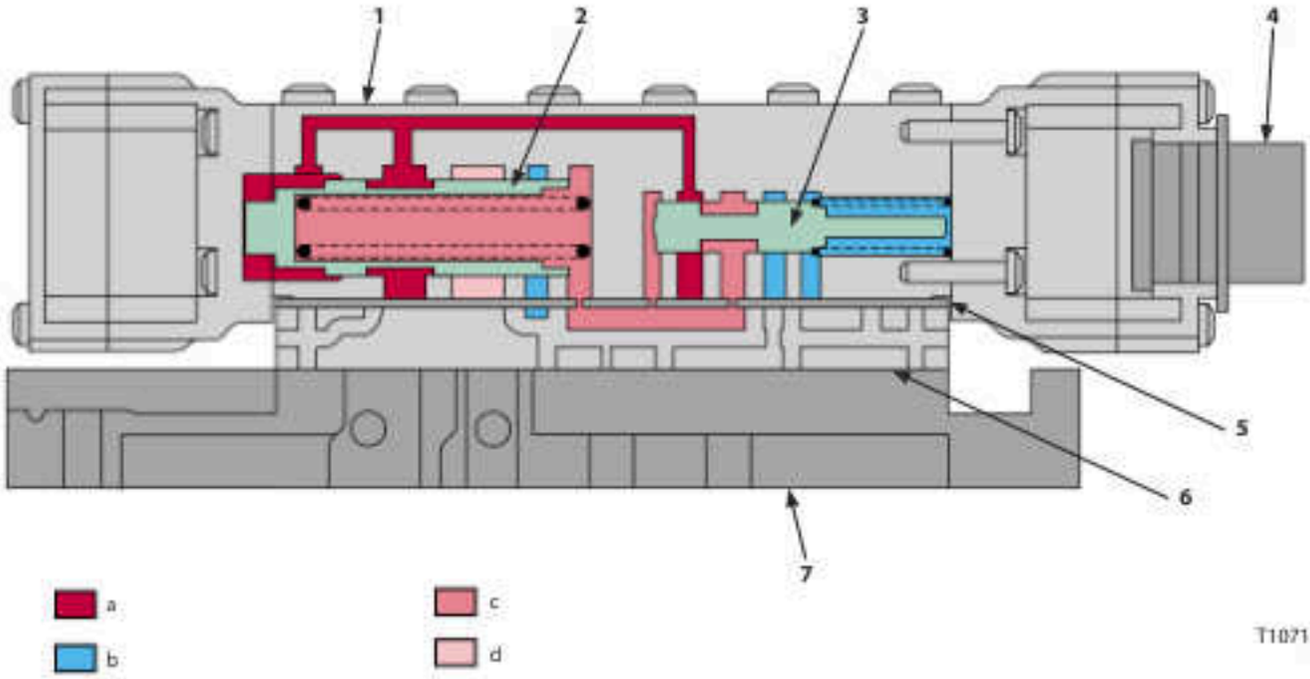
Fault Code	Trouble	Cause	Remedy
114001-2	Flash Memory Read/ Write Error	The internal memory of monitor controller is abnormal.	After initializing the monitor controller (information) by using MPDr., retry the troubleshooting. If the fault code is displayed after retry, the monitor controller may be broken. Replace the monitor controller. When initializing the monitor controller (information), all stored data is deleted.
114002-2	External RAM Read/ Write Error	The internal memory of monitor controller is abnormal.	After initializing the monitor controller (information) by using MPDr., retry the troubleshooting. If the fault code is displayed after retry, the monitor controller may be broken. Replace the monitor controller. When initializing the monitor controller (information), all stored data is deleted.
114003-2	Abnormal EEPROM	The internal memory of monitor controller is abnormal.	Retry the troubleshooting by using MPDr. If the fault code is displayed after retry, the monitor controller may be broken. Replace the monitor controller.
114006-2	Communication Terminal : Communication Error	Communication error with communication equipment	Check the communication line, power line, and fuses for communication terminal. Then, retry the troubleshooting by using MPDr. If the fault code is displayed after retry, the communication equipment may be broken. Replace the communication equipment.
114008-2	Abnormal Internal RAM	The internal memory of monitor controller is abnormal.	Retry the troubleshooting by using MPDr. If the fault code is displayed after retry, the monitor controller may be broken. Replace the monitor controller.

