SEN06589-03

Shop Manual

HYDRAULIC
EXCAVATOR

PC138USLC-11

SERIAL NUMBERS 50001 and up

KOMATSU®

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INDEX

00 INDEX AND FOREWORD 00-1
ABBREVIATION LIST 00-18
FOREWORD, SAFETY, BASIC INFORMATION 00-24
HOW TO READ THE SHOP MANUAL 00-24
SAFETY NOTICE FOR OPERATION 00-26
PRECAUTIONS TO PREVENT FIRE 00-34
ACTIONS IF FIRE OCCURS 00-36
PRECAUTIONS FOR DISPOSING OF WASTE MATERIALS 00-37
ACTIONS TAKEN TO MEET EXHAUST GAS REGULATIONS 00-38
PRECAUTIONS FOR DEF 00-39
STORE AdBlue/DEF 00-40
PRECAUTIONS FOR HANDLING HYDRAULIC EQUIPMENT 00-41
PRECAUTIONS FOR DISCONNECTION AND CONNECTION OF PIPINGS 00-44
PRECAUTIONS FOR HANDLING ELECTRICAL EQUIPMENT 00-50
PRECAUTIONS FOR HANDLING FUEL SYSTEM EQUIPMENT 00-52
PRECAUTIONS FOR HANDLING INTAKE SYSTEM EQUIPMENT 00-53
PRACTICAL USE OF KOMTRAX 00-54
DISCONNECT AND CONNECT PUSH-PULL TYPE COUPLER 00-55
PRECAUTIONS FOR DISCONNECTION AND CONNECTION OF CONNECTORS 00-59
METHOD FOR DISCONNECTING AND CONNECTING DEUTSCH CONNECTOR 00-63
METHOD FOR DISCONNECTING AND CONNECTING SLIDE LOCK TYPE CONNECTOR 00-64
METHOD FOR DISCONNECTING AND CONNECTING CONNECTOR WITH LOCK TO PULL ... 00-66
METHOD FOR DISCONNECTING AND CONNECTING CONNECTOR WITH LOCK TO PUSH .. 00-67
METHOD FOR DISCONNECTING AND CONNECTING CONNECTOR WITH HOUSING TO ROTATE 00-69
HOW TO READ ELECTRICAL WIRE CODE 00-70
EXPLANATION OF TERMS FOR MAINTENANCE STANDARD 00-74
STANDARD TIGHTENING TORQUE TABLE 00-77
CONVERSION TABLE 00-84
01 SPECIFICATIONS 01-1
CONTENTS 01-2
ABBREVIATION LIST 01-3
SPECIFICATIONS 01-9
SPECIFICATION DRAWING 01-9
WORKING RANGE DRAWINGS 01-11
SPECIFICATIONS 01-12
WEIGHT TABLE 01-16
TABLE OF FUEL, COOLANT, AND LUBRICANTS 01-18
10 STRUCTURE AND FUNCTION 10-1
CONTENTS 10-2
ABBREVIATION LIST 10-5
UREA SCR SYSTEM 10-11
LAYOUT DRAWING OF UREA SCR SYSTEM 10-11
UREA SCR SYSTEM DIAGRAM 10-13
FUNCTION OF UREA SCR SYSTEM 10-14
COMPONENT PARTS OF UREA SCR SYSTEM 10-31
BOOT-UP SYSTEM 10-40
LAYOUT DRAWING OF BOOT-UP SYSTEM 10-40
SYSTEM OPERATING LAMP SYSTEM 10-41
BATTERY DISCONNECT SWITCH 10-42
ENGINE SYSTEM 10-43
LAYOUT DRAWING OF ENGINE SYSTEM 10-43
ENGINE CONTROL SYSTEM 10-45
AUTO-DECELERATION SYSTEM 10-48
ENGINE AUTOMATIC WARM-UP SYSTEM 10-50
OVERHEAT PREVENTION SYSTEM 10-52

