PART NO. TODDN50-EN-00

HITACHI

Reliable solutions

Technical Manual

Operational Principle

ZX
300LC-6
300LCN-6

Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TODDN50-EN
Technical Manual (Troubleshooting)	: Vol. No.TTDDN50-EN
Workshop Manual	: Vol. No.WDDN50-EN
Engine Manual	: Vol. No.ETDDN50-EN, EWDDN50-EN

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IMPORTANT: This list shows design specifications, which are not servicing standards.

Performance	without fan	with fan
Fuel Consumption Ratio	218±13.6 g/kW·h at 197±3.9 kW/(at Full Load: 1900 min^{-1})	232±13.6 g/kW·h at 186$^{+13.2}_{-4.8}$ kW/(at Full Load: 1900 min^{-1})
	215±13.6 g/kW·h at 188.8±10 kW/(at Working Load: 1800 min^{-1})	227±13.6 g/kW·h at 177±10 kW/(at Working Load: 1800 min^{-1})
Maximum Output Torque	1050±60 N·m at 1500 min^{-1}	
Compression Pressure	3.04 MPa at 200 min^{-1}	
Valve Clearance (Intake/ Exhaust)	0.4/0.4 mm (when cool)	
No Load Speed	Slow: 800±20 min^{-1}	
	Fast: 1800±20 min^{-1}	

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Outline

The electrical circuit is broadly divided into the main circuit, monitor circuit, accessory circuit, and control circuit.

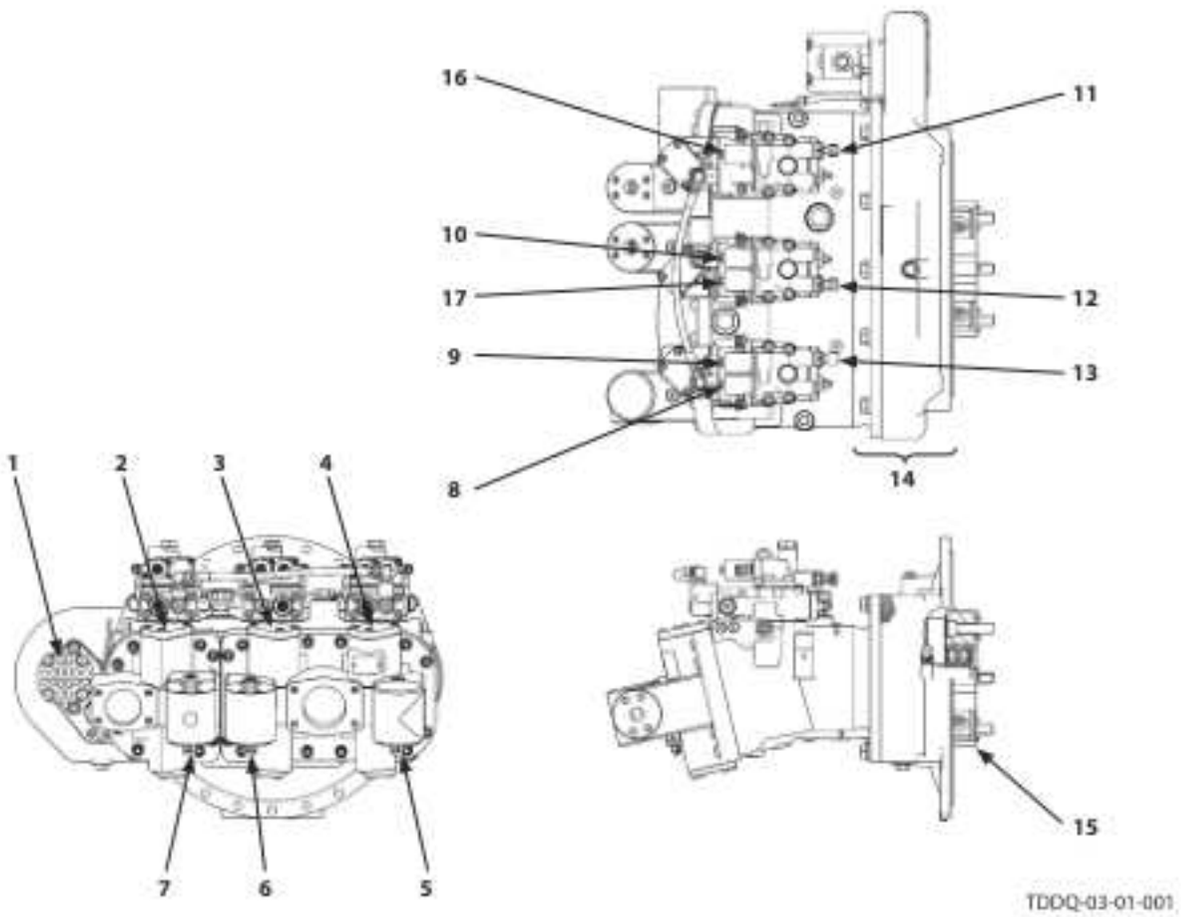
- The main circuit consists of the engine and the accessory related circuits.
- The monitor circuit displays the machine operating conditions. The monitor circuit consists of the monitor controller, monitor, relays, and switches.
- The accessory circuit controls the various lights, the wiper, and the washer. The accessory circuit consists of the wiper/light controller, relays, and switches.
- The control circuit controls the engine, pump, and valve. The control circuit consists of the actuators such as solenoid valves, MC, ECM, sensors, and switches.
  (Refer to SYSTEM/Control System.)

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Outline

The pump device consists of transmission (14), main pump (pump 1 (2), pump 2 (4), pump 3 (3)), pilot pump (1), control solenoid valves, and sensors.
The engine output power is transmitted to transmission (14) via coupling (15). After being distributed by the gear, the engine output power drives pump 1 (2), pump 2 (4), pump 3 (3), and pilot pump (1).

The main pump is a bent-axis type variable displacement axial plunger pump. Pump 1 (2), pump 2 (4), and pump 3 (3) are contained in one housing.
Pilot pump (1) is a gear pump.
Pump 1 and 2 torque control solenoid valve (8), maximum pump 1 flow rate limit control solenoid valve (16), maximum pump 2 flow rate limit control solenoid valve (9), maximum pump 3 flow rate limit control solenoid valve (17), and pump 3 torque control solenoid valve (10) are installed in order to control the pumps.
Pump delivery pressure sensors (5, 6, 7) and pump control pressure sensors (11, 12, 13) are installed in order to control the pump and valve.
(Refer to SYSTEM/Control System.)

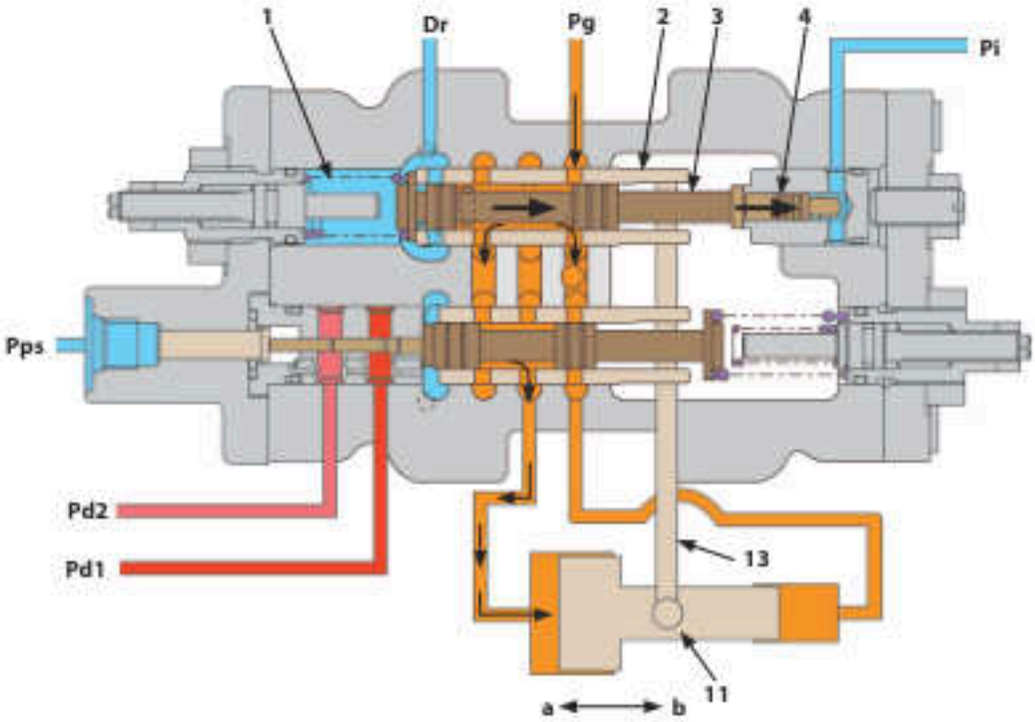


TDDQ-03-01-001

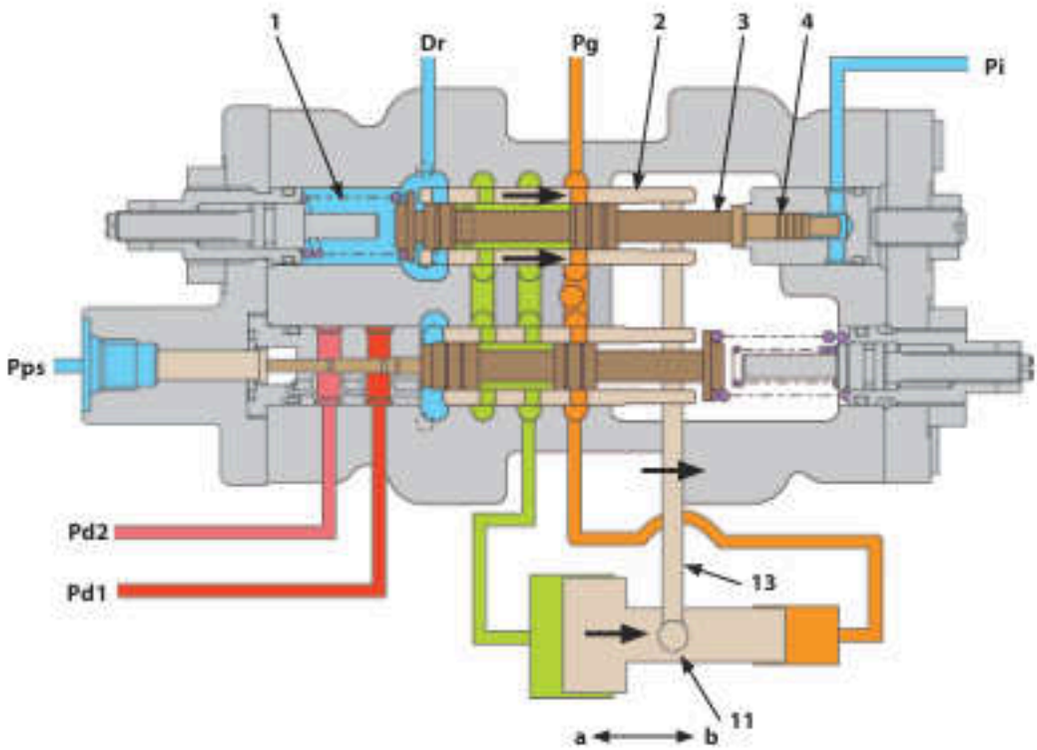
1- Pilot Pump
2- Pump 1
3- Pump 3
4- Pump 2
5- Pump 2 Delivery Pressure Sensor
6- Pump 3 Delivery Pressure Sensor
7- Pump 1 Delivery Pressure Sensor
8- Pump 1 and 2 Torque Control Solenoid Valve
9- Maximum Pump 2 Flow Rate Limit Control Solenoid Valve
10- Pump 3 Torque Control Solenoid Valve
11- Pump 1 Control Pressure Sensor
12- Pump 3 Control Pressure Sensor
13- Pump 2 Control Pressure Sensor
14- Transmission
15- Coupling
16- Maximum Pump 1 Flow Rate Limit Control Solenoid Valve
17- Maximum Pump 3 Flow Rate Limit Control Solenoid Valve

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NOTE: The illustration shows the pump1 regulator.



TPPP-03-01-018



TPPP-03-01-019

Pd1- Pump 1 Delivery Pressure
Pd2- Pump 2 Delivery Pressure

Dr- Returning to Hydraulic Oil Tank
Pi- Pump Control Pressure

Pps- Torque Control Pressure
Pg- Primary Pilot Pressure (From Pilot Pump)

a- Displacement Angle Increase
b- Displacement Angle Decrease

1- Spring
2- Sleeve A

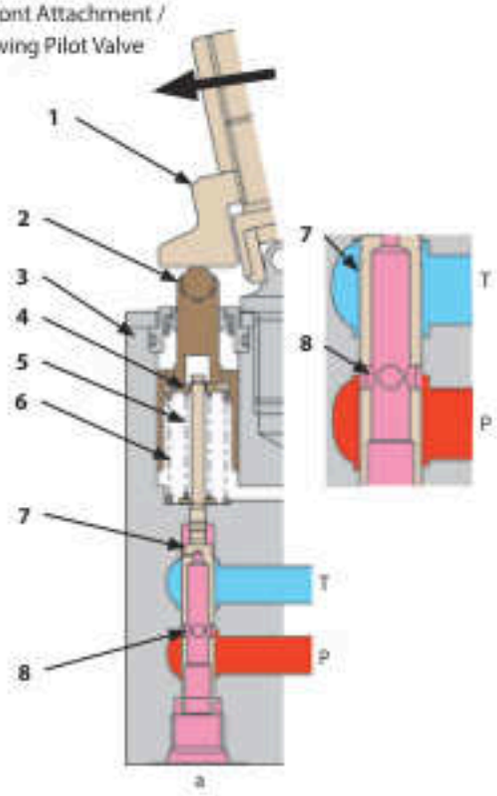
3- Spool A
4- Piston

11- Servo Piston

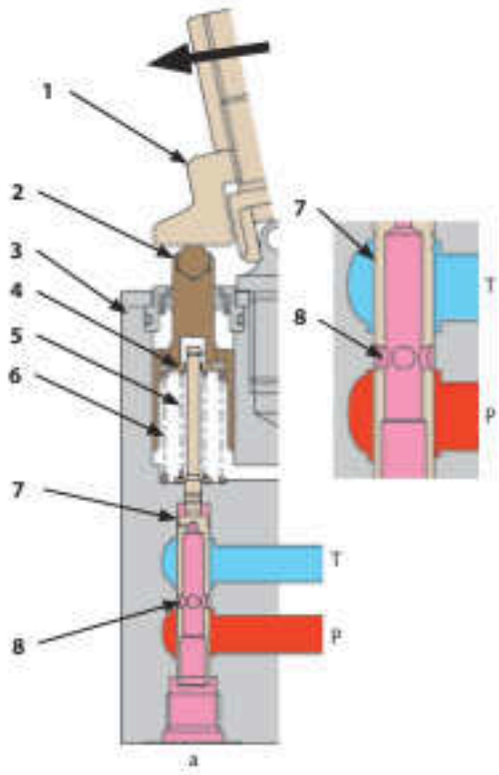
13- Link

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Front Attachment / Swing Pilot Valve

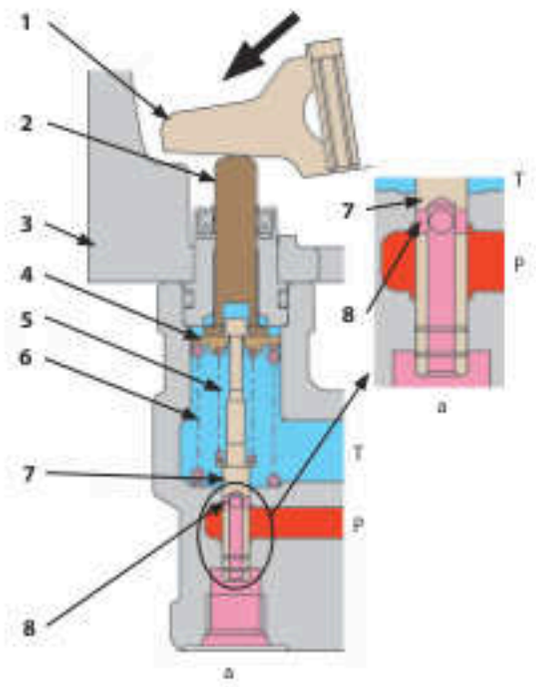


TPPP-03-04-007

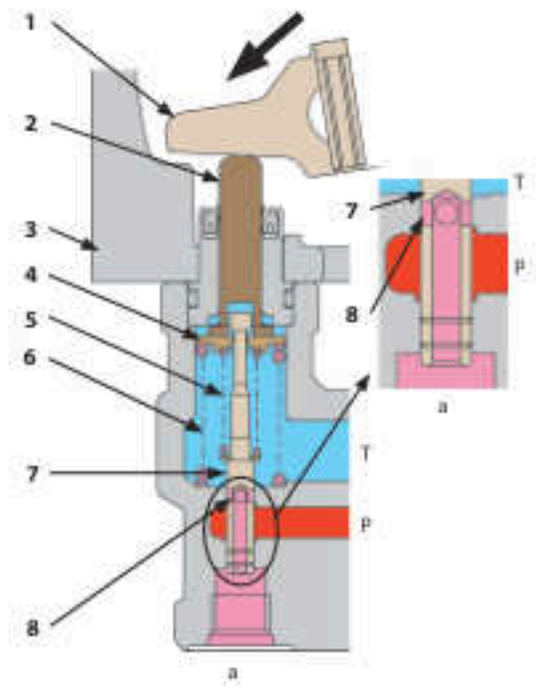


TPPP-03-04-008

Travel Pilot Valve



TPPP-03-04-012



TPPP-03-04-013

P- Port P
T- Port T
a- Output Port

1- Cam
2- Pusher
3- Casing
4- Spring Guide
5- Balance Spring
6- Return Spring
7- Spool
8- Hole

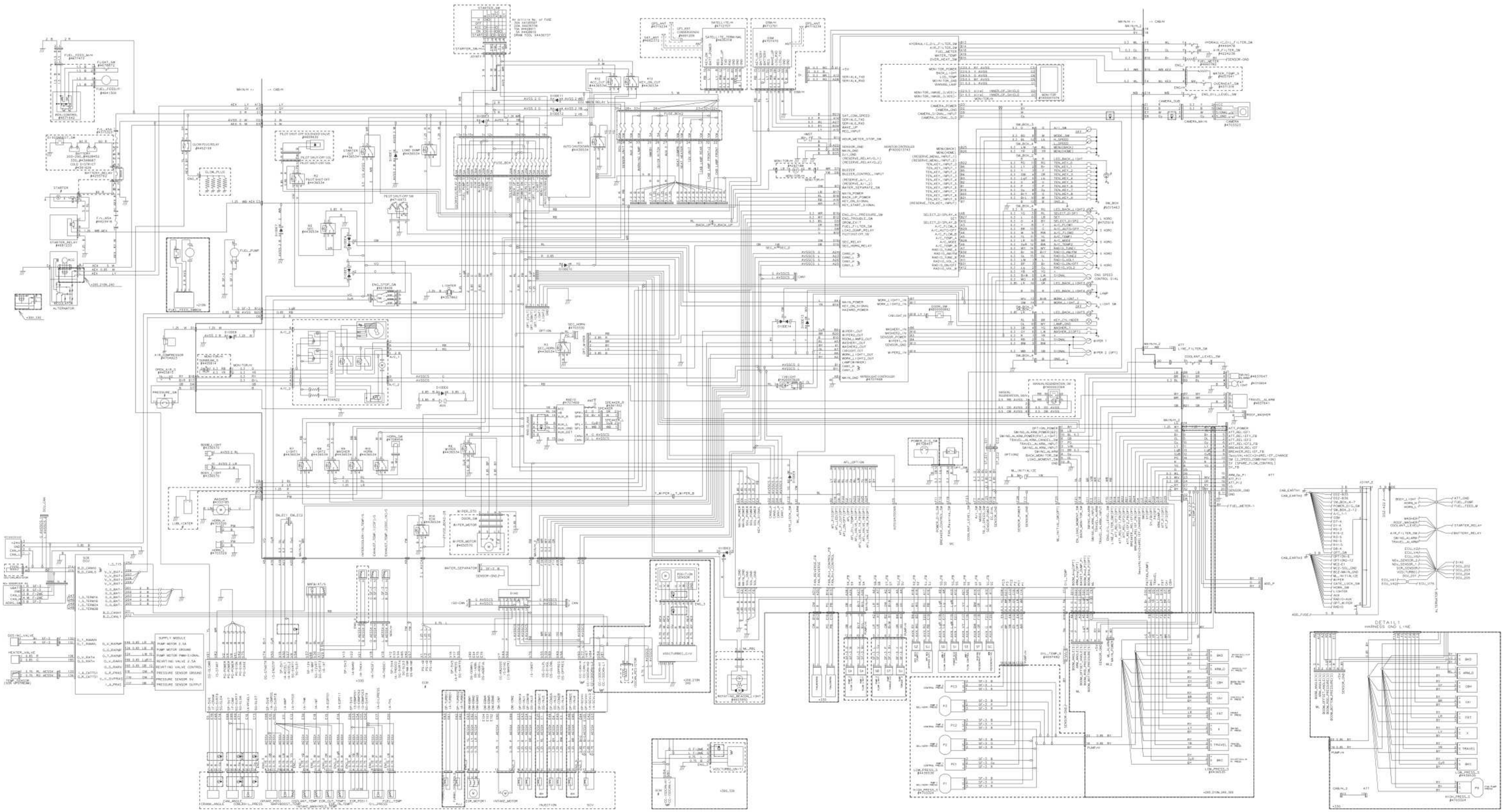
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ELECTRICAL CIRCUIT DIAGRAM

Applicable Machine

Attach to vol. No.	Model
TTDC150-EN-00	ZX250LC-6/ 250LCN-6
TTDDN50-EN-00	ZX300LC-6/ 300LCN-6
TTDDQ50-EN-00	ZX350LC-6/ 350LCN-6

CAUTION: Parts numbers on the drawing are provided only for reference purpose.
To order parts on the drawing, be sure to consult the Parts Catalog.



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