580LE, SLE, LSP, LPS, 590SLE-LSP
Loader Backhoes

Service Manual

7-79973

CASE CONSTRUCTION

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580LE-SLE-LSP-LPS 590SLE-LSP LOADER BACKHOES
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*Refer to the Engine Service Manual

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CASE

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Large Format Hydraulic and Electrical Schematics	Pocket	[redacted]

[redacted] Section to be distributed at a later date.

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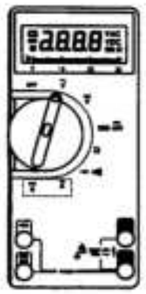
SPECIAL TOOLS



CM98K0025

Electrical system diagnostic box CAS-2110A

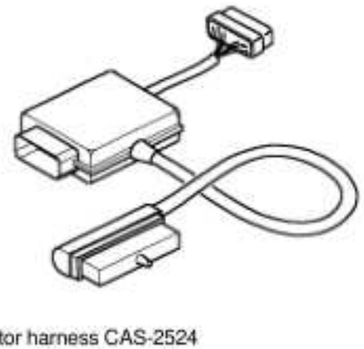
Used with multimeter CAS-1559 and adaptor harness CAS-2524



CM98K0027

Digital multimeter CAS-1559

Used with electrical system diagnostic box CAS-2110A



CI97C020

Adaptor harness CAS-2524

Used with electrical system diagnostic box CAS- 2110A

SCHEMATIC LEGENDS

A (n) Radio/C.B.
B (n) Indicator/pressure contact switches/loud-speakers/pressure switches/detector/thermal sender/gauge
E (n) Lighting components
F (n) Fuses
G (n) Electrical supply generators
H (n) Warning devices (lighted)
K (n) Relays
M (n) Motor
P (n) Instruments
R (n) Elements/heater plugs
S (n) Switches/rotating switches/main circuit breaker
V (n) Diodes
X (n) Supply line connections
Y (n) Solenoid valves, solenoid shut-off valves, solenoids

