PART NO. WPTC50-EN-01

HITACHI

Reliable solutions

Workshop Manual

ZW

150-6
150PL-6

Wheel Loader

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TOPTC50-EN
Technical Manual (Troubleshooting)	: Vol. No.TTPTC50-EN
Workshop Manual	: Vol. No.WPTC50-EN

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Cylinder

Rod

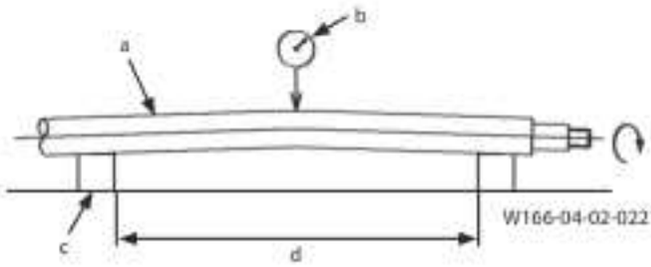


W105-04-02-094

Unit: mm (in)

Cylinder Name	Recommended Size After Re-Manufacturing (A)
Lift Arm	$65^{0.010}_{0.023}$ ($2.56^{0.0004}_{0.0009}$)
Bucket	$60^{0.030}_{0.076}$ ($2.36^{0.0012}_{0.0030}$)
Steering	$40^{0.008}_{0.020}$ ($1.58^{0.0004}_{0.0008}$)
Quick Coupler	$25^{0.020}_{0.053}$ ($0.98^{0.0008}_{0.0021}$)

Rod Bend and Run Out



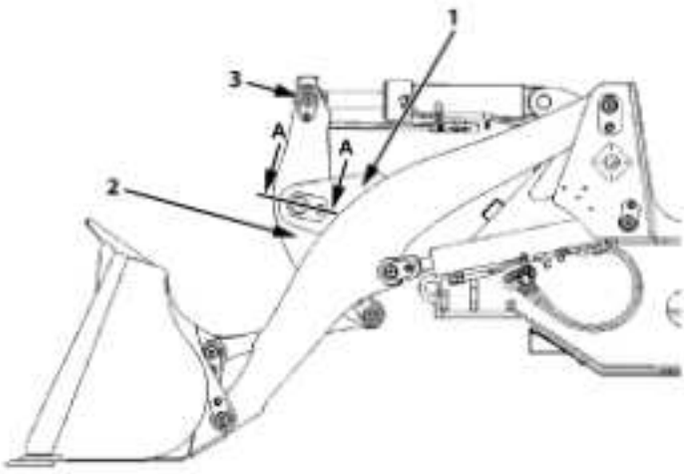
W166-04-02-022

a- Cylinder Rod
b- Dial Gauge
c- V Block
d- 1 m (39.4 in)

Bend	Run Out	Remedy
0.5 mm/1 m (0.020 in/39.4 in)	1.0 mm/1 m (0.039 in/39.4 in)	Replace

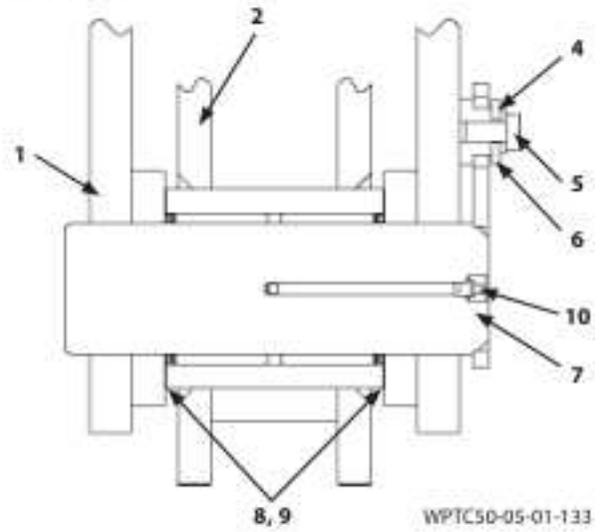
IMPORTANT: When measuring the items, bend and run out of the cylinder rod, the distance (d) may not be able to keep 1 m (39.4 in). In this case, measure the full length of the rod.