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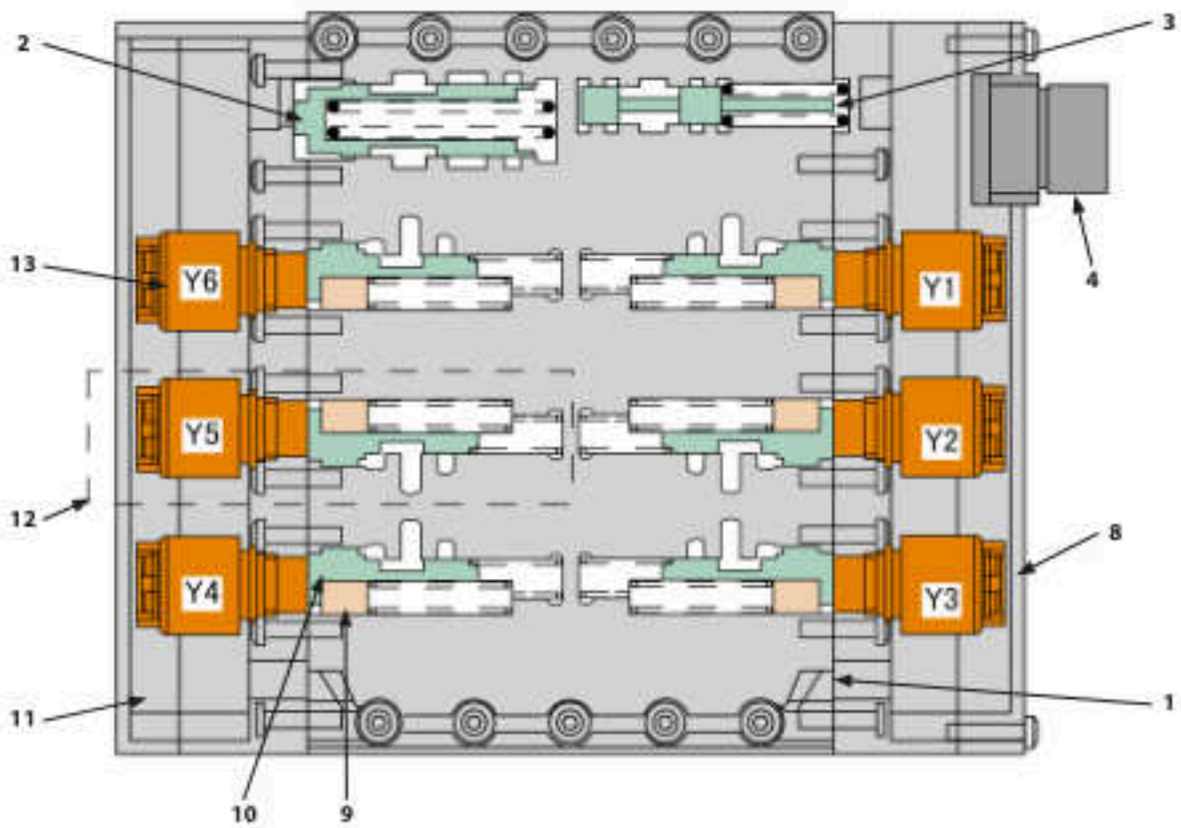
Fault Code	Trouble	Cause	Behavior of TCU	Repair Procedure
5560-3	Abnormal Reverse Light Relay Exciting Circuit High Voltage	Shorted circuit in power circuit because of faulty harness. Faulty reverse light relay. Shorted circuit in power circuit by the connector pin.	-	Check the harness between TCU and reverse light relay. Check the harness between reverse light relay and TCU. Check the harness in reverse light relay.
5560-4	Abnormal Reverse Light Relay Exciting Circuit Low Voltage	Grounding to body because of faulty harness. Faulty reverse light relay. Grounding to body by the connector pin.	-	Check the harness between TCU and reverse light relay. Check the harness between reverse light relay and TCU. Check the harness in reverse light relay.
5560-5	Faulty Open Circuit in Reverse Light Relay Exciting Circuit. TCU detects wrong voltage similar to voltage during faulty open circuit.	Faulty connection of harness and TCU. Faulty reverse light relay. Faulty contact of connector and TCU.	-	Check the harness between TCU and reverse light relay. Check the harness between reverse light relay and TCU. Check the harness in reverse light relay.

