

SHOP MANUAL WA380-6H

MACHINE MODEL

WA380-6H

SERIAL NUMBER

H60051 and up

- This shop manual may contain attachments and optional equipment that are not available in your area. Please consult your local Komatsu distributor for those items you may require. Materials and specifications are subject to change without notice.
- WA380-6H mounts the SAA6D107E-1 engine.

WHEEL LOADER

WA380-6H

Machine model	Serial number
WA380-6H	H60051 and up

00 Index and foreword

Index

Organization list of the shop manual	2
Table of contents	4

Organization list of the shop manual

The contents of this shop manual are shown together with Form No. in a list.

Note 1: Always keep the latest version of this manual in accordance with this list and utilize accordingly.

The marks shown to the right of Form No. denote the following:

○: New issue (to be filed additionally) ●: Revision (to be replaced for each Form No.)

Note 2: This shop manual can be supplied for each Form No.

Note 3: To file this shop manual in the special binder for management, handle it as follows:

- Place a divider on the top of each section in the file after matching the Tub No. with No. indicated next to each Section Name shown in the table below:
- File overview and other materials in sections in the order shown below and utilize them accordingly.

Section Title	Form Number
Shop Manual, contents binder, binder label and tabs	SEN01010-03
00 Index and foreword	SEN01011-03
Index	SEN01019-03 ●
Foreword and general information	SEN01020-00
01 Specification	SEN01012-00
Specification and technical data	SEN01021-00
10 Structure, function and maintenance standard	SEN01013-01
Engine and cooling system	SEN01040-00
Power train	SEN01041-00
Steering system	SEN01042-00
Brake system	SEN01043-00
Undercarriage and frame	SEN01044-00
Hydraulic system, Part 1	SEN01045-00
Hydraulic system, Part 2	SEN01046-00
Work equipment	SEN01047-00
Cab and its attachments	SEN01048-00
Electrical system, Part 1	SEN01049-00
Electrical system, Part 2	SEN01050-00
Electrical system, Part 3	SEN01051-00
20 Standard value table	SEN01014-01
Standard service value table	SEN01024-01 ●
30 Testing and adjusting	SEN01015-01
Testing and adjusting, Part 1	SEN01025-01 ●
Testing and adjusting, Part 2	SEN01026-01 ●
Testing and adjusting, Part 3	SEN01027-01 ●
40 Troubleshooting	SEN01016-00
General information on troubleshooting	SEN01212-00 ○
Troubleshooting by failure code (Display of code), Part 1	SEN01213-00 ○
Troubleshooting by failure code (Display of code), Part 2	SEN01214-00 ○
Troubleshooting by failure code (Display of code), Part 3	SEN01215-00 ○
Troubleshooting by failure code (Display of code), Part 4	SEN01216-00 ○

Troubleshooting by failure code (Display of code), Part 5	SEN01217-00 ○
Troubleshooting by failure code (Display of code), Part 6	SEN01218-00 ○
Troubleshooting by failure code (Display of code), Part 7	SEN01219-00 ○
Troubleshooting by failure code (Display of code), Part 8	SEN01220-00 ○
Troubleshooting by failure code (Display of code), Part 9	SEN01221-00 ○
Troubleshooting by failure code (Display of code), Part 10	SEN01222-00 ○
Troubleshooting of electrical system (E-mode)	SEN01223-00 ○
Troubleshooting of hydraulic and mechanical system (H-mode)	SEN01224-00 ○
Troubleshooting of engine (S-mode)	SEN01225-00 ○
 50 Disassembly and assembly	 SEN01017-00
General information on disassembly and assembly	SEN01461-00
Engine and cooling system	SEN01462-00
Power train	SEN01463-00
Steering system	SEN01464-00
Brake system	SEN01465-00
Undercarriage and frame	SEN01466-00
Hydraulic system	SEN01467-00
Work equipment	SEN01468-00
Cab and its attachments	SEN01469-00
Electrical system	SEN01470-00
 90 Diagrams and drawings	 SEN01018-01
Hydraulic diagrams and drawings	SEN01022-00
Electrical diagrams and drawings	SEN01023-00

