PART NO. TODCE-EN-00

HITACHI

Reliable solutions

Technical Manual

Operational Principle

ZX
240-5G
240LC-5G
250H-5G
250LCH-5G

Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TODCE-EN
Technical Manual (Troubleshooting)	: Vol. No.TTDCE-EN
Workshop Manual	: Vol. No.WDCE-EN
Engine Manual	: Vol. No.EDCD-EN

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SECTION 1

GENERAL

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Engine Accessories

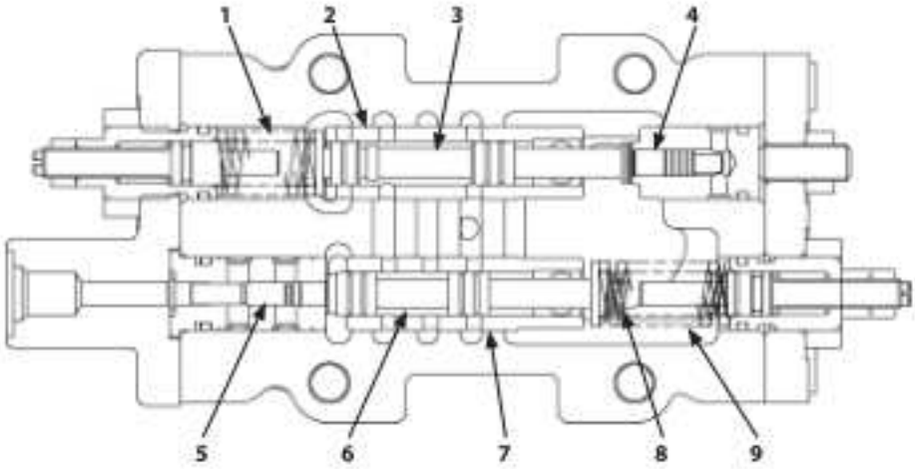
RADIATOR ASSEMBLY	Type	Parallel Type
	Weight	69 kg (152 lb)

	Radiator	Oil Cooler	Intercooler
Air-Tight Test Pressure	0.1 MPa (1.0 kgf/cm², 14 psi)	1.5 MPa (15 kgf/cm² 213 psi)	0.25 MPa (2.5 kgf/cm², 36 psi)
Cap Opening Pressure	49 kPa (0.5 kgf/cm², 7 psi)	–	–

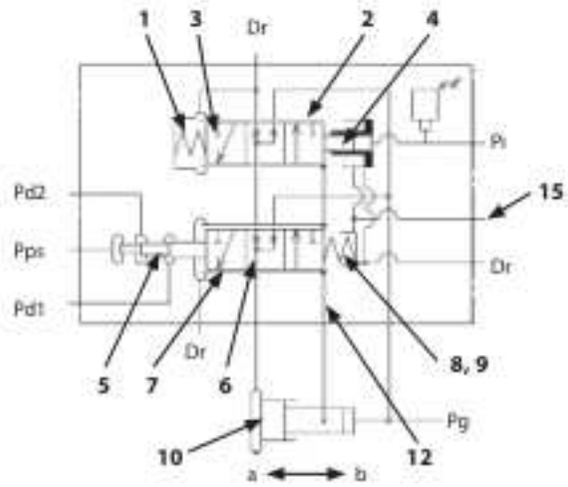
BATTERY	Type	115E41L
	Capacity	88 Ah (5-Hour Rate)
	Voltage	12 V
	Weight	27.5 kg (61 lb)×2

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Pump 1 Regulator



TDCD-03-01-005



TDCE-03-01-001

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
5- Load Piston
6- Spool B
7- Sleeve B
8- Inner Spring
9- Outer Spring
10- Servo Piston
12- Link
13- Torque Control Solenoid Valve
14- Maximum Pump 2 Flow Rate Limit Control Solenoid Valve
15- Air Bleeding Circuit