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Section of Transmission Control Valve



T107151



T107153

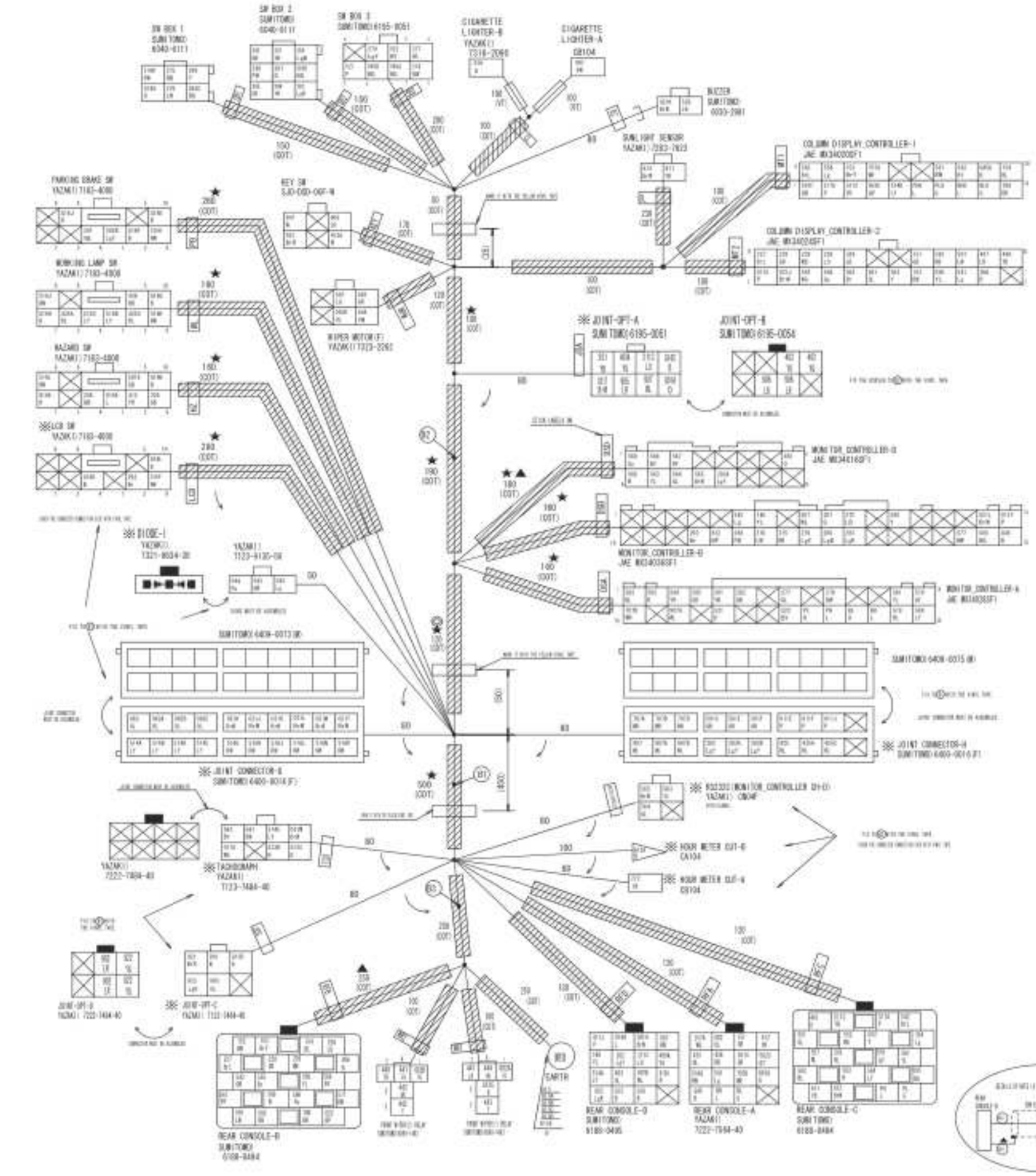
a- System Main Pressure Oil
b- Returning Oil
c- Reduced Pressure Oil
d- Converter Pressure Oil (Returning Oil)

1- Valve Body
2- Pressure Control Valve
3- Reducing Valve
4- Connector
5- Middle Plate
6- Channel Plate
7- Plate
8- Cover
9- Damper Valve
10- Spool
11- Housing
12- Modulation Circuit
13- Proportional Solenoid Valve

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Attach to Vol. No. : TTNEE-EN-00, TTNEC-EN-00

ZW220-5B/250-5B FRONT CONSOLE HARNESS



No.	SIZE	COLOR	TYPE	FROM	TO	
0115	0.5	P	AVSS	JOINT CONNECTOR-H	COLUMN DISPLAY CONTROLLER-1 (17)	1
0119	0.5	P	AVSS	JOINT CONNECTOR-H	MONITOR CONTROLLER-B (13)	2
0113	0.75	P	AVSS	REAR CONSOLE-C	JOINT CONNECTOR-H	3
0144	0.5	L	AVSS	REAR CONSOLE-F	HAZARD SW	4
0174	0.5	W-G	AVSS	REAR CONSOLE-H	*1	5
0219	0.5	Br-W	AVSS	REAR CONSOLE-G	JOINT CONNECTOR-B	6
0212	0.5	Br-W	AVSS	JOINT CONNECTOR-B	COLUMN DISPLAY CONTROLLER-2 (1)	7
0218	0.5	Br-W	AVSS	JOINT CONNECTOR-B	BUZZER	8
0215	0.5	Br-W	AVSS	JOINT CONNECTOR-B	MONITOR CONTROLLER-B (17)	9
0178	0.5	Br-W	AVSS	JOINT CONNECTOR-B	*1	10
0111	0.5	Br-W	AVSS	JOINT CONNECTOR-B	JOINT-OPT-A	11
0101	0.75	G-L	AVSS	REAR CONSOLE-A	JOINT CONNECTOR-B	12
0102	0.5	G-L	AVSS	JOINT CONNECTOR-B	*1	13
0103	0.5	G-L	AVSS	JOINT CONNECTOR-B	*1	14
0105	0.5	G-L	AVSS	JOINT CONNECTOR-B	*1	15
0107	1.25	W-R	AVSS	REAR CONSOLE-D	CIGARETTE LIGHTER-A	16
146	0.5	Y-L	AVSS	MONITOR CONTROLLER-A (1)	REAR CONSOLE-B	17
151	0.5	G-R	AVSS	COLUMN DISPLAY CONTROLLER-2 (3)	REAR CONSOLE-B	18
152	0.5	B-W	AVSS	COLUMN DISPLAY CONTROLLER-2 (2)	REAR CONSOLE-B	19
153	0.5	Br-Y	AVSS	COLUMN DISPLAY CONTROLLER-2 (1)	REAR CONSOLE-B	20
154	0.5	B-L	AVSS	REAR CONSOLE-B	COLUMN DISPLAY CONTROLLER-2 (8)	21
201	0.5	Y-B	AVSS	JOINT-OPT-A	PARKING BRAKE SW	22
