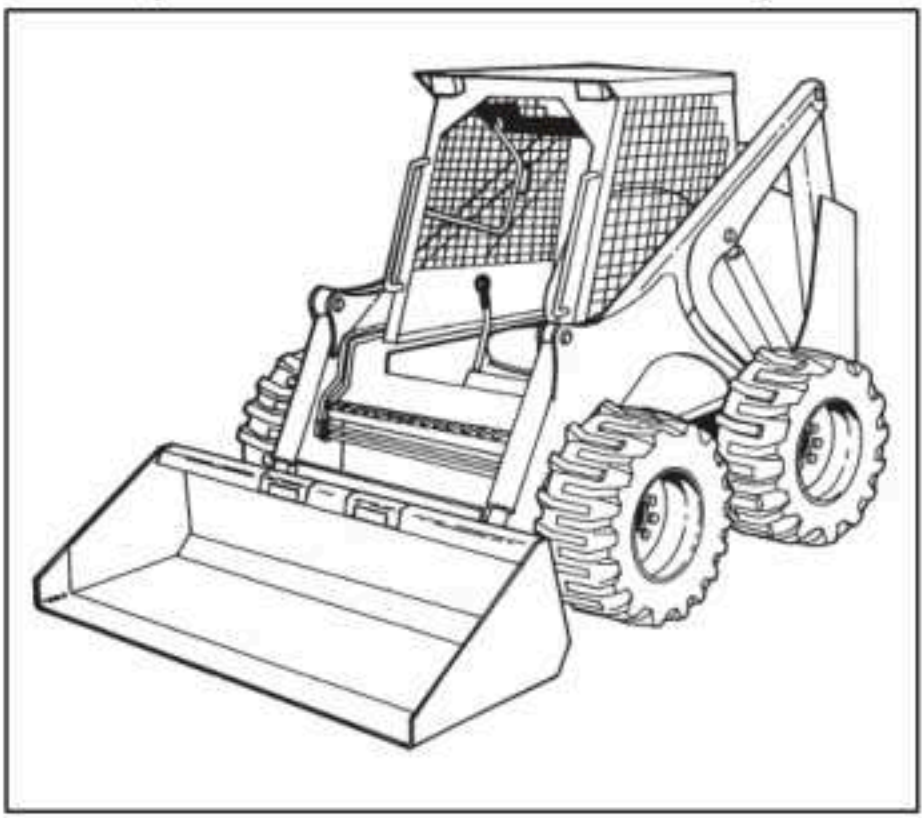
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Service Manual

(S/N 514115001 & Above)
(S/N 514213001 & Above)



EQUIPPED WITH
BOBCAT INTERLOCK
CONTROL SYSTEM (BICS™)

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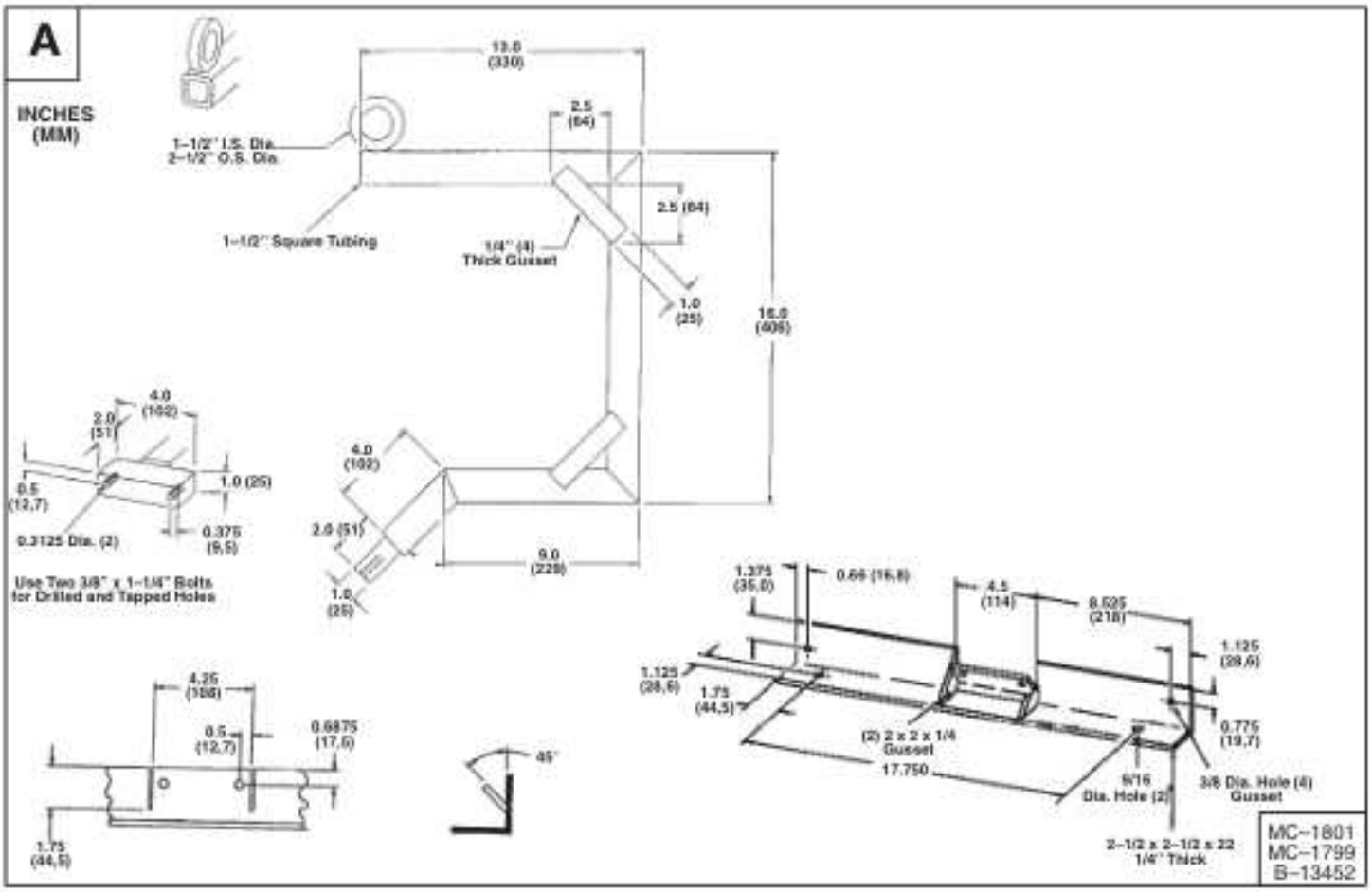
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CALIFORNIA
PROPOSITION 65 WARNING

