PART NO. TOJAE-EN-00

HITACHI

Reliable solutions

Technical Manual

Operational Principle

ZX

470-5A
470LC-5A
490H-5A
490LCH-5A
530LCH-5A

Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TOJAE-EN
Technical Manual (Troubleshooting)	: Vol. No.TTJAE-EN
Workshop Manual	: Vol. No.WJAE-EN
Engine Manual	: Vol. No.ETJAE-EN, EWJAE-EN

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GENERAL

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Engine Accessories

RADIATOR ASSEMBLY	Type	Radiator/Oil Cooler Parallel Type, Inter Cooler Serial Type

	Radiator	Oil Cooler	Intercooler
Air-Tight Test Pressure	0.1 MPa	1.5 MPa	0.25 MPa

EXPANSION TANK	Total Capacity	17.3 L
	Cap Opening Pressure	90 kPa

FUEL COOLER	Core Type	Wavy Fin
	Capacity	0.5 L
BATTERY	Type	195G51
	Voltage	12 V
	Capacity	147 Ah (20-Hour Rate)
	CCA	930A
Fuel Solenoid Pump	Rated Voltage	DC 24 V

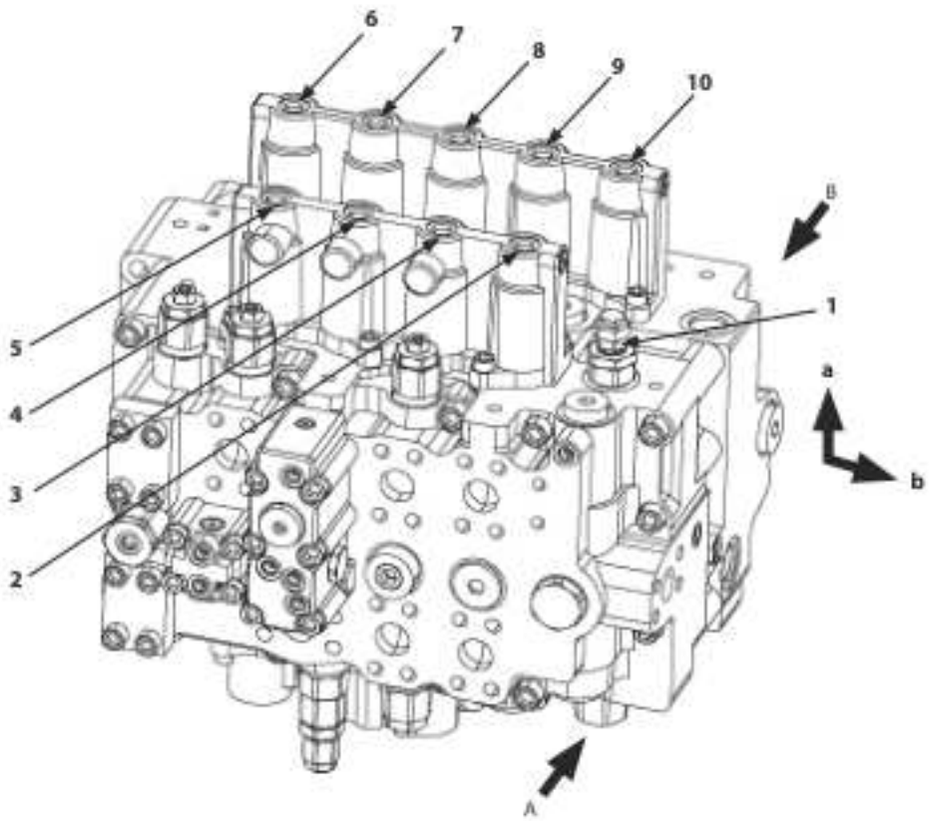
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Outline

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

The spool arrangements at the A-side block is: travel (right) (2), bucket (3), boom 1 (4), arm 2 (5) in this order from the front side, and at the B-side block is: travel (left) (10) auxiliary (9), boom 2 (8), arm 1 (7), and swing (6) in this order from the front side.

