SEN06515-03

Shop Manual

HYDRAULIC
EXCAVATOR

PC210i -10
PC210LCi -10

SERIAL NUMBERS 451080 and up

KOMATSU®

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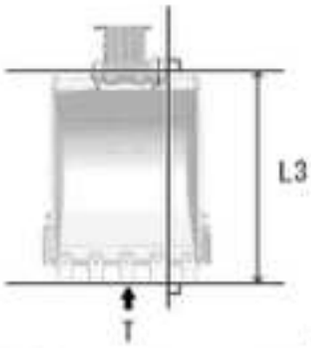
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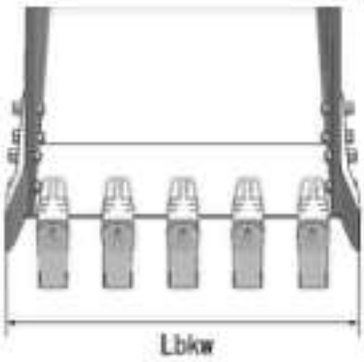
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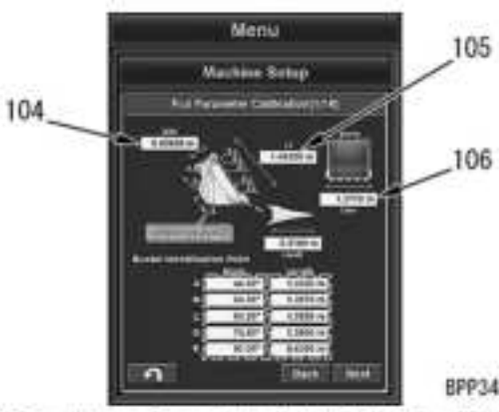
BPP34318

- "Lbkw": Distance between side cutters (or distance between widest parts of bucket when no side cutter is installed)



BPP26193

4) Compare the measured dimensions with dimensions "Lbk3" (104), "L3" (105), and "Lbkw" (106) displayed on "Full Parameter Calibration [1/16]" screen.
When dimensions are the same
Since the selected bucket file matches with the installed bucket, set the machine in the posture for calculating the swing plane of the machine.
When dimensions are not the same
Since the selected bucket file is wrong, return to "Conventional Bucket Files" screen and select the correct bucket file again.



BPP34395

When there is no bucket file in the list and you need to copy a bucket file from USB memory

1) Insert USB memory (16) containing the bucket file of the bucket currently installed to the machine into control box.
   - Since you cannot input a password for canceling the lock function of USB memory (16) into control box, use USB memory (16) for which no password is set.
   - Always save the bucket file in the root directory of USB memory (16).



BPP26185

2) Press "Copy" (17).



BPP26186

3) Press "▼" (18) on "Copy files" screen.
4) Press and select "D: to 3DMC folder" (19) on the pull-down menu.



BPP26187

5) In the displayed bucket file list in the USB memory, press and select the applicable bucket file name.
   - The background of the selected line changes to yellow.

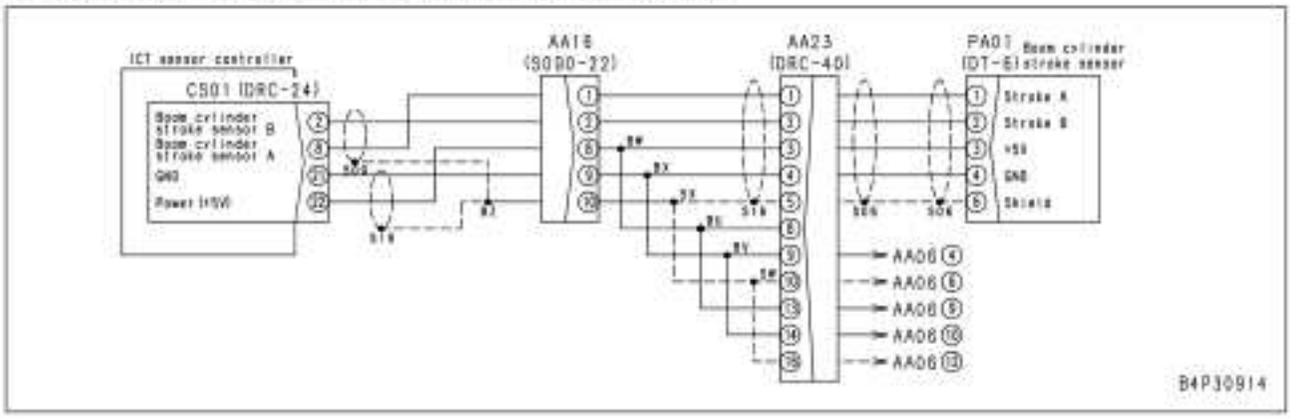
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Failure code [DKT1KB] Boom Cyl Stroke Sensor A Short Circuit (PC200_ICT-DKT1KB-400-A-Z1-A)

