KOBELCO

SERVICE MANUAL

HYDRAULIC EXCAVATOR

SK450LC VI

SK480LC VI

Applicable: SK450LC VI LS06-01001~
SK480LC VI YS06-00901~

S5LS0006E-00 12/00

MidWestTech | Kobelco SK450LC VI, SK480LC VI Hydraulic Excavator Service Manual | Publication S5LS0006E

Order the manual at mid-west-tech.com >

KOBELCO

Book code No. S5LS0206E

SHOP MANUAL

SK450(LC)VI
SK480(LC)VI

LS02

SPECIFICATION

TABLE OF CONTENTS

1. NAME OF COMPONENTS 1
2. GENERAL DIMENSIONS 2
3. WEIGHT OF COMPONENTS 3
4. TRANSPORTATION 4
5. MACHINE LIFTING PROCEDURE 6
6. WORKING RANGE 9
7. LIFTING DIAGRAM 11
8. SPECIFICATIONS AND PERFORMANCE 18
9. TYPE OF CRAWLER 19
10. TYPE OF BUCKET 20
11. COMBINATIONS OF ATTACHMENT 20
12. ENGINE SPECIFICATIONS 21

KOBELCO CONSTRUCTION MACHINERY CO., LTD.

MidWestTech | Kobelco SK450LC VI, SK480LC VI Hydraulic Excavator Service Manual | P... Order the manual at mid-west-tech.com >

KOBELCO

Book code No. S5LS0306E

SHOP MANUAL

SK450(LC)VI
SK480(LC)VI

LS03

ATTACHMENT DIMENSION

TABLE OF CONTENTS

1. BOOM
   1.1 Boom dimensional drawing 1
   1.2 Boom maintenance standard 2
2. ARM
   2.1 Arm dimensional drawing 4
   2.2 Arm maintenance standard 5
3. BUCKET
   3.1 Bucket dimensional drawing 7
   3.2 Bucket dimensional table 7
   3.3 Dimensional drawing of lug section 8
   3.4 Dimensional drawing of boss section 9

KOBELCO CONSTRUCTION MACHINERY CO., LTD.

MidWestTech | Kobelco SK450LC VI, SK480LC VI Hydraulic Excavator Service Manual | P... Order the manual at mid-west-tech.com >

KOBELCO

Book code No. S5LS1106E

SHOP MANUAL

SK450(LC)VI
SK480(LC)VI

LS11

TOOLS

TABLE OF CONTENTS

1. TIGHTENING TORQUES FOR CAPSCREWS AND NUTS 1
2. SCREW SIZE AND TOOLS NOMINAL SIZE 2
3. TIGHTENING TORQUES FOR NUTS AND SLEEVES 3
4. PLUG 4
5. SPECIAL SPANNER FOR TUBE 7
6. SPECIAL TOOLS 8
7. APPLICATION OF SCREW LOCKING COMPOUND AND SEALING COMPOUND 10
8. SUCTION STOPPER 11
9. UPPER FRAME LIFTING JIG 12
10. ENGINE MOUNTING PEDESTAL 13

KOBELCO CONSTRUCTION MACHINERY CO., LTD.

MidWestTech | Kobelco SK450LC VI, SK480LC VI Hydraulic Excavator Service Manual | P... Order the manual at mid-west-tech.com >

