
SKID STEERS

40 XT - 60 XT - 70 XT



CASE

CENTRE DE FORMATION CASE
FRANCE MARCH 2002

INTRODUCTION

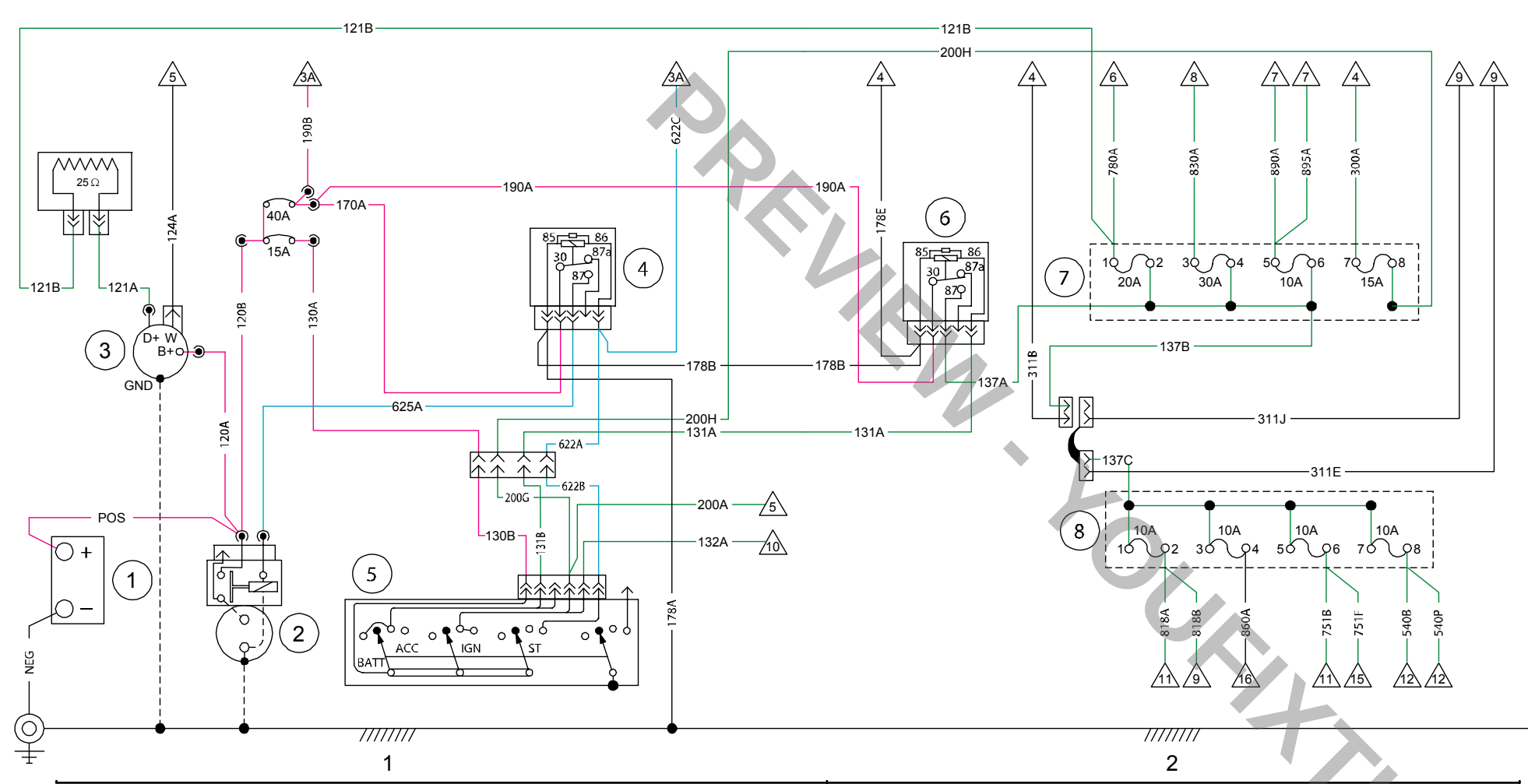
BOOK COMPOSITION

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ELECTRICAL SYSTEM

STARTING SYSTEM

POWER DISTRIBUTION



Components

1. Battery

2. Starter Motor and Solenoid

3. Alternator

4. Starting Relay
5. Ignition Switch

6. Main Power Relay

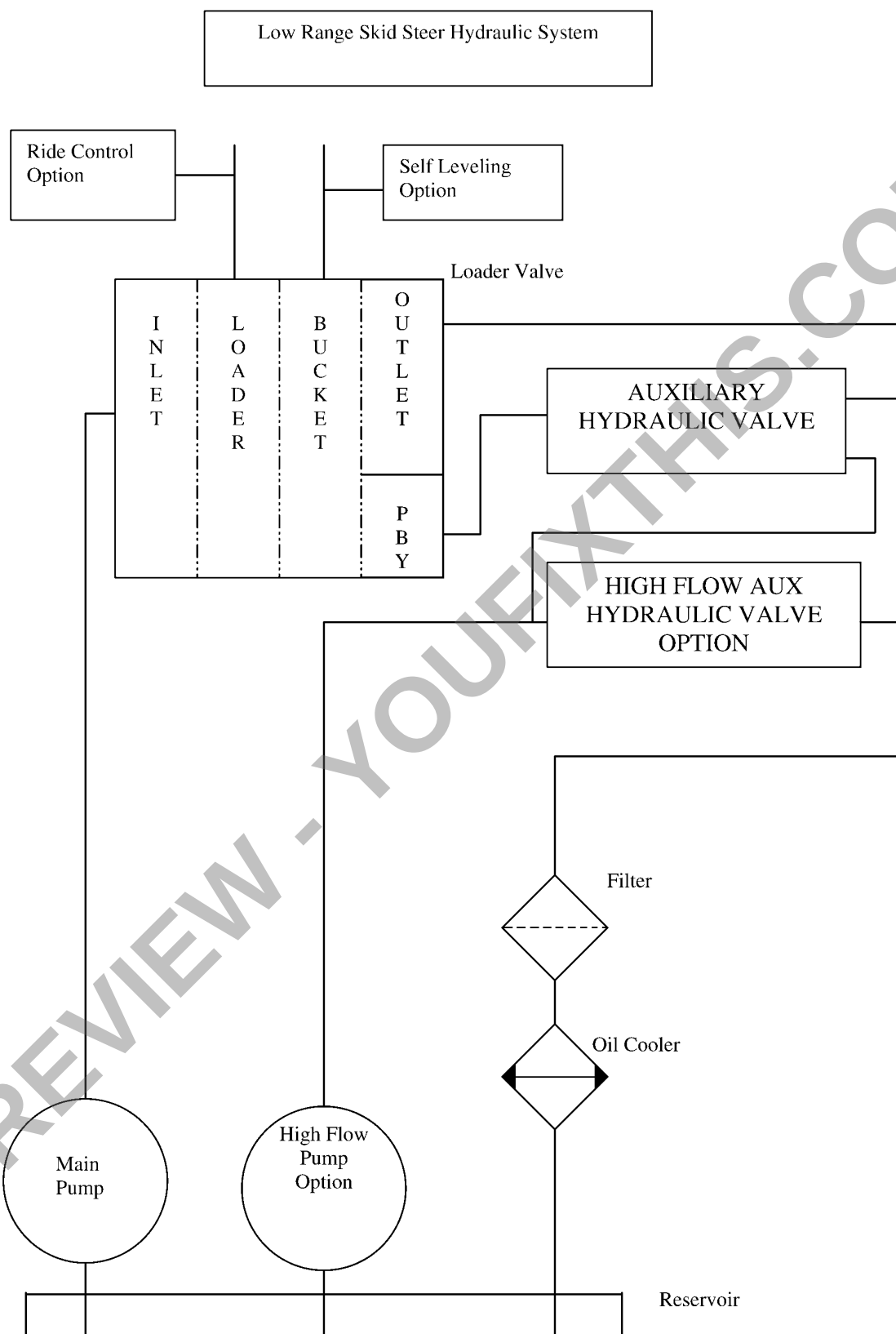
7. Primary Fuse Block

8. Options Fuse Block

NO.	GA.	COLOR	FROM:	TO:
131B	1.0	Red	Ignition Switch (ACC)	Cab Harness Connector (B2)
132A	1.0	Red	Ignition Switch (IGN)	Cold Start Switch
137A	5.0	Red	Main Power Relay (87)	Primary Fuse Block (Buss)
137B	5.0	Red	Primary Fuse Block (Buss)	Chassis Options Harness
137C	5.0	Red	Chassis Options Harness	Options Fuse Block (Buss)
170A	5.0	Red	40 Ampere Circuit Breaker	Starting Relay (30)