Action level	Failure code	Failure	Boom Cylinder Stroke Sensor A Phase Hot Short (ICT sensor controller system)
L01	DKT1KB		
Details of failure	• Input voltage from stroke sensor phase A for boom cylinder is above 4.7 V.		
Action of controller	• None.		
Problem on machine	• Boom in image of excavator on control box screen stops.		
Related information	• Control box displays the message "Sensors are invalid". • Method of reproducing failure code: Turn starting switch to ON position.		

No.	Cause	Procedure, measuring location, criteria, and remarks		
1	Defective 5 V sensor power supply system	If failure code [DBR5KP] is also displayed, perform troubleshooting for it first.		
2	Defective boom cylinder stroke sensor phase A (internal open circuit or ground fault)	1. Turn starting switch to OFF position. 2. Connect T-adapter to connector PA01. 3. Turn starting switch to ON position.		
		If failure code [DKT1KB] disappears, stroke sensor for boom cylinder is defective. (If this failure code is still displayed, wiring harness or ICT sensor controller is defective.) ★ Since connector PA01 is disconnected, many failure codes appear. Ignore failure codes besides [DKT1KB].		
3	Hot short circuit in wiring harness	1. Turn starting switch to OFF position. 2. Disconnect connectors CS01 and PA01 and connect T-adapters to each female side.		
		Voltage	Between PA01 (female) (1) and (4) or ground	Max. 1 V
4	Short circuit in wiring harness	1. Turn starting switch to OFF position. 2. Disconnect connectors CS01 and PA01, and connect T-adapter to female side of CS01. ★ Check by using multimeter in continuity mode.		
		Continuity	Between CS01 (female) (8) and each pin other than (8)	No continuity (no sound is heard)
5	ICT sensor controller error	If no failure is found by preceding checks, ICT sensor controller is defective. • Reference 1. Turn starting switch to OFF position. 2. Insert T-adapter into connector CS01. 3. Turn starting switch to ON position.		
		Voltage	Between CS01 (8) and (21)	0.3 to 4.7 V

Circuit diagram related to stroke sensor for boom cylinder



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★ Installed positions of wiring harnesses

Wiring harness color	Cylinder No.
White	1, 3, 5
Black	2, 4, 6

Mounting nut:
1.5 ± 0.25 Nm {0.15 ± 0.03 kgm}

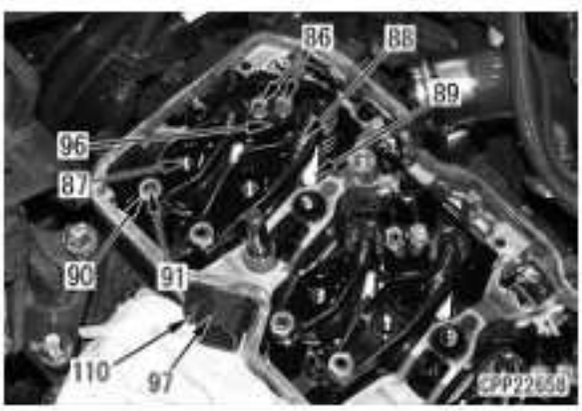
★ If injector wiring harness connector (97) is removed, apply liquid gasket to O-ring (108) and flange (109) of the connector.

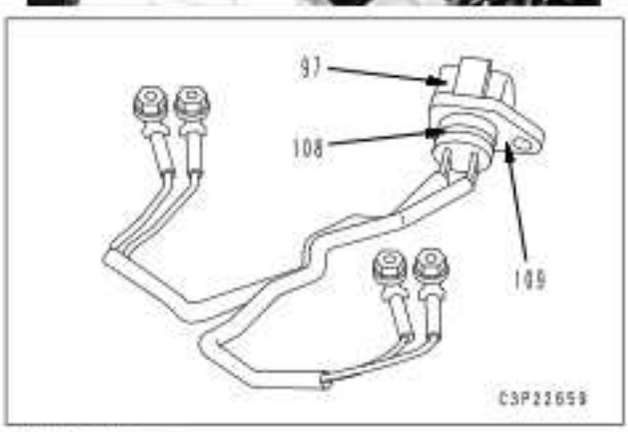
Apply a bead of liquid gasket, ϕ3 mm in diameter to the O-ring so that the ring groove is completely covered.

