PART NO. TOJBG-EN-00

HITACHI

Reliable solutions

Technical Manual

Operational Principle

ZX
670LC-5A
690LCH-5A

Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TOJBG-EN
Technical Manual (Troubleshooting)	: Vol. No.TTJBG-EN
Workshop Manual	: Vol. No.WJBG-EN
Engine Manual	: Vol. No.ETJBG-EN, EWJBG-EN

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GENERAL

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Hydraulic Component

PUMP DEVICE	Drive Gear Ratio	Pump1 and 2: 53/57 Fan Pump: 1 Pilot Pump: 1
MAIN PUMP	Type	Variable Displacement Swash Plate Tandem Plunger Pump
	Theoretical Displacement	300 cm^3/rev (18.3 in^3/rev)×2
	Rated Pressure	34.3 MPa (350 kgf/cm^2, 4975 psi)
REGULATOR	Type	Pump Control Solenoid Valve Operated Type
FAN PUMP	Type	Variable Displacement Swash Plate Plunger Pump
	Maximum Flow (Theoretical Value)	82 L/min (22 US gpm)
REGULATOR	Type	Pump Control Solenoid Valve Operated Type
PILOT PUMP	Type	SGP1A27F2H5-R693
	Model	Fixed Displacement Type Gear Pump
	Theoretical Displacement	27.8 cm^3/rev (1.7 in^3/rev)×2
CONTROL VALVE	Type	Pilot Pressure Operated Type (4-Spools + 5-Spools)
	Main Relief Set-Pressure	Normal: 31.9 MPa (325 kgf/cm^2, 4627 psi) at 300 L/min (79 US gpm)
		Increases Pressure: 34.3 MPa (350 kgf/cm^2, 4975 psi) at 420 L/min (111 US gpm)
	Overload Relief Set-Pressure	35.3 MPa (360 kgf/cm^2, 5120 psi) at 110 L/min (29 US gpm) (Boom, Arm, Bucket)
		33.3 MPa (340 kgf/cm^2, 4830 psi) at 110 L/min (29 US gpm) (Auxiliary Open , Auxiliary Close)

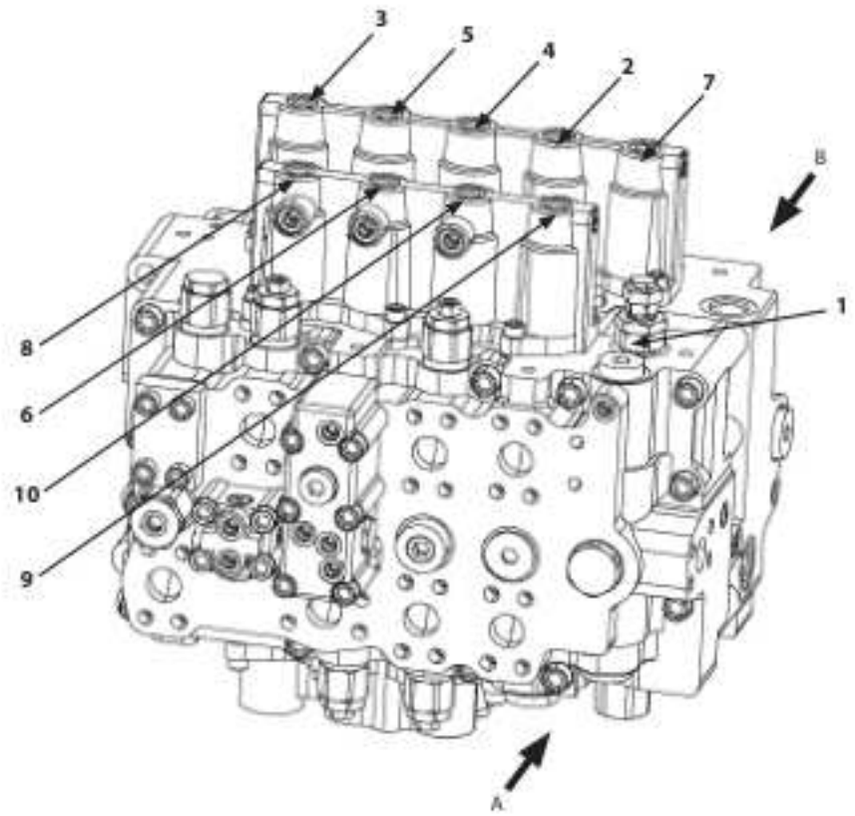
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Outline

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, boom lower meter-in cut valve, bypass shut-out valve, and spools. The spools are operated by the pilot oil pressure.

