CEBM012801

Shop Manual

KOMATSU®

WB140PS-2N
WB150PS-2N

BACKHOE LOADER

SERIAL NUMBERS **WB140PS-2N** **A40034 and up**
WB150PS-2N **A70010 and up**

ENGINE

S4D106-1

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WARNING! When working with others, use agreed upon signals and do not let unauthorized persons near the machine.

Before checking coolant level, wait until it has cooled. If the radiator cap is removed when the coolant is hot, the coolant will spurt our and cause burns. Be careful when working close to moving parts, fan, fan belt, etc. Entanglement with moving parts can cause serious injury.

Before testing, adjusting or troubleshooting, make sure the machine is parked on firm, level ground. Check that all machine safety devices are applied and that blocks are in place to prevent the machine from moving.

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Ring gear teeth broken at the outer side	
CAUSES	**REMEDY**
Excessive gear load compared to the one foreseen	Replace bevel gear set. Carefully follow the recommended operations for the adjustment of the bevel gear set free backlash.
Incorrect gear adjustment, excessive backlash	
Pinion nut loosened	

Ring gear tooth broken	
CAUSES	**REMEDY**
Load bump	Replace bevel gear set. Adjust bevel gear set free backlash.
Incorrect gear adjustment, insufficient backlash	
Pinion nut loosened	

Pinion or ring gear teeth worn	
CAUSES	**REMEDY**
Insufficient lubrication; contaminated oil; improper lubrication	Replace bevel gear set. Carefully follow the recommended operations for the adjustment of the bevel gear set free play. Use correct lubricants, fill to proper levels and replace according to the recommended schedule.
Worn out pinion bearings	

Overheated ring and pinion teeth	
CAUSES	**REMEDY**
Prolonged operation at high temperature	Replace bevel gear set. Use correct lubricants, fill to proper levels and replace according to the recommended schedule.
Insufficient lubrication; contaminated oil; improper lubrication	

Pinion teeth pitting	
CAUSES	**REMEDY**
Excessive use	Replace bevel gear set. Use correct lubricants, fill to proper levels and replace according to the recommended schedule.
Insufficient lubrication	

Axle beam body bent	
CAUSES	**REMEDY**
Vehicle overloaded	Replace axle beam body
Vehicle accident	
Load bump	

Worn out or pitted bearings	
CAUSES	**REMEDY**
Insufficient lubrication; contaminated oil	Replace bearings. Use correct lubricants, fill to proper levels and replace according to the recommended schedule.
Excessive use	
Normal wear out	
Pinion nut loosened	

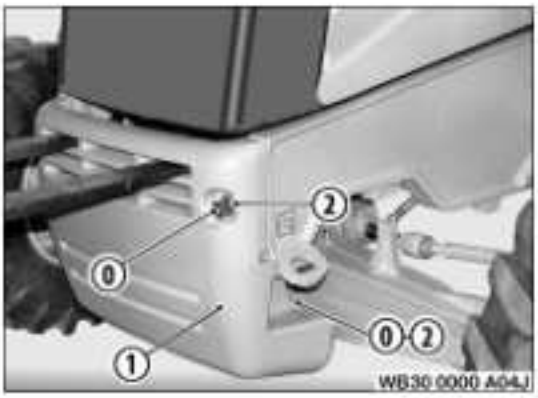
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COUNTERWEIGHT

REMOVAL

WARNING! Fully raise the front work equipment and engage the safety stop. Lower the backhoe to the ground. Set the parking brake.

1. Loosen the front mounting bolts ⑧ slightly first. Using a forklift truck, position the forks into the openings on the counterweight ① front. 1



2. Tilt the forks back slightly and remove the mounting bolts ⑧ and washers ② carefully.

WARNING! When performing this operation, stand clear of the counterweight in case it should slip off the forks.