If the O-ring is damaged, replace it and the wiring harness assembly as a unit.

O-ring and flange face of connector:
Liquid gasket (LG-7)

Connector flange mounting bolt (110):
10 ± 2 Nm {1 ± 0.2 kgm}





6. Head cover

1) Install the gasket and then install head cover (85) with mounting nuts (84).

Mounting nut:
24 ± 4 Nm {2.45 ± 0.41 kgm}

2) Install blowby duct (83).

Mounting bolt:
7 ± 2 Nm {0.7 ± 0.2 kgm}

3) Install spill tube (82).

Joint bolt:
24 ± 4 Nm {2.45 ± 0.41 kgm}



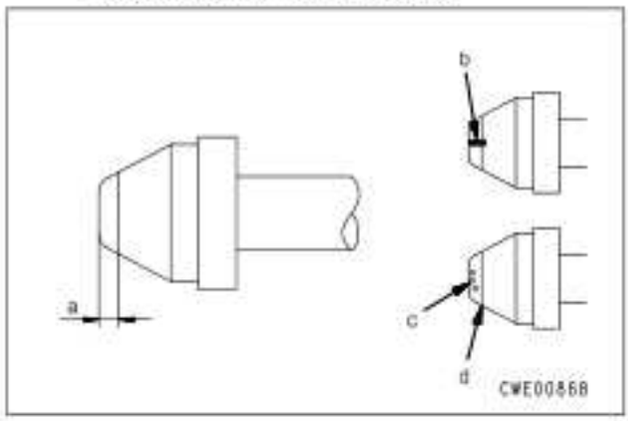
7. High-pressure pipe

⚠ Do not use high-pressure pipes with bending modification.

⚠ Be sure to use the genuine high-pressure pipe fixing clamp and observe the tightening torque.

⚠ Install each high-pressure pipe and wiring harness at least 10 mm apart from each other.

★ A high-pressure pipe may cause fuel leakage if visible lengthwise slits (**b**) or spots (**c**) are found at the joint's taper seal at part (**a**) (within 2 mm from the end), or the stepped wear at part (**d**) (2 mm from the end of taper seal) is as severe as it can be felt with a fingernail. If there is any of those defects, replace the high-pressure pipe.