202	0.5	Lg-Y	AVSS	REAR CONSOLE-D	JOINT CONNECTOR-H	23
2034	0.5	Lg-Y	AVSS	JOINT CONNECTOR-H	MONITOR CONTROLLER-B (12)	24
2035	0.5	Lg-Y	AVSS	JOINT CONNECTOR-H	PARKING BRAKE SW	25
205	0.5	B-G	AVSS	HAZARD SW	HAZARD SW	26
216	0.5	L-O	AVSS	REAR CONSOLE-D	JOINT-OPT-A	27
226	0.5	L-O	AVSS	COLUMN DISPLAY CONTROLLER-2 (10)	REAR CONSOLE-B	28
227	0.5	Br-L	AVSS	COLUMN DISPLAY CONTROLLER-2 (11)	REAR CONSOLE-B	29
228	0.5	G-R	AVSS	COLUMN DISPLAY CONTROLLER-2 (4)	REAR CONSOLE-B	30
229	0.5	W-O	AVSS	COLUMN DISPLAY CONTROLLER-2 (5)	REAR CONSOLE-B	31
304	0.5	B	AVSS	COLUMN DISPLAY CONTROLLER-2 (7)	REAR CONSOLE-B	32
172	0.5	L-B	AVSS	MONITOR CONTROLLER-B (11)	MAIN MASTER CUT-A	33
215	0.5	W-G	AVSS	MONITOR CONTROLLER-B (24)	CN-B001 1	34
176	0.5	L-W	AVSS	MONITOR CONTROLLER-B (22)	CN-B001 1	35
177	0.5	B-L	AVSS	MONITOR CONTROLLER-A (6)	CN-B001 2	36
178	0.5	B-W	AVSS	MONITOR CONTROLLER-A (23)	CN-B001 2	37
179	0.5	Lg-Y	AVSS	MONITOR CONTROLLER-B (23)	CN-B001 1	38
181	0.5	Y-B	AVSS	MONITOR CONTROLLER-A (5)	CN-B001 2	39
182	0.5	B-W	AVSS	MONITOR CONTROLLER-A (24)	CN-B001 2	40
183	0.5	Lg-W	AVSS	MONITOR CONTROLLER-B (25)	CN-B001 1	41
184	0.5	Y-R	AVSS	MONITOR CONTROLLER-A (3)	CN-B001 2	42
185	0.5	G-R	AVSS	MONITOR CONTROLLER-A (4)	CN-B001 2	43
186	0.5	Lg-B	AVSS	MONITOR CONTROLLER-B (26)	CN-B001 1	44
187	0.5	B	AVSS	MONITOR CONTROLLER-B (10)	CN-B001 1	45
188	0.5	Y-B	AVSS	MONITOR CONTROLLER-A (22)	CN-B001 2	46
189	0.5	P	AVSS	MONITOR CONTROLLER-A (12)	CN-B001 2	47
190	0.5	Br	AVSS	MONITOR CONTROLLER-B (21)	LCD CN	48
192	0.5	O	AVSS	REAR CONSOLE-C	JOINT-OPT-A	49
4004	0.5	Y-O	AVSS	REAR CONSOLE-D	JOINT-OPT-A	50
212	0.5	P-R	AVSS	HAZARD SW	REAR CONSOLE-B	51
4201	0.5	W-L	AVSS	JOINT CONNECTOR-H	REAR CONSOLE-A	52
4204	0.5	B-L	AVSS	WORKING LAMP SW	JOINT CONNECTOR-H	53
4205	0.5	B-L	AVSS	WORKING LAMP SW	JOINT CONNECTOR-H	54
420	0.5	W-B	AVSS	WORKING LAMP SW	REAR CONSOLE-A	55
441	0.75	L-O	AVSS	WIPER MOTOR (F)	WIPER MOTOR (F)	56
