CEBM018501

SHOP MANUAL

KOMATSU®

WB146PS-5

BACKHOE LOADER

SERIAL NUMBERS **WB146PS-5 A43001** and UP

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CONTENTS

01	GENERAL	01-1
10	STRUCTURE, FUNCTION AND MAINTENANCE STANDARD	10-1
20	TESTING, ADJUSTING AND TROUBLESHOOTING	20-1
30	DISASSEMBLY AND ASSEMBLY	30-1
90	OTHER	90-1

MidWestTech | Komatsu WB146PS-5 Backhoe Loader Service Manual | Publication CEBM... Order the manual at mid-west-tech.com >

MAIN CONTROL VALVE 10-40
UNLOADING VALVE 10-41
LS PRESSURE 10-44
LS BYPASS PLUG 10-46
PRESSURE COMPENSATION 10-47
PRESSURE COMPENSATION VALVE 10-48
PRIORITY VALVE 10-49
PPC REDUCING VALVE 10-50
STEERING UNIT 10-53
TECHNICAL DATA 10-53
OPERATION 10-53
PPC VALVES 10-54
STANDARD VALVE 10-54
OPERATION 10-56
PPC VALVE (FLOAT + RETURN TO DIG) 10-60
OPERATION 10-62
OUTRIGGER 10-66
OPERATION 10-67
BACKHOE 10-70
LEFT VALVE 10-70
RIGHT VALVE 10-71
SOLENOID VALVE 10-72
HYDRAULIC CONTROLS WITHOUT MULTI-PURPOSE BUCKET 10-72
HYDRAULIC CONTROLS WITH MULTI-PURPOSE BUCKET 10-73
SAFETY VALVES 10-74
BUCKET RAISE 10-74
BUCKET DUMP 10-75
BOOM 10-76
ARM 10-77
LOADER CYLINDERS 10-78
BOOM 10-78
CHARACTERISTICS 10-78
BUCKET 10-79
CHARACTERISTICS 10-79
MULTI-PURPOSE (MP) BUCKET 10-80
CHARACTERISTICS 10-80
BACKHOE CYLINDERS 10-81
BOOM 10-81
CHARACTERISTICS 10-81
ARM 10-82
CHARACTERISTICS 10-82
BUCKET 10-83
CHARACTERISTICS 10-83
TELESCOPIC ARM CYLINDER 10-84
CHARACTERISTICS 10-84
SWING 10-85
CHARACTERISTICS 10-85
OUTRIGGER 10-86
CHARACTERISTICS 10-86

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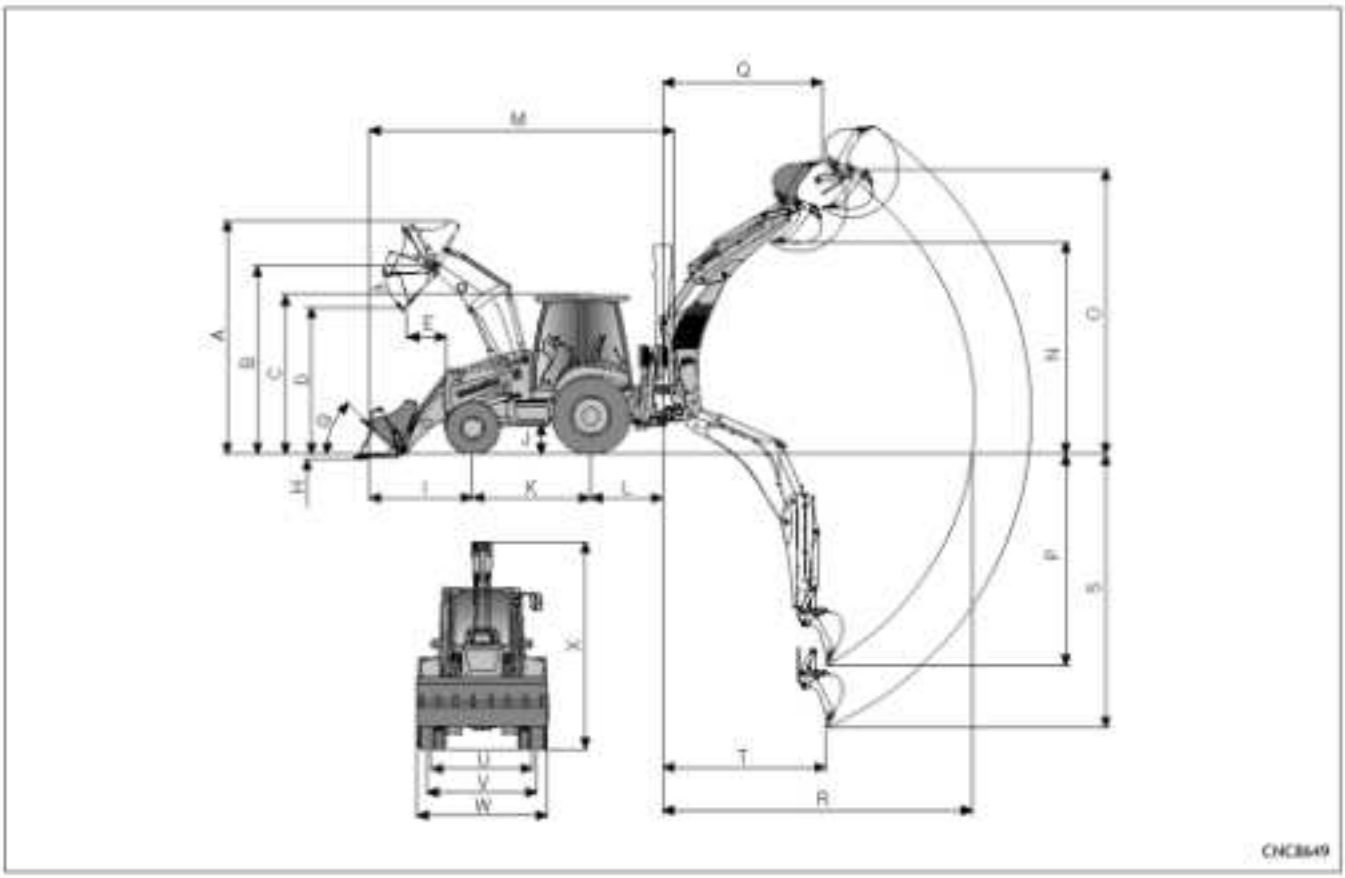
WORK EQUIPMENT 10-88
LOADER 10-88
BACKHOE 10-90
AIR CONDITIONING 10-93