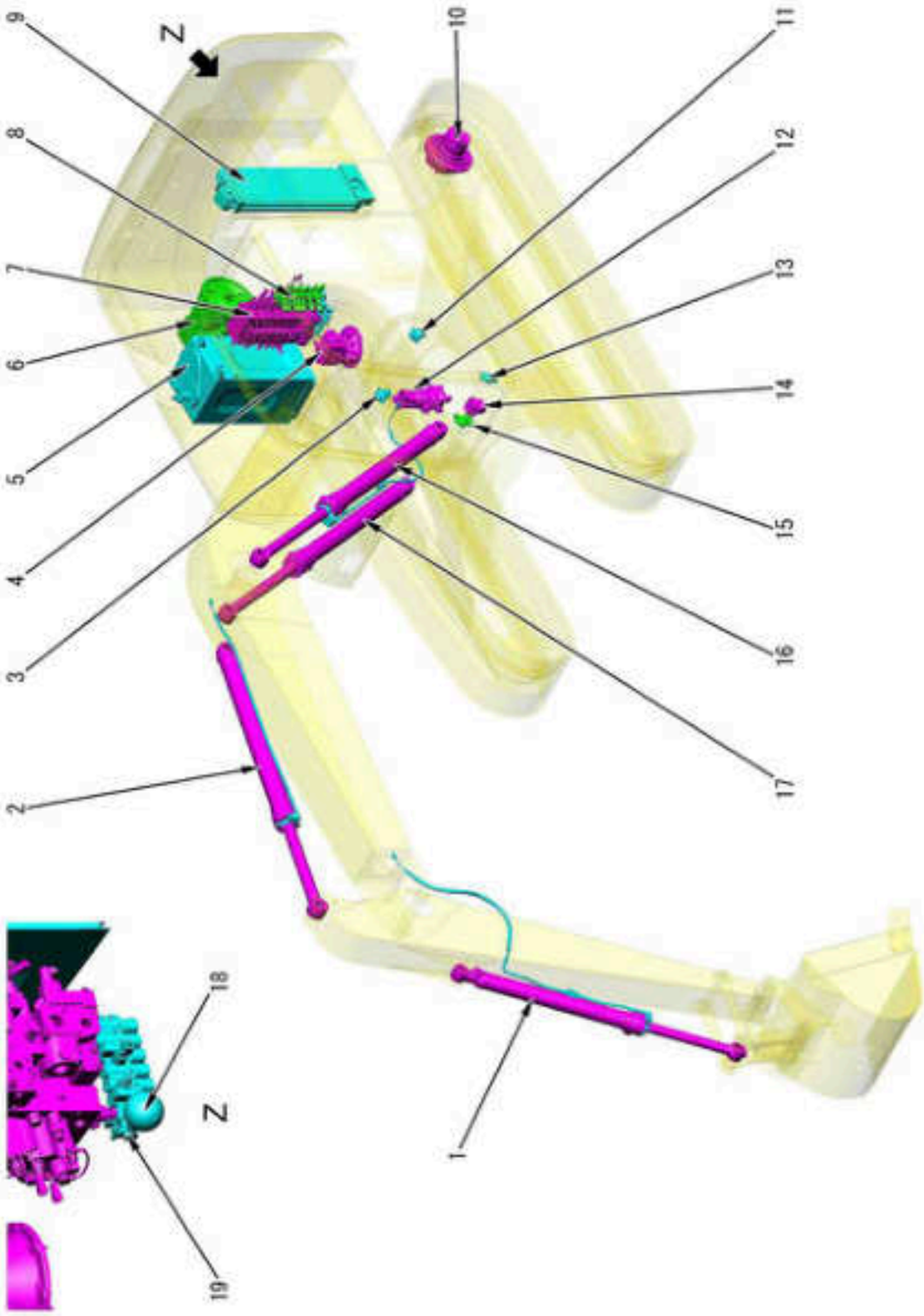


1) Tighten common rail (125) and high pressure pipes (34) to (39) lightly.

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Hydraulic system (ALL-C000-001-K-00-A)

Hydraulic component layout (PC200_ICT-C000-04D-K-01-A)



APP15911

1. Stroke sensing bucket cylinder

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21. GNSS antenna (AUX)

Input and output signals

a. CAN signal 2 (Komnet/c)
b. CAN signal 1 (Komnet/r)
c. Cylinder stroke signal
d. Cylinder reset signal
e. Ethernet signal
f. GNSS signal (MAIN antenna)
g. GNSS signal (AUX antenna)
h. PPC pressure (lever side) signal
i. PPC pressure reduce pressure EPC drive signal
j. PPC pressure (control valve side) signal

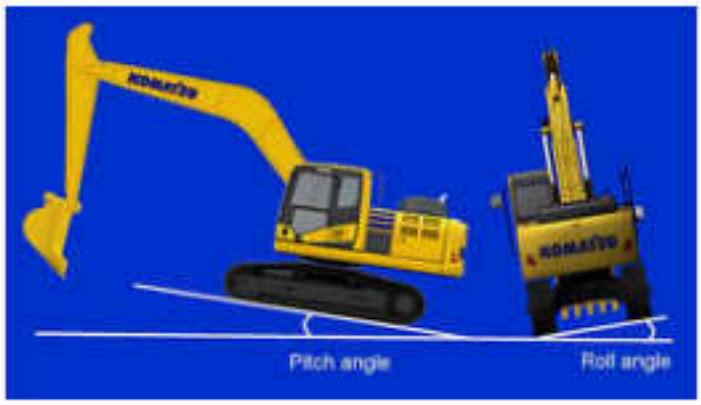
Blade edge position detection function *(PC200_ICT-LL9B-110-K-22-A)*

Function

- This function calculates the blade tip coordinates to display the blade tip position on the control box.

Calculation

- GNSS receiver
  GNSS receiver measures the position of each antenna, and sends its information to the control box.
- ICT sensor controller
  ICT sensor controller calculates the work equipment posture from the length of each work equipment cylinder.
  ICT sensor controller calculates the machine pitch angle and machine roll angle from the angle information detected by IMU.
  ICT sensor controller sends the work equipment posture, machine pitch angle, and machine roll angle to the control box.