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WPTC50-05-01-132

Section A-A



WPTC50-05-01-133

CAUTION: The bell crank (2) weight: 140 kg (310 lb)

2. Attach nylon slings onto pin (3). Hoist bell crank (2). Align the bell crank (2) mounting hole with the lift arm (1) mounting hole.

IMPORTANT: Use one or more spacers (8) and shims (9) respectively at the right and left sides.

3. Fit spacer (8) or shim (9) to the right and left holes of the bell crank (2) mounting hole. Adjust the total clearance between bell crank (2) and lift arm (1) to 1.5 mm (0.051 in) or less in total on the right and left sides.

NOTE: Spacer (8) thickness: 2.3 mm (0.091 in), Shim (9) thickness: 1.6 mm (0.063 in)

CAUTION: The pin (7) weight: 21 kg (47 lb)

CAUTION: Metal fragments may fly off when a hammer is used. Wear the necessary protection, such as goggles and hard hats, in order to prevent personal injury.

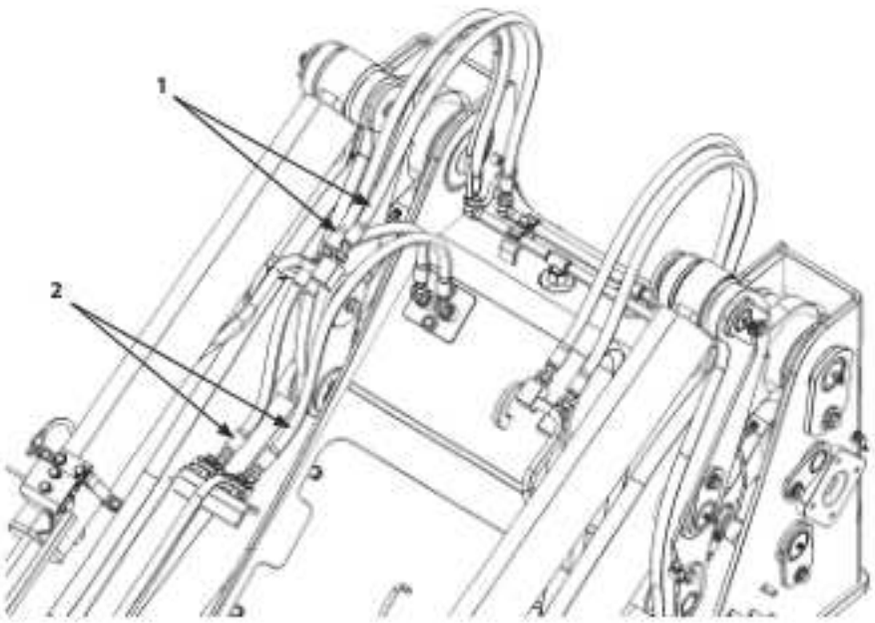
4. Install pin (7) by using a hammer.
5. Install washers (4, 6) and bolt (5).

   : 24 mm

   : 210 N-m (155 lbf-ft)

6. Apply grease onto grease fitting (10).

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WNDF-05-03-019

CAUTION: Release any pressure in the hydraulic oil tank. (Refer to W1-5-1.)

CAUTION: Release any pressure in the front attachment hydraulic circuit. (Refer to W1-5-1.)