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SPECIFICATION DRAWING

SPECIFICATIONS

MACHINE DIMENSIONS AND WEIGHTS



A	Maximum height	4230 mm (13'11")	O	Maximum digging height	5319 mm (17'5")
B	Hinge pin height	3367 mm (11'1")		-with telescopic arm	5885 mm (19'4")
C	Overall height, ROPS Cab	2935 mm (9'8")	P	Digging depth (2' level bottom)	4370 mm (14'4")
D	Maximum dumping height	2622 mm (8'7")		-with telescopic arm	5479 mm (18'0")
E	Reach at maximum height and 45° dump angle	750 mm (2'5")	Q	Reach at maximum height	2828 mm (9'3")
				-with telescopic arm	3877 mm (12'9")
F	Dumping angle	45°	R	Maximum reach from swing center	5742 mm (18'10")
G	Rollback angle	45°		-with telescopic arm	6755 mm (22'2")
H	Digging depth	138 mm (5'4")	S	Maximum digging depth	4423 mm (14'6")
I	Bucket reach (transport)	2023 mm (6'8")		-with telescopic arm	5533 mm (18'2")
J	Ground clearance	430 mm (1'5")	T	Digging reach	2320 mm (7'7")
K	Wheel base	2175 mm (7'2")	U	Rear tread	1800 mm (5'11")
L	Backhoe swing center distance	1175 mm (3'10")	V	Front tread	1874 mm (6'2")
M	Transport length	7432 mm (24'5")	W	Overall width (with bucket)	2356 mm (7'9")
N	Dumping height (SAE)	3676 mm (12'1")	X	Backhoe transport height	3676 mm (12'1")
	-arm retracted	3658 mm (12')		-with telescopic arm	3746 mm (12'4")
	-arm extended	4369 mm (14'4")			

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Noise while driving	
CAUSES	**REMEDY**
Excessive backlash between pinion and ring gear	Adjust.
Worn out pinion and ring gear	Replace.
Worn out pinion bearings	Replace.
Pinion bearings loose	Adjust.
Excessive axial pinion backlash	Adjust.
Worn out differential bearings	Replace.
Differential bearings loose	Adjust.
Ring gear out of round	Replace.
Low oil level	Add oil.
Poor or worn oil	Replace.
Bent half shaft	Replace.

Noise while driving in neutral	
CAUSES	**REMEDY**
Noises coming from axle are usually heard but not loud when vehicle moves in neutral gear.	Replace or adjust (see above).
Incorrect backlash between pinion and ring sound heard while decelerating, disappears while increasing speed	Replace.
Pinion or input flange worn out	Adjust.