Table of contents

00 Index and foreword

Index	SEN01019-03
Organization list of the shop manual	2
Table of contents	4

Foreword and general information

Foreword and general information	2
Safety notice	2
How to read the shop manual	6
Explanation of terms for maintenance standard	8
Handling electric equipment and hydraulic component	10
How to read electric wire code	18
Method of disassembling and connecting push-pull type coupler	21
Standard tightening torque table	24
Conversion table	28

01 Specification

Specification and technical data

Specification and technical data	3
Specification dimension drawing	3
Specifications	4
Weight table	8
Table of fuel, coolant and lubricants	10

10 Structure, function and maintenance standard

Engine and cooling system

Engine and cooling system	2
Engine mount and transmission mount	2
Cooling system	3
Cooling fan pump	4
Cooling fan motor	12

Power train

Power train	3
Power train	3
Power train system diagram	4
Drive shaft	6
Power train piping diagram	7
Torque converter	8
Transmission	16
Flow control valve	33
Valve assembly	34
ECMV	35
Main relief valve and torque converter relief valve	42
Axle	44
Front axle	44
Rear axle	45
Differential	46
Front differential	46
Rear differential	47
Limited slip differential	51
Final drive	58

Steering system	SEN01042-00
Steering system.....	2
Steering piping diagram.....	2
Steering column.....	3
Steering pump.....	4
Steering valve.....	15
Orbit-roll valve.....	30
Stop valve.....	34
Steering relief valve.....	35
Steering cylinder.....	36
Emergency steering motor.....	38
Emergency steering pump.....	39
Brake system	SEN01043-00
Brake system.....	2
Brake piping diagram.....	2
Charge valve.....	3
Brake valve.....	10
Accumulator (for brake).....	15
Brake.....	16
Parking brake control.....	21
Parking brake.....	22
Parking brake solenoid valve.....	24
Emergency parking brake release valve.....	26
Undercarriage and frame	SEN01044-00
Undercarriage and frame.....	2
Axle mount and center hinge pin.....	2
Tires.....	6
Hydraulic system, Part 1	SEN01045-00
Hydraulic system, Part 1.....	2
Hydraulic piping diagram.....	2
Work equipment control lever linkage.....	5
Hydraulic tank.....	6
Breather.....	7
Power train pump.....	8
Work equipment pump.....	9
Work equipment control valve.....	20
CLSS.....	34
Outline of CLSS.....	34
Basic principle.....	35
Each function and operation of each valve.....	38
Hydraulic circuit diagram and names of valves.....	38
Area ratio of pressure compensation valve.....	48
Hydraulic system, Part 2	SEN01046-00
Hydraulic system, Part 2.....	2
PPC valve.....	2
Stabilizer valve.....	8
Accumulator (for PPC circuit).....	13
Accumulator (for ECSS).....	14
Work equipment	SEN01047-00
Work equipment.....	2
Work equipment linkage.....	2
Bucket.....	4
Bucket positioner and boom kick-out.....	5
Work equipment cylinder.....	11

Cab and its attachments	SEN01048-00
Cab and its attachments.....	3
Cab	3
Air conditioner.....	4
Air conditioner piping diagram	4
Air conditioner unit.....	7
Blower and intake unit	9
Compressor	10
Condenser	11
Receiver.....	12
Air conditioner panel.....	14
Electrical system, Part 1	SEN01049-00
Electrical system, Part 1.....	2
Machine monitor system.....	2
Machine monitor	7
Electrical system, Part 2	SEN01050-00
Electrical system, Part 2.....	2
Electrical system (Transmission controller system).....	2
Transmission controller	36
Electrical system, Part 3	SEN01051-00
Electrical system, Part 3.....	2
Electric transmission control	2
Kickdown switch and hold switch.....	6
KOMTRAX terminal system.....	8
Engine starting circuit	10
Engine stopping circuit.....	12
Preheating circuit.....	13
Engine power mode selector circuit.....	14
Engine output derating function	15
Automatic warm-up function	15
Parking brake circuit	16
Sensor	18
20 Standard value table	
Standard service value table	SEN01024-01
Standard service value table	2
Standard service value table for engine.....	2
Standard service value table for chassis	3
30 Testing and adjusting	
Testing and adjusting, Part 1	SEN01025-01
Testing and adjusting, Part 1	3
Tools for testing, adjusting, and troubleshooting.....	3
Measuring engine speed	6
Measuring exhaust gas color	8
Adjusting valve clearance	10
Measuring compression pressure.....	12
Measuring blow-by pressure.....	15
Measuring engine oil pressure.....	16
Measuring intake air (boost) pressure	17
Handling fuel system equipment.....	18
Releasing residual pressure in fuel system	18
Measuring fuel pressure	19
Measuring fuel return rate and leakage	21
Bleeding air from fuel circuit	24
Testing leakage in fuel system.....	26