NOTE: *The (n) shows the number of components.*



Earth connection terminal



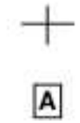
Undercarriage earth



Cable number



Intersection of two cables with connecting point



Intersection of two cables without connecting point

Transfer to another plate with the same letter



Bulbs



Bulb test



Diodes



Harness connectors



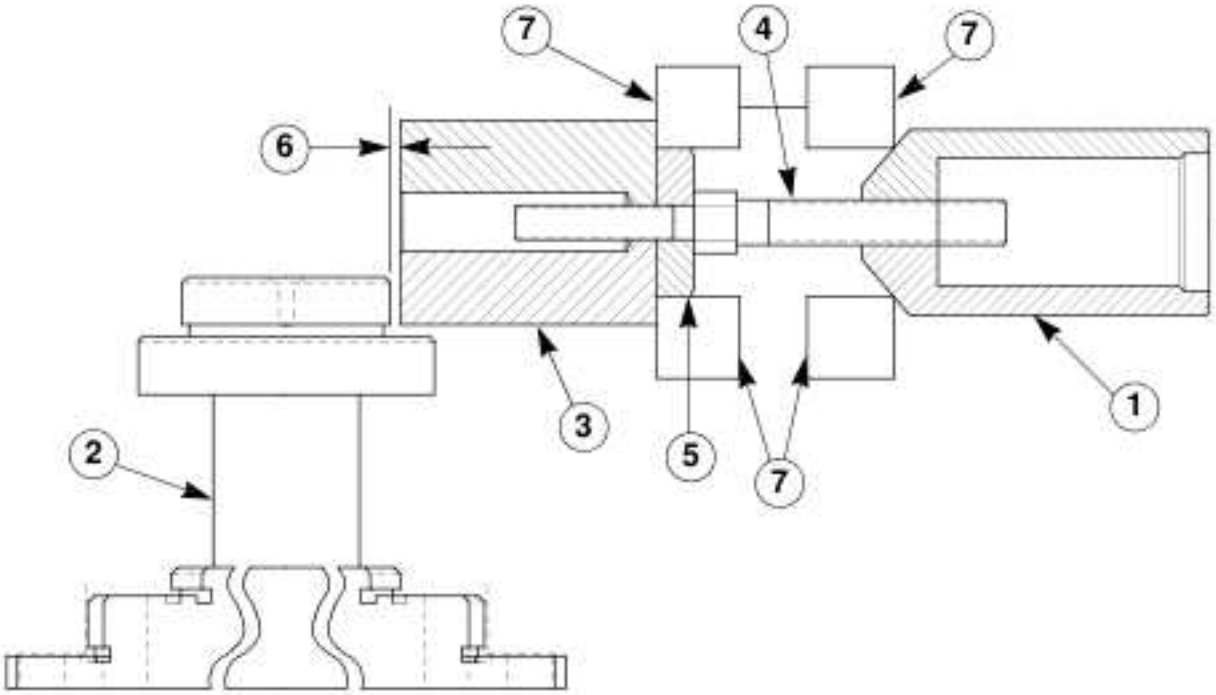
Shows a connection to another schematic



Shows the location where the connection should take place (the circuit is in fact completed)

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BT95G152

1 CAS 1596A-4
2 CAS 2372
3 CAS 1596B-5
4 CAS 1596A-7
5 CAS 1596A-6
6 GAP MEASUREMENT
7 BEARING STACK

Example

a.	*134.600 mm*	*a. At tool constant dimension*
b.	*+ 0.600 mm*	*b. Gap measurement*
c.	*135.200 mm*	*c. Total dimension*
d.	*- 132.250 mm*	*d. Figure stamped on pinion*
e.	*2.950 mm*	*e. Required shim thickness*

Use 2.950 mm thick shim

Work Sheet

a.	*134.600 mm*	*a. At tool constant dimension*
b.	*+ mm*	*b. Gap measurement*
c.	*mm*	*c. Total dimension*
d.	*- mm*	*d. Figure stamped on pinion*
e.	*mm*	*e. Required shim thickness*

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Assembly

STEP 17



BP9502191

Install the check valve.

STEP 18



BP9502190

Install the spring.

STEP 19



BP9502192

Install a new O-ring on the plug. Use clean hydraulic oil to lubricate the O-ring. Install the plug. Tighten the plug to a torque of between 41 and 54 Nm.

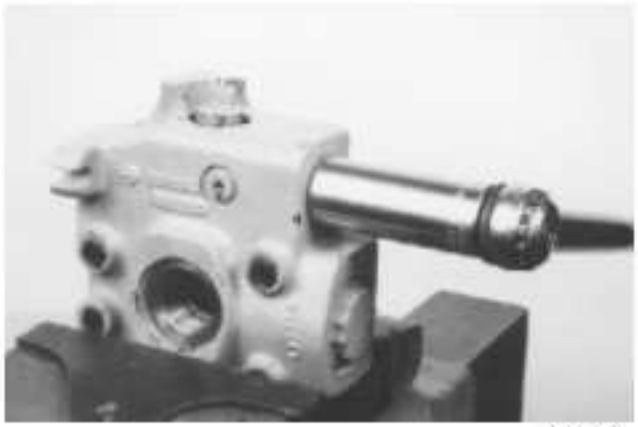
STEP 20



BP9502194

Install new O-rings and a new backup ring on the main relief valve. Use clean hydraulic oil to lubricate the O-rings and the backup ring.