442	0.75	B-W	AVSS	WIPER MOTOR (F)	WIPER MOTOR (F)	57
422	0.75	P	AVSS	WIPER MOTOR (F)	WIPER MOTOR (F)	58
444	0.75	Y-W	AVSS	WIPER MOTOR (F)	WIPER MOTOR (F)	59
447	0.5	L-R	AVSS	WIPER MOTOR (F)	COLUMN DISPLAY CONTROLLER-2 (2)	60
448	0.5	P-B	AVSS	WIPER MOTOR (F)	COLUMN DISPLAY CONTROLLER-2 (6)	61
461	0.5	B	AVSS	REAR CONSOLE-C	MONITOR CONTROLLER-B (4)	62
5010	0.5	B-W	AVSS	REAR CONSOLE-A	JOINT CONNECTOR-H	63
5016	0.5	B-W	AVSS	JOINT CONNECTOR-H	HAZARD SW	64
5017	0.5	B-W	AVSS	JOINT CONNECTOR-H	COLUMN DISPLAY CONTROLLER-2 (9)	65
5020	0.5	G-Y	AVSS	REAR CONSOLE-A	COLUMN DISPLAY CONTROLLER-2 (12)	66
5170	0.5	Y-W	AVSS	REAR CONSOLE-C	COLUMN DISPLAY CONTROLLER-2 (13)	67
5144	0.5	L-Y	AVSS	REAR CONSOLE-D	JOINT CONNECTOR-G	68
5146	0.5	L-Y	AVSS	JOINT CONNECTOR-G	WORKING LAMP SW	69
5147	0.5	L-Y	AVSS	JOINT CONNECTOR-G	WORKING LAMP SW	70
5148	0.5	L-Y	AVSS	JOINT CONNECTOR-G	COLUMN DISPLAY CONTROLLER-2 (5)	71
5149	0.5	L-Y	AVSS	JOINT CONNECTOR-G	CN-B001 1	72
5160	0.5	B-W	AVSS	REAR CONSOLE-A	JOINT CONNECTOR-G	73
5169	0.5	B-W	AVSS	JOINT CONNECTOR-G	PARKING BRAKE SW	74
5170	0.5	B-W	AVSS	JOINT CONNECTOR-G	WORKING LAMP SW	75
5180	0.5	B-W	AVSS	5P-G	WORKING LAMP SW	76

No.	SIZE	COLOR	TYPE	FROM	TO	
5181	0.5	B-W	AVSS	JOINT CONNECTOR-G	HAZARD SW	77
5189	0.5	B-W	AVSS	JOINT CONNECTOR-G	CN-B001 1	78
5197	0.5	B-W	AVSS	REAR CONSOLE-C	LCD CN	79
5139	0.5	P	AVSS	REAR CONSOLE-C	COLUMN DISPLAY CONTROLLER-1 (2)	80
221	0.5	P	AVSS	MONITOR CONTROLLER-B (18)	CN-B001 2	81
222	0.5	B-Y	AVSS	CN-B001 1	MONITOR CONTROLLER-A (20)	82
223	0.5	L-W	AVSS	CN-B001 2	COLUMN DISPLAY CONTROLLER-2 (14)	83
241	0.5	Lg	AVSS	COLUMN DISPLAY CONTROLLER-1 (13)	REAR CONSOLE-A	84
242	0.5	Br-L	AVSS	COLUMN DISPLAY CONTROLLER-1 (14)	REAR CONSOLE-G	85
243	0.5	G-W	AVSS	CN-B001 1	REAR CONSOLE-G	86
244	0.5	Gr	AVSS	COLUMN DISPLAY CONTROLLER-1 (15)	CN-B001 1	87
245	0.5	Lg	AVSS	MONITOR CONTROLLER-B (9)	CN-B001 1	88