Handling reduced cylinder mode operation	27
Handling no-injection cranking operation	27
Handling controller voltage circuit.....	28
Testing and adjusting air conditioner compressor belt tension	29
Adjusting transmission speed sensor	30
Measuring directional lever.....	31
Measuring and adjusting power train oil pressure	32
Procedure for flushing torque converter and transmission hydraulic circuit	47
Method of moving machine when transmission valve is broken	48
Testing and adjusting steering stop valve.....	50
Testing and adjusting steering wheel.....	52
Testing steering oil pressure.....	54
Bleeding air from steering circuit	57
Testing and adjusting, Part 2	SEN01026-01
Testing and adjusting, Part 2	3
Testing hydraulic drive fan	3
Bleeding air from hydraulic drive fan circuit	5
Measuring brake pedal	7
Measuring brake performance.....	8
Testing and adjusting accumulator charge pressure	9
Testing wheel brake oil pressure	10
Measuring wear of wheel brake disc	12
Bleeding air from wheel brake circuit.....	13
Releasing residual pressure in brake accumulator circuit	14
Testing parking brake performance	15
Measuring parking brake oil pressure	16
Testing wear of parking brake disc	18
Method of releasing parking brake manually.....	19
Measuring and adjusting work equipment control lever	20
Measuring and adjusting work equipment PPC oil pressure	21
Measuring and adjusting work equipment oil pressure	24
Bleeding air from work equipment circuit.....	28
Releasing residual pressure in work equipment circuit	29
Testing and adjusting bucket positioner.....	30
Testing and adjusting boom kick-out	32
Checking proximity switch operation pilot lamp.....	33
Procedure for testing diodes.....	34
Preparation work for troubleshooting for electric system.....	35
How to start operation of KOMTRAX terminal.....	40
Lamp display of KOMTRAX terminal.....	45
Adjusting machine monitor	48
Adjusting replaced, reassembled or added sensor, controller, etc. with machine monitor	49
Testing and adjusting, Part 3	SEN01027-01
Testing and adjusting, Part 3	2
Special functions of machine monitor (EMMS).....	2
Pm-click inspection table	61
40 Troubleshooting	
General information on troubleshooting	SEN01212-00
General information on troubleshooting	2
Points to remember when troubleshooting	2
Sequence of events in troubleshooting	3
Testing before troubleshooting	4
Classification and procedures of troubleshooting	5
Connection table for connector pin numbers	8
T-branch box and T-branch adapter table	31