As for the spools, in the A side block, travel (right), bucket, boom 1, and arm 2 are arranged in that order as viewed from the machine front. In the B side block, travel (left), auxiliary, boom 2, arm 1, and swing are arranged in that order as viewed from the machine front.

Control Valve



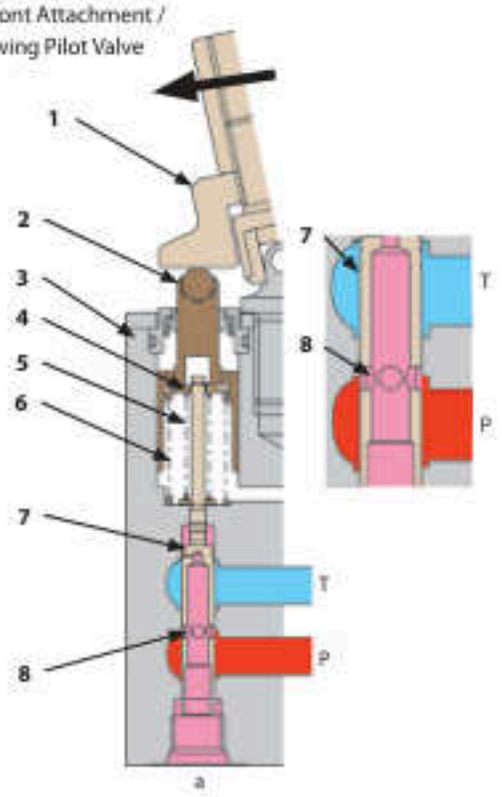
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A - 4-Spool Side
B - 5-Spool Side

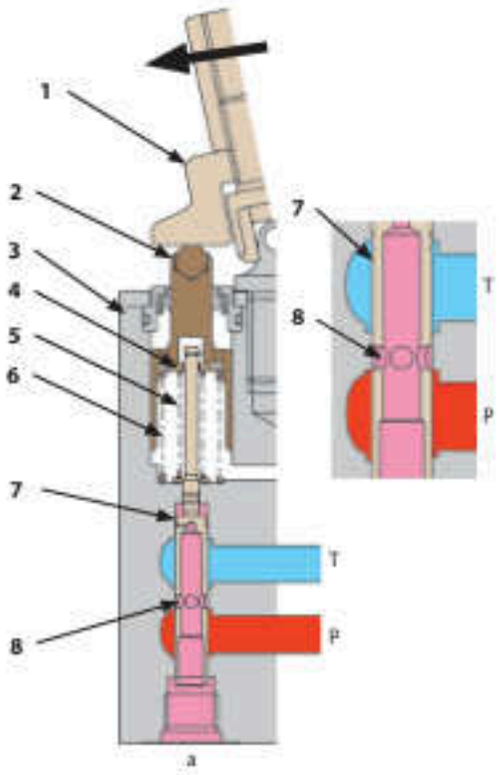
1- Main Relief Valve
2- Auxiliary
3- Swing
4- Boom 2
5- Arm 1
6- Boom 1
7- Travel (Left)
8- Arm 2
9- Travel (Right)
10- Bucket

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Front Attachment /
Swing Pilot Valve

