SEN06635-02

Shop Manual

HYDRAULIC
EXCAVATOR

PC238USLC-11

SERIAL NUMBERS 5001 and up

KOMATSU®

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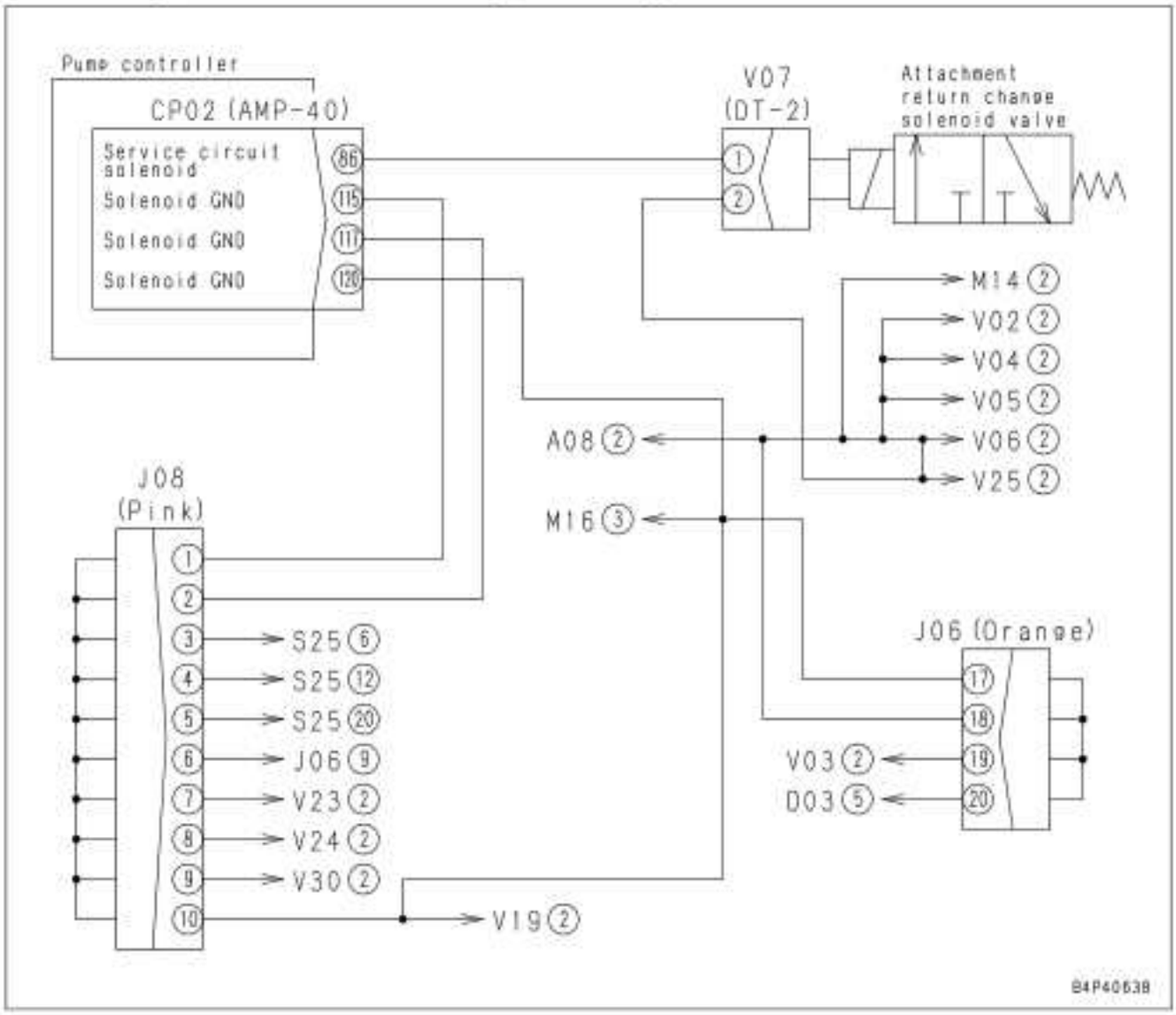
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Related information	• If failure code [CA3558], [CA3559], [CA3571], [CA3572], [CA4169], [CA4171], [CA4249] and [CA4251] are displayed, or if they are logged in the abnormality record, AdBlue/DEF pump system may be defective. Perform the troubleshooting for them first. • If failure code [CA3713] or [CA5115] is displayed ,or if it is logged in the abnormality record, wiring harness of AdBlue/DEF line heater 1 is defective. Perform the troubleshooting for it first. • If failure code [CA1669], [CA3868], [CA4732], [CA4739] and [CA4769] are displayed, AdBlue/DEF level sensor system is defective. Perform the troubleshooting for them first. • If failure code [CA2976] is displayed, AdBlue/DEF pump temperature sensor system may be defective. Perform the troubleshooting for it first. • If failure code [CA1673], [CA3497], [CA3498] and [CA3547] are displayed, AdBlue/DEF quantity is insufficient. Perform the troubleshooting for them first. • Engine controller does not display this failure code while AdBlue/DEF supply system is under thawing control. (It cannot judge because AdBlue/DEF injection is disabled.) • Start the engine, wait for 3 minutes, and then check that the number showing 4 conditions below is other than 1 (Thawing). (You cannot troubleshoot this failure until thawing is completed.) 1. 19305 AdBlue/DEF Tank Heating State 2. 19306 AdBlue/DEF Line Heater 1 State 3. 19307 AdBlue/DEF Line Heater 2 State 4. 19309 AdBlue/DEF Pump Heater State • The state of each heater is 1: Thawing control, 2: Warming, 3 or 0: OFF. (On the monitoring code screen, input the number directly to check the value.) • Pre-defined Monitoring (19/22) AdBlue/DEF tank thawing control related 1. 19305 AdBlue/DEF Tank Heating State 2. 19102 AdBlue/DEF Tank HtrValve Command 3. 19115 AdBlue/DEF Temperature in Tank 4. 04107 Engine Coolant Temperature 5. 19400 Ambient Temperature 6. 19133 Engine Room Temperature • Pre-defined Monitoring (20/22) AdBlue/DEF tank thawing control related 1. 19107 AdBlue/DEF Pump Heater 1 Command 2. 19309 AdBlue/DEF Pump Heater State 3. 19136 AdBlue/DEF Pump Temperature 4. 19304 AdBlue/DEF Pump State 5. 19400 Ambient Temperature 6. 03203 Battery Power Supply • Pre-defined Monitoring (21/22) AdBlue/DEF tank thawing control related 1. 19306 AdBlue/DEF Line Heater 1 State 2 19106 AdBlue/DEF Line Heater 1 Command 3. 19307 AdBlue/DEF Line Heater 2 State 4 19135 AdBlue/DEF Line Heater 2 Command 5. 19400 Ambient Temperature 6. 19133 Engine Room Temperature • If "AdBlue/DEF pump pressure" rises to around 900 kPa on "Pre-defined Monitoring" screen of the AdBlue/DEF pump, this failure code is not displayed. • On "Pre-defined Monitoring" screen, AdBlue/DEF pump diagnosis is used. (The numbers below denote monitoring codes.) • Pre-defined Monitoring (16/22) AdBlue/DEF pump related 1. 19120 AdBlue/DEF Injection Quantity 2. 19108 AdBlue/DEF Pump Pressure

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Circuit diagram related to ATT single or 2-way selector solenoid



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METHOD FOR INSTALLING COUNTERWEIGHT ASSEMBLY

Counterweight assembly

1. Install the lifting tools (A) to the slinging positions (a), sling the counterweight assembly (29), and set it on the installing position.

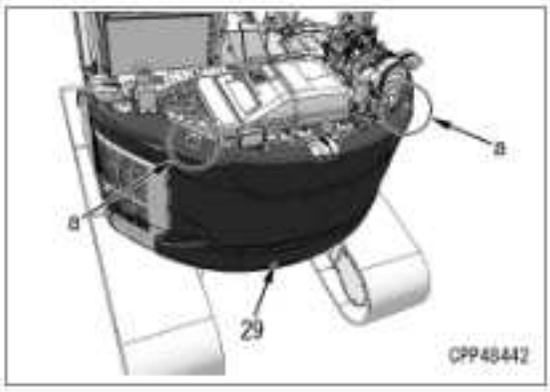
   REMARK

   Install the assembly while sliding it horizontally and forward.

   Counterweight assembly (29):

   6720 kg

   [Tool: Shackle lifting tool (slinging at 2 points)]



2. Install the counterweight assembly (29) with the bolts (30) (6 pieces).

   Bolt (30):

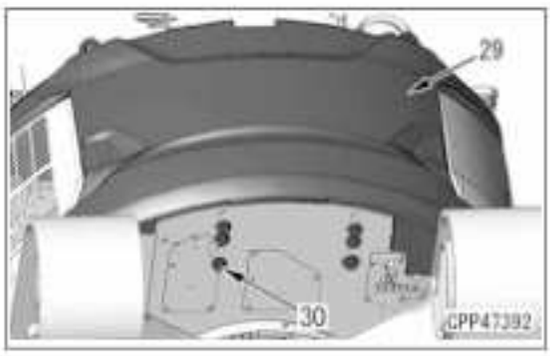
   3820±390 Nm {390±40 kgm}

   NOTICE

   Since this is an important bolt, tighten it to the center value of the torque range.

   [Width across flats: 65 mm]

   [Tool: Impact wrench]



3. Install the cover (28) with the bolts (27) (2 pieces).

   [Bolt M12 x width across flats: 19 mm]

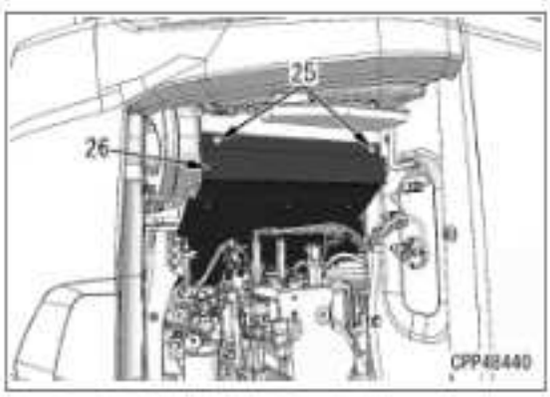
   [Tool: Impact wrench]



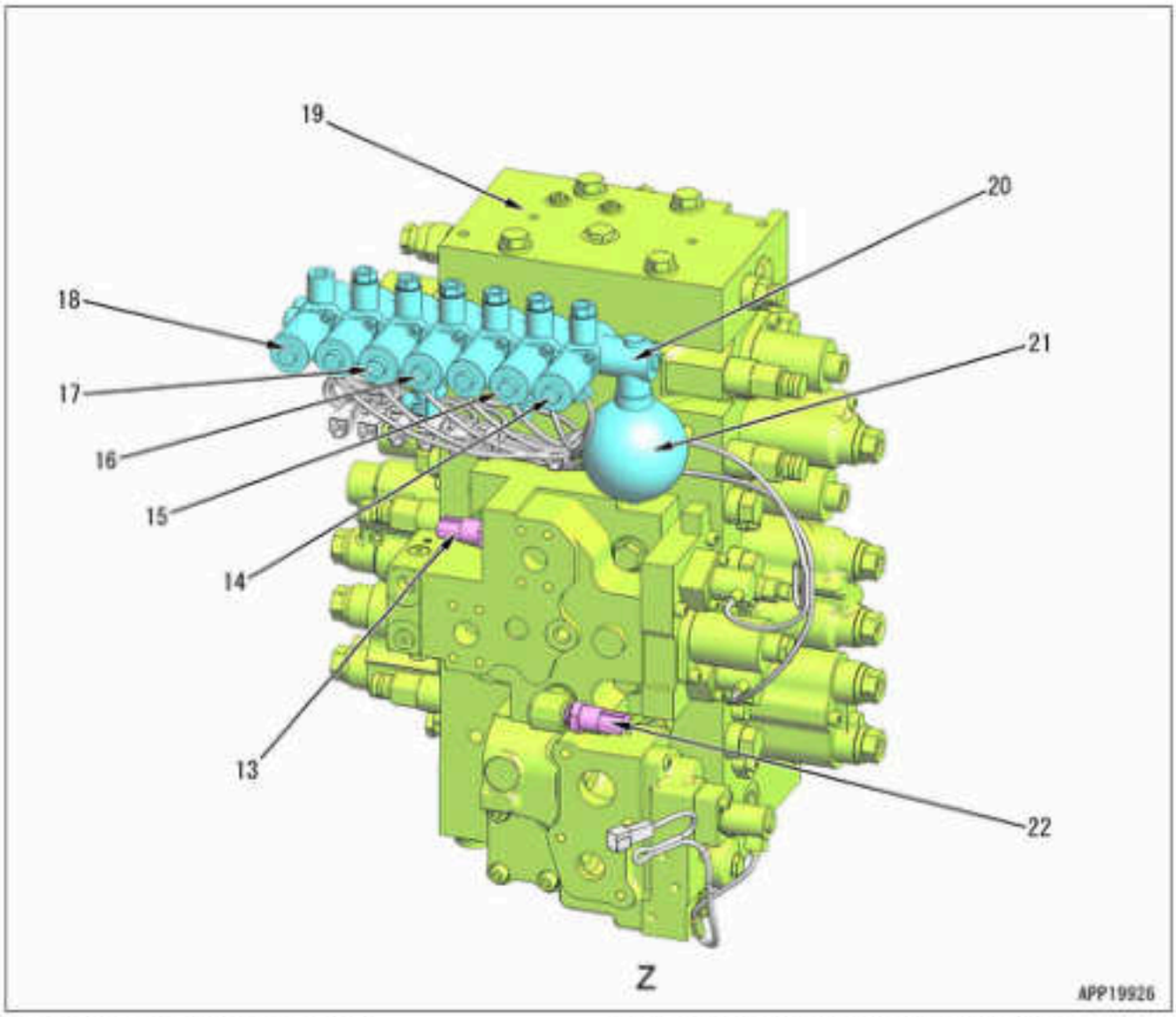
4. Install the cover (26) with the bolts (25) (2 pieces).

   [Bolt M12 x width across flats: 19 mm]

   [Tool: Impact wrench]

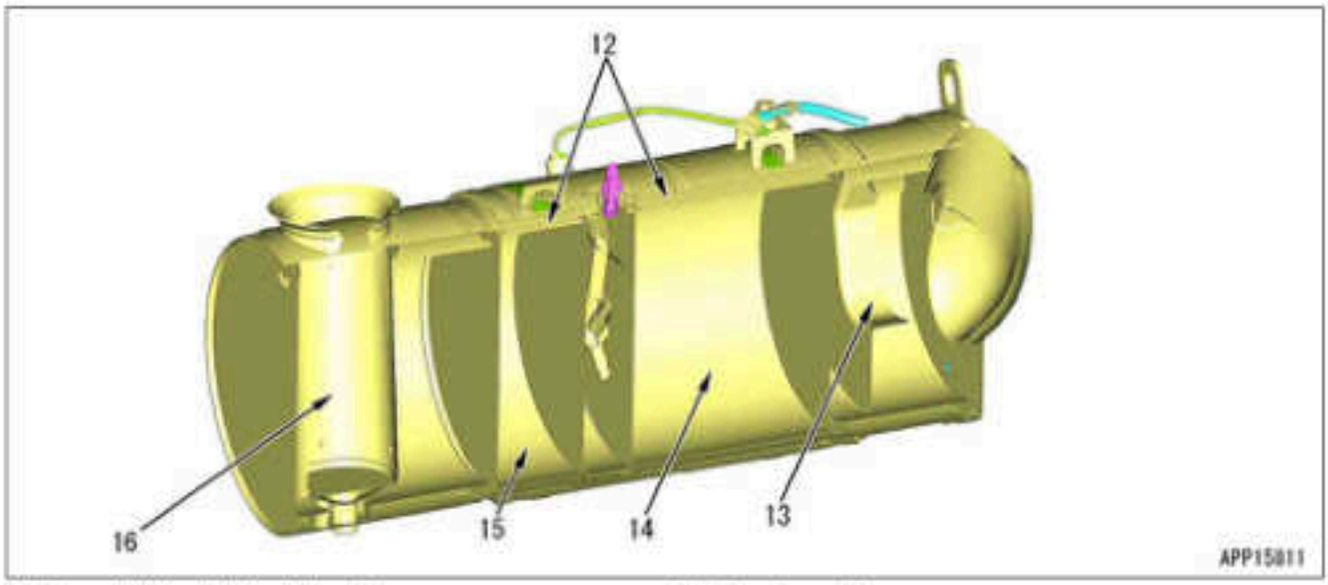


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13: Rear pump oil pressure sensor
14: PPC lock solenoid valve
15: Travel junction solenoid valve
16: Travel speed increase solenoid valve
17: 2-stage relief solenoid valve
18: Attachment selector signal solenoid valve
19: Control valve
20: Solenoid valve
21: Pilot circuit accumulator
22: Front pump oil pressure sensor

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A: From AdBlue/DEF mixing tube
B: To exhaust pipe
1: SCR body
2: SCR temperature sensor
3: SCR outlet NOx sensor
4: SCR outlet temperature sensor
5: Temperature sensor controller
6: Ammonia sensor
7: Hanger plate
8: water baffle
9: Water drain port
10: Sensor table
11: Sensor table band
12: Catalyzer hold mat
13: Water dam
14: Downstream SCR catalyst and ammonia oxidation catalyst (integrated type)
15: Upstream SCR catalyst
16: Rectifier tube

- SCR assembly consists of rectifier tube (16) equalizing the distribution of flow speed by leading exhaust gas, upstream SCR catalyst (15), downstream SCR catalyst, ammonia oxidation catalyst (14), and water dam which prevents rain water from entering into downstream SCR catalyst and ammonia oxidation catalyst (14) while exhausting gas.
- Ammonia oxidation catalyst (a part of 14) oxidizes ammonia to water and nitrogen with ammonia oxidation catalyst (a part of 14) to prevent ammonia which is supplied to SCR assembly from being released out because SCR catalyst (a part of 14, 15)cannot completely consume it.
- Each 1 piece of SCR temperature sensor (2), SCR outlet temperature sensor (4), ammonia sensor (6), and SCR outlet NOx sensor (3) are installed. These sensors are usable for various troubleshooting, such as they are used to control the feedback of denitration efficiency or they monitor that SCR catalyst properly functions or not.
- Rectifying tube (16) equalizes the distribution of exhaust gas flow speed.
- SCR catalyst (15, a part of 14) uses the ceramic honeycomb.
- The catalyzer holding mat (12) is made of a specific fiber and protects the ceramic catalyst against vibrations by the engine and the machine body. It also protects the outer periphery of SCR assembly against a heat transfer of the ceramics during operation.
- Water dam (13) is located at the upstream side of the outlet and prevents rainwater from entering into downstream SCR catalyst unit and ammonia oxidation catalyst (14).
- Water baffle (8) is located at the downstream side of the outlet and prevents rainwater at outlet from splashing over the detection part of NOx sensor.

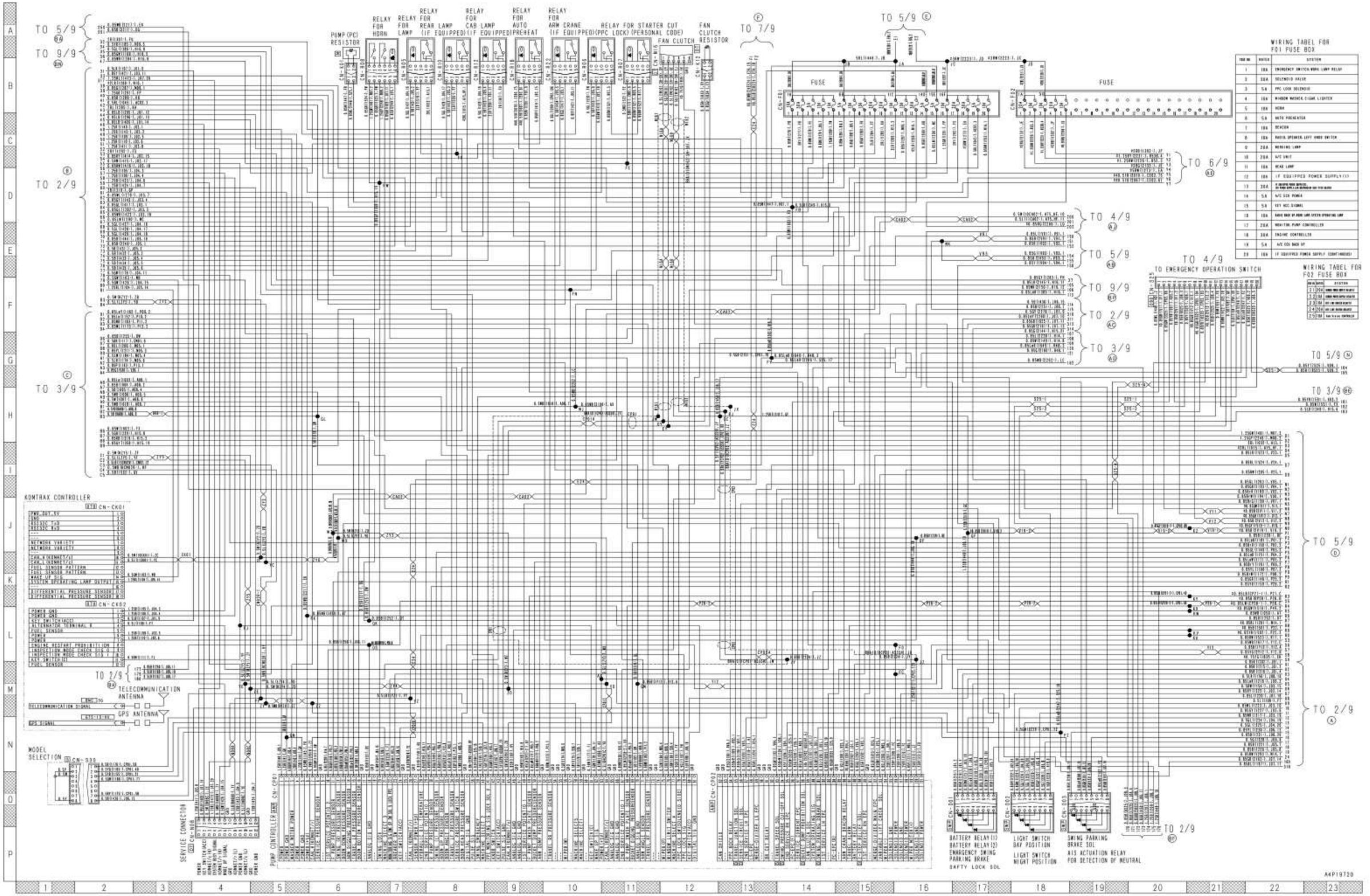
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ELECTRICAL CIRCUIT DIAGRAM (1/9)

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REMARK

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



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