Intermittent noise	
CAUSES	**REMEDY**
Ring gear damaged	Replace bevel gear set.
Differential box bolts loosened	Tighten to torque.

Constant noise	
CAUSES	**REMEDY**
Ring gear teeth or pinion damaged	Replace bevel gear set.
Worn out bearings	Replace.
Pinion spline worn out	Replace.
Bent half shaft	Replace.

Noise while steering	
CAUSES	**REMEDY**
Worn out differential gears	Replace.
Worn out differential box or spider	Replace.
Differential thrust washers worn out	Replace.
Half shaft spline worn out	Replace.

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CONNECTOR REPAIR PROCEDURES

These steps outline the proper repair procedures for the HD30 and DT type wire connectors. Failure to follow these procedures may result in a failed contact situation in the electrical circuit or damage to the connector or wiring harness.

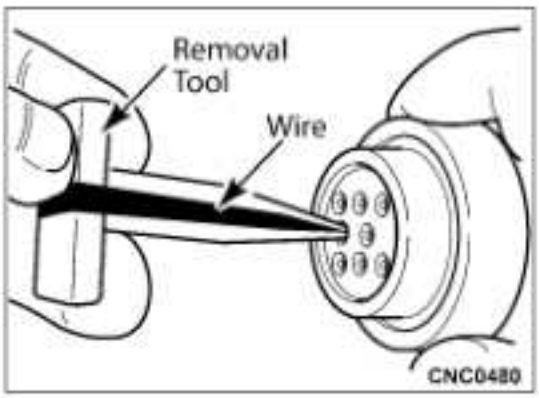
CONTACT TERMINAL REMOVAL (HD30 TYPE)

1. Obtain the correct removal tool according to the wire size used in the connector.

2. With the rear insert part of the connector facing you, snap the removal tool over the wire of the contact terminal you will be removing.

Remark

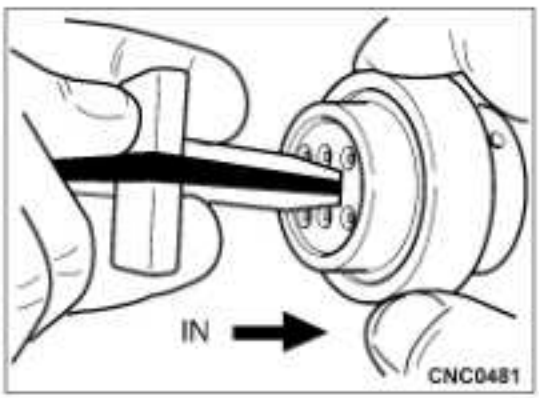
Using a removal tool that is too large or too small will hinder wire removal and may damage the connector or removal tool. Always use the correct removal tool size for the wire gauge you are servicing.



3. In a straight line, carefully slid the removal tool along the wire and into the grommet until a contact resistance is felt.

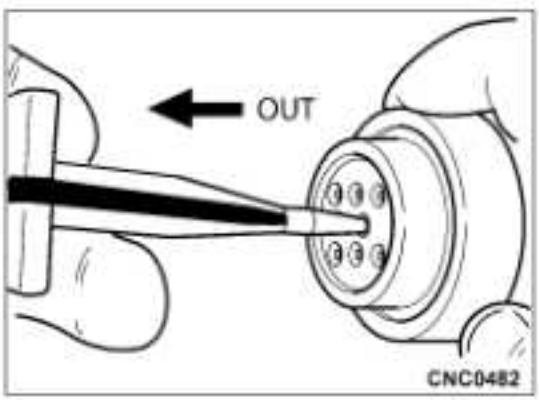
Remark

Do not pull on the wire or twist the tool when inserting removal tool into the grommet. Damage to the tool or connector may result.



4. Once tool is fully inserted into the connector, carefully pull the removal tool and contact terminal wire out of the connector.