Troubleshooting by failure code (Display of code), Part 1	SEN01213-00
Troubleshooting by failure code (Display of code), Part 1	3
Failure codes list	3
Before carrying out troubleshooting for electrical system	10
Information contained troubleshooting table	13
Failure code [1500L0] (TORQFLOW transmission: Double meshing)	15
Failure code [15SAL1] (ECMV F clutch: When command current is OFF, fill signal is ON)	16
Failure code [15SALH] (ECMV F clutch: When command current is ON, fill signal is OFF)	18
Failure code [15SBL1] (ECMV R clutch: When command current is OFF, fill signal is ON)	20
Failure code [15SBLH] (ECMV R clutch: When command current is ON, fill signal is OFF)	22
Failure code [15SEL1] (ECMV 1st clutch: When command current is OFF, fill signal is ON)	24
Failure code [15SELH] (ECMV 1st clutch: When command current is ON, fill signal is OFF)	26
Failure code [15SFL1] (ECMV 2nd clutch: When command current is OFF, fill signal is ON)	28
Failure code [15SFLH] (ECMV 2nd clutch: When command current is ON, fill signal is OFF)	30
Failure code [15SGL1] (ECMV 3rd clutch: When command current is OFF, fill signal is ON)	32
Failure code [15SGLH] (ECMV 3rd clutch: When command current is ON, fill signal is OFF)	34
Failure code [15SHL1] (ECMV 4th clutch: When command current is OFF, fill signal is ON)	36
Failure code [15SHLH] (ECMV 4th clutch: When command current is ON, fill signal is OFF)	38
Failure code [2F00MA] (Parking brake: Malfunction)	40
Troubleshooting by failure code (Display of code), Part 2	SEN01214-00
Troubleshooting by failure code (Display of code), Part 2	4
Failure code [2G43ZG] (Accumulator: Low oil pressure)	4
Failure code [AA1ANX] (Air cleaner: Clogging)	6
Failure code [AB00L6] (Alternator: Signal disagrees with operating state of engine)	8
Failure code [AB00MA] (Alternator: Malfunction)	10
Failure code [B@BAZG] (Rotation derating by low engine oil pressure)	12
Failure code [B@BAZK] (Engine oil: Low level)	13
Failure code [B@BCNS] (Coolant: Overheating)	14
Failure code [B@BCZK] (Coolant: Low level)	16
Failure code [B@C7NS] (Brake oil: Overheating)	18
Failure code [b@CENS] (Torque converter oil: Overheating)	20
Failure code [B@CENS] (Torque converter oil: Overheating)	22
Failure code [B@HANS] (Hydraulic oil: Overheating)	24
Failure code [CA111] (Abnormality in engine controller)	26
Failure code [CA115] (Engine Ne or Bkup speed sensor error)	27
Failure code [CA122] (Charge pressure sensor high error)	28
Failure code [CA123] (Charge pressure sensor low error)	30
Failure code [CA131] (Throttle sensor high error)	32
Failure code [CA132] (Throttle sensor low error)	34
Failure code [CA144] (Coolant sensor high error)	36
Failure code [CA145] (Coolant sensor low error)	38
Failure code [CA153] (Charge temperature sensor high error)	40
Failure code [CA154] (Charge temperature sensor low error)	42
Failure code [CA155] (Derating of speed by abnormally high charge temperature)	44
Failure code [CA187] (Sensor power supply 2 low error)	46
Failure code [CA221] (Atmospheric pressure sensor high error)	48
Failure code [CA222] (Atmospheric sensor low error)	50
Failure code [CA227] (Sensor power supply 2 high error)	52
Troubleshooting by failure code (Display of code), Part 3	SEN01215-00
Troubleshooting by failure code (Display of code), Part 3	3
Failure code [CA234] (Engine overspeed)	3
Failure code [CA238] (Ne speed sensor power supply error)	4
Failure code [CA271] (PCV1 Short circuit)	5
Failure code [CA272] (PCV1 Disconnection)	6
Failure code [CA322] (Injector #1 (L/B #1) open/short error)	8
Failure code [CA323] (Injector #5 (L/B #5) open/short error)	10
Failure code [CA324] (Injector #3 (L/B #3) open/short error)	12