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TURBOCHARGER PROTECTION SYSTEM 10-54
AUTOMATIC IDLE STOP SYSTEM 10-55
COMPONENT PARTS OF ENGINE SYSTEM 10-58
COOLING SYSTEM 10-77
LAYOUT DRAWING OF COOLING SYSTEM 10-77
CONTROL SYSTEM 10-79
LAYOUT DRAWING OF CONTROL SYSTEM 10-79
MACHINE MONITOR SYSTEM 10-81
KomVision SYSTEM 10-83
KOMTRAX SYSTEM 10-87
COMPONENT PARTS OF CONTROL SYSTEM 10-88
HYDRAULIC SYSTEM 10-126
LAYOUT DRAWING OF HYDRAULIC SYSTEM 10-126
CLSS 10-128
ENGINE AND PUMP COMBINED CONTROL SYSTEM 10-131
COMPONENT PARTS OF HYDRAULIC SYSTEM 10-136
WORK EQUIPMENT SYSTEM 10-224
LAYOUT DRAWING OF WORK EQUIPMENT SYSTEM 10-224
STRUCTURE OF VALVE CONTROL 10-227
PPC LOCK SYSTEM 10-228
WORK EQUIPMENT AND TRAVEL AUTOMATIC LOCK SYSTEM 10-229
OIL FLOW ADJUSTER SYSTEM FOR ATTACHMENT 10-231
COMPONENT PARTS OF WORK EQUIPMENT SYSTEM 10-233
SWING SYSTEM 10-259
LAYOUT DRAWING OF SWING SYSTEM 10-259
SWING CONTROL SYSTEM DIAGRAM 10-261
COMPONENT PARTS OF SWING SYSTEM 10-264
TRAVEL SYSTEM 10-277
LAYOUT DRAWING OF TRAVEL SYSTEM 10-277
TRAVEL CONTROL SYSTEM DIAGRAM 10-279
COMPONENT PARTS OF TRAVEL SYSTEM 10-283
UNDERCARRIAGE AND FRAME 10-299
LAYOUT DRAWING OF UNDERCARRIAGE 10-299
IDLER CUSHION 10-300
WORK EQUIPMENT 10-301
STRUCTURE OF WORK EQUIPMENT 10-301
FUNCTION OF WORK EQUIPMENT 10-302
WORK EQUIPMENT CLEARANCE ADJUSTMENT SHIM 10-303
BUCKET CLEARANCE ADJUSTMENT SHIM 10-304
CAB AND ITS ATTACHMENTS 10-305
ROPS CAB 10-305
CAB MOUNT 10-306
TAKE WIRING HARNESS OUT OF CAB 10-308
20 STANDARD VALUE TABLE 20-1
CONTENTS 20-2
ABBREVIATION LIST 20-3
STANDARD VALUE TABLE FOR ENGINE 20-9
STANDARD VALUE TABLE FOR ENGINE:PC138USLC-11 20-9
STANDARD VALUE TABLE FOR MACHINE 20-13
STANDARD VALUE TABLE FOR MACHINE:PC138USLC-11 20-13
MACHINE POSTURE AND PROCEDURE FOR MEASURING PERFORMANCE 20-26
30 TESTING AND ADJUSTING 30-1
CONTENTS 30-2
ABBREVIATION LIST 30-5
RELATED INFORMATION ON TESTING AND ADJUSTING 30-11
TOOLS FOR TESTING AND ADJUSTING 30-11
SKETCH OF TOOLS FOR TESTING AND ADJUSTING 30-18
ENGINE AND COOLING SYSTEM 30-20