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

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ENGINE/HYDROSTATIC PUMP ASSEMBLY (Cont'd)

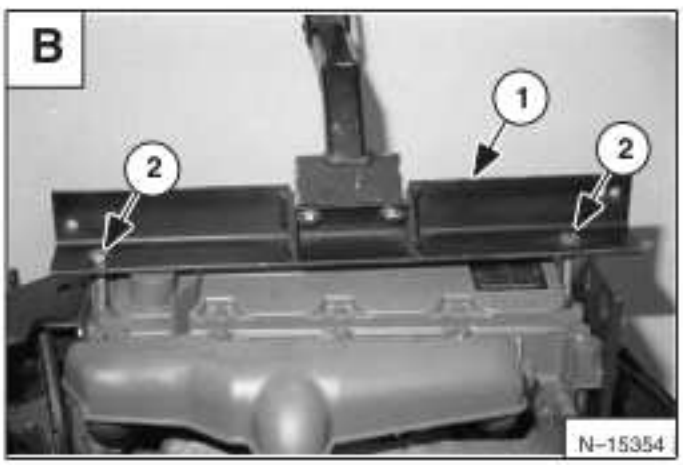
Removal And Installation (Cont'd)

Use the dimensions from figure **[A]** to make engine removal and installation brackets.

Install the lift bracket (Item 1) **[B]** on the engine.

Tighten the bolts (Item 2) **[B]** until the lift bracket is held firmly against the valve cover.

NOTE: Bolts required are two 12 x 80 mm x 1.75 threads.



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BOBCAT INTERLOCK CONTROL SYSTEM (BICS™) (S/N 514123810 & Above; 514222300 & Above)

Troubleshooting Chart

The following list shows the effects which can happen to the loader, and the probable causes when the BICS Controller lights are off or flashing. Have the service procedure performed ONLY BY QUALIFIED BOBCAT SERVICE PERSONNEL.

Indicator Light	Light ON	Light OFF	Effect on Operation of Loader When Light Is OFF	Flashing Indicator Means System Problem (See Your Bobcat Dealer for Service)	
				Number of Flashes	Cause
System Activated	*PRESS TO OPERATE* button is activated	*PRESS TO OPERATE* button not activated	Lift, tilt and traction functions will not operate.	2	System Activated circuit shorted to battery voltage.*
				3	System Activated circuit shorted to ground.
Seat Bar 	Seat Bar Down.	Seat Bar Up.	Lift, tilt and traction functions will not operate.	2	Seat bar sensor circuit shorted to battery voltage*.
				3	Seat bar sensor circuit shorted to ground.
Valve 	Control Valve Can Be Used.	Control Valve Cannot Be Used.	Lift and tilt functions will not operate.	2	Valve output circuit shorted to battery voltage*.
				3	Valve output circuit shorted to ground.
				3	Valve output circuit is not grounded.
Traction 	Loader can be moved forward & backward.	Loader cannot be moved forward and backward.	Loader cannot be moved forward and backward.	1	Traction lock hold coil circuit is open.
				2	Traction lock hold coil circuit shorted to battery voltage*.
				3	Traction lock hold coil circuit shorted to ground.
				4	Traction lock pull coil circuit is open.
				5	Traction lock pull coil circuit is shorted to battery voltage*.
				6	Traction lock pull coil circuit is shorted to ground.
Power 	BICS Controller is operating correctly.	BICS Controller is not operating correctly.	Lift, tilt and traction functions will not operate.	N/A	N/A