251	0.5	G-L	AVSS	COLUMN DISPLAY CONTROLLER-1 (3)	REAR CONSOLE-C	89
252	0.5	W-G	AVSS	COLUMN DISPLAY CONTROLLER-1 (4)	REAR CONSOLE-C	90
253	0.5	Y	AVSS	COLUMN DISPLAY CONTROLLER-1 (5)	REAR CONSOLE-C	91
254	0.5	Lg	AVSS	COLUMN DISPLAY CONTROLLER-1 (6)	REAR CONSOLE-C	92
255	0.5	Br	AVSS	COLUMN DISPLAY CONTROLLER-1 (7)	REAR CONSOLE-C	93
256	0.5	Y-L	AVSS	COLUMN DISPLAY CONTROLLER-1 (8)	REAR CONSOLE-C	94
257	0.5	W-L	AVSS	REAR CONSOLE-C	MONITOR CONTROLLER-B (5)	95
261	0.5	B-W	AVSS	COLUMN DISPLAY CONTROLLER-1 (1)	*1	96
262	0.5	B-Y	AVSS	COLUMN DISPLAY CONTROLLER-1 (9)	*1	97
263	0.5	Y-L	AVSS	MONITOR CONTROLLER-B (3)	CN-C001 1	98
264	0.5	B-L	AVSS	MONITOR CONTROLLER-B (2)	CN-C001 1	99
265	0.5	Br-W	AVSS	MONITOR CONTROLLER-B (20)	CN-C001 1	100
266	0.5	B-Y	AVSS	REAR CONSOLE-B	MONITOR CONTROLLER-B (1)	101
267	0.5	B-Y	AVSS	MONITOR CONTROLLER-B (1)	REAR CONSOLE-B	102
268	0.5	W	AVSS(G)	REAR CONSOLE-B	MONITOR CONTROLLER-B (8)	103
269	0.5	Gr	AVSS(G)	REAR CONSOLE-B	MONITOR CONTROLLER-B (11)	104
277	0.5	W-R	AVSS	MONITOR CONTROLLER-B (16)	REAR CONSOLE-C	105
278	0.5	W-L	AVSS	MONITOR CONTROLLER-A (27)	REAR CONSOLE-C	106
279	0.5	G-Y	AVSS	MONITOR CONTROLLER-A (13)	REAR CONSOLE-C	107
280	0.5	Y-L	AVSS	MONITOR CONTROLLER-A (11)	REAR CONSOLE-C	108
281	0.5	B-L	AVSS	MONITOR CONTROLLER-A (10)	REAR CONSOLE-C	109
282	0.5	R	AVSS	MONITOR CONTROLLER-A (9)	REAR CONSOLE-C	110
284	0.5	L-Y	AVSS	MONITOR CONTROLLER-A (28)	REAR CONSOLE-C	111
285	0.5	B-G	AVSS	REAR CONSOLE-C	MONITOR CONTROLLER-B (15)	112
2054	0.5	B-G	AVSS	CN-B001 1	SSS	113
2058	0.5	B-G	AVSS	CN-B001 1	SSS	114
2062	0.5	B-G	AVSS	CN-B001 1	SSS	115
2066	0.5	B-G	AVSS	CN-B001 1	SSS	116
301	0.5	L-W	AVSS	REAR CONSOLE-B	COLUMN DISPLAY CONTROLLER-2 (23)	117
302	0.5	W-R	AVSS	REAR CONSOLE-B	COLUMN DISPLAY CONTROLLER-2 (22)	118
311	0.5	Y-B	AVSS	REAR CONSOLE-C	CONN_SUB1 (DEUTSCH)	119
312	0.5	Br-W	AVSS	CONN_SUB1 (DEUTSCH)	REAR CONSOLE-C	120
900	0.5	W	AVSS	KEY SW (SUB)	JOINT-OPT-C	121