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TEST ENGINE SPEED 30-20
TEST EXHAUST GAS COLOR 30-23
TEST THE CLEARANCE OF THE EXHAUST THROTTLE VALVE 30-25
TEST AND ADJUST VALVE CLEARANCE 30-28
TEST COMPRESSION PRESSURE 30-30
TEST BLOWBY PRESSURE 30-33
TEST ENGINE OIL PRESSURE 30-35
TEST FUEL PRESSURE 30-37
TEST FUEL RETURN RATE AND LEAKAGE 30-39
BLEED AIR FROM FUEL SYSTEM 30-43
TEST FUEL CIRCUIT FOR LEAKAGE 30-45
HANDLE CYLINDER CUT-OUT MODE OPERATION 30-47
HANDLE NO-INJECTION CRANKING OPERATION 30-48
TEST AND ADJUST AIR CONDITIONER COMPRESSOR BELT TENSION 30-49
TEST ALTERNATOR BELT 30-51
TEST AUTOMATIC TENSIONER 30-52
TEST COOLING FAN SPEED 30-55
WRITE INJECTOR COMPENSATION VALUE TO ENGINE CONTROLLER 30-56
TEST SCR RELATED FUNCTIONS 30-62
CLEAN AdBlue/DEF TANK 30-92
BLEED AIR FROM COOLANT CIRCUIT OF AdBlue/DEF TANK 30-97
POWER TRAIN 30-99
TEST SWING CIRCLE BEARING CLEARANCE 30-99
UNDERCARRIAGE AND FRAME 30-100
TEST AND ADJUST TRACK TENSION 30-100
HYDRAULIC SYSTEM 30-102
RELEASE REMAINING PRESSURE FROM HYDRAULIC SYSTEM 30-102
TEST AND ADJUST OIL PRESSURE IN WORK EQUIPMENT, SWING, TRAVEL, AND BLADE CIRCUITS 30-105
TEST OIL PRESSURE OF CONTROL CIRCUIT 30-114
TEST AND ADJUST OIL PRESSURE IN PUMP PC CONTROL CIRCUIT 30-116
TEST AND ADJUST OIL PRESSURE IN PUMP LS CONTROL CIRCUIT 30-120
TEST OUTLET PRESSURE OF SOLENOID VALVE 30-126
TEST PPC VALVE OUTLET PRESSURE 30-131
ADJUST WORK EQUIPMENT AND SWING PPC VALVES 30-133
TEST AND ADJUST TRAVEL DEVIATION 30-134
TEST THE PARTS CAUSING HYDRAULIC DRIFT IN WORK EQUIPMENT 30-137
TEST OIL LEAKAGE 30-139
BLEED AIR FROM HYDRAULIC CIRCUIT 30-143
CAB AND ITS ATTACHMENTS 30-147
TEST CAB TIPPING STOPPER 30-147
METHOD FOR ADJUSTING MIRRORS 30-148
ELECTRICAL SYSTEM 30-150
SET AND OPERATE MACHINE MONITOR 30-150
METHOD FOR STARTING UP KOMTRAX TERMINAL 30-223
ADJUST REARVIEW CAMERA ANGLE 30-228
ADJUST KomVision CAMERA ANGLE 30-231
ADJUST KomVision RELATED ITEMS 30-233
HANDLE VOLTAGE CIRCUIT OF ENGINE CONTROLLER 30-249
HANDLE BATTERY DISCONNECT SWITCH 30-250
TEST DIODES 30-251
Pm CLINIC 30-252
Pm CLINIC SERVICE 30-252
40 TROUBLESHOOTING 40-1
CONTENTS 40-2
ABBREVIATION LIST 40-12
RELATED INFORMATION ON TROUBLESHOOTING 40-18
GENERAL TROUBLESHOOTING POINTS 40-18

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Item	Unit	PC138USLC-11	
		Specification to which the blade is installable	Specification of blade
Track roller	-	8 pieces on one side	
Track shoe	-		
Steel shoe	-	Assembly type triple grouser shoe, 46 pieces on one side	
Road liner	-	Assembly type road liner, 46 pieces on one side	
Hydraulic system			
Main pump			
Type x quantity	-	Variable displacement piston type x 1 pieces	
Discharged volume	cm^3/rev	121 x 2(at 2050 rpm)	
Set pressure	MPa{ kg/cm^2}	34.8 {355}	
Control valve			
Type x quantity	-	7-spool type x 1 piece	
Operating method	-	Hydraulic assist type	
Travel motor			
Type x quantity	-	Variable displacement piston type x 2 pieces (with brake valve and parking brake)	
Swing motor			
Type x quantity	-	Fixed displacement piston type x 1 piece (With swing modulating relief valve and swing parking brake)	
Boom cylinder			
Type	-	Double-acting piston type	Double-acting piston type
Cylinder bore	mm	105	105
Piston rod diameter	mm	70	70
Stroke	mm	1055	1055
Max. distance between pins	mm	2555	2555
Min. distance between pins	mm	1500	1500
Arm cylinder			
Type	-	Double-acting piston type	Double-acting piston type
Cylinder bore	mm	110	110
Piston rod diameter	mm	75	75
Stroke	mm	1175	1175
Max. distance between pins	mm	2798	2798
Min. distance between pins	mm	1623	1623
Bucket cylinder			
Type	-	Double-acting piston type	Double-acting piston type
Cylinder bore	mm	95	95
Piston rod diameter	mm	65	65
Stroke	mm	885	885

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FAILURE CODE [CA4155]