3. Remove the counterweight ① carefully.

Counterweight - 300 kg



INSTALLATION

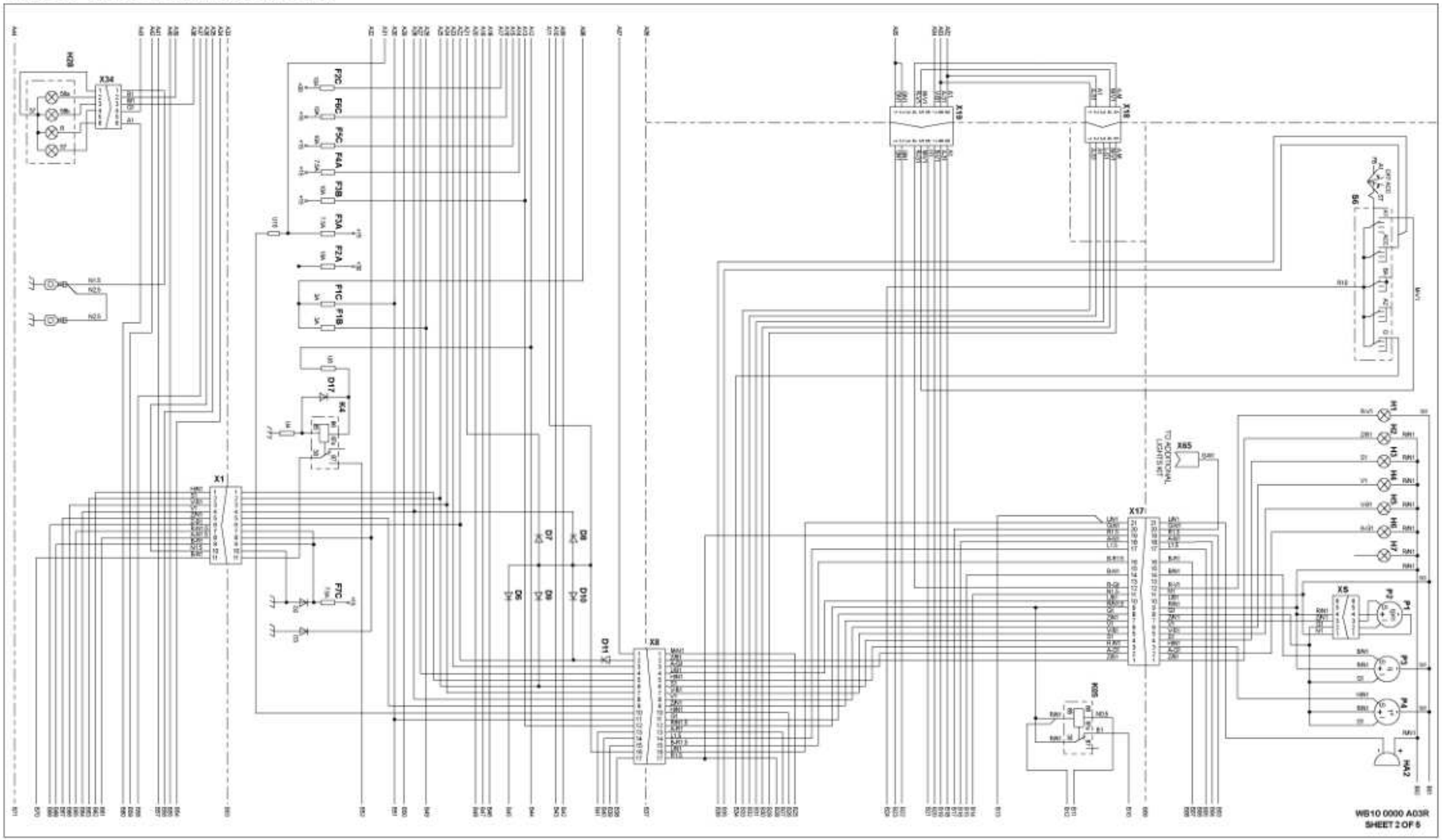
- Carry out installation in the reverse order of removal.

1

Counterweight mounting bolts - - - - - - - - - - - - - - - - - 330 N•m

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CANOPY WIRING SCHEMATIC (2 OF 5)



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LEGEND FOR CAB WIRING SCHEMATIC