178A	2.0	Black	Starting Relay (85)	Chassis Ground
178B	1.0	Black	Starting Relay (85)	Main Power Relay (85)
178E	1.0	Black	Main Power Relay (85)	Engine Shut Down Relay (85)
190A	5.0	Red	40 Ampere Circuit Breaker	Main Power Relay (30)
190B	3.0	Red	40 Ampere Circuit Breaker	Fuel Sol. Pull In Relay (30)
200A	0.8	Red	Ignition Switch (IGN)	LH Instrument Cluster 10-Pin Connector (Ignition Power-IN)
200G	2.0	Red	Ignition Switch (IGN)	Cab Harness Connector (B1)
200H	2.0	Red	Cab Harness Connector (B1)	Primary Fuse Block (15A)
300A	2.0	Red	Primary Fuse Block (15A)	Splice 1 (Interlock System)
311B	1.0	Pink	Loader Valve Sol. Relay (87)	Chassis Options Harness
311E	1.0	Pink	Chassis Options Harness	Brake Switch Connector
311J	1.0	Pink	Chassis Options Harness	Brake Release Solenoid
540B	1.0	Red	Options Fuse Block (10A)	Hydraulic Coupler Circuit
540P	1.0	Red	Options Fuse Block (10A)	Self Level Circuit Connector
622A	1.0	White	Cab Harness Connector (B3)	Starting Relay (86)
622B	1.0	White	Ignition Switch (ST)	Cab Harness Connector (B3)
622C	1.0	White	Starting Relay (86)	Fuel Sol. Pull in Relay (86)
625A	5.0	White	Starting Relay (87)	Starter Solenoid (START)
751B	1.0	Red	Options Fuse Block (10A)	Rotating Beacon Circuit
751F	1.0	Red	Options Fuse Block (10A)	Front Elec. Connector
780A	3.0	Red	Primary Fuse Block (20A)	Cab Harness Connector (A2)
818A	1.0	Red	Options Fuse Block (10A)	Elec. Accessory Socket Circuit
818B	1.0	Red	Options Fuse Block (10A)	Brake Pressure Switch
830A	3.0	Red	Primary Fuse Block (30A)	Cab Harness Connector (K2)
860A	2.0	Orange	Options Fuse Block (20A)	Miscellaneous Power Circuit
890A	1.0	Red	Primary Fuse Block (10A)	Horn Switch Circuit
895A	1.0	Orange	Primary Fuse Block (10A)	Backup Alarm Switch #1