25. Disconnect hoses (1) (2 used).

    : 27 mm

26. Disconnect hose (2) (2 used).

    : 27 mm

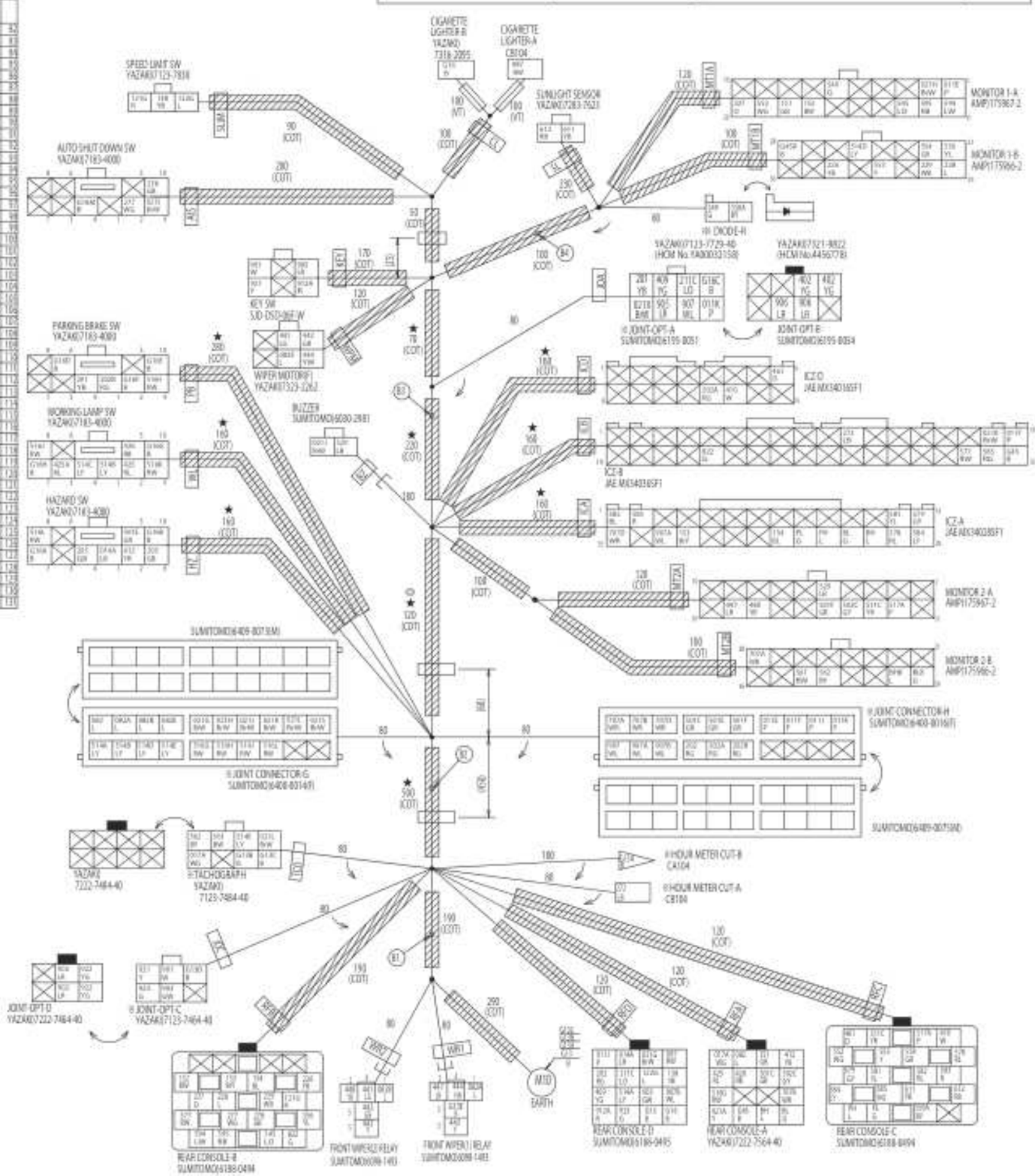
27. Disconnect another hoses (1) (2 used) and hose (2) (2 used) in the same way as step 25 to step 26.

