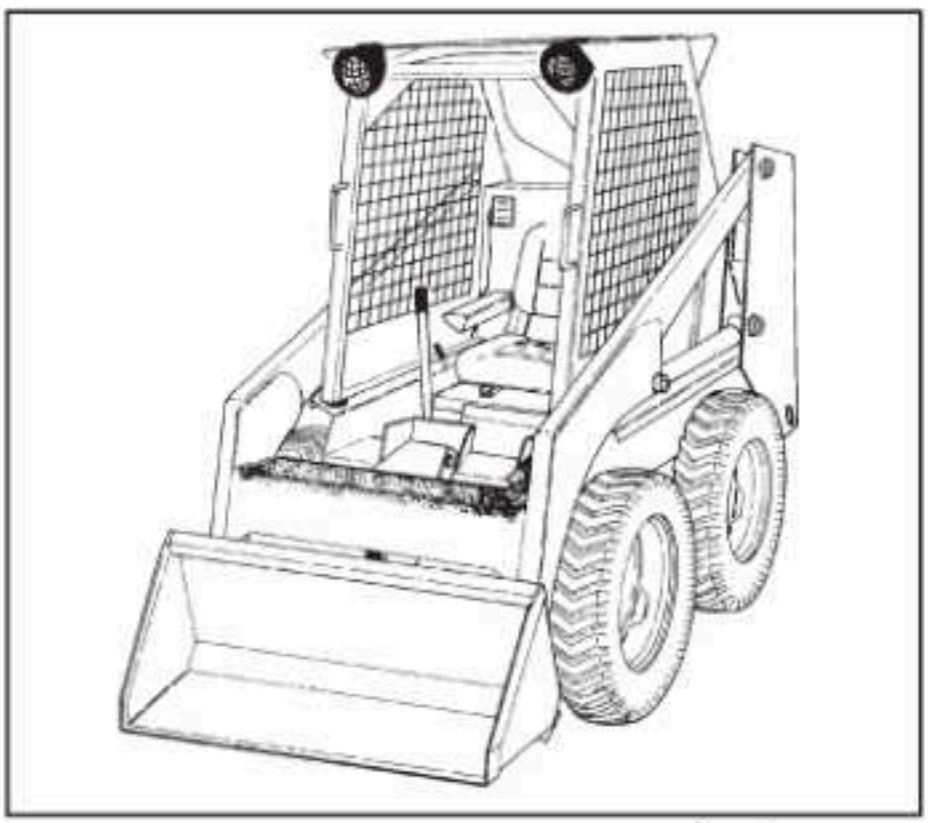
730

731

732

Service Manual



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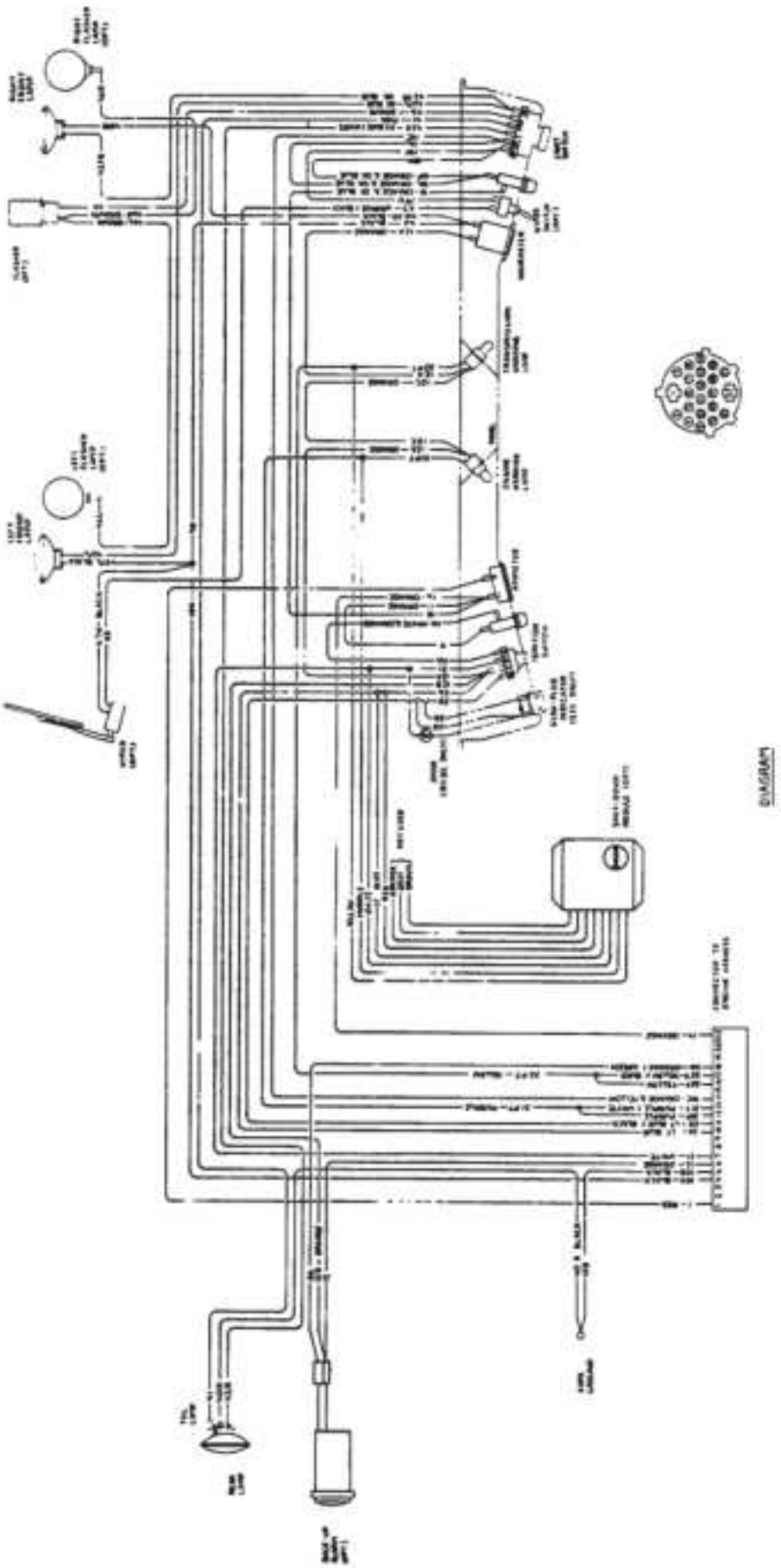
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Fig. 6–3 Wiring Diagram (ROPS Electrical Circuit) S/N 12999 & Below

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7B ENGINE SERVICE (DEUTZ ENGINE – 731)

7B–1 TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Engine will not turn over with the starter.	Battery has lost its charge.	Charge battery. Check the functions of charging system.
	Loose battery connection.	Clean battery connections and cables. Tighten the clamps.
	Loose starter connections.	Tighten the connections.
	Defect in starter switch.	Make replacement of switch.
	Broken or disconnected wiring harness.	Connect or make replacement of wiring.
	Defective starter or solenoid.	Repairs as needed.
Engine fails to start or is difficult to start.	Wrong starting procedure.	Refer to "Starting Procedure" in the Bobcat Owner's Manual.
	No fuel in the tank.	Add fuel. Remove air from fuel system.
	Air cleaner is dirty.	Service the air cleaner.
	Fuel tank vent is cap has restriction.	Remove the cap and clean vent.
	Fuel line has air leak or dirt, or water.	Correct as required.
	Damaged fuel lift pump.	Make replacement of pump if needed.
	Excess fuel assembly not working.	Check alignment and linkage.
	Hydraulic–hydrostatic load on engine.	Place all controls in neutral and warm oil reservoir during very low temperatures.
	Defect in fuel injection system.	Check and make repairs as needed.
	Crankcase oil is thick.	Use engine oil of correct viscosity. (See Oil Specification Chart).
Engine misses, runs irregularly or stops.	Fuel injection set wrong.	Check timing.
	Dirty fuel mixture, or restriction in fuel filter or vent.	Clean as required.
	Poor compression.	Check for loose cylinder head screws.
	Water in the fuel.	Make replacement of fuel.