CONNECTORS SELECTION TABLE

CONNECTOR NAME (PIN NUM.)	MANUFAC.	PART. NUMBER	
		HOUSING	TERMINAL
100PAM-SA1C	AMP	179220-5	917067-5 175273-1 7114-2871
2PAF-HW	SUMITOMO	6189-0139	1500-0106
2PAM-HW	SUMITOMO	6181-0070	
3PAF-HW	SUMITOMO	6189-0131	1500-0106 1500-0133
4PAF-HW	SUMITOMO	6189-0132	1500-0106
6PAF-HW	SUMITOMO	6189-0133	1500-0106
8PAM-HW	SUMITOMO	6181-0074	1500-0105
2PAF-090	SUMITOMO	6180-2321	1500-0110
3PAF-090	SUMITOMO	6180-3241	1500-0110
2PAF-090	SUMITOMO	6189-0094	1500-0110
3PAF-HS30S	SUMITOMO	6098-0210	8242-4068
1PAF	YAZAKI	7123-2215	7116-2092 7116-2090
2PAF	YAZAKI	7123-2228	7116-2090
3PAF	YAZAKI	7123-2237	7116-2090
3PAM	YAZAKI	7122-2237	7114-2020
1PAF-F	YAZAKI	7123-2215	7116-2270
CA104	YAZAKI	7120-8012	7113-1020-02
CB104	YAZAKI	7120-1010	7113-1050-02
STRAIGHT FEMAL	YAZAKI	7120-3011	7116-2270
11PAF-GND	YAZAKI	7283-1110	7116-4021
2PAM-S8Y	YAZAKI	7223-4220-30	7114-3250
2PAF-SWP	YAZAKI	7123-1424-40	7116-1471
2PAM-080	SUMITOMO	6187-2311	