Action level	Failure code	Failure	AdBlue/DEF Pump Heater Relay Voltage High Error (Engine controller system)
L01	CA4155		
Detail of failure	A high voltage error is detected in AdBlue/DEF pump heater relay circuit.		
Action of controller	Advances to Inducement strategy.		
Phenomenon on machine	• Engine output is reduced based on inducement strategy. • AdBlue/DEF thawing defective. • NOx emission increases because AdBlue/DEF injection is disabled at low temperature.		
Related information	• Connectors of electrical parts around engine may be defective due to heat and vibration. See descriptions of wiring harness and connectors in "Electrical equipment" in "CHECKS BEFORE TROUBLESHOOTING" of "RELATED INFORMATION ON TROUBLESHOOTING", and check them. • AdBlue/DEF pump heater relay is driven at AdBlue/DEF supply system thawing/thermal insulation or an AdBlue/DEF pump heater relay test. • AdBlue/DEF pump heater relay is integrated in the AdBlue/DEF heater relay. • Troubleshooting of this failure code covers circuits from engine controller through AdBlue/DEF heater relay to ground. • This failure code is detected only when the AdBlue/DEF pump heater relay is turned OFF. • This failure code is displayed if the connector is removed. • After repairing, check if the failure code is cleared by the following procedure. Procedure: Turn starting switch to ON position.		