ITEM	DESCRIPTION	SHEET	ITEM	DESCRIPTION	SHEET	ITEM	DESCRIPTION	SHEET	ITEM	DESCRIPTION	SHEET	ITEM	DESCRIPTION	SHEET
EV1	MP Bucket Open Solenoid	5 of 5	H16	Cab Light	4 of 5	M9	Fuel Pump	5 of 5	Y9	3rd Speed Solenoid	? of 5	X53	AC Interface, 1 Pin	3 of 5
EV2	MP Bucket Close Solenoid	5 of 5	H17	Front Work Light	4 of 5	P1	Tachometer	2 of 5	Y10	1st Speed Solenoid	? of 5	X59	Front Line Cross, 6 Pin	4 of 5
EV3	Diff Lock Solenoid	5 of 5	H18	Front Work Light	4 of 5	P2	Hour Meter	2 of 5	Y11	2ndSpeed Solenoid	? of 5	X60	Optional, 1 Pin	1 of 5
EV4	Boom Lock Solenoid	5 of 5	H19	Beacon Light	4 of 5	P3	Fuel Level Gauge	2 of 5	Y12	4th Speed Solenoid	? of 5	X63	Alternator Resistance, 2 Pin	5 of 5
F1A	Low Beam Fuse, 15A	1 of 5	H20	Rear Work Light	4 of 5	P4	Coolant Temp Gauge	2 of 5	Y13	4WD Solenoid	? of 5	X65	Optional light	? of 5
F1B	Right Light Fuse, 3A	2 of 5	H21	Rear Work Light	4 of 5	R30	Heating Start	5 of 5	C1	A/C Magnetic Clutch	5 of 5	X66	Optional light	? of 5
F1C	Left Light Fuse, 3A	2 of 5	H22	Indicators Warn Light	1 of 5	R31	Fuel Level Sender	5 of 5	XC1	Lighter Socket	3 of 5	X67	Seat Sensor, 3 Pin	5 of 5
F2A	Trans Power Supply Fuse, 10A	2 of 5	H23	High Beam Warn Light	1 of 5	R32	Coolant Temp Sender	5 of 5	X1	Engine Harness, 11 Pin	2 of 5	X69	Trans Diode	? of 5
F2B	Cab Fuse, 15A	3 of 5	H24	Brake Oil Warn Light	1 of 5	R33	Alternator	5 of 5	X2	Lights and Gear Shift, 9 Pin	1 of 5	X70	Trans Gear Unit	? of 5
F2C	Hazard Fuse, 10A	2 of 5	H25	Diff Lock Warn Light	1 of 5	S1	ECO Power Button	5 of 5	X3	Front Line, 11 Pin	1 of 5	XA	Alternator, 2 Pin	5 of 5
F3A	Stp Seat DL Fuse, 7.5A	2 of 5	H28	Right Front Light	2 of 5	S2	Boom Unlock Switch	4 of 5	X4	4WD Monitor, 11 Pin	? of 5	XAM	Fuel Shutoff Valve, 3 Pin	5 of 5
F3B	Instr. Warn RTD, 10A	2 of 5	H29	Left Front Light	1 of 5	S4	Blower Motor Switch	3 of 5	X5	Cab Controls, 11 Pin	3 of 5	XD1	Light Switch, 9 Pin	1 of 5
F3C	MPB Declutch Fuse, 7.5A	1 of 5	H36	Rear Left Side Lights	4 of 5	S6	Starting Switch	2 of 5	X6	Trans Solenoids, 9 Pin	1 of 5	XD2	Gear Shift, 5 Pin	1 of 5
F4A	4WD Ft Washer Fuse, 7.5A	2 of 5	H37	Rear Right Side Lights	4 of 5	S10	Declutch Button	5 of 5	X7	Not Used, 9 Pin	3 of 5	XD3	Light Switch, 12 Pin	? of 5
F4B	F/R BUA Fuse, 10A	1 of 5	H38	Courtesy Light	4 of 5	S13	Battery Cut Off Switch	5 of 5	X8	Side Dashboard, 17 Pins	2 of 5	XD4	Gear Shift, 8 Pin	? of 5
F4C	High Beam Fuse, 15A	1 of 5	H39	Plate Light	? of 5	S15	Hand Brake Switch	3 of 5	X9	Front Dashboard, 17 Pins	1 of 5	XM9	Fuel Pump, 2 Pin	5 of 5
F5A	Heater Relay Fuse, 10A	3 of 5	HA1	Horn	5 of 5	S16	Brake Oil Level Low Switch	1 of 5	X10	To Engine Harness, 13 Pin	4 of 5	XS	Instrument Panel, 6 Pin	2 of 5
F5B	Rear Work Light, 15A	3 of 5	HA2	Buzzer	2 of 5	S17	Brake Pressure Switch	1 of 5	X10A	Trans Interface, 4 Pin	? of 5	XT1	Fuel Shutoff Timer, 4 Pin	5 of 5
F5C	Front Work Light, 15A	2 of 5	HA3	Rear Horn	3 of 5	S18	Brake Pressure Switch	1 of 5	X11	2 Way Power, 2 Pin	4 of 5	XT2	Preheat Timer, 4 Pin	5 of 5
F6A	Rear Wiper Front Horn, 15A	3 of 5	HA4	Back Up Alarm	3 of 5	S19	Seat Sensor	5 of 5	X12	Front Cross Over, 2 Pin	4 of 5	XK12	Seat Unit, 6 Pin	5 of 5
F6B	Light Sel Horn Relay, 7.5A	1 of 5	K01	Starter Relay	5 of 5	S21	Coolant High Temp Switch	5 of 5	X16	AC Clutch, 2 Pin	5 of 5	XK13	Stop Light Diff Lock, 6 Pin	4 of 5