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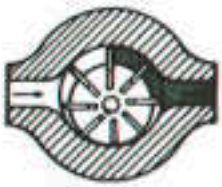
ENGINE SPECIFICATIONS, 730 (WISCONSIN)

	Paragraph Number	Page Number
ENGINE SPECIFICATIONS	8A–1	8A–1
LOADER SPECIFICATIONS		8A–3

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filter 5 and to the hydrostatic pumps 19. But if the oil is cold or there is a sudden increase of pressure from the control valve 13 the pressure will cause the cold weather bypass valve 10 to open and put the excess oil back to the reservoir 1 until the excess pressure decreases.



From the 40 micron filter 5 the oil flows pass the temperature switch 6 and the pressure switch 7. The oil flows from the port block 8 to the center section of the hydrostatic pumps 19. This oil is called "charge supply oil". In the center section of the hydrostatic pumps 19 the oil is against two high pressure replenishing relief valves 17, two replenishing valves and the non-functional charge relief valve 3. The charge relief valve 3 has a heavy spring holding it shut and it is non-functional. When the oil gets to the hydrostatic pumps 19 it activates the high pressure replenishing valves 17. The replenishing valves open and let oil into the hydrostatic pumps 19 for replenishing, lubrication and cooling.



The hydrostatic pumps 19 do not need the full volume of oil flow, so there is extra oil. This extra oil goes to the neutral charge bypass valve 9 16 (See Chart for S/N break). When the pressure reaches the setting of the neutral charge bypass valve 9 16 (See Chart for S/N break) opens and lets this extra oil go to the oil cooler 15.



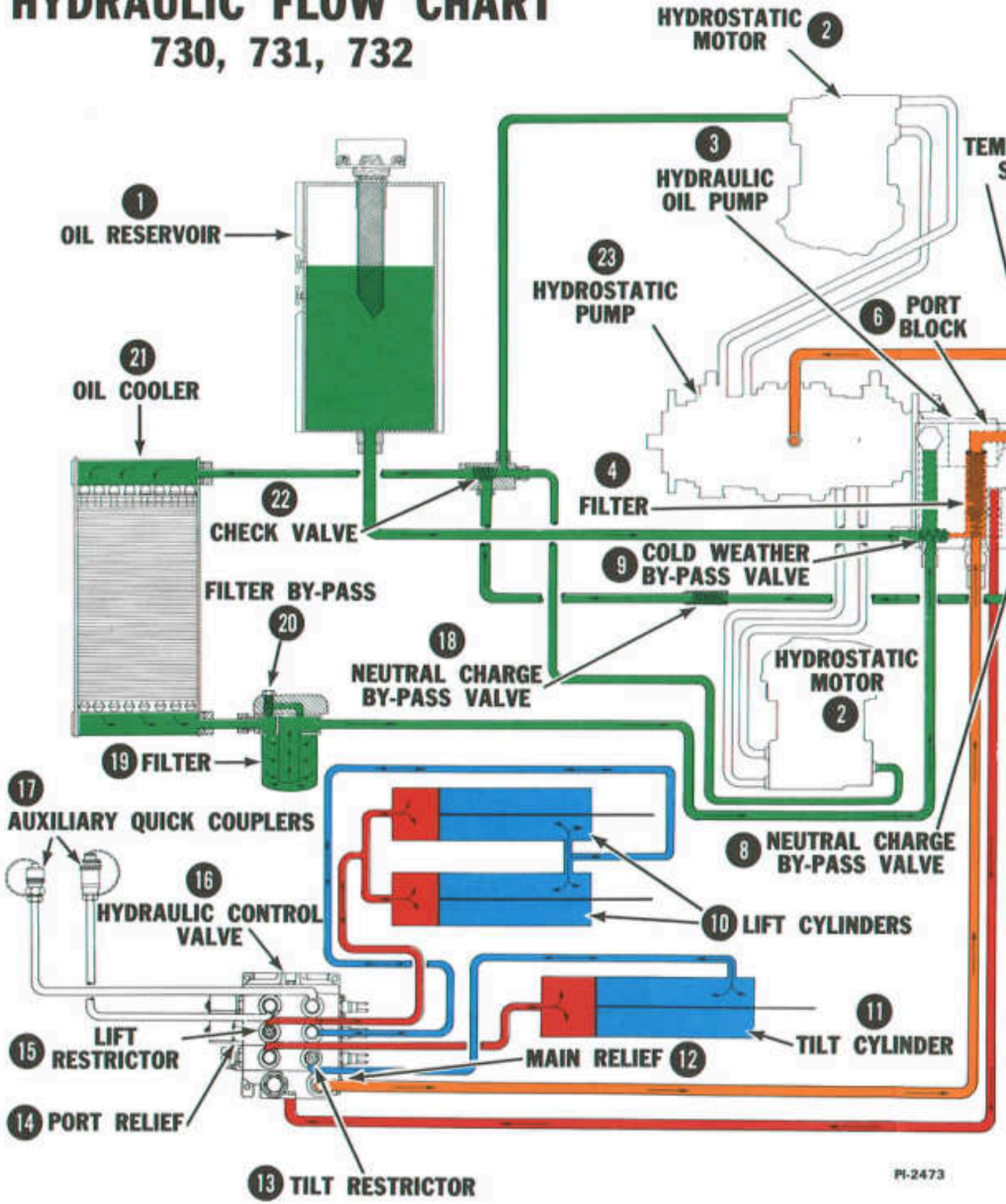
There are two hydrostatic pumps 19 and two hydrostatic motors 2. One pump and one motor work together as a pair to drive on one side of the machine. The other pump and motor work as a pair to drive the opposite side of the machine.