No.	Cause	Procedure, measuring location, criteria and remarks		
1	Defective wiring harness connector	1. See descriptions of wiring harness and connectors in "Electrical equipment" in "CHECKS BEFORE TROUBLESHOOTING" of "RELATED INFORMATION ON TROUBLESHOOTING", and check it. 2. See "service modes" of "setting and operating machine monitor", "operating method of testing menu (SCR service test)" to perform an "AdBlue/DEF pump heater relay test".		
		If this failure code is cleared, wiring harness connector is defective.		
2	Open circuit in wiring harness (wire breakage or defective contact of connector)	1. Turn the starting switch to OFF position. 2. Disconnect the connectors ECM J2, R53A and MB02, and connect the T-adapter to each female side.		
		Resistance	Between R53A (female) (12) and ground	Max. 1 Ω
		Resistance	Between ECM J2 (female) (83) and R53A (female) (3)	Max. 1 Ω
3	Hot short circuit in wiring harness	1. Turn starting switch to OFF position. 2. Disconnect connector R53A, and connect T-adapter to female side. 3. Turn starting switch to ON position.		
		Voltage	Between R53A (female) (3) and (12)	Max. 4.5 V

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Related circuit diagram

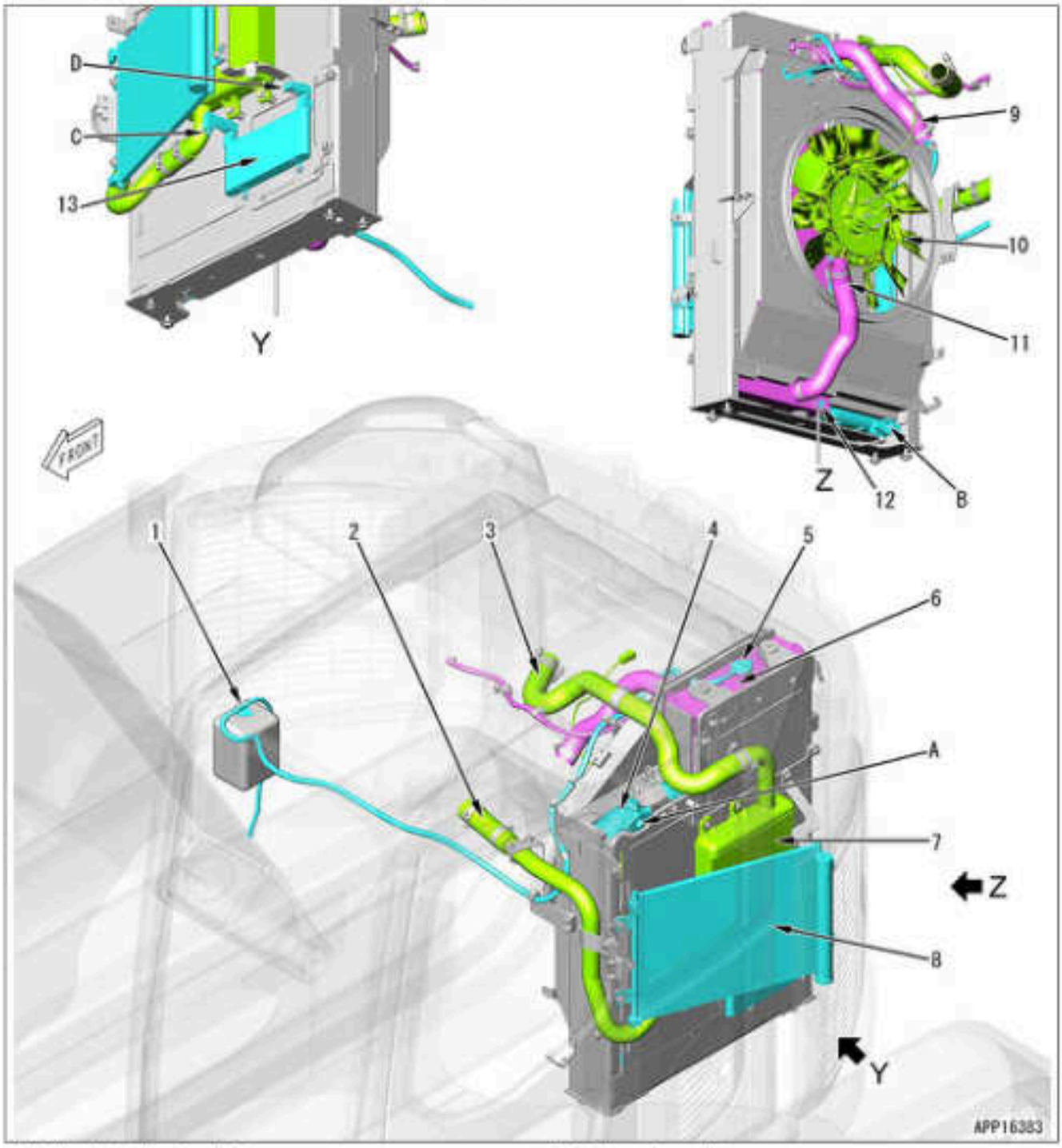
This is the excerpted circuit diagram related to troubleshooting