F6C	Direction Lights, 10A	2 of 5	K02	Preheat Relay	5 of 5	S22	Air Filter Clogged Switch	5 of 5	X17	Side Dashboard, 21 Pin	2 of 5			
F7A	Fuse, 7.5A Not Used	1 of 5	K03	Fuel Shut Off Relay	5 of 5	S23	Lo Eng Oil Pres Switch	5 of 5	X18	Front Cable, 5 Pin	2 of 5			
F7B	Front Horn Fuse, 10A	1 of 5	K04	AC Blower Relay	3 of 5	S24	Fuel Gauge	5 of 5	X19	Front Dashboard, 9 Pin	2 of 5			
F7C	Fuel Shut Off Fuse, 7.5 A	2 of 5	K05	Return to Dig Relay	2 of 5	S27	Return to Dig Sensor	3 of 5	X20	Blower Motor	3 of 5			
FUG1	Key Switch Fuse, 60A	5 of 5	K06	Power ECO Unit	5 of 5	S35	Converter Hi Temp Switch	? of 5	X21	Fuel Level Indicator, 3 Pin	5 of 5			
FUG2	Preheat Switch Fuse, 80A	5 of 5	KC	Load Fan Heater Relay	3 of 5	S37	Rear Door Switch	3 of 5	X22	Washer Pump, 2 Pin	2 of 5			
FUG3	FSO Power Fuse, 40A	5 of 5	K2	Reverse Direction Relay	1 of 5	S1A	4WD Switch	1 of 5	X23	Optional, 2 Pin	1 of 5			
FUG4	Heater A/C Fuse, 40A	5 of 5	K3	4WD Relay	1 of 5	S1L	Rear Work Light Switch	3 of 5	X24	Front Wiper, 4 Pin	1 of 5			
G1	Battery	5 of 5	K4	Neutral Position Relay	2 of 5	S2A	Front Wiper/Washer Switch	1 of 5	X25	Blower Motor, 2 Pin	3 of 5			
G2	Alternator	5 of 5	K5	Low Beam Relay	1 of 5	S2L	Rear Wiper/Washer Switch	3 of 5	X26	Rear Line, 8 Pin	4 of 5			
H1	Preheat Warn Light	2 of 5	K6	Main Beam Relay	1 of 5	S3A	Front Work Light	1 of 5	X27	Valve Lines, 6 Pin	5 of 5			
H2	Alternator Warn Light	2 of 5	K8	Front Horn Relay	1 of 5	S3L	Rotary Beacon Switch	3 of 5	X28	Loader Lever, 12 Pin	5 of 5			
H3	Coolant Warn Light	2 of 5	K9	Flasher Unit	1 of 5	S4A	Warning Switch	1 of 5	X29	Declutch Button, 2 Pin	5 of 5			
H4	Eng Oil Pressure Warn Light	2 of 5	K10	Trans Power Relay	? of 5	S4L	Horn Switch	3 of 5	X30	Transfer Fuel Pump, 2 Pin	5 of 5			
H5	Air Filter Warn Light	2 of 5	K12	Seat Unit	5 of 5	S5L	Optional Switch	3 of 5	X31	Cab, 5 Pin	4 of 5			
H6	Hyd Oil Filter Warn Light	2 of 5	K13	Stop Light, Diff Lock Unit	4 of 5	SM2	Power Button	5 of 5	X32	Radio, 2 Pin	3 of 5			
H7	Opt Warn Light	2 of 5	K14	Trans Diode Unit	? of 5	SM3	MPB Grab Button	5 of 5	X33	Wiper and Beacon, 7 Pin	3 of 5			
H8	Opt Warn Light	2 of 5	KT1	Fuel Shut Off Timer	5 of 5	SM4	Converter Declutch Button	5 of 5	X34	Right Front Light, 6 Pin	2 of 5			
H9	Coolant Warn Light	1 of 5	KT2	Preheater Timer	5 of 5	SM5	MPB Open Button	5 of 5	X35	Left Front Light, 6 Pin	1 of 5			
H10	Converter Temp Warn Light	1 of 5	M1	Starter Motor	5 of 5	SM6	Differential Lock Button	5 of 5	X39	Proximity, 3 Pin	3 of 5			
H11	4WD Warn Light	1 of 5	M2	Washer Pump	2 of 5	Y0	Fuel Shutoff Solenoid Valve	5 of 5	X40	Flasher Unit, 13 Pin	1 of 5			
H12	Low Fuel Warn Light	1 of 5	M3	Windshield Wiper Motor	5 of 5	Y1	Eco Power Solenoid Valve	5 of 5	X43	Power Relay, 7 Pin	3 of 5			
H13	Komatsu Logo Light	1 of 5	M4	Blower Motor	3 of 5	Y6	Return to Dig Magnet	3 of 5	X45	Power ECO Unit, 5 Pin	5 of 5			
H14	Komatsu Logo Light	1 of 5	M5	Transfer Fuel Pump	5 of 5	Y7	Forward Solenoid	? of 5	X46	Rear Wiper, 4 Pin	5 of 5			
H15	Lighter Light	3 of 5	M8	Windshield Wiper Motor	1 of 5	Y8	Reverse Solenoid	? of 5	X47	Beacon Light, 2 Pin	4 of 5			

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