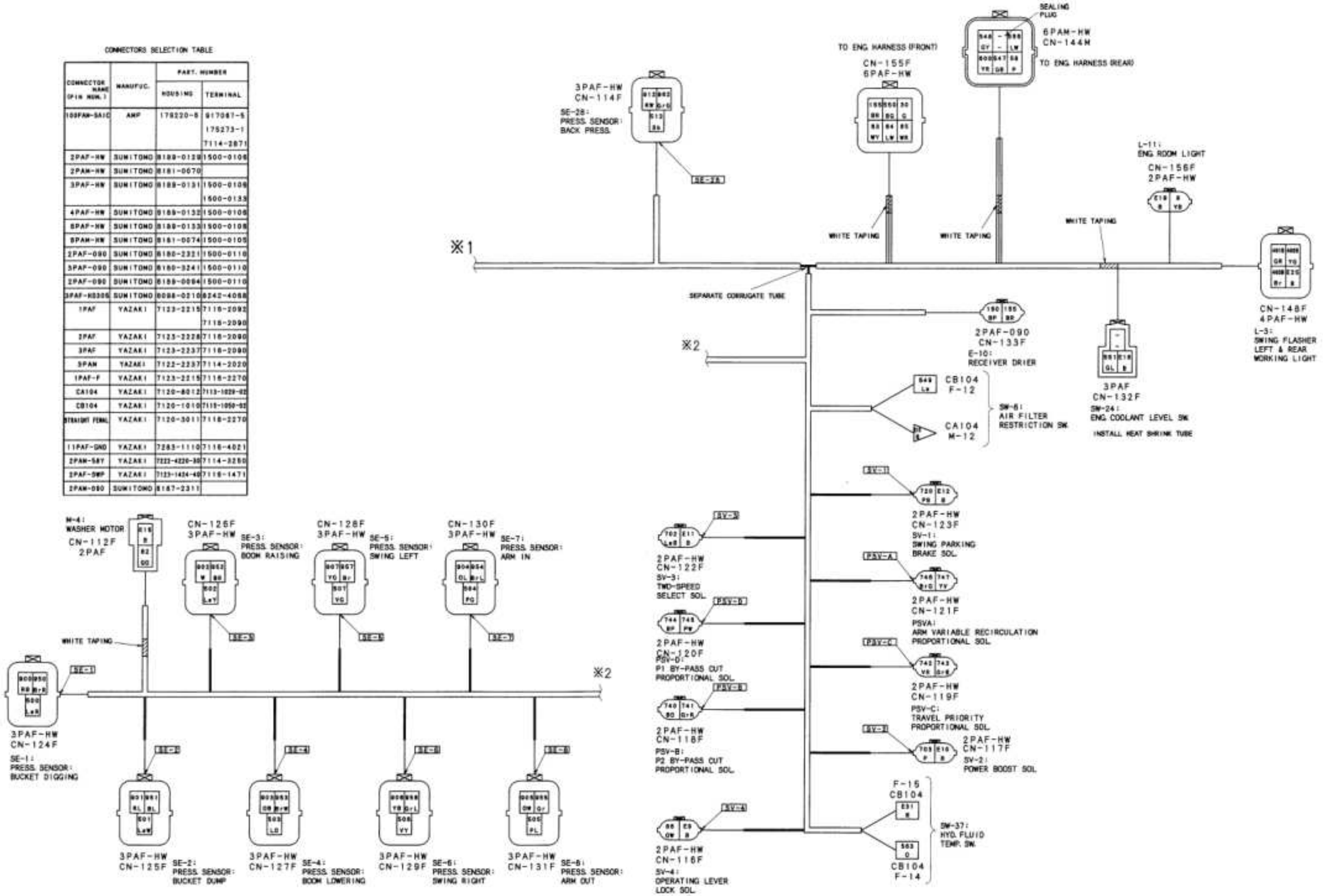


Fig. 10 (2/2) Upper harness (EU)

MidWestTech | Kobelco SK450LC VI, SK480LC VI Hydraulic Excavator Service Manual | Publication S5LS0006E

Order the manual at mid-west-tech.com >

6. TROUBLESHOOTING

Symptom	Probable cause	Remedy	Ref. group
Overheat	Defective V-belt		
	• Incorrect tension	Adjust	
	• Broken belt	Replace	
	Clogged cooling system	Clean	
	Defective thermostat	Replace	
	Defective water pump		
	• Loose shaft to impeller engagement	Replace	
	• Loose shaft to flange engagement	Replace	
	• Improper clearance between impeller and water pump case	Correct	
	• Damaged impeller	Replace	
	Clogged radiator fins	Clean	
	Defective autocool fan coupling		
	• Damaged bimetal	Replace	
	• Clogged bimetal	Clean	
	• Defective autocool fan coupling proper	Replace	
	Damaged cooling fan	Replace	
	Low coolant level	Replenish	
Overcool	Defective thermostat	Replace	
Quick loss of coolant	Defective radiator hose		
	• Loose hose connection	Correct	
	• Worn or damaged hose	Replace	
	Defective radiator		
	• Radiator proper not tight	Correct or replace	
	• Pressure cap not tight	Replace	
	Defective water pump		
	• Defective unit seal	Replace	
	• Defective oil seal	Replace	
	• Pump mounted improperly	Correct	
	Defective oil cooler	Replace	Group 12
	Thermostat case or cover mounted improperly	Correct	
	Defective heater hose		
	• Loose hose connection	Correct	
	• Worn or damaged hose	Replace	
	Defective cylinder head gasket	Replace	Group 11

MidWestTech | Kobelco SK450LC VI, SK480LC VI Hydraulic Excavator Service Manual | P... Order the manual at mid-west-tech.com >

(a) Remove the set screw, lock nut and adjusting screw as an assembly from the nozzle holder.

NOTE:
Never loosen the lock nut as loosening it changes the 2nd valve opening pressure.

(b) Install the prelift shim selected in Item (2) between the spacer and 2nd push rod.
(c) Install the 2nd push rod and 2nd spring and tighten the set screw, lock nut and adjusting screw as an assembly to specified torque.
(d) Check again that the needle valve full lift dimension "S" with the Dial Gauge by the procedures described in Item (4).

(6) Checking prelift

Check the prelift based on dimension "L" measured in Item (4) and dimension "S" measured in Item (5).

$L - S = \Delta \ell$

where $\ell - 0.02$ mm $\leq \Delta \ell \leq \ell + 0.02$ mm

$\Delta \ell$: Prelift (measured)
ℓ: Prelift (0.1 mm)
L: Needle valve full lift dimension (measured)
S: Needle valve lift dimension (measured) with prelift subtracted