When the replenishing valves 17 open and oil goes into the hydrostatic pumps 19, the flow of oil becomes the "drive loop oil". When the steering levers are in neutral, the hydrostatic pumps 19 and the hydrostatic motors 2 are not working but do have charge pressure. When the steering levers are moved, the swashplates in the hydrostatic pumps 19 are angled and oil is forced out of the pressure side of the hydrostatic pumps 19 and to the hydrostatic motors 2. This flow of oil is called "drive pressure". Drive pressure is much higher than charge pressure causing the replenishing valves 17 to close allowing the flow of oil to go to the hydrostatic motors 19. There are four replenishing valves 17, two

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HYDRAULIC FLOW CHART
730, 731, 732



1. OIL RESERVOIR, System Cap.: 5 Gal. [19 L]
2. HYDROSTATIC MOTOR
3. HYDRAULIC OIL PUMP, 12 GPM [45,2 L/m] at 2800 RPM
4. FILTER, 40 Micron
5. TEMPERATURE SWITCH, 225°F [108°C]
6. PORT BLOCK
7. PRESSURE SWITCH, 20-25 PSI [137-172 kPa]
8. NEUTRAL CHARGE BY-PASS VALVE, 78-97 PSI [537-668 kPa] (730—S/N 12163 & Below) (731—S/N 11920 & Below) (732—S/N12743 & Below)
9. COLD WEATHER BY-PASS VALVE, 187-217 PSI [1289-1496 kPa]
10. LIFT CYLINDERS
11. TILT CYLINDER (730—S/N 12235, 731—S/N 12283 & 732—S/N 12949 & Above With Cushion Cylinder)
12. MAIN RELIEF, 2100-2150 PSI [14479-14824 kPa] At Valve (2300-2350 PSI [15858-16203 kPa] Measured at Aux. Quick Couplers)
13. TILT RESTRICTOR (730—S/N 12234, 731—S/N 12282 & 732—S/N 12948 & Below)
14. PORT RELIEF, 3500 PSI [24132 kPa]
15. LIFT RESTRICTOR
16. HYDRAULIC CONTROL VALVE
17. AUXILIARY QUICK COUPLERS
18. NEUTRAL CHARGE BY-PASS VALVE, 78-97 PSI [537-668 kPa] (730—S/N 12164 & Above, 731—S/N 11921 & Above & 732—S/N 12744 & Above)
19. FILTER, 10 Micron
20. FILTER BY-PASS, 30 PSI [206 kPa] (730—S/N 12184, 731—S/N 12141 & 732—S/N 12860 & Below), 72 PSI [496 kPa] (730—S/N 12185, 731—S/N 12142 & 732—S/N 12861 & Above)
21. OIL COOLER
22. CHECK VALVE, 16 - 20 PSI [110 - 137 kPa]
23. HYDROSTATIC PUMP

RED - - - - - - - High Pressure
BLUE - - - - - - Low Pressure
GREEN - - - - - Case Drain & Reservoir
ORANGE - - - -Charge Pressure

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