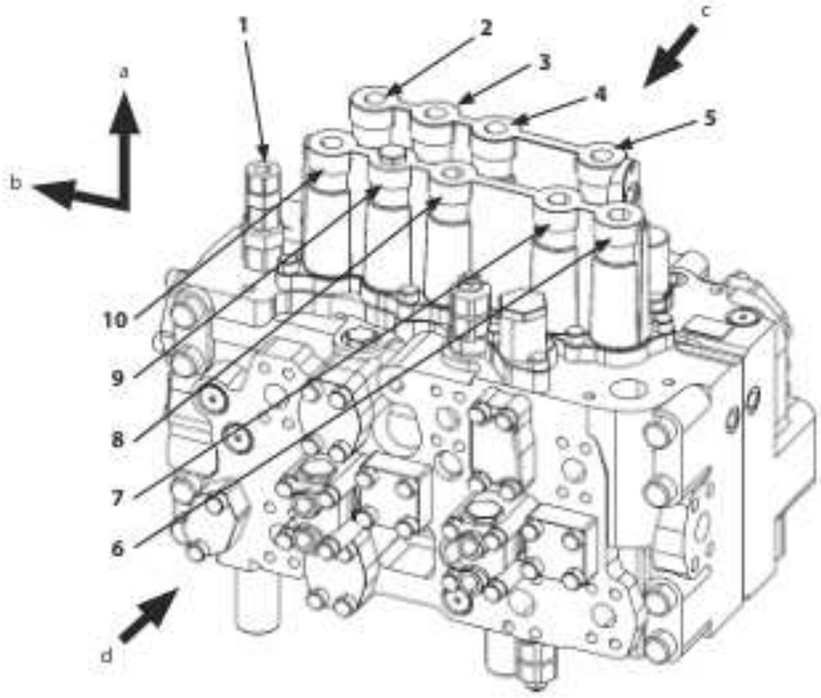
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Outline

The control valve controls the oil pressure, flow rate, and flow direction in the hydraulic circuit.
The major parts are the main relief valve, overload relief valve, flow combiner valve, anti-drift valve, flow rate control valve, regenerative valve, digging regenerative valve, boom lower meter-in cut valve, auxiliary flow combiner valve, bypass shut-out valve, and spools. The spools are operated by the pilot oil pressure.

As for the spools, in the 4-spool section, travel (right), bucket, boom 1, and arm 2 are arranged in that order as viewed from the machine front. In the 5-spool section, travel (left), auxiliary, boom 2, arm 1, and swing are arranged in that order as viewed from the machine front.