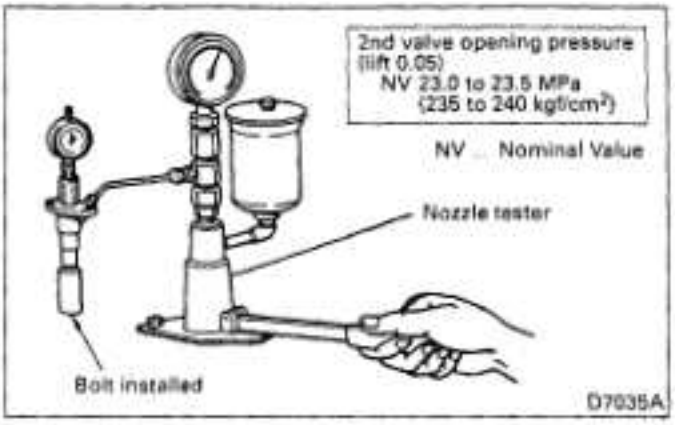
If $\Delta \ell$ is outside of specified dimension $\ell \pm 0.02$ mm, replace the prelift adjusting shim as described in (5) and repeat steps (4) and (5) so that $\Delta \ell$ will fall within $\ell \pm 0.02$ mm.
Select thickness t' of shim to be used as follows.

$t' = t + (\ell - \Delta \ell)$

$T = t' \pm 0.015$ mm

where t: Thickness of existing shim
t': Shim thickness
T: Thickness of shim to actually replace existing shim
ℓ: Prelift (0.1 mm)

(7) Checking 2nd valve opening pressure ("cover" pressure)



(a) After checking the prelift in Item (6), increase the pressure again to about 34.3 to 44.1 MPa {350 to 450 kgf/cm²} so that the needle valve of the nozzle is fully lifted.

NOTE:
Retaining Nut for Adjustment (special tool) must have a bolt fitted at its tip.

(b) When the nozzle tester lever operation is stopped with the nozzle needle valve fully lifted, the pressure will start to drop and the needle valve will go down.
(c) At the moment the nozzle lift has dropped to 0.05 mm, read the pressure gauge indication.
(d) If the 2nd valve opening pressure ("open" pressure) is out of specification, adjust it in accordance with item (3).

NOTE:
Adjust without installing prelift shim.

(e) Remove special tools.

(8) Inspection

(a) Tighten the retaining nut and cap nut to specified torque.

NOTE:
1. **Make sure that the knock pin has seated completely before tightening the retaining nut.**
2. **Tighten the retaining nut finger tight and then tighten to specified torque using a torque wrench.**

MidWestTech | Kobelco SK450LC VI, SK480LC VI Hydraulic Excavator Service Manual | Pu... Order the manual at mid-west-tech.com >

KOBELCO

SERVICE MANUAL

MITSUBISHI DIESEL ENGINE

6D2

(For industrial use)

Applicable Engine Models: 6D24, 6D24-T, 6D25-TC, 6D24-TL

97841-02020-00 01/01

MidWestTech | Kobelco SK450LC VI, SK480LC VI Hydraulic Excavator Service Manual | P... Order the manual at mid-west-tech.com >

(4) Removing Carrier 1 assy

1) Remove thrust plate (8).

2) Remove sun gear 1 (9).

3) Place three M10 eye bolt in carrier 1 (2) and remove carrier 1 assy (2, 3, 4, 5, 6, 7).



Fig. 1-22 Removing Carrier 1 Assy

(5) Removing carrier 2 assy

1) Remove sun gear 2 (10).

2) Place three M10 eye bolt in carrier 2 (11) and remove carrier 2 assy (11, 12, 13, 14, 15, 16).



Fig. 1-23 Removing Carrier 2 Assy

(6) Removing housing assy

1) Remove support ring (22).

2) Remove lock washer (21) by hammering on something like a screwdriver that is placed in the split.

3) Place an eye bolt in each of the three M12 threaded holes in ring gear (17). Then remove housing assy [ring gear (17), housing (18), bearing (19), floating seal (24), and seal cover (25)].