STEP 21



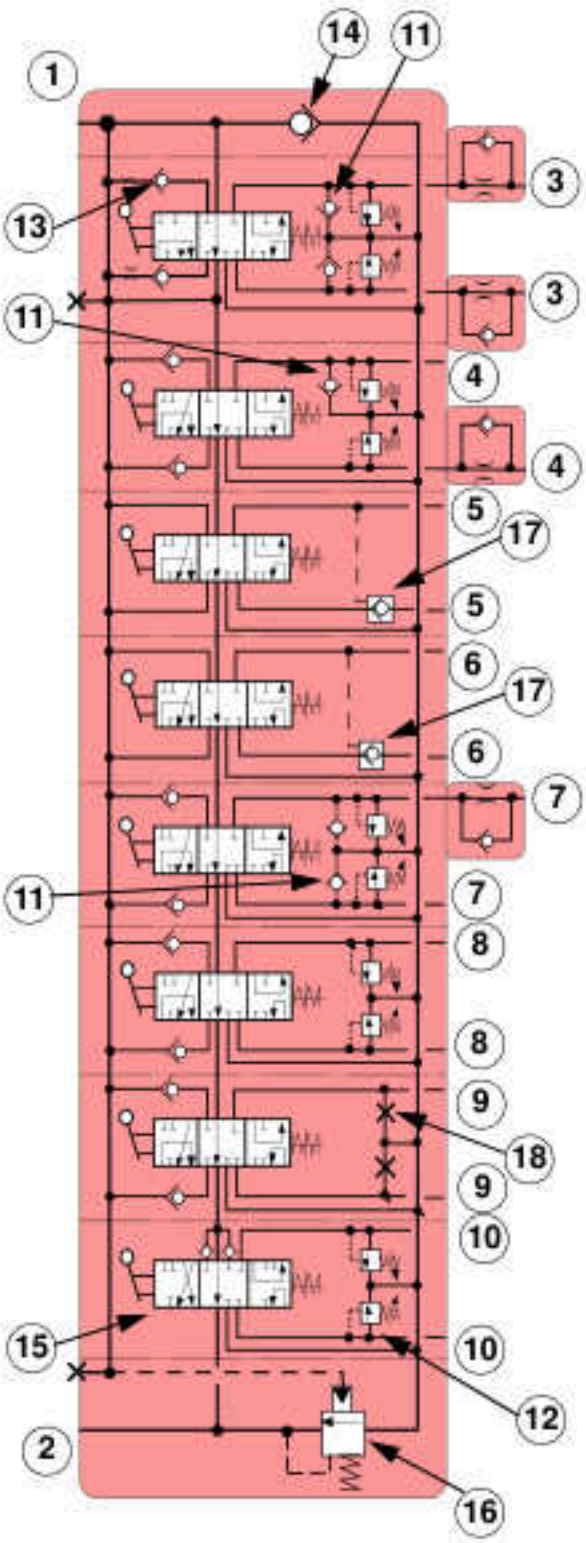
BP9502193

Install the main relief valve. Tighten the main relief valve to a torque of between 47 and 54 Nm.

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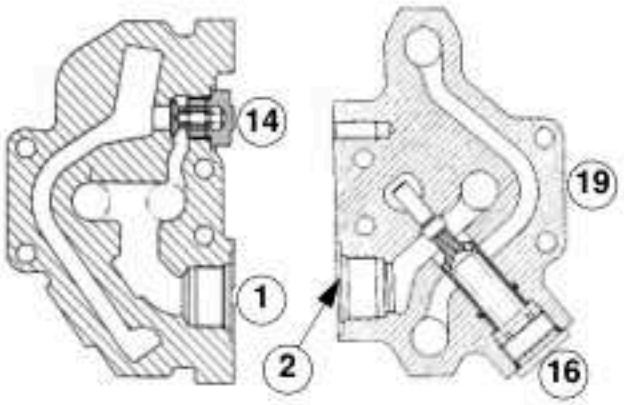
BACKHOE CONTROL VALVE (without swing priority)

Controls oil flow to backhoe cylinders by means of control levers.



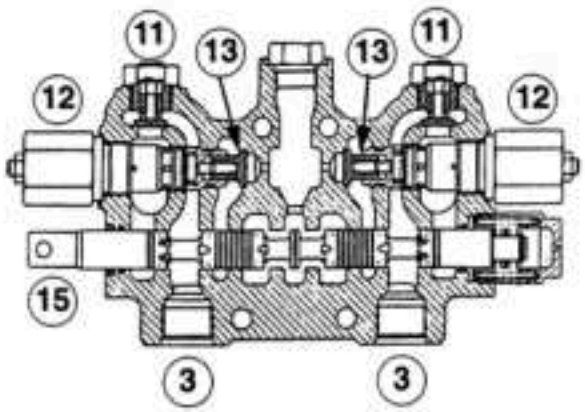
CM98A021

1 INLET PLATE
2 OUTLET PLATE
3 TO SWING CYLINDERS
4 TO THE BOOM CYLINDERS
5 TO RH STABILIZER CYLINDER
6 TO LH STABILIZER CYLINDER
7 TO DIPPER CYLINDER
8 TO BUCKET CYLINDER
9 TO THE TELESCOPIC DIPPER CYLINDER
10 TO THE OPTION
11 ANTI-CAVITATION VALVE
12 CIRCUIT RELIEF VALVE
13 LOAD HOLDING VALVE
14 MAIN ANTI-CAVITATION VALVE
15 SPOOL
16 FLOW REGENERATION VALVE
17 PILOT CHECK VALVE
18 PLUG



INLET PLATE OUTLET PLATE

CS00C526 B9403098



SWING SECTION

B9403039

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Side console and front console wiring (M2) (continued)