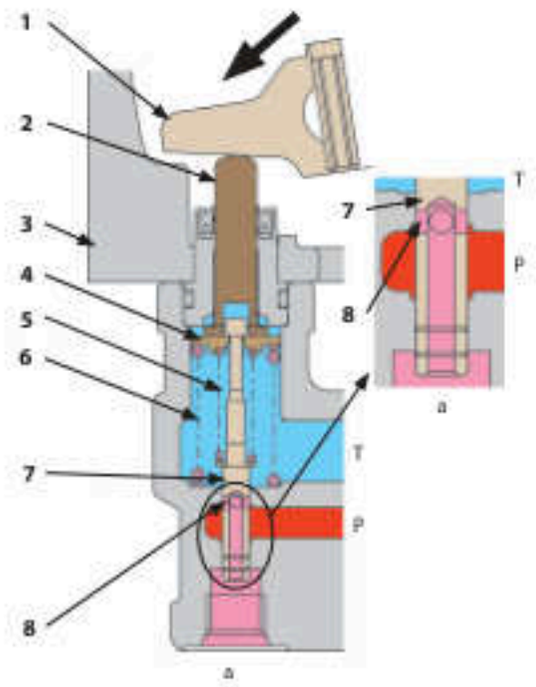


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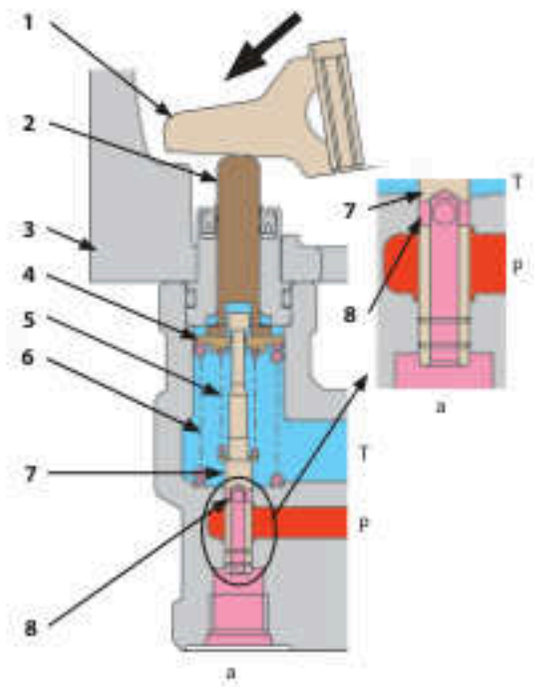


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Travel Pilot Valve



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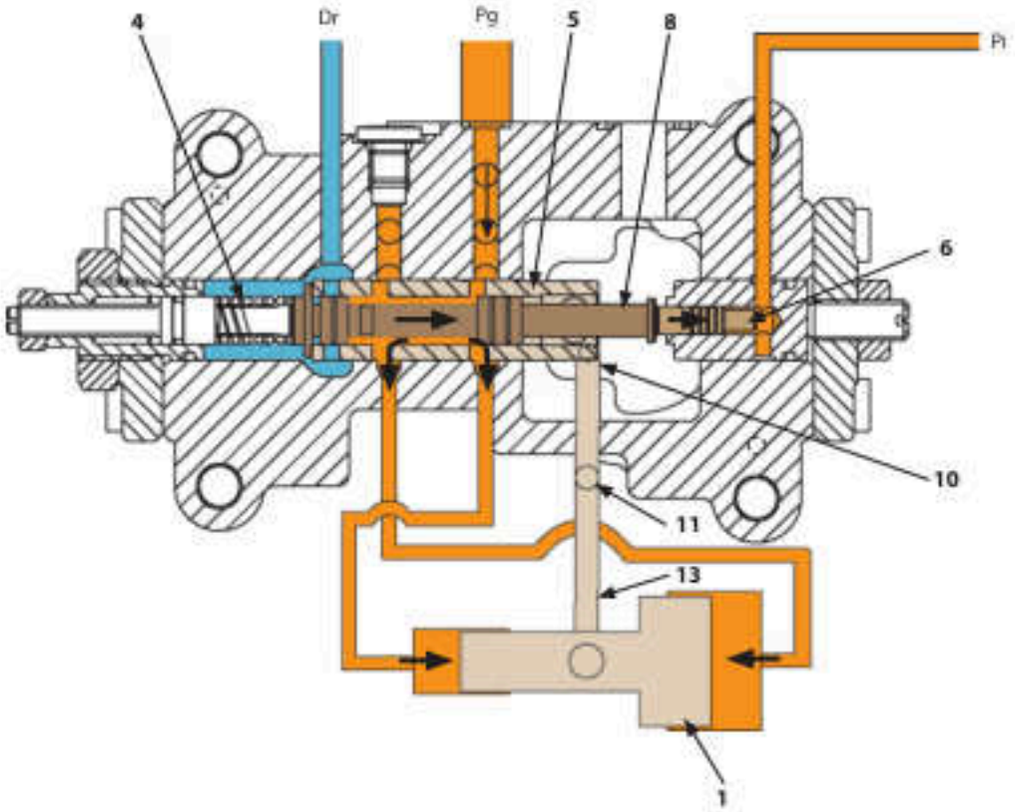