Fig. 1-24 Removing support ring (22)

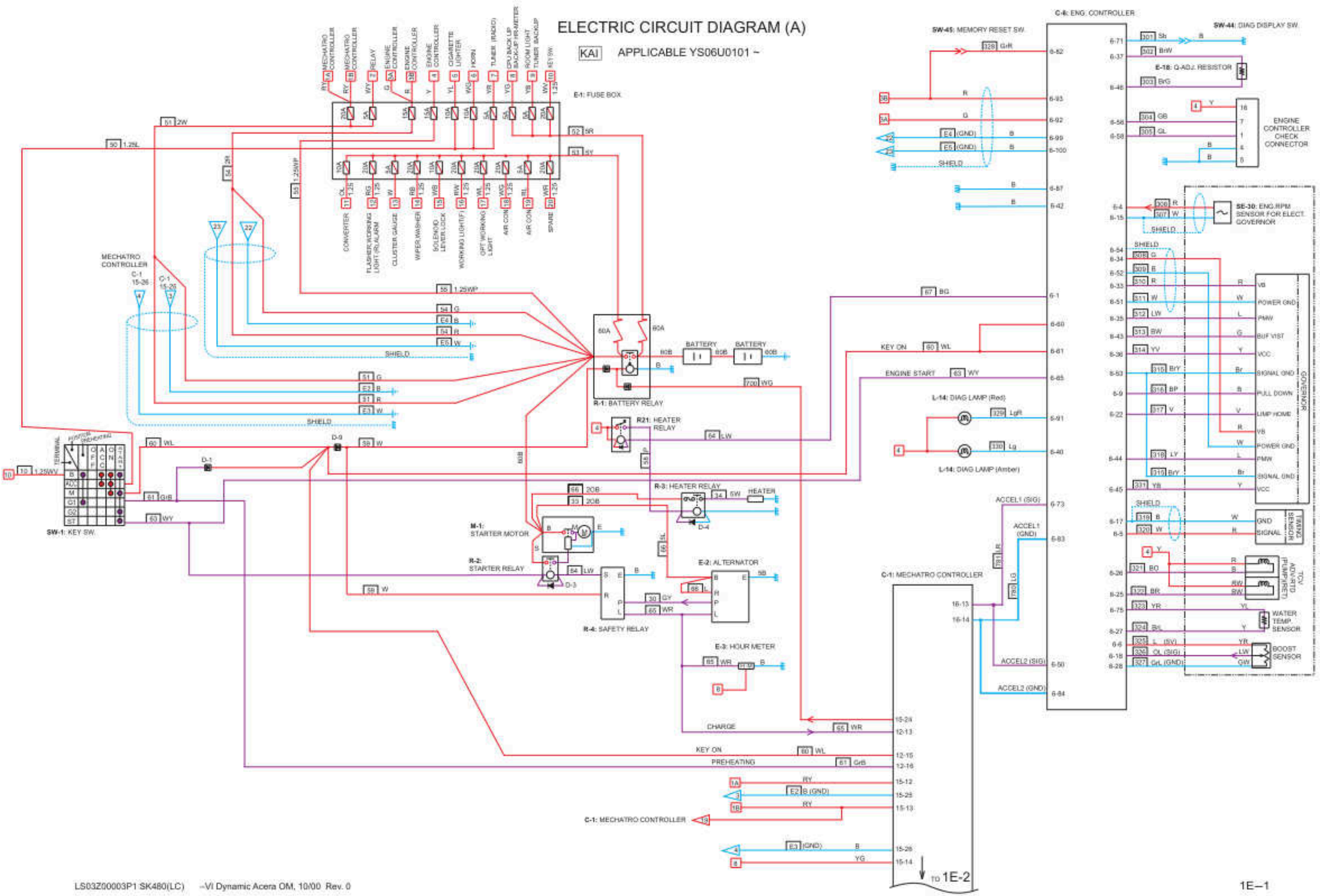


Fig. 1-25 Removing lock washer (21)

MidWestTech | Kobelco SK450LC VI, SK480LC VI Hydraulic Excavator Service Manual | P... Order the manual at mid-west-tech.com >

ELECTRIC CIRCUIT DIAGRAM (A)

KAI APPLICABLE YS06U0101 ~



MidWestTech | Kobelco SK450LC VI, SK480LC VI Hydraulic Excavator Service Manual | Publication S5LS0006E

Order the manual at mid-west-tech.com >