901	0.5	L-W	AVSS	JOINT-OPT-B	JOINT-OPT-B	122
902	0.5	Br-L	AVSS	JOINT-OPT-C	REAR CONSOLE-B	123
903	0.75	L-R	AVSS	KEY SW (DEUTSCH)	JOINT-OPT-B	124
904	0.75	L-R	AVSS	JOINT-OPT-B	JOINT-OPT-B	125
907	0.5	W-L	AVSS	JOINT-OPT-A	JOINT CONNECTOR-H	126
908	0.5	W-L	AVSS	JOINT CONNECTOR-H	MONITOR CONTROLLER-A (17)	127
909	0.75	W-L	AVSS	JOINT CONNECTOR-H	REAR CONSOLE-B	128
910	1.25	W	AVSS	REAR CONSOLE-C	KEY SW (B)	129
911	1.25	Br-R	AVSS	KEY SW (B)	JOINT-OPT-C	130
912	1.25	Y-G	AVSS	JOINT-OPT-C	JOINT-OPT-B	131
913	1.25	Lg-R	AVSS	JOINT-OPT-C	REAR CONSOLE-B	132
2111	0.5	B	AVSS	CN-B001	CN-B001	133
2134	0.5	B	AVSS	REAR MASTER CUT-B	CN-B001	134
2138	0.5	B	AVSS	CN-B001	CN-B001	135
2142	0.5	B	AVSS	CN-B001	CN-B001	136
2146	0.5	B	AVSS	JOINT-OPT-C	CN-B001	137
2150	0.75	B	AVSS	FUSE BOX(B) 10A/2P	CN-B001	138
2154	1.25	B	AVSS	CIGARETTE LIGHTER-B	REAR CONSOLE-B	139
2158	0.5	B	AVSS	HAZARD SW	CN-B001	140
2162	0.5	B	AVSS	HAZARD SW	CN-B001	141
2166	0.5	B	AVSS	JOINT-OPT-A	CN-B001	142
2170	0.5	B	AVSS	CN-B001 1	CN-B001	143
2174	0.5	B	AVSS	PARKING BRAKE SW	CN-B001	144
2178	0.5	B	AVSS	WORKING LAMP SW	CN-B001	145
2182	0.5	B	AVSS	PARKING BRAKE SW	CN-B001	146
2186	0.5	B	AVSS	LCD CN	CN-B001	147
2190	0.5	B	AVSS	LCD CN	CN-B001	148
2194	0.5	B	AVSS	MONITOR CONTROLLER-B (19)	REAR CONSOLE-B	149
2198	0.5	B	AVSS	COLUMN DISPLAY CONTROLLER-1 (16)	CN-B001	150
2202	0.75	B	AVSS	CN-B001	CN-B001	151
2206	0.5	B	AVSS	CN-B001	CN-B001	152
2210	0.5	B	AVSS	CN-B001	CN-B001	153
2214	0.5	B	AVSS	CN-B001	CN-B001	154
2218	0.5	B	AVSS	CN-B001	CN-B001	155
2222	0.5	B	AVSS	CN-B001	CN-B001	156
2226	0.5	B	AVSS	CN-B001	CN-B001	157
2230	0.5	B	AVSS	CN-B001	CN-B001	158
2234	0.5	B	AVSS	CN-B001	CN-B001	159
2238	0.5	B	AVSS	CN-B001	CN-B001	160
2242	0.5	B	AVSS	CN-B001	CN-B001	161
2246	0.5	B	AVSS	CN-B001	CN-B001	162
2250	0.5	B	AVSS	CN-B001	CN-B001	163
2254	0.5	B	AVSS	CN-B001	CN-B001	164

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