5. If contact terminal wire will not come out, remove tool and reinsert removal tool again.



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ELECTRICAL SCHEMATIC
LIST OF CONNECTORS (WIRING - 8 OF 8)

NAME/ ITEM	DESCRIPTION	KUE P/N
A6	FUNCTION MACHINE UNIT	
B13	RETURN TO DIG SENSOR	
B59	BRAKE OIL LOW LEVEL SWITCH	
B97	REAR HORN SWITCH	
B112	THERMISTOR SWITCH	
B113	AIR FILTER BLOCKED SWITCH	
B115	ENGINE OIL LOW PRESSURE SWITCH	
B121	HORN	
B208	FUEL LEVEL SENSOR	
B210	GEARING OIL TEMPERATURE SENSOR	
E211	CARDAN SENSOR	
E156	RIGHT REAR LIGHT	
E154	LEFT REAR LIGHT	
E155	LEFT INDICATOR LIGHT	
E157	RIGHT INDICATOR LIGHT	
E136	LATERAL RIGHT REAR WORKING LIGHT	
E138	LATERAL LEFT REAR WORKING LIGHT	
E143	LATERAL RIGHT FRONT WORKING LIGHT	
E146	LATERAL LEFT FRONT WORKING LIGHT	
E147	LEFT FRONT INDICATOR LIGHT	
E148	BEACON LAMP	
E151	RIGHT FRONT INDICATOR LIGHT	
E152	ROOM LAMP	
E400	FRONT RIGHT WORKING LIGHT	
E401	FRONT LEFT WORKING LIGHT	
E402	REAR LEFT WORKING LIGHT	
E403	REAR RIGHT WORKING LIGHT	
F1	CENTRAL FRONT WORKING LIGHT FUSE 15A	
F2	CENTRAL REAR WORKING LIGHT FUSE 15A	
F3	RIGHT POSITION LIGHT FUSE 3A	
F4	LEFT POSITION LIGHT FUSE 3A	
F5	HORN FUSE 10A	
F6	LATERAL REAR WORKING LIGHT FUSE 15A	
F7	WINDSHIELD WIPER - WASHER + REAR HORN FUSE 7.5A	
F8	STOP LIGHT SWITCH FUSE 7.5A	
F9	LATERAL FRONT WORKING LIGHT FUSE 15A	
F10	FRONT WINDSHIELD - MOTOR SUPPLY FUSE 10A	
F11	OPTIONAL FUSE 7.5A	
F12	FRONT AND LATERAL INSTRUMENTS SUPPLY + BUZZER FUSE 5A	
F13	SUPPLY LEVER GRIP FUSE 10A	
F14	LIGHT SWITCH + SWITCH OPTIONAL FUSE 10A	
F15	ELETTROSTOP + SAFETY STARTER FUSE 10A	
F16	BEACON LIGHT FUSE 10A	
F17	WARNING SWITCH FUSE 15A	
F18	CABIN LAMP + CIGARETTE LIGHTER FUSE 10A	
F19	LOW BEAM LIGHT FUSE 15A	
F20	MAIN BEAM LIGHT FUSE 15A	
F21	RETURN SENSOR SUPPLY + DIG FUSE 10A	
F22	E/C POWER FUSE 7.5A	
F23	+ 15 STEERING UNIT FUSE 10A	
F24	FLASHER FUSE 7.5A	
F25	STEERING COLUMN SWITCH + REVERSE BUZZER FUSE 10A	
F27	GENERAL FUSE 15A	
G1	BATTERY	
G118	STARTER	
G119	GENERATOR	
H17	BUZZER	
K1	ANTI REPETITION STARTING UNIT	
K2	FLASHER	
K3	LOW BEAM RELAY	
K4	MAIN BEAM RELAY	
K5	FRONT HORN RELAY	
K6	RETURN TO DIG SOLENOID VALVE RELAY	
K7	LIGHT STOP RELAY	
K8	ASCENT START RELAY	
K9	FORWARD SPEED RELAY	
K10	REVERSE SPEED RELAY	
K11	STOP DRIVE RELAY	
K45	PREHEATING RELAY	
K56	STARTING RELAY	
K61	SHOVEL RELAY	
M42	REAR WINDSHIELD WASHER	
M55	MOTOR PUMP	
M58	FRONT WINDSHIELD WASHER	
M116	CONTROLLER ELECTRONIC CLUTCH	
R114	PREHEATING	
S1	KICK DOWN SWITCH	
S2	SOLENOID VALVE E.C. POWER SWITCH	
S3	LOCK GRAB SWITCH	
S4	DECLUTCH SWITCH	