*** Normal BICS operating voltage is less than the electrical system voltage. If voltage is more, the circuit is shorted to system voltage.**

NOTES:

(1) If the System Activated and/or seat bar sensor circuits are open, the corresponding lights will be OFF. If one of the lights stay OFF, check the circuit for continuity. See Inspection & Maintenance Instructions in Preventive Maintenance section.

(2) If all five lights flash repeatedly, the voltage supply is greater than 16 volts or less than 9 volts.

(3) Flashing patterns will repeat every 3.25 seconds.

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AHC/PWM CONTROLLER (Cont'd)

Handle Testing

The right side steering lever handle switch (Item 1) **[A]** controls the proportional flow to front auxiliary. Use a Ohm meter to test the switch.

Disconnect the handle switch harness from the controls harness (Item 1) **[B]**. Use the chart below to test the handle switch.

Handle Switch Position

Test between handle wires	Full Left	Center	Full Right
Dk. Blue & Dk. Blue/White	4.5–5.5 K–Ohms	4.5–5.5 K–Ohms	4.5–5.5 K–Ohms
Dk. Blue/Yellow & Dk. Blue/White	0.5–1.5 K–Ohms	2.3–2.7 K–Ohms	3.5–4.5 K–Ohms
Dk. Blue/Yellow & Dk. Blue	3.5–4.5 K–Ohms	2.3–2.7 K–Ohms	0.5–1.5 K–Ohms

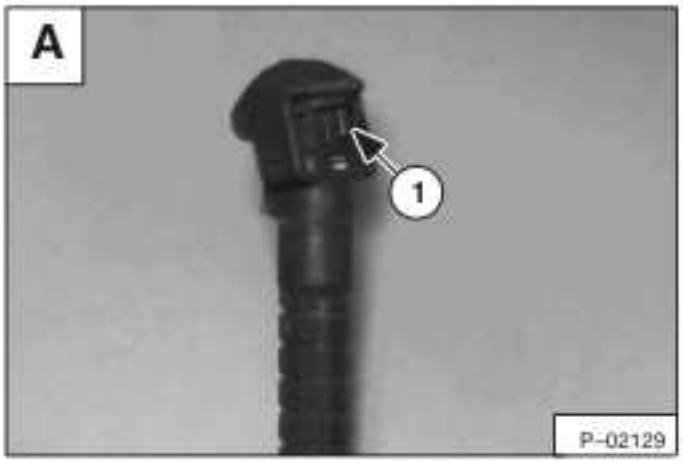
One K–Ohm is equal to 1000 Ohms.

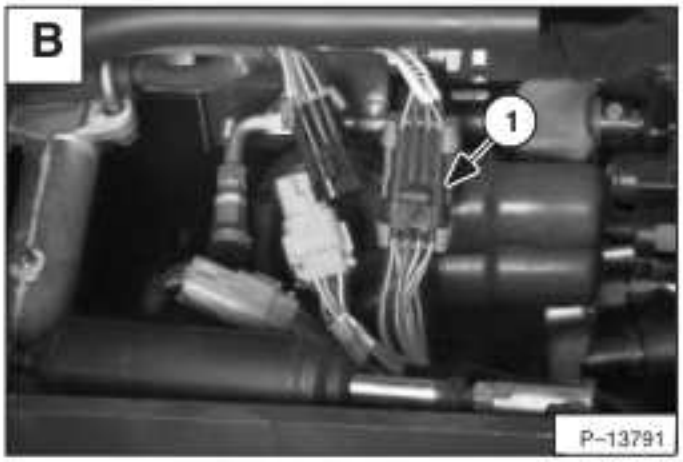
NOTE: Push the switch gradually from center to either left or right. The Ohm reading must change gradually. Replace the handle switch assembly if required.