Control Valve



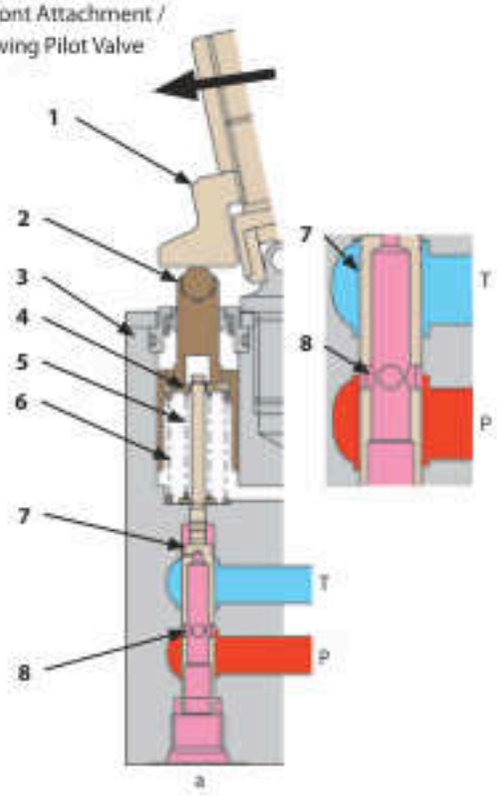
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a- Machine Upper Side
b- Machine Front Side

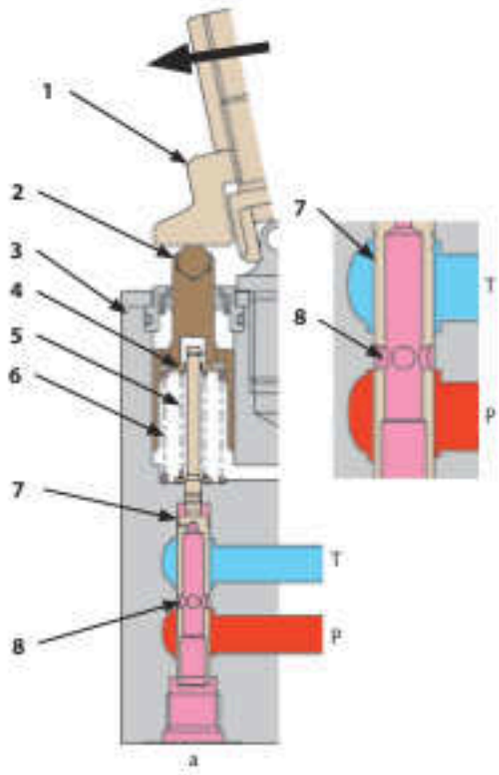
1- Main Relief valve
2- Travel (Right)
3- Bucket
4- Boom 1
5- Arm 2
6- Swing
7- Arm 1
8- Boom 2
9- Auxiliary
10- Travel (Left)

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Front Attachment / Swing Pilot Valve

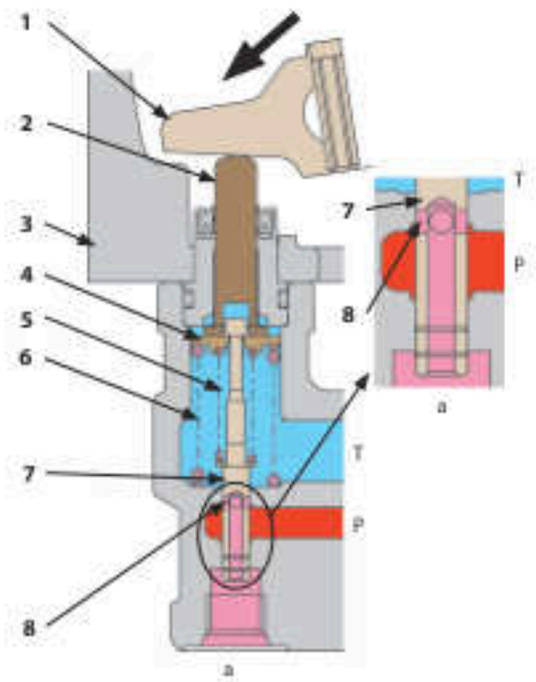


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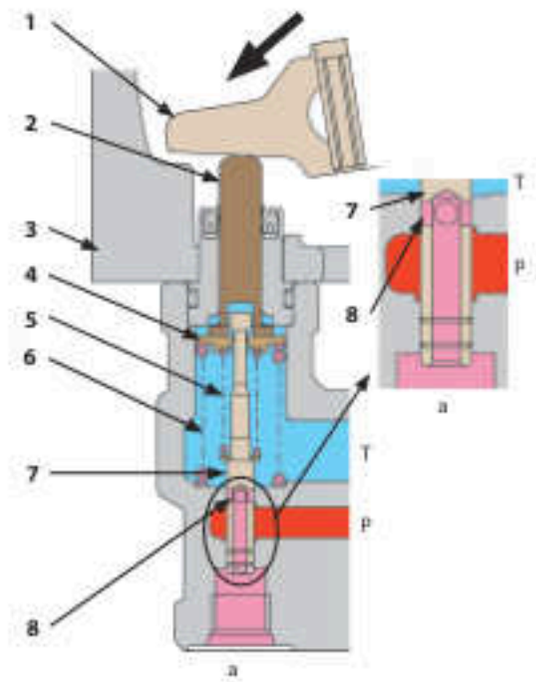