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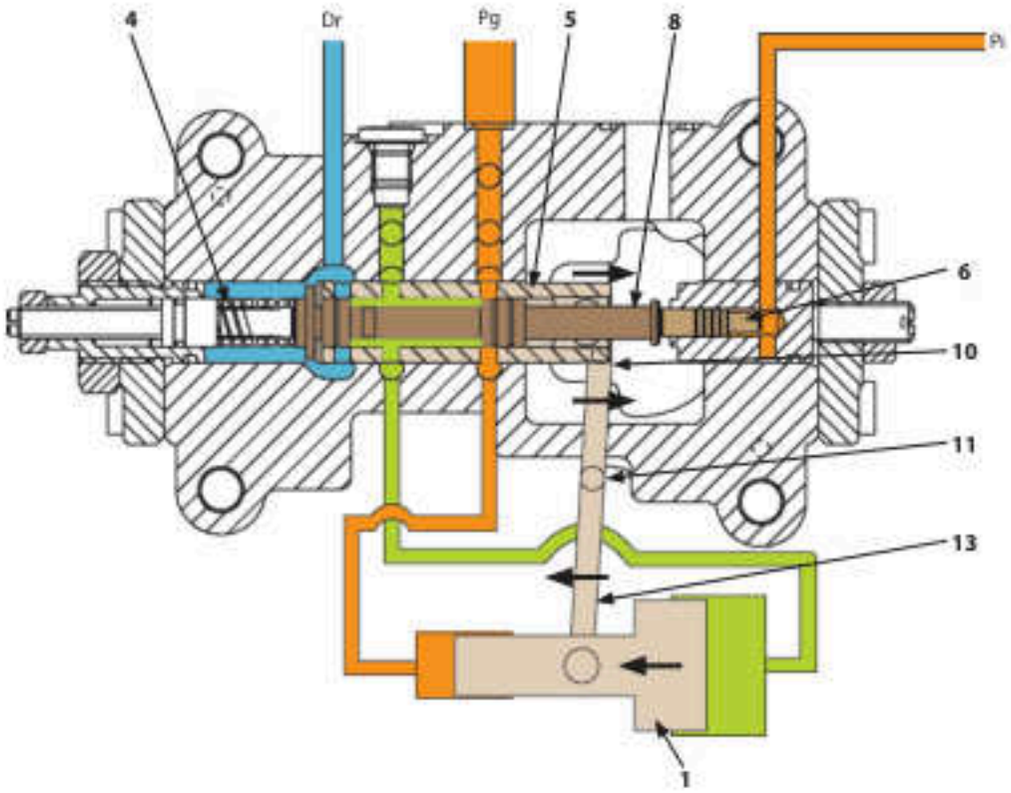
P- Port P
T- Port T
a- Output Port

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

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Dr- Returning to Hydraulic Oil Tank
Pi- Flow Rate Control Pressure
Pg- Primary Pilot Pressure (From Pilot Pump)