Failure code [CA325] (Injector #6 (L/B #6) open/short error)	14
Failure code [CA331] (Injector #2 (L/B #2) open/short error)	16
Failure code [CA332] (Injector #4 (L/B #4) open/short error)	18
Failure code [CA342] (Calibration code inconsistency)	20
Failure code [CA351] (Injectors drive circuit error)	21
Failure code [CA352] (Sensor power supply 1 low error)	23
Failure code [CA386] (Sensor power supply 1 high error)	25
Failure code [CA428] (Abnormally high level in water sensor)	26
Failure code [CA429] (Abnormally low level in water sensor)	28
Failure code [CA431] (Idle validation switch error)	30
Failure code [CA432] (Idle validation action error)	32
Failure code [CA435] (Engine oil pressure switch error)	34
Failure code [CA441] (Battery voltage low error)	35
Failure code [CA442] (Battery voltage high error)	38
Failure code [CA449] Common rail pressure high error 2	40
Failure code [CA451] (Common rail pressure sensor high error)	41
Failure code [CA452] (Common rail pressure sensor low error)	43
Failure code [CA488] (Derating of torque by abnormally high charge temperature)	45
Failure code [CA553] (Common rail pressure high error 1)	46
Failure code [CA559] (Supply pump pressure very low error)	47
Failure code [CA689] (Engine Ne speed sensor error)	48
Failure code [CA731] (Engine Bkup speed sensor phase error)	50
Failure code [CA757] (All continuous data lost error)	51
Failure code [CA778] (Engine Bkup speed sensor error)	54
Failure code [CA1117] (Partial engine controller data loss error)	56
Failure code [CA1633] (KOMNET datalink timeout error)	59
Troubleshooting by failure code (Display of code), Part 4	SEN01216-00
Troubleshooting by failure code (Display of code), Part 4	3
Failure code [CA2185] (Throttle sensor supply voltage high error)	3
Failure code [CA2186] (Throttle sensor power supply low error)	4
Failure code [CA2249] (Supply pump pressure very low error 2)	5
Failure code [CA2311] (Abnormality in IMV solenoid)	6
Failure code [CA2555] (Intake heater relay disconnection error)	8
Failure code [CA2556] (Intake heater relay short circuit error)	10
Failure code [D150KA] (Emergency steering relay: Disconnection)	12
Failure code [D150KB] (Emergency steering relay: Short circuit)	14
Failure code [D150KY] (Emergency steering relay: Short circuit with power supply line)	16
Failure code [D160KA] (Backup lamp relay: Disconnection)	18
Failure code [D160KB] (Backup lamp relay: Short circuit)	20
Failure code [D191KA] (Joystick steering neutral safety relay: Disconnection)	22
Failure code [D191KB] (Joystick steering neutral safety relay: Short circuit)	24
Failure code [D191KY] (Joystick steering neutral safety relay: Short circuit with power supply line)	26
Failure code [D192KA] (ECSS solenoid: Disconnection)	28
Failure code [D192KB] (ECSS solenoid: Short circuit)	29
Failure code [D192KY] (ECSS solenoid: Short circuit with power supply line)	30
Failure code [D5ZHKA] (Terminal C signal: Disconnection)	31
Failure code [D5ZHKB] (Terminal C signal: Short circuit)	35
Failure code [D5ZHL6] (Terminal C signal: Signal does not match engine running or stopped state)	39
Failure code [DA80L4] (Auto grease controller: ON/OFF signals disagree)	42
Failure code [DAF3KK] (Machine monitor: Low source voltage (input))	44
Failure code [DAF5KP] (Machine monitor: Low output voltage)	46
Failure code [DAFRKR] (CAN communication with machine monitor: Defective communication (Abnormality in target component system))	49
Failure code [DAQ0KK] (Transmission controller: Low source voltage)	51
Failure code [DAQ0KT] (Transmission controller: Abnormality in controller)	53