APP16553

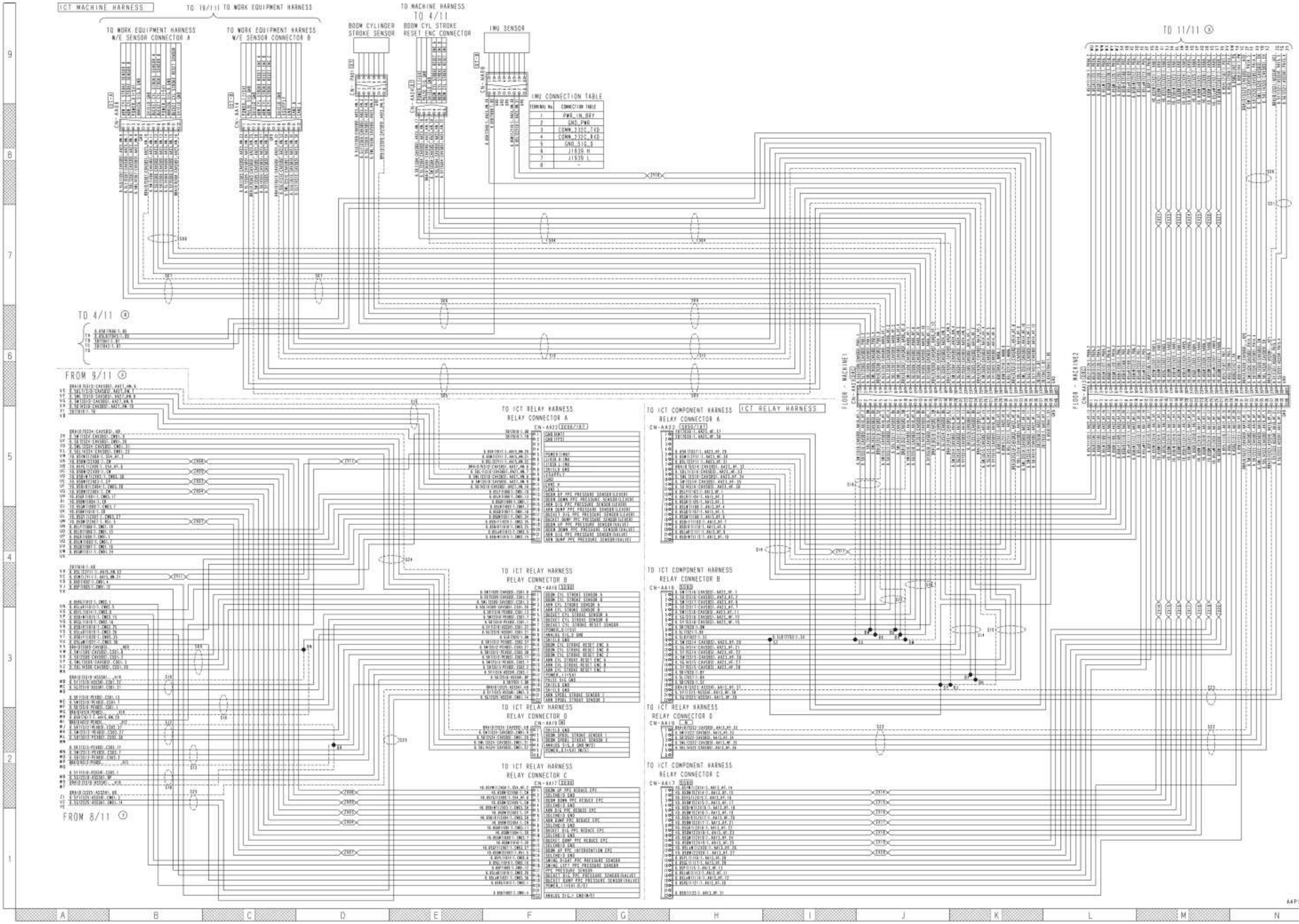
- Control box
  Control box calculates the position and direction of machine from the positional relationship of each antenna.
  Control box calculates the coordinates of current bucket blade edge from the machine position, machine direction, work equipment posture, machine pitch angle, and machine roll angle.
  Control box calculates the deflection from the target bucket blade edge coordinates.

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Electrical circuit diagram (10/11)

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



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