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No.	SIZE	COLOR	TYPE	FROM	TO	
01 IE	0.5	P	AVSS	JOINT CONNECTOR-H	MONITOR 1-A(1)	1
01 IF	0.5	P	AVSS	JOINT CONNECTOR-H	ICZ-B(1)	2
01 IJ	0.75	P	AVSS	REAR CONSOLE-D	JOINT CONNECTOR-H	3
01 IK	0.5	P	AVSS	JOINT CONNECTOR-H	JOINT-OPT-A	4
01 KB	0.5	L-B	AVSS	REAR CONSOLE-D	HAZARD SW	5
01 KL	0.5	W-G	AVSS	REAR CONSOLE-A	TACHOGRAPH	6
02 FL	0.5	Br-W	AVSS	REAR CONSOLE-D	JOINT CONNECTOR-G	7
02 FM	0.5	Br-W	AVSS	JOINT CONNECTOR-G	MONITOR 1-A(2)	8
02 FJ	0.5	Br-W	AVSS	JOINT CONNECTOR-G	BUZZER-H	9
02 FK	0.5	Br-W	AVSS	JOINT CONNECTOR-G	ICZ-B (1)	10
02 FC	0.5	Br-W	AVSS	JOINT CONNECTOR-G	TACHOGRAPH	11
02 FD	0.5	Br-W	AVSS	JOINT CONNECTOR-G	AUTO SHUT DOWN SW	12
02 FX	0.5	Br-W	AVSS	IG I/S	JOINT-OPT-A	13
0301	0.75	L	AVSS	REAR CONSOLE-A	JOINT CONNECTOR-G	14
0302A	0.5	L	AVSS	JOINT CONNECTOR-G	HOT WIPER 1 RELAY	15
0302B	0.5	L	AVSS	JOINT CONNECTOR-G	HOT WIPER2 RELAY	16
0408	0.75	L	AVSS	JOINT CONNECTOR-G	WIPER MOTOR (F)	17
0501	1.25	R-W	AVSS	REAR CONSOLE-D	CIGARETTE LIGHTER-B	18
1292	0.5	R	AVSS	REAR CONSOLE-B	SPEED LIMIT SW	19
1293	0.5	L	AVSS	SPEED LIMIT SW	REAR CONSOLE-D	20
138	0.5	Y-B	AVSS	SPEED LIMIT SW	REAR CONSOLE-D	21
151	0.5	G-B	AVSS	MONITOR 1-A (3)	REAR CONSOLE-A	22
152	0.5	W-W	AVSS	MONITOR 1-A(1)	REAR CONSOLE-B	23
153	0.5	Br-Y	AVSS	ICZ-A(1)	REAR CONSOLE-B	24
154	0.5	B-L	AVSS	REAR CONSOLE-B	ICZ-A(2)	25
201	0.5	Y-B	AVSS	JOINT-OPT-A	PARKING BRAKE SW	26
202	0.5	R-G	AVSS	REAR CONSOLE-D	JOINT CONNECTOR-H	27
202A	0.5	R-G	AVSS	JOINT CONNECTOR-H	ICZ-D (1)	28
202B	0.5	R-G	AVSS	JOINT CONNECTOR-H	PARKING BRAKE SW	29
205	0.5	G-B	AVSS	HAZARD SW	HAZARD SW	30
213C	0.5	L-O	AVSS	REAR CONSOLE-D	JOINT-OPT-A	31
126	0.5	Y-B	AVSS	MONITOR 1-B (4)	REAR CONSOLE-B	32
127	0.5	O	AVSS	MONITOR 1-A (2)	REAR CONSOLE-B	33
128	0.5	L	AVSS	MONITOR 1-B (2)	REAR CONSOLE-B	34
129	0.5	W-B	AVSS	MONITOR 1-B (1)	REAR CONSOLE-B	35
272	0.5	L-B	AVSS	ICZ-B(1)	HOUR METER CUT-A	36
277	0.5	W-G	AVSS	REAR CONSOLE-B	AUTO SHUT DOWN SW	37
278	0.5	G-B	AVSS	AUTO SHUT DOWN SW	REAR CONSOLE-B	38
402	0.5	Y-G	AVSS	JOINT-OPT-B	JOINT-OPT-A	39
409	0.5	Y-G	AVSS	REAR CONSOLE-D	JOINT-OPT-A	40