Failure code [DAQ2KK] (Transmission controller load power supply line: Low source voltage (input))	54
Failure code [DAQ9KQ] (Transmission controller model selection: Disagreement of model selection signals)	56
Troubleshooting by failure code (Display of code), Part 5	SEN01217-00
Troubleshooting by failure code (Display of code), Part 5	3
Failure code [DAQRKR] (CAN communication with transmission controller: Defective communication (Abnormality in target component system))	3
Failure code [DAQRMA] (Transmission controller option setting: Malfunction)	5
Failure code [DB2RKR] (CAN communication with engine controller: Defective communication (Abnormality in target component system))	6
Failure code [DB99KQ] (Work equipment controller model selection: Disagreement in model selection signals)	9
Failure code [DB9RKR] (CAN communication with work equipment controller: Defective communication (Abnormality in target component system))	10
Failure code [DB9RMA] (Work equipment controller option setting: Malfunction)	12
Failure code [DD15LD] t switch (Panel switch 1): Switch is kept pressed for long time	14
Failure code [DD16LD] U switch (Panel switch 2): Switch is kept pressed for long time	16
Failure code [DD17LD] < switch (Panel switch 3): Switch is kept pressed for long time	18
Failure code [DD18LD] > switch (Panel switch 4): Switch is kept pressed for long time	20
Failure code [DD1CLD] Load meter subtotal switch: Switch is kept pressed for long time	22
Failure code [DD1FLD] Load meter mode selector switch (A/B): Switch is kept pressed for long time	24
Failure code [DD1GLD] Load meter mode selector switch (+/-): Switch is kept pressed for long time	26
Failure code [DD1HLD] (Load meter display selector switch: Switch is kept pressed for long time)	28
Failure code [DD1NLD] (Fan reverse switch: Switch is kept pressed for long time)	30
Failure code [DD1NL4] (Fan automatic reverse switch: Switch is kept pressed for long time)	32
Failure code [DDB6L4] (Parking brake switch (Neutralizer): ON/OFF signals disagree)	34
Troubleshooting by failure code (Display of code), Part 6	SEN01218-00
Troubleshooting by failure code (Display of code), Part 6	4
Failure code [DDK3KA] (Right FNR switch: Disconnection)	4
Failure code [DDK6KA] (FNR lever switch: Disconnection)	7
Failure code [DDK6KB] (FNR lever switch: Short circuit)	10
Failure code [DDT0L4] (Shift mode selector switch: ON/OFF signals disagree)	12
Failure code [DDT4LD] (Transmission cut-off set switch: Switch is kept pressed for long time)	14
Failure code [DDW9LD] (Kick-down switch: Switch is kept pressed for long time)	16
Failure code [DDWLLD] (Hold switch: Switch is kept pressed for long time)	18
Failure code [DDY0LD] (Load meter cancel switch: Switch is kept pressed for long time)	20
Failure code [DF10KA] (Transmission shift lever switch: Disconnected)	22
Failure code [DF10KB] (Transmission shift lever switch: Short circuit)	26
Failure code [DGF1KA] (Transmission oil temperature sensor: Disconnected)	28
Failure code [DGF1KB] (Transmission oil temperature sensor: Short circuit)	30
Failure code [DGH2KX] (Hydraulic oil temperature sensor: Out of input signal range)	32
Failure code [DGR2KA] (Rear brake oil temperature sensor: Disconnected)	34
Failure code [DGR2KX] (Rear brake oil temperature sensor: Out of input signal range)	36
Failure code [DGT1KX] (Torque converter oil temperature sensor: Out of input signal range)	38
Troubleshooting by failure code (Display of code), Part 7	SEN01219-00
Troubleshooting by failure code (Display of code), Part 7	2
Failure code [DHPCKX] (Lift arm cylinder bottom pressure sensor: Out of input signal range)	2
Failure code [DHPDKX] (Lift arm cylinder head pressure sensor: Out of input signal range)	4
Failure code [DHT1KX] (Transmission cut-off pressure sensor: Out of input signal range)	6
Failure code [DHT8KA] (Steering pump pressure sensor: Disconnection)	8
Failure code [DHT8KB] (Steering pump pressure sensor: Short circuit)	10