NAME/ ITEM	DESCRIPTION	KUE P/N
S5	OPEN GRAB SWITCH	
S6	DIFFERENTIAL SWITCH	
S24	STARTING SWITCH	
S40	SEAT SWITCH	
S41	REAR HORN SWITCH	
S46	PARKING BRAKE SWITCH	
S53	STEP SWITCH	
S54	STOP LIGHT SWITCH	
S57	STEERING COLUMN GEAR SHIFT	
S60	STEERING COLUMN LIGHT SWITCH	
S80	HIGH CONTROL SWITCH	
S81	ARM UNLOCK SWITCH	
S83	E/C POWER SWITCH	
S84	EMPTY SOLENOID VALVE SWITCH	
S85	REAR HORN SWITCH	
S86	GENERAL LIGHT SWITCH	
S87	4WD SWITCH	
S88	PPC SWITCH	
S89	WARNING SWITCH	
S169	REAR WORKING LIGHT SWITCH	
S187	BEACON LIGHT SWITCH	
S188	FRONT WORKING LIGHT SWITCH	
Y48	FLOAT SOLENOID VALVE	
Y49	RETURN TO DIG SOLENOID VALVE	
Y60	EMPTY SOLENOID VALVE	
Y90	REAR PPC SOLENOID VALVE	
Y91	E/C POWER SOLENOID VALVE	
Y92	BACK UP ALARM SOLENOID VALVE	
Y93	PPC SOLENOID VALVE	
Y94	LOCK DIFFERENTIAL GEAR SOLENOID VALVE	
Y95	ARM UNLOCK SOLENOID VALVE	
Y96	PLATE UNLOCK SOLENOID VALVE	
Y98	GRAB CLOSE SOLENOID VALVE	
Y99	GRAB OPEN SOLENOID VALVE	
Y117	ELETTROSTOP	
Y200	4th GEAR SOLENOID VALVE	
Y201	FORWARD SOLENOID VALVE	
Y202	1st GEAR SOLENOID VALVE	
Y203	2nd GEAR SOLENOID VALVE	
Y204	DUEL TRACTION SOLENOID VALVE	
Y205	REVERSE SPEED SOLENOID VALVE	
Y206	3rd GEAR SOLENOID VALVE	
X12.s	TO DRIVER SITE HARNESS CONNECTOR	
X25.s	TO DRIVER SITE HARNESS CONNECTOR	
X26.s	TO DRIVER SITE HARNESS CONNECTOR	
X44.s	TO DRIVER SITE HARNESS CONNECTOR	
X77.s	TO ATC2M UNIT CONNECTOR	
X8.s	TO DRIVER SITE HARNESS CONNECTOR	
X10.s	TO DRIVER SITE HARNESS CONNECTOR	
X9.s	TO DRIVER SITE HARNESS CONNECTOR	
X1.s	TO UNIT 01T16R2 CONNECTOR	
X10.p	TO FRONT DASHBOARD HARNESS CONNECTOR	
X11.p	TO CHASSIS HARNESS CONNECTOR	
X12.p	TO CHASSIS HARNESS CONNECTOR	
X15.p	TO OPTIONAL HARNESS CONNECTOR	
X158	TO ATC2M UNIT CONNECTOR	
X159	TO ATC2S UNIT CONNECTOR	
X160.p	TO SWITCHES PANEL HARNESS CONNECTOR	
X2.s	TO UNIT 01T16B2 CONNECTOR	
X25.p	TO SWITCHES PANEL HARNESS CONNECTOR	
X26.p	TO SWITCHES PANEL HARNESS CONNECTOR	
X27.s	A/C HARNESS CONNECTOR	
X28.s	HEATING CONNECTOR	
X3.s	TO UNIT 01T16B3 CONNECTOR	
X30	CIGARETTE LIGHTER	
X4.s	TO UNIT 01T16R3 CONNECTOR	
X44.p	TO CABIN HARNESS CONNECTOR	
X5.s	TO UNIT 01T16B2 CONNECTOR	
X6	TO FUNCTION MACHINE UNIT	
X65.p	TO MOTOR HARNESS CONNECTOR	
X7.p	TO MOTOR HARNESS CONNECTOR	
X77.p	ATC2S HARNESS CONNECTOR	
X8.p	ATC2S HARNESS CONNECTOR	
X9.p	TO FRONT DASHBOARD HARNESS CONNECTOR	
X11.s	TO DRIVER SITE HARNESS CONNECTION	
P43	INSTRUMENT PANEL	
P63	FRONT CONTROL PANEL	
X166.s	TO CABIN ROOF HARNESS CONNECTOR	
X166.p	TO SWITCH HARNESS CONNECTOR	
X177.s	TO WORKING LIGHT HARNESS CONNECTOR	

WIRING COLORS

A	LIGHT BLUE
B	WHITE
C	ORANGE
G	YELLOW
H	GRAY
L	BLUE
M	BROWN
N	BLACK
R	RED
S	PINK
V	GREEN
Z	VIOLET

EXAMPLE:

GV -> YELLOW/GREEN (TRANSVERSE COLORS)
G-V -> YELLOW-GREEN (LONGITUDINAL COLORS

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Sheet 8 of 8

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