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Travel Pilot Valve



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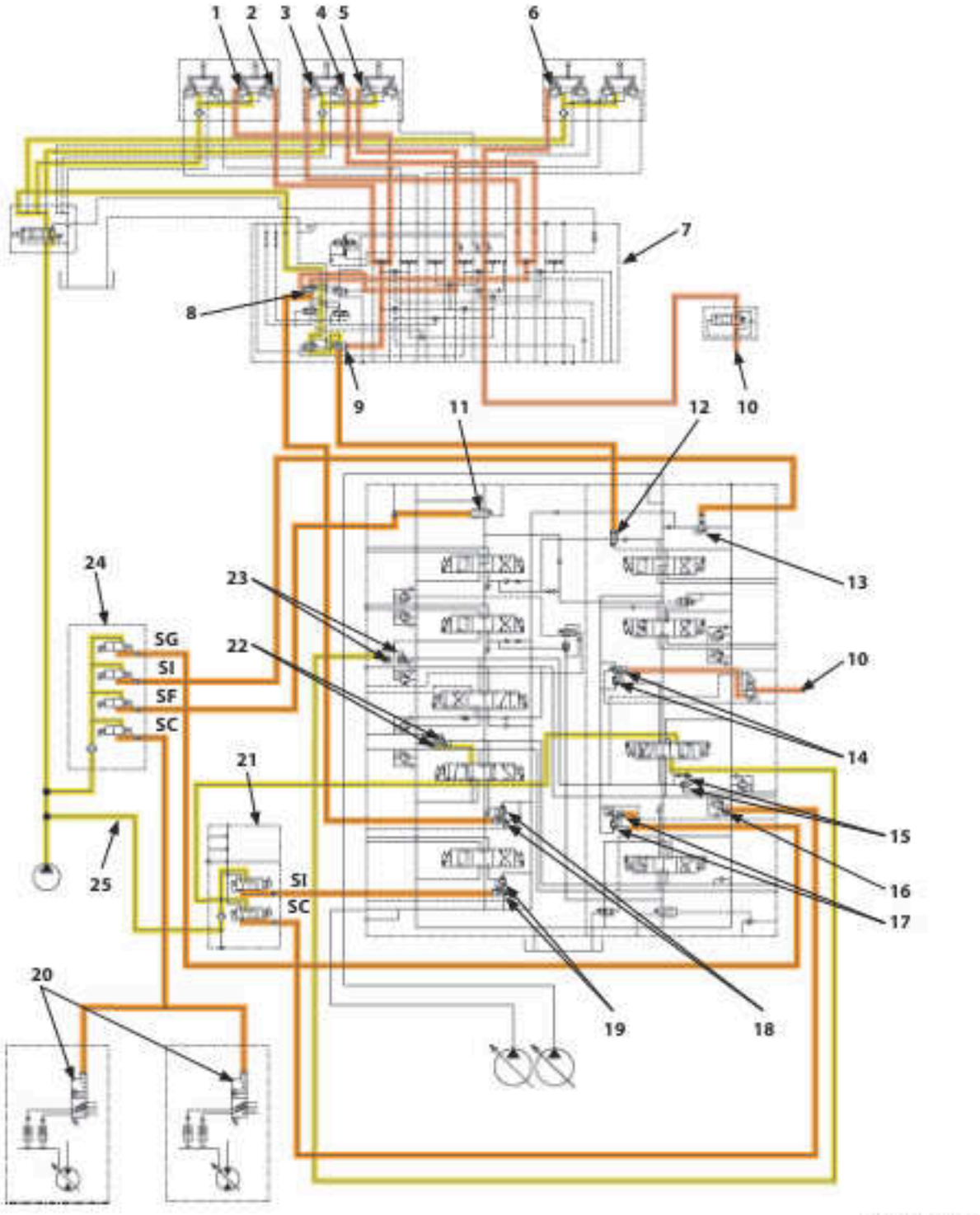


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P- Port P
T- Port T
a- Output Port