Troubleshooting by failure code (Display of code), Part 8	SEN01220-00
Troubleshooting by failure code (Display of code), Part 8.....	2
Failure code [DLT3KA] (Transmission output shaft speed sensor: Disconnection).....	2
Failure code [DLT3LC] (Transmission output shaft speed sensor: Out of input signal range).....	4
Failure code [DT20KB] (Transmission cut-off indicator lamp: Short circuit).....	6
Failure code [DV00KB] (Alarm buzzer: Short circuit).....	8
Troubleshooting by failure code (Display of code), Part 9	SEN01221-00
Troubleshooting by failure code (Display of code), Part 9.....	2
Failure code [DW7BKA] (Fan reverse solenoid: Disconnection).....	2
Failure code [DW7BKB] (Fan reverse solenoid: Short circuit).....	3
Failure code [DW7BKY] (Fan reverse solenoid: Short circuit with power supply line).....	4
Failure code [DX16KA] (Fan pump EPC solenoid: Disconnection).....	6
Failure code [DX16KB] (Fan pump EPC solenoid: Short circuit).....	7
Failure code [DX16KY] (Fan pump EPC solenoid: Short circuit with power supply line).....	8
Failure code [DXH1KA] (Lockup ECMV solenoid: Disconnection).....	10
Failure code [DXH1KB] (Lockup ECMV solenoid: Short circuit).....	12
Failure code [DXH1KY] (Lockup ECMV solenoid: Short circuit with power supply line).....	14
Failure code [DXH4KA] (1st clutch ECMV solenoid: Disconnection).....	16
Failure code [DXH4KB] (1st clutch ECMV solenoid: Short circuit).....	18
Troubleshooting by failure code (Display of code), Part 10	SEN01222-00
Troubleshooting by failure code (Display of code), Part 10.....	4
Failure code [DXH4KY] (1st clutch ECMV solenoid: Short circuit with power supply line).....	4
Failure code [DXH5KA] (2nd clutch ECMV solenoid: Disconnection).....	6
Failure code [DXH5KB] (2nd clutch ECMV solenoid: Short circuit).....	8
Failure code [DXH5KY] (2nd clutch ECMV solenoid: Short circuit with power supply line).....	10
Failure code [DXH6KA] (3rd clutch ECMV solenoid: Disconnection).....	12
Failure code [DXH6KB] (3rd clutch ECMV solenoid: Short circuit).....	14
Failure code [DXH6KY] (3rd clutch ECMV solenoid: Short circuit with power supply line).....	16
Failure code [DXH7KA] (R clutch ECMV solenoid: Disconnection).....	18
Failure code [DXH7KB] (R clutch ECMV solenoid: Short circuit).....	20
Failure code [DXH7KY] (R clutch ECMV solenoid: Short circuit with power supply line).....	22
Failure code [DXH8KA] (F clutch ECMV solenoid: Disconnection).....	24
Failure code [DXH8KB] (F clutch ECMV solenoid: Short circuit).....	26
Failure code [DXH8KY] (F clutch ECMV solenoid: Short circuit with power supply line).....	28
Failure code [DXHHKA] (4th clutch ECMV solenoid: Disconnection).....	30
Failure code [DXHHKB] (4th clutch ECMV solenoid: Short circuit).....	32
Failure code [DXHHKY] (4th clutch ECMV solenoid: Short circuit with power supply line).....	34
Troubleshooting of electrical system (E-mode)	SEN01223-00
Troubleshooting of electrical system (E-mode).....	3
Before carrying out troubleshooting for electrical system.....	3
Information in troubleshooting table.....	6
E-1 Engine does not start.....	7
E-2 Wiper does not operate.....	14
E-3 Windshield washer does not operate.....	18
E-4 Headlamp, clearance lamp, tail lamp, and license lamp do not light up or go off.....	21
E-5 Working lamp does not light up or go off.....	29
E-6 Turn signal lamp and hazard lamp do not light up or go off.....	34
E-7 Brake lamp does not light or it keeps lighting up.....	40
E-8 Backup lamp does not light or it keeps lighting up.....	42
E-9 Backup buzzer does not sound or it keeps sounding.....	44
E-10 Horn does not sound or it keeps sounding.....	46
E-11 Alarm buzzer does not sound or it keeps sounding.....	48
E-12 Air conditioner does not operate or stop.....	50
E-13 The KOMTRAX system does not work properly.....	53
Troubleshooting of hydraulic and mechanical system (H-mode)	SEN01224-00
Troubleshooting of hydraulic and mechanical system (H-mode).....	3
Method of using troubleshooting chart.....	3

Table of failure modes and causes	6
H-1 The machine does not start	10
H-2 Torque converter lockup is not switched off (engine stalls) [Machine with lockup clutch (if equipped)]	12
H-3 Torque converter lockup is not switched on [Machine with lockup clutch (if equipped)] ...	13
H-4 The travel speed is slow, the thrusting force is weak, the uphill traveling power is weak, and the gear is not shifted	14
H-5 Shocks are large at the times of starting and shifting gear	16
H-6 Time lag is large at the times of starting and shifting gear	18
H-7 The torque converter oil temperature is high	20
H-8 Steering does not turn	21
H-9 Steering does not turn [Machine with joystick steering (if equipped)]	22
H-10 Steering response is low	23
H-11 Turning, response of steering is poor [machine with joystick steering (if equipped)]	24
H-12 Steering is heavy	25
H-13 When machine turns, it shakes or makes large shocks	26
H-14 When machine turns, it shakes or makes large shocks [machine with joystick steering (if equipped)]	27
H-15 The wheel brake does not work or does not work well	28
H-16 The wheel brake is not released or it drags	29
H-17 The parking brake does not work or does not work well	30
H-18 The parking brake is not released or it drags (including emergency release system)	31
H-19 Lift arm does not rise	32
H-20 Lift arm speed is low or rising force of lift arm is insufficient	33
H-21 When rising, the lift arm comes to move slowly at specific height	34
H-22 The lift arm cylinder cannot hold down the bucket (Bucket floats)	34
H-23 Hydraulic drifts of the lift arm is large	34
H-24 The lift arm wobbles during operation	34
H-25 Bucket does not tilt back	35
H-26 Bucket speed is low or tilting back force is insufficient	36
H-27 The bucket comes to operate slowly in the midst of tilting-back	37
H-28 The bucket cylinder cannot hold down the bucket	37
H-29 Hydraulic drifts of the bucket is large	37
H-30 The bucket wobbles during travel with cargo (The work equipment valve is set to "HOLD")	37
H-31 Lift arm and bucket control levers do not move smoothly and are heavy	38
H-32 During operation of the machine, engine speed lowers remarkably or engine stalls	39
H-33 Large shock is made when work equipment starts and stops	39
H-34 When work equipment circuit is relieved singly, other work equipment moves	39
H-35 ECSS does not operate, and pitching, bouncing occur	40
Troubleshooting of engine (S-mode)	SEN01225-00
Troubleshooting of engine (S-mode)	3
Method of using troubleshooting chart	3
S-1 Engine does not start easily.	6
S-2 Engine does not start	7
S-3 Engine does not pick up smoothly	10
S-4 Engine stops during operations	11
S-5 Engine does not rotate smoothly	12
S-6 Engine lacks output (or lacks power)	13
S-7 Exhaust smoke is black (Incomplete combustion)	14
S-8 Oil consumption is excessive (or exhaust smoke is blue)	15
S-9 Engine oil becomes contaminated quickly	16
S-10 Fuel consumption is excessive	17
S-11 Coolant contains oil (blows back or reduces)	18
S-12 Oil pressure drops	19
S-13 Oil level rises (Water, fuel in oil)	20
S-14 Coolant temperature rises too high (Overheating)	21
S-15 Abnormal noise is made	22