410	0.5	W	AVSS	REAR CONSOLE-C	ICZ-D(1)	41
412	0.5	Y-R	AVSS	HAZARD SW	REAR CONSOLE-A	42
425	0.5	R-L	AVSS	WORKING LAMP SW	REAR CONSOLE-A	43
425A	0.5	R-L	AVSS	WORKING LAMP SW	421	44
426	0.5	R-B	AVSS	WORKING LAMP SW	REAR CONSOLE-A	45
441	0.75	L-G	AVSS	WIPER MOTOR (F)-Lo	HOT WIPER 1 RELAY	46
442	0.75	G-R	AVSS	WIPER MOTOR (F)-Hi	HOT WIPER 1 RELAY	47
443	0.75	Y	AVSS	HOT WIPER 1 RELAY	HOT WIPER 2 RELAY	48
444	0.75	Y-W	AVSS	HOT WIPER 1 RELAY	WIPER MOTOR (F)	49
447	0.5	L-R	AVSS	HOT WIPER 1 RELAY	MONITOR 2-B (1)	50
448	0.5	Y-B	AVSS	HOT WIPER 1 RELAY	MONITOR 2-A (1)	51
451	0.5	O	AVSS	REAR CONSOLE-C	ICZ-D(1)	52
503C	0.5	G-R	AVSS	REAR CONSOLE-A	JOINT CONNECTOR-H	53
503E	0.5	G-R	AVSS	JOINT CONNECTOR-H	HAZARD SW	54
503F	0.5	G-R	AVSS	JOINT CONNECTOR-H	MONITOR 2-B (1)	55
505C	0.5	G-Y	AVSS	REAR CONSOLE-A	MONITOR 2-A (1)	56
512C	0.5	Y-R	AVSS	REAR CONSOLE-C	MONITOR 2-A (2)	57
514A	0.5	L-Y	AVSS	REAR CONSOLE-D	JOINT CONNECTOR-G	58
514B	0.5	L-Y	AVSS	JOINT CONNECTOR-G	WORKING LAMP SW	59
514C	0.5	L-Y	AVSS	JOINT CONNECTOR-G	WORKING LAMP SW	60
514D	0.5	L-Y	AVSS	JOINT CONNECTOR-G	MONITOR 1-B (12)	61
514E	0.5	L-Y	AVSS	JOINT CONNECTOR-G	TACHOGRAPH	62
516V	0.5	R-W	AVSS	REAR CONSOLE-A	JOINT CONNECTOR-G	63
516H	0.5	R-W	AVSS	JOINT CONNECTOR-G	PARKING BRAKE SW	64
516J	0.5	R-W	AVSS	JOINT CONNECTOR-G	WORKING LAMP SW	65
516K	0.5	R-W	AVSS	516J	WORKING LAMP SW	66
516L	0.5	R-W	AVSS	JOINT CONNECTOR-G	HAZARD SW	67
517A	0.5	P	AVSS	REAR CONSOLE-C	MONITOR 2-A (3)	68
525	0.5	L-B	AVSS	BUZZER-H	MONITOR 2-A (5)	69
546	0.5	L-O	AVSS	REAR CONSOLE-B	MONITOR 1-A (13)	70
549	0.5	G	AVSS	MONITOR 1-A (6)	DIODE-H	71
549A	0.5	B-Y	AVSS	DIODE-H	REAR CONSOLE-C	72
552	0.5	W-G	AVSS	MONITOR 1-A (10)	REAR CONSOLE-C	73
553	0.5	Y	AVSS	MONITOR 1-B (3)	REAR CONSOLE-C	74
554	0.5	G-R	AVSS	MONITOR 1-B (2)	REAR CONSOLE-C	75
556	0.5	Y-L	AVSS	MONITOR 1-B (7)	REAR CONSOLE-B	76
561	0.5	R-W	AVSS	MONITOR 1-B (14)	TACHOGRAPH	77
562	0.5	B-Y	AVSS	MONITOR 1-B (13)	TACHOGRAPH	78
577	0.5	R-W	AVSS	ICZ-A(3)	REAR CONSOLE-B	79
578	0.5	R-L	AVSS	ICZ-A(2)	REAR CONSOLE-C	80
579	0.5	G-Y	AVSS	ICZ-A(4)	REAR CONSOLE-C	81