Control Valve

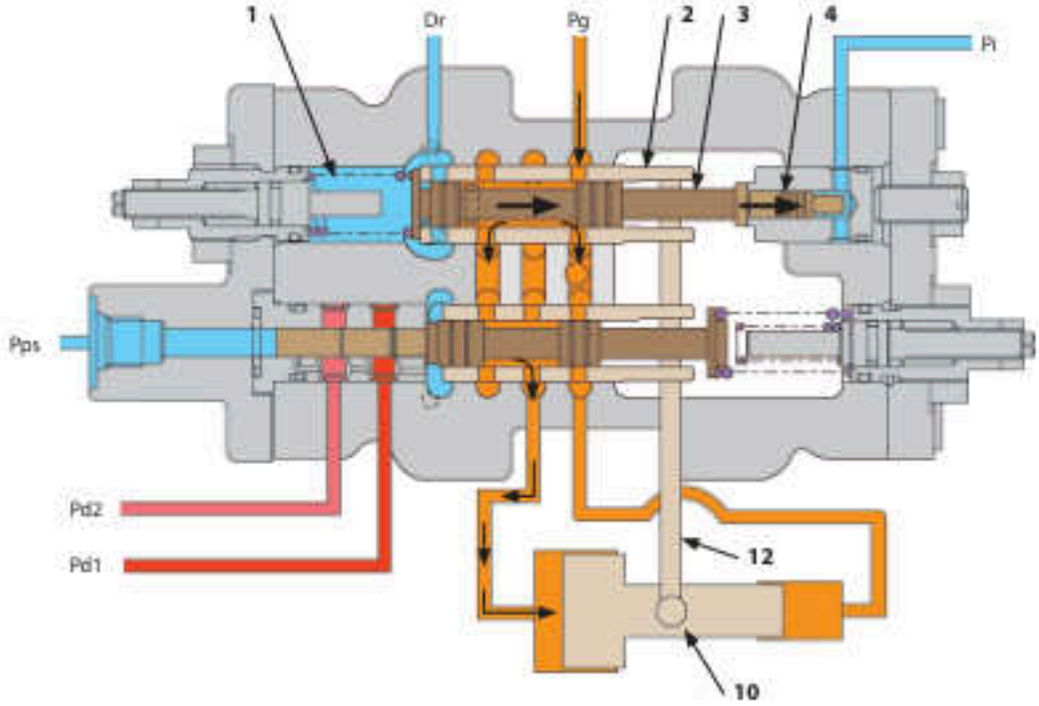


T1V1-03-03-072

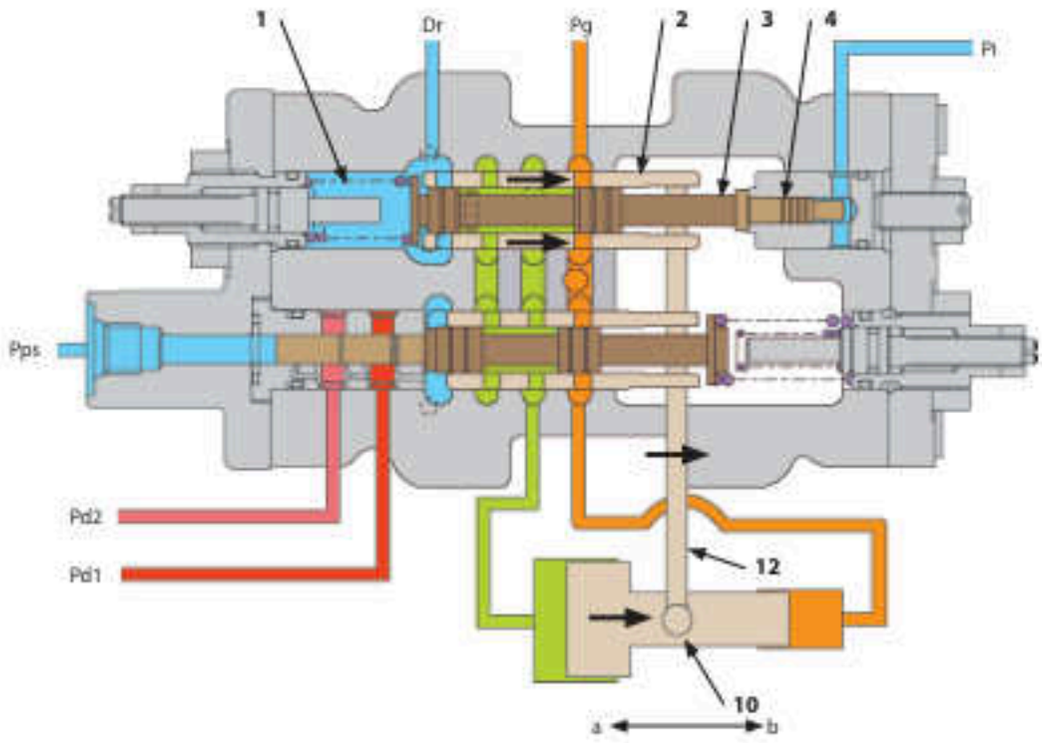
a-	Machine Upper Side	b-	Machine Front Side	c-	4-Spool Section	d-	5-Spool Section
1-	Main Relief Valve (A Side)	4-	Boom 1	7-	Arm 1	10-	Travel (Left)
2-	Travel (Right)	5-	Arm 2	8-	Boom 2		
3-	Bucket	6-	Swing	9-	Auxiliary		

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NOTE: The illustration shows the pump2 regulator.



TDCD-03-01-011



TDCD-03-01-012

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

Dr- Returning to Hydraulic Oil Tank

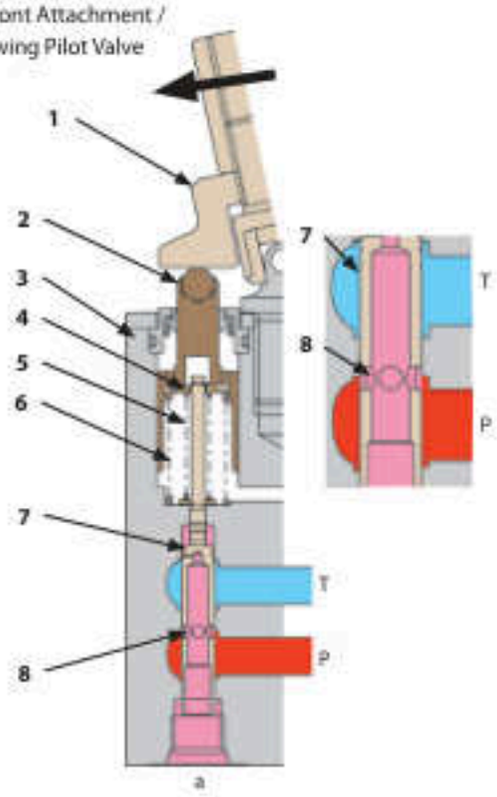
Pi- Pump Control Pressure
Pps- Torque Control Pressure