S-16 Vibration is excessive	23
50 Disassembly and assembly	
General information on disassembly and assembly	SEN01461-00
General information on disassembly and assembly	2
How to read this manual	2
Coating materials list	4
Special tools list	7
Engine and cooling system	SEN01462-00
Engine and cooling system	2
Removal and installation of fuel supply pump assembly	2
Removal and installation of fuel injector assembly	4
Removal and installation of cylinder head assembly	9
Removal and installation of engine hood	18
Removal and installation of radiator assembly	20
Removal and installation of air aftercooler	22
Removal and installation of hydraulic oil cooler assembly	24
Removal and installation of engine assembly	26
Removal and installation of cooling fan and fan motor assembly	31
Removal and installation of fuel tank assembly	34
Power train	SEN01463-00
Power train	2
Removal and installation of torque converter and transmission assembly	2
Disassembly and assembly of torque converter assembly (Standard specification)	8
Disassembly and assembly of torque converter assembly (Lockup specification)	12
Disassembly and assembly of transmission assembly	18
Disassembly and assembly of transmission clutch pack assembly	33
Disassembly and assembly of parking brake assembly	49
Removal and installation of front axle assembly	54
Removal and installation of rear axle assembly	56
Disassembly and assembly of axle housing	59
Disassembly and assembly of differential assembly	68
Steering system	SEN01464-00
Steering system	2
Removal and installation of steering demand valve assembly	2
Brake system	SEN01465-00
Brake system	2
Removal and installation of parking brake discs and plates	2
Undercarriage and frame	SEN01466-00
Undercarriage and frame	2
Removal and installation of center hinge pin	2
Removal and installation of counterweight	10
Hydraulic system	SEN01467-00
Hydraulic system	2
Removal and installation of work equipment control valve assembly	2
Removal and installation of power train pump and work equipment pump assembly	4
Removal and installation of steering pump and cooling fan pump assembly	5
Removal and installation of hydraulic tank assembly	6
Work equipment	SEN01468-00
Work equipment	2
Removal and installation of work equipment assembly	2
Disassembly and assembly of hydraulic cylinder assembly	6
Cab and its attachments	SEN01469-00
Cab and its attachments	2
Removal and installation of operator's cab and floor frame assembly	2

Removal and installation of operator's cab glass (stuck glass)	5
Removal and installation of air conditioner unit assembly	13
Electrical system	SEN01470-00
Electrical system	2
Removal and installation of engine controller assembly	2
90 Diagrams and drawings	
Hydraulic diagrams and drawings	SEN01022-00
Hydraulic diagrams and drawings	2
Power train hydraulic circuit diagram	2
Hydraulic circuit diagram	5
Electrical diagrams and drawings	SEN01023-00
Electrical diagrams and drawings	3
Electrical circuit diagram (1/2)	3
Electrical circuit diagram (2/2)	5