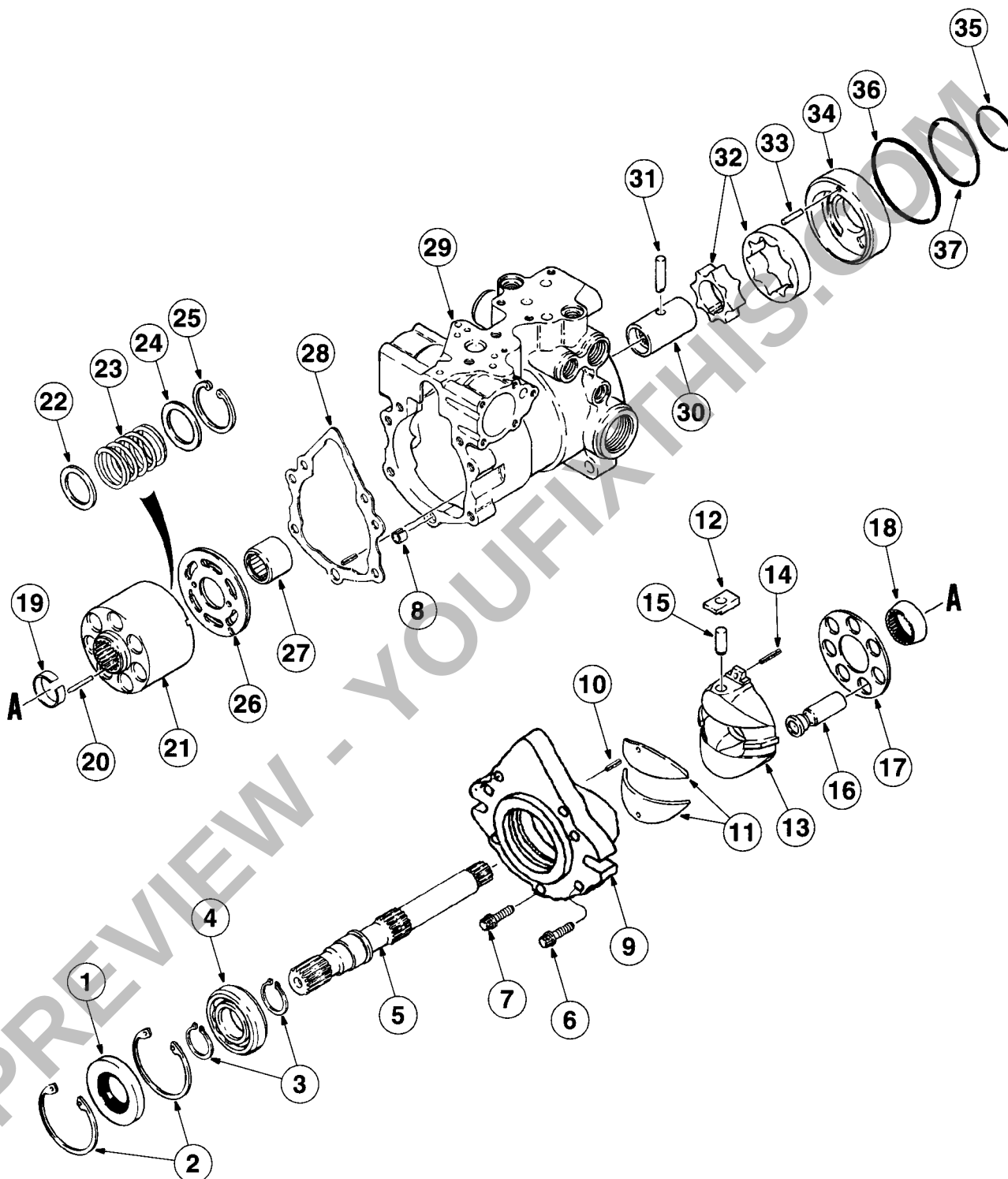
0	50.0	Black	Chassis Ground	Battery (-)
0	50.0	Red	Battery (+)	Starter Solenoid (+)
120A	8.0	Red	Starter Solenoid (+)	Alternator (B+)
120B	8.0	Red	Starter Solenoid (+)	Buss Bar
121A	1.0	Yellow	Alternator Resistor	Alternator Field Excite Terminal
121B	1.0	Red	Primary Fuse Block (20A)	Alternator Resistor
124A	1.0	Red	Alternator (W)	Cab Harness Connector (B4)
130A	2.0	Red	15 Ampere Circuit Breaker	Cab Harness Connector (A1)
130B	2.0	Red	Cab Harness Connector (A1)	Ignition Switch (BATT)
131A	1.0	Red	Cab Harness Connector (B2)	Main Power Relay (86)

HYDRAULIC SYSTEM



COMPONENTS

Hydrostatic pump



Rear pump with bearings, shaft and plate

HYDRAULIC SYSTEM

SYMPTOM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Bucket does not self-level at all.	On-Off switch on right front ROPS post turned to OFF position. Bad bucket spool microswitch or out of adjustment. Bad float switch in