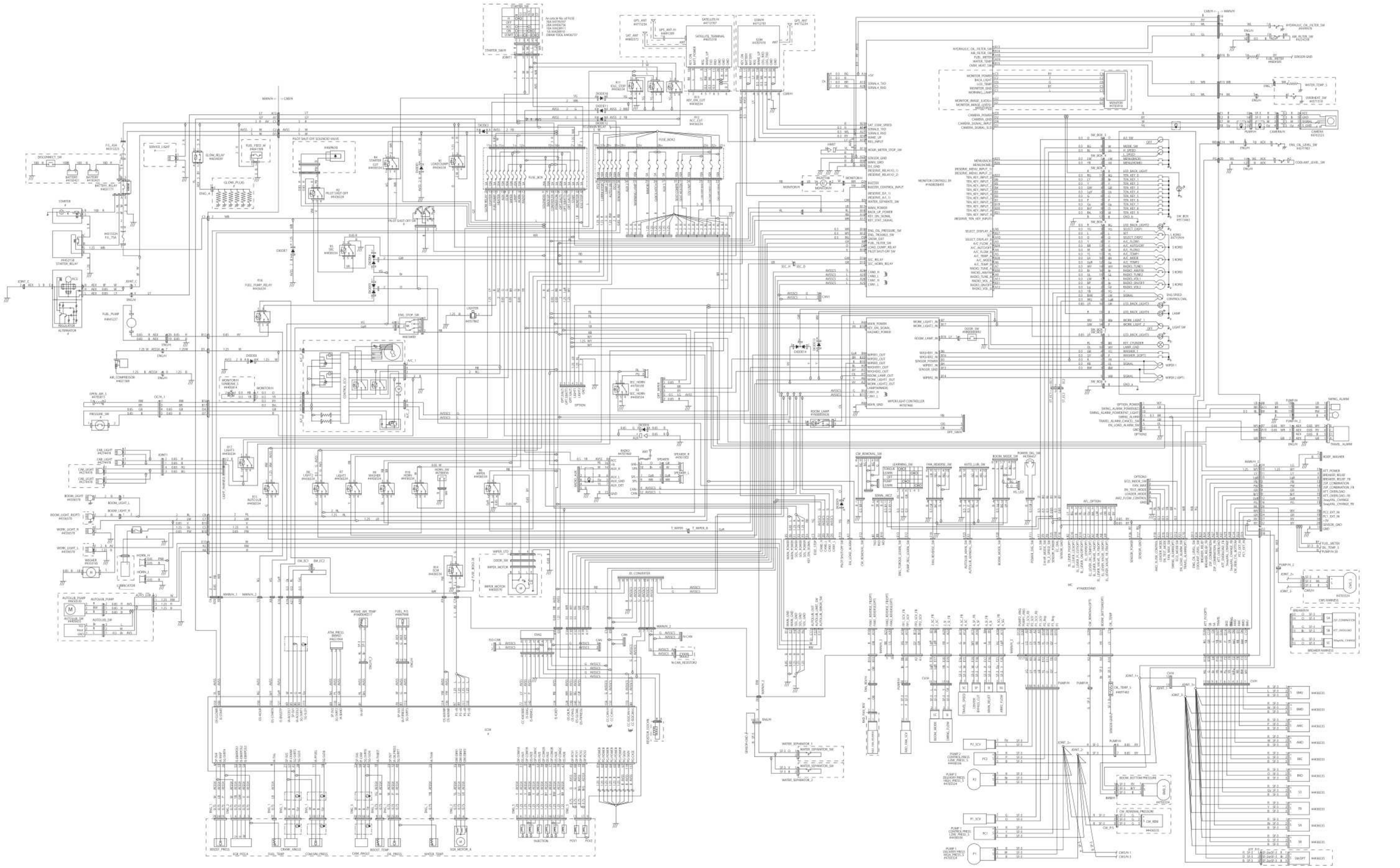
1- Servo Piston
4- Spring
5- Sleeve
6- Piston
8- Spool
10- Pin
11- Pin
13- Link

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Attach to Part No. : TTJBG-EN-00

ZX670LC-5A • 690LCH-5A 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.



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