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

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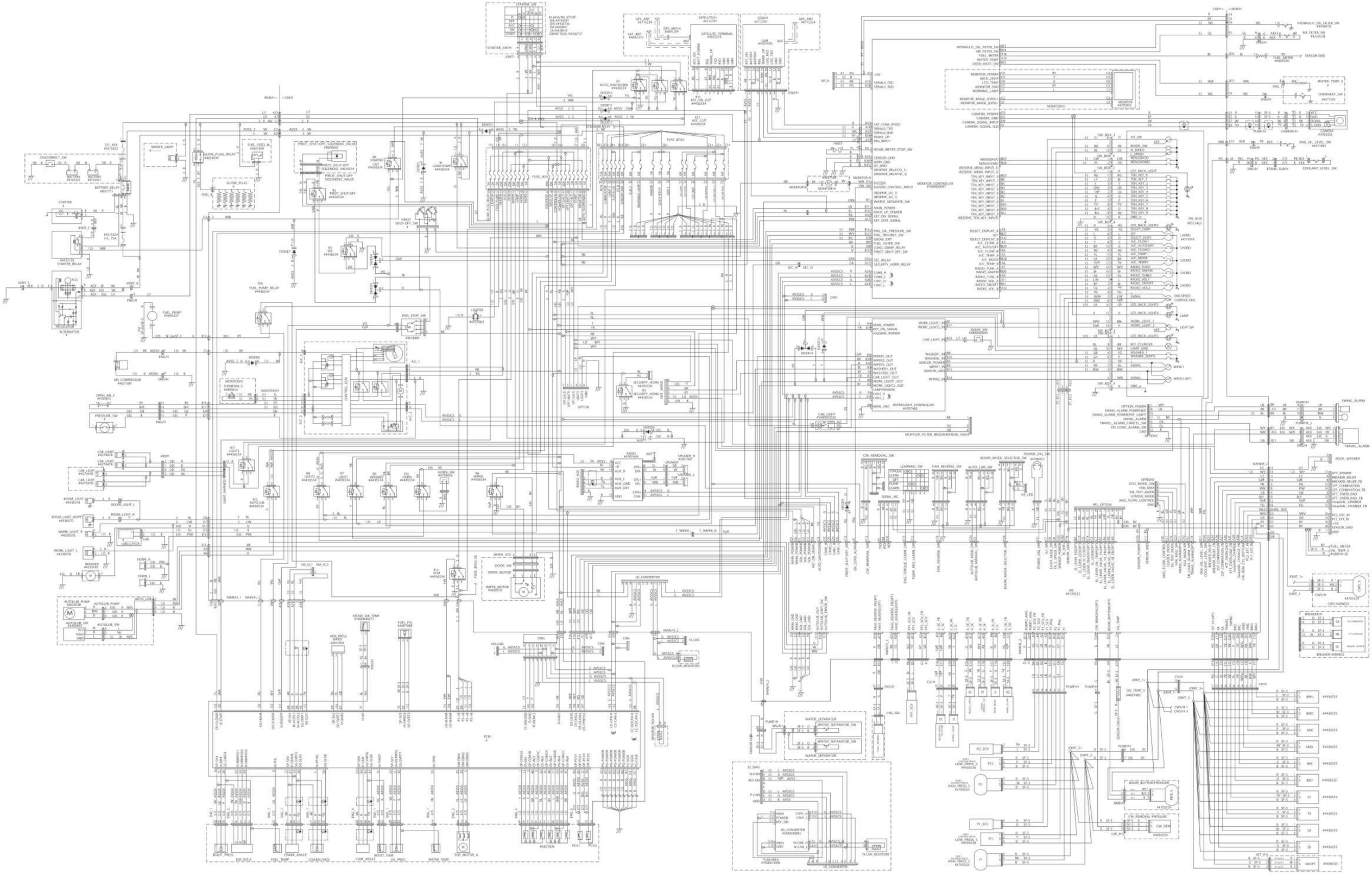
1- Travel Right Reverse
2- Travel Right Forward
3- Swing (Right)
4- Swing (Left)
5- Arm Roll-In
6- Boom Lower
7- Signal Control Valve
8- Arm Flow Rate Control Valve Control Spool
9- Flow Combiner Valve Control Spool
10- Boom Lower Pilot Pressure
11- Bypass Shut-Out Valve
12- Flow Combiner Valve
13- Main Relief Valve
14- Boom Flow Rate Control Valve
15- Boom 1 Anti-Drift Valve
16- Boom Overload Relief Control Valve
17- Arm 2 Flow Rate Control Valve
18- Arm 1 Flow Rate Control Valve
19- Swing Flow Rate Control Valve
20- Travel Motor Displacement Angle Control Valve
21- 2-Spool Solenoid Valve Unit
22- Arm 1 Anti-Drift Valve
23- Boom 2 Anti-Drift Valve
24- 4-Spool Solenoid Valve Unit
25- Pilot Pressure from Pilot Pump

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Attach to Part No. TTJAE-EN-00

ZX470-5A • 470LC-5A • 490H-5A • 490LCH-5A • 530LCH-5A
ELECTRICAL 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.



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