Wire number	Wire section mm²	Wire colour	Coming from	Going to
1C	3.32	Red	Supply terminal	Starting relay T30
1D	3.32	Red	Supply terminal	Key switch (batt.), 2A, 4A, 6A, 8A fuse block and road lighting switch
1E	3.32	Red	Supply terminal	Supply relay 1, 2, 3, T30
1F	3.32	Red	Supply terminal	Fuse block 2B, 4B, & 6B
1G	3.32	Red	Battery	fuel injection pump solenoid valve relay T30 (low emissions engine)
1L	3.32	Red	Battery + (master switch)	Fuse box
2	3.32	White	Fuel injection pump solenoid valve relay T87	Fuel injection pump solenoid valve (low emissions engine)
3	3.32	White	Starter switch (cont.)	Sol. Solenoid for fuel shut-off, cold start switch Fuse block 2C, 4C, 6C & 12C
3C	1.32	Black	RH cab loud-speaker	Radio earth
4	1.32	Grey	Starter switch (acc.)	Supply relay 1, 2, 3, T85
4D	1.32	Grey	RH cab loud-speaker	RH loud-speaker radio output
5E	1.32	Black	LH cab loud-speaker	Radio earth
6F	1.32	Grey	LH cab loud-speaker	LH loud-speaker radio output
7	1.32	Grey	Differential locking switch (loader control lever)	Differential locking relay T86)
8	1.32	Yellow	Momentary earth	Diodes
10	1.32	Black	Accessories	Earth
12A	3.32	Red	Supply relay 1. T87	Fuse block 8B & 10B
12B	3.32	Red	Supply relay 2. T87	Fuse block 6D, 8D, 10D, 12D
12C	3.32	Red	Supply relay 3. T87	Fuse block 2D & 4D
19A	2.07	Red	Fuse block 9B	Front working light switch
19B	3.32	Red	Fuse block 5A	Hazard warning light switch, horn relay T85, T30
19C	3.32	Red	Fuse block 1D	Rear working light switch and relay T30
19D	1.32	Red	Fuse block 1A	Rotary light switch
19E	1.32	Red	Fuse block 1C	Clutch relay T85 &T30/FWD & REV travel relay T30 4WD cont. switch
19F	1.32	Red	Fuse block 7D	Sol. loader return to dig, sideshift. Locking switch
19H	1.32	Grey	Rear working lights switch	Rear working light relay T85
19K	1.32	Red	Fuse block 1B	Cold start relay T30
19L	1.32	Red	Fuse block 5D	Hazard warning light switch, brake light switch, instrument panel T4
19M	1.32	Grey	Direction of travel locking time-delay relay	Relay T30 for forward travel and relay T30 for reverse travel
19P	1.32	Red	Fuse box	Radio option (battery +)
21	1.32	Red	Clutch relay T87a	(+) fwd N rev lever / Slow gears relay 3 & 4 T30 / Slow gears and PTO control switches
21A	1.32	Light blue	Starter switch (Start)	Neutral position relay T30 cable 93
21B	3.32	White	Starter motor relay T87	Starter motor solenoid
21C	1.32	White	fwd - N - rev lever (neu.)	Neutral relay T85
22	1.32	White	Neutral relay T87	Starter motor relay T85
23A	1.32	Grey	Forward travel transmission relay T87	Relay to change to neutral 1 T30
23B	1.32	Grey	Reverse travel transmission relay T87	Relay to change to neutral 2 T30
23F	1.32	Red	Fuse box 3C	Instrument cluster T2/T9. diode, tach.
24	1.5	White/brown	Stab. lever switch	Neutral 1 locking relay, T85, T87 Neutral 2 locking relay, T85, T87 Horn locking relay T85
24A	1.32	White	Direction of travel reverser locking relay T30	Direction of travel reverser locking time-delay relay (input)
25	1.32	Red	Clutch relay T86	4th gear clutch locking switches REV (4th) clutch locking relay T30
25A	1.32	Light blue	FWD - N - REV (FWD) lever	FWD relay T85, diode/to cables 25G & 25J
25B	1.32	Light blue	FWD - N - REV (REV) lever	REV relay T85, diodes/opt., 4th gear REV micro-switch
25C	1.32	Red	4WD cont. switch	4WD solenoid
25S	1.32	Grey	Differential locking relay T87 - Powershift option harness	Differential locking solenoid valve, diode
26	1.32	Light blue	Neutral 1 locking relay, T87	Forward travel solenoid & diode
27	1.32	Light blue	Neutral 2 locking relay, T87	Wire 51A sol. forward travel & diode