Pg- Primary Pilot Pressure (From Pilot Pump)

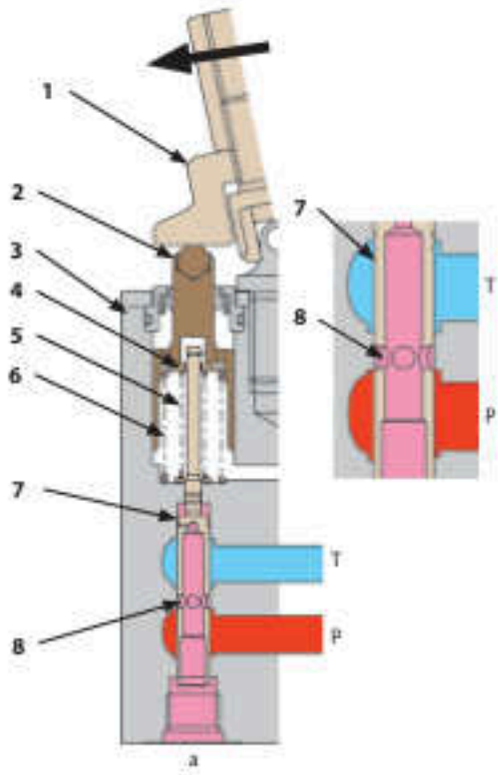
1- Spring
2- Sleeve A
3- Spool A
4- Piston
10- Servo Piston
12- Link

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Front Attachment / Swing Pilot Valve