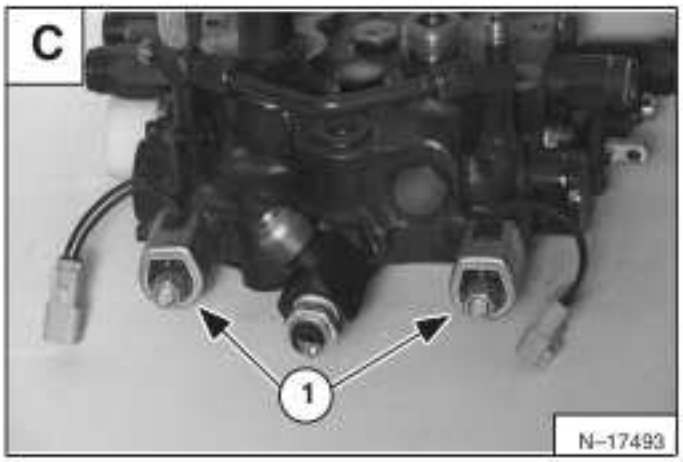
Solenoid Coil Testing

The front auxiliary solenoid coils (Item 1) **[C]** are located in the hydraulic control valve. Test the solenoid coils with a Ohm test meter.

Disconnect the coil from the controls harness. The correct reading is 1–5 Ohms.







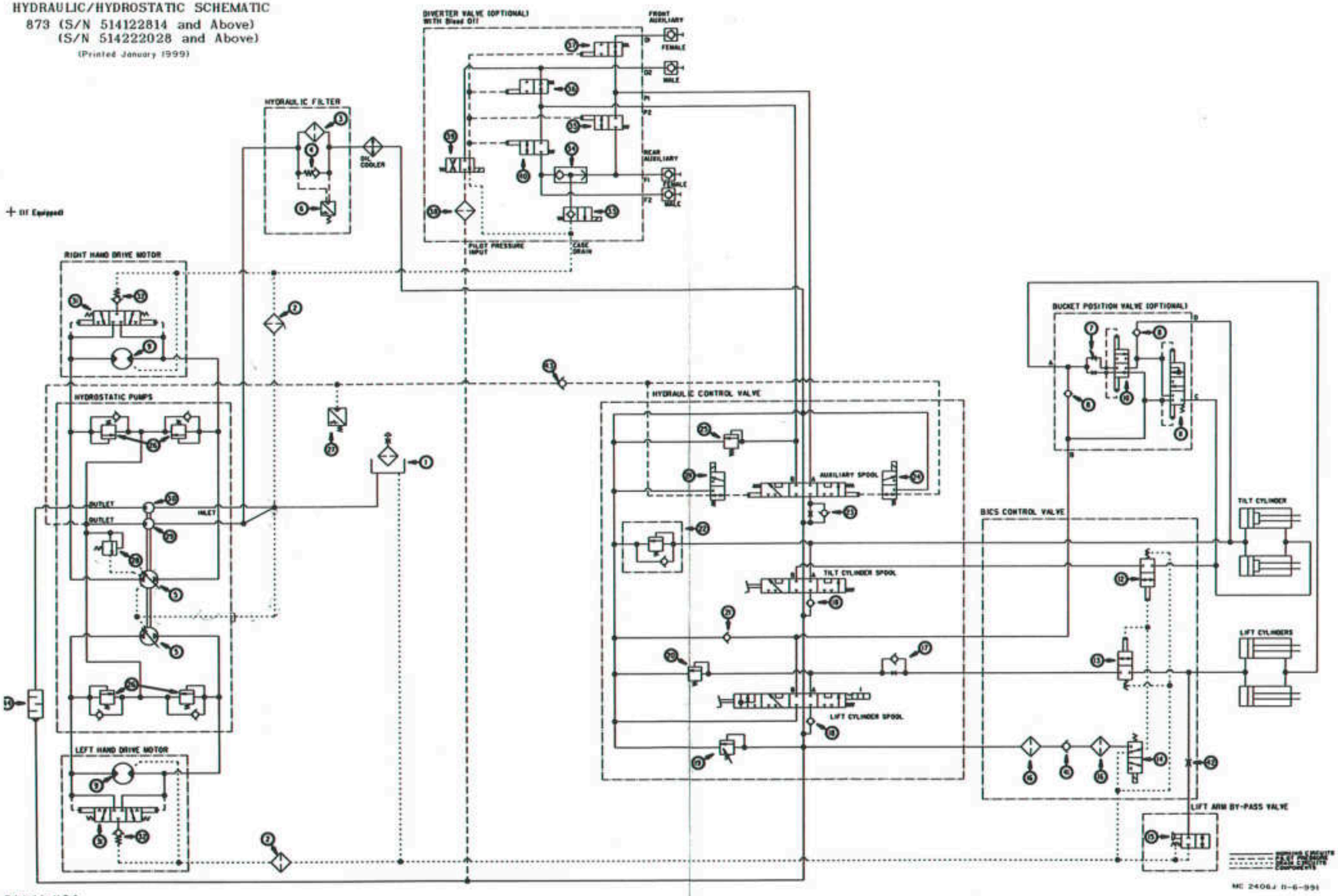
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HYDRAULIC/HYDROSTATIC SCHEMATIC

873 (S/N 514122814 and Above)
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