No.	SIZE	COLOR	TYPE	FROM	TO	
581	0.5	Y-L	AVSS	ICZ-A (5)	REAR CONSOLE-C	82
582	0.5	B-L	AVSS	REAR CONSOLE-C	ICZ-A(3)	83
583	0.5	R	AVSS	ICZ-A(2)	REAR CONSOLE-C	84
584	0.5	L-Y	AVSS	ICZ-A(3)	REAR CONSOLE-C	85
585	0.5	R-G	AVSS	ICZ-B(3)	REAR CONSOLE-C	86
594	0.5	L-W	AVSS	MONITOR 1-A(13)	REAR CONSOLE-B	87
595	0.5	R-B	AVSS	MONITOR 1-A(13)	REAR CONSOLE-B	88
617	0.5	Y-B	AVSS	REAR CONSOLE-C	SUNLIGHT SENSOR	89
617Z	0.5	R-B	AVSS	SUNLIGHT SENSOR	REAR CONSOLE-C	90
707A	0.5	W-IR	AVSS	JOINT CONNECTOR-H	MONITOR 2-B (2)	91
707B	0.5	W-IR	AVSS	REAR CONSOLE-A	JOINT CONNECTOR-H	92
707D	0.5	W-IR	AVSS	JOINT CONNECTOR-H	ICZ-A(1)	93
817	0.5	G	AVSS	ICZ-B (1)	REAR CONSOLE-B	94
901	0.5	W	AVSS	KEY SW-ACC	JOINT-OPT-C	95
902	0.5	L-R	AVSS	JOINT-OPT-D	JOINT-OPT-D	96
903	0.5	G-W	AVSS	JOINT-OPT-C	REAR CONSOLE-D	97
905	0.75	L-R	AVSS	KEY SW-START	JOINT-OPT-A	98
906	0.75	L-R	AVSS	JOINT-OPT-B	JOINT-OPT-B	99
907	0.75	W-L	AVSS	JOINT-OPT-A	JOINT CONNECTOR-H	100
907A	0.5	W-L	AVSS	JOINT CONNECTOR-H	ICZ-A(7)	101
907B	0.75	W-L	AVSS	JOINT CONNECTOR-H	HEATER CONSOLE-D	102
912A	1.25	R	AVSS	REAR CONSOLE-D	KEY SW-B1	103
921	1.25	Y	AVSS	KEY SW-ON	JOINT-OPT-C	104
921A	0.5	Y	AVSS	ECU	HEAR CONSOLE-A	105
922	1.25	Y-G	AVSS	JOINT-OPT-D	JOINT-OPT-D	106
923	1.25	G	AVSS	JOINT-OPT-C	REAR CONSOLE-D	107
G11	2	B	AEX	EARTH	REAR CONSOLE-D	108
G11A	0.5	B	AEX	WIPER MOTOR (OUT) B	EARTH	109
G11B	0.5	B	AEX	TACHOGRAPH	EARTH	110
G11C	0.5	B	AEX	TACHOGRAPH	EARTH	111
G11D	0.5	B	AVSS	JOINT-OPT-C	G11	112
G11E	0.75	B	AVSS	WIPER MOTOR (F)	G11	113
G16	1.25	B	AVSS	CIGARETTE LIGHTER-B	REAR CONSOLE-D	114
G16A	0.5	B	AVSS	HAZARD SW	G16	115
G16B	0.5	B	AVSS	HAZARD SW	G16	116
G16C	0.5	B	AVSS	JOINT-OPT-A	G16	117
G16D	0.5	B	AVSS	PARKING BRAKE SW	G16	118
G16E	0.5	B	AVSS	PARKING BRAKE SW	G16	119
G16F	0.5	B	AVSS	PARKING BRAKE SW	G16	120
G16G	0.5	B	AVSS	WORKING LAMP SW	G16	121
G16H	0.5	B	AVSS	WORKING LAMP SW	G16	122
G16M	0.5	B	AVSS	AUTO SHUT DOWN SW	G16	123
G45	0.75	B	AVSS	ICZ-B(6)	REAR CONSOLE-A	124
G45A	0.5	B	AVSS	MONITOR 1-B (8)	G45	125
IPH	0.5	L	AVSS(C)	ICZ-A(3)	REAR CONSOLE-C	126
IPL	0.5	G	AVSS(C)	ICZ-A(1)	REAR CONSOLE-C	127
IPH	0.5	L	AVSS(C)	ICZ-A(5)	REAR CONSOLE-A	128
IPL	0.5	G	AVSS(C)	ICZ-A(2)	REAR CONSOLE-A	129
IPH	0.5	L	AVSS(C)	IPH	MONITOR 2-B (3)	130
IPL	0.5	G	AVSS(C)	IPL	MONITOR 2-B (2)	131

⚠ CAUTION: Parts numbers on the drawing are provided only for reference purpose.
To order parts on the drawing, be sure to consult the Parts Catalog.



FRONT CONSOLE HARNESS

Applicable Machine

Attach to vol. No.	Model
TTPTC50-EN-00	ZW150-6

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