27A	1.32	Gray	REV 4th gear micro-switch	Relay T85. 4th gear reverse clutch locking
27B	1.32	Grey	Relay, 4th gear reverse neutralisation	Relay, T85 reverse travel transmission
28	2.07	Light blue	Cold start switch	Cold start pre-heat plug
30	1.32	Black	Accessories	Earth
31P	1.32	Yellow	Instrument panel T7	Oil pressure switch & diode
31S	1.32	Yellow	Tach. Alt. output	Servo, tach. Instrument cluster harness
31T	1.32	Yellow	Instrument cluster T10	Oil cooler temp. sender
32T	1.32	Yellow	Instrument cluster T11	Transmission temp. sender
33T	1.32	Yellow	Instrument cluster T1	Rear axle temp. switch
34	1.32	Light green	Alternator	Instrument cluster T5
36F	1.32	Yellow	Instrument cluster T14	Fuel level sender
36H	1.32	Yellow	Instrument cluster T18	Switch for hydraulic filter clogging & diode
36P	1.32	Yellow	Instrument cluster T3	Parking brake switch & diode
36R	1.32	Grey	Audible warning device T87	Diode
37	1.32	Yellow	Audible warning device (-) Cable 39B	Oil cooler temp. switch
38	1.32	Yellow	Instrument cluster T8	Air filter restriction switch & diode
39	1.32	Grey	Diode	Audible warning device (+)
40A	3.32	Black	Road lighting, working lights, front direction indicators, front windshield wiper, blower	Earth
40B	3.32	Black	Working lights, side lights, rear flashers, rear fog light, rear windshield wiper switch, aircon. ind. lamp, reg. plate light	Earth
41	2.07	Grey	Front road lighting switch	Fuse block 9A
41A	1.32	Red	Fuse block 10A	Front road lighting
41C	1.32	Red	Road lighting switch	Fuse block 8C & 10C
41D	1.32	Red	Fuse block 7C	Instrument cluster T12, frt LH & rear RH side lights
41E	1.32	Red	Fuse block 9C	Fog light switch, frt RH and rear LH side lights
42C	3.32	Grey	Rear working light relay, T87	Rear working lights
42F	1.32	Grey	Front working light switch	Front working lights
43	1.32	Tan	Flasher unit relay T49A	Direction indicator & hazard warning light switches
44	2.07	Tan	Brake switch	Brake lights
45	2.07	Tan	Hazard warning lights switch	Diodes
45L	1.32	Tan	Direction indicator switch	Diodes, direction ind. lamps, frt & rear direction indicator, LH side light
45R	1.32	Tan	Direction indicator switch	Diodes, flasher ind. lamp, frt. & rear flashers, RH side mounted light
46	1.32	Tan	Hazard warning lights switch	Flasher unit relay T49
47	1.32	Grey	Fog light switch	Fog light
48	1.32	Grey	Rotary light switch	Rotary light
49	1.32	Red	Fuse block 3A	Cab interior light
52	1.32	Grey	Diodes	Audible warning relay T85. stabilizer lever CONT. switch
56	1.32	Red	Fuse block 3B	Radio or CB option (BATT.)
57	1.32	Red	Fuse block 9D	Radio (+) and/or rear aux. hyd.
58	1.32	Red	Fuse block 5B	Free
60	1.32	Grey	Aircon. thermostat	Aircon. relay T30. high/low pressure switches
60A	1.32	Red	Aircon. relay T86 & T87	High/low aircon pressure switches, aircon ind. lamp
60B	1.32	Grey	Aircon. relay T87a	Aircon. compressor clutch
61	2.07	Red	Fuse block 7B	Blower switch (+)
61B	1.32	Red	Cab interior light	Cab interior light switch
62	1.32	Grey	Washer switch (frt.)	Frt. windshield washer pump
63	2.07	Red	Fuse block 3D	Frt/rear windshield wiper switches, motors, washer switch
64A	1.32	Red	Horn relay T86	Frt & rear horn switches
64B	1.32	Grey	Horn relay T87	Horn
65	1.32	Grey	Windshield washer switch (rear)	Rear windshield washer pump
72	1.32	Grey	Sideshift locking switch	Sideshift locking solenoid valve
73	1.32	Grey	Cold start switch	Cold start relay T85
219	1.32	Red	Fuse box	Servopower harness option (+)
285	1.32	Red	Fuse box	Servopower harness option (battery +)

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