- Connector numbers and pin numbers are shown.
- Size of wire is shown. When there is a number in front of color, it shows size.
  W: White, B: Black, R: Red, G: Green, Y: Yellow, L: Blue, V: Purple, P: Pink, O: Orange, Br: Brown, Gr: Gray, Sb: Sky blue, Lg: Light green, Dg: Dark green, Ch: Dark brown
  - When there are two colors
    Example) WY: Yellow line on white background
  - When there is a number in front of color, it shows size.
- NC: Normally closed (Normally ON)
- [1] and [2] are numbers of unlabeled connectors.
- Arrow (⟷): Roughly indicates their mounting place on the machine.

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COOLING SYSTEM

LAYOUT DRAWING OF COOLING SYSTEM



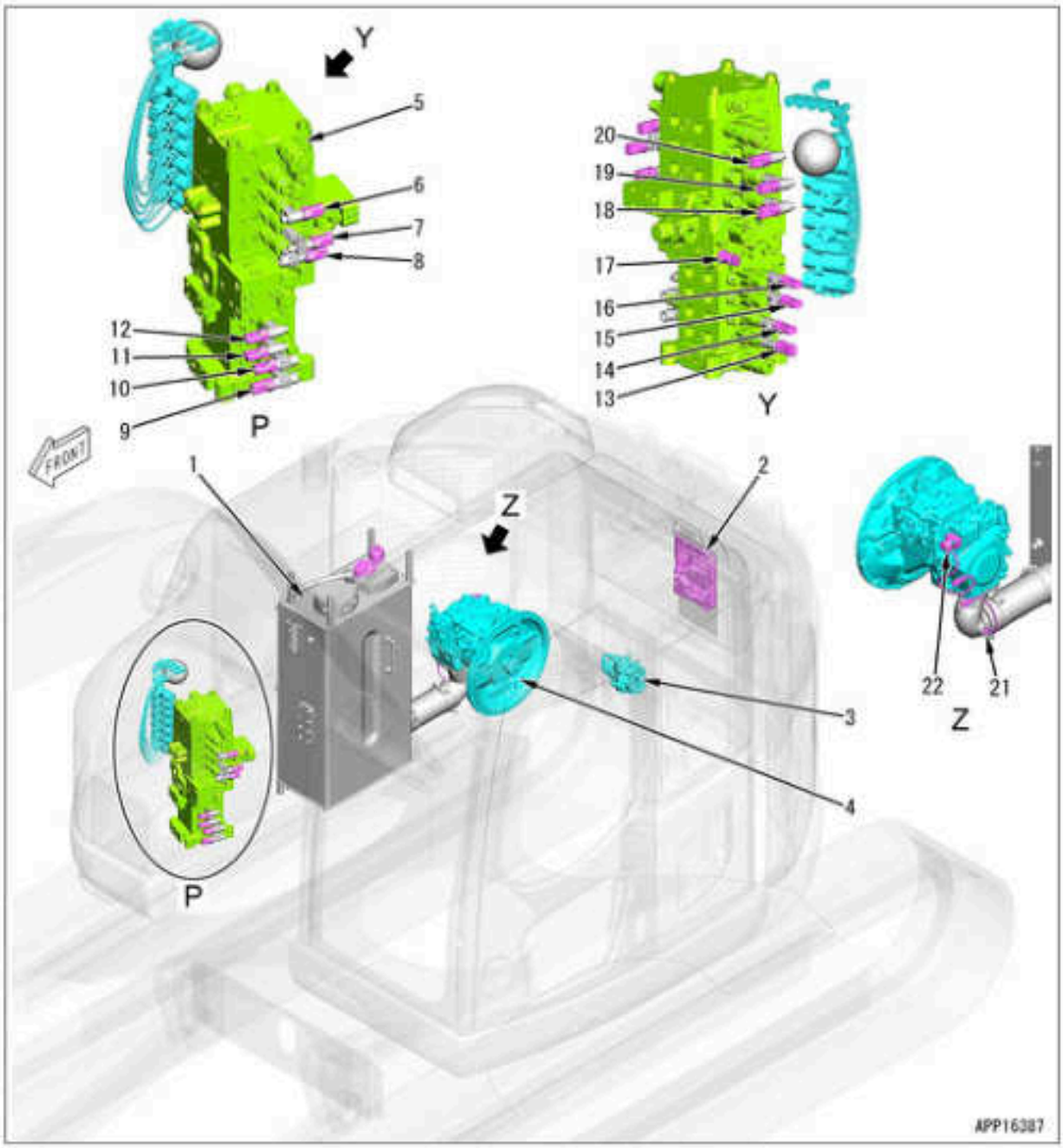
A: Hydraulic oil cooler inlet
B: Hydraulic oil cooler outlet
1: Reservoir tank
2: Aftercooler inlet hose
3: Aftercooler outlet hose
4: Hydraulic oil cooler
5: Radiator cap
C: Fuel cooler outlet
D: Fuel cooler inlet
6: Radiator
7: Aftercooler
8: Air conditioner condenser
9: Radiator inlet hose
10: Fan

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HYDRAULIC SYSTEM

LAYOUT DRAWING OF HYDRAULIC SYSTEM

Chassis part



1: Hydraulic tank
2: Engine controller
3: Fuel supply pump
4: Main pump
5: Control valve
6: Bucket DUMP sensor
7: Arm OUT sensor
8: Boom RAISE pressure sensor
9: Swing LEFT pressure sensor
10: Blade LOWER pressure switch
11: L.H. travel FORWARD pressure sensor
12: R.H. travel FORWARD pressure sensor

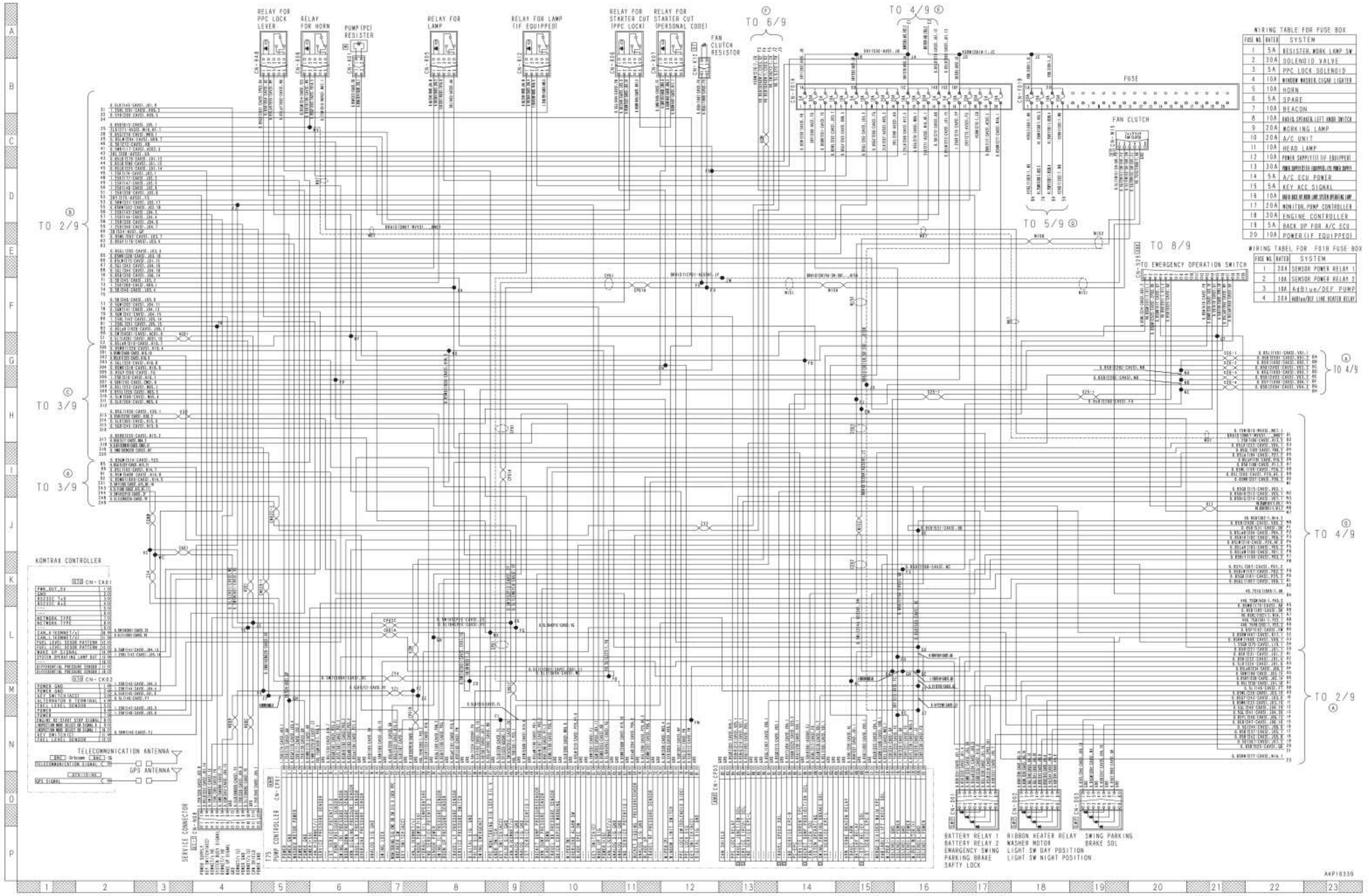
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ELECTRICAL CIRCUIT DIAGRAM (1/9)

PC138USLC-11

REMARK

This figure covers the equipment and devices that are unavailable as optional items in some areas.



WIRING TABLE FOR FUSE BOX

FUSE NO.	RATED	SYSTEM
1	5A	RESISTER, WORK LAMP SW
2	30A	SOLENOID VALVE
3	5A	PPC LOCK SOLENOID
4	10A	WINDOW WASHER,CIGAR LIGHTER
5	10A	HORN
6	5A	SPARE
7	10A	BEACON
8	10A	RADIO,SPEAKER,LEFT KNOB SWITCH
9	20A	WORKING LAMP
10	20A	A/C UNIT
11	10A	HEAD LAMP
12	10A	POWER SUPPLY(IF EQUIPPED)
13	30A	POWER SUPPLY(IF EQUIPPED,15 POWER SUPPLY)
14	5A	A/C ECU POWER
15	5A	KEY ACC SIGNAL
16	10A	RADIO BACK UP,ROOM LAMP,SPEAKER OPERATING LAMP
17	20A	MONITOR,PUMP CONTROLLER
18	30A	ENGINE CONTROLLER
19	5A	BACK UP FOR A/C ECU
20	10A	POWER(IF EQUIPPED)

WIRING TABEL FOR F01B FUSE BOX

FUSE NO.	RATED	SYSTEM
1	30A	SENSOR POWER RELAY 1
2	10A	SENSOR POWER RELAY 2
3	10A	AdBlue/DEF PUMP
4	20A	AdBlue/DEF LINE HEATER RELAY

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