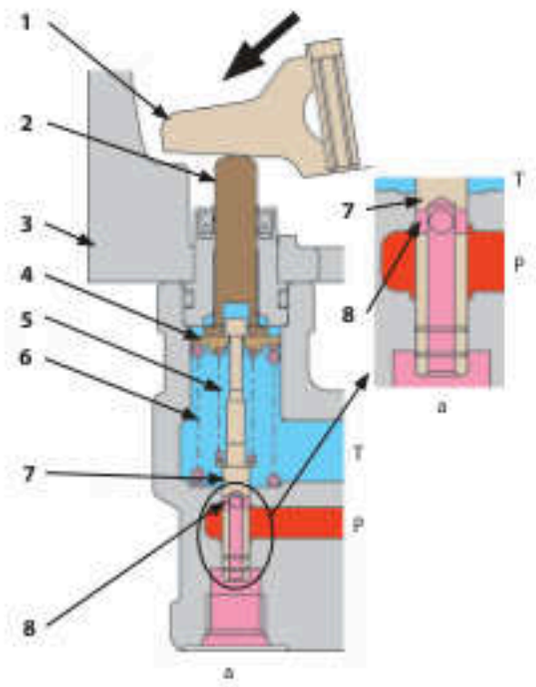


TPPP-03-04-007

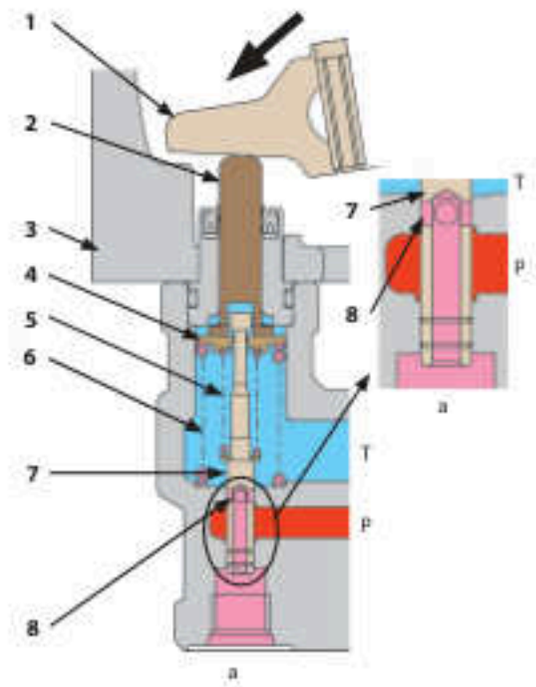


TPPP-03-04-008

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

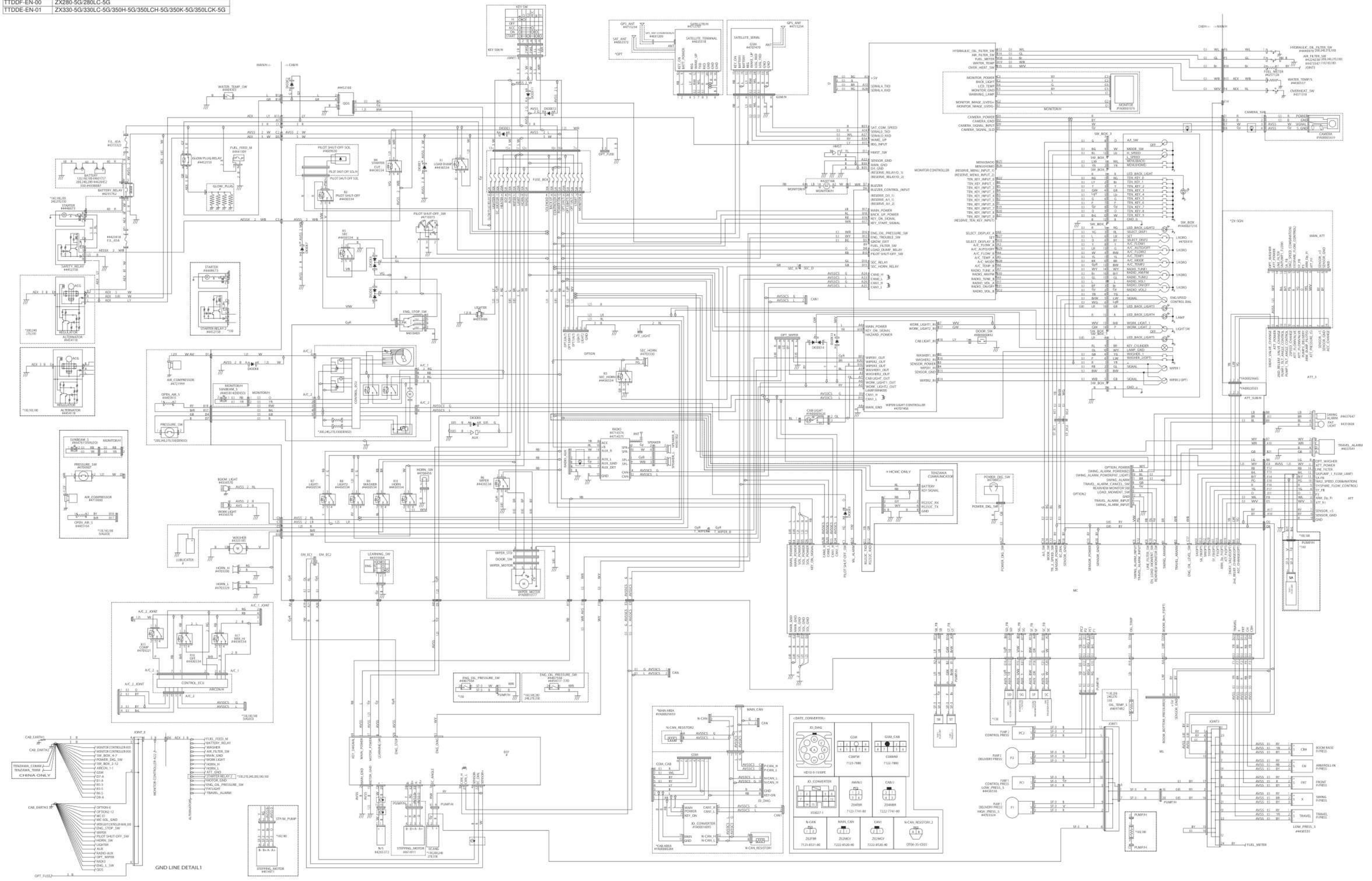
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ELECTRICAL CIRCUIT DIAGRAM

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.

Applicable Machine

Attach to vol. No.	Model
TTDAG-EN-00	ZX130-5G/130K-5G
TTDBG-EN-00	ZX160LC-5G
TTDBH-EN-00	ZX180LC-5G/180LCN-5G
TTDCD-EN-01	ZX200-5G/200LC-5G/210H-5G/210LCH-5G/210K-5G/210LCK-5G
TTDCE-EN-00	ZX240-5G/240LC-5G/250H-5G/250LCH-5G
TTDDF-EN-00	ZX280-5G/280LC-5G
TTDDE-EN-01	ZX330-5G/330LC-5G/350H-5G/350LCH-5G/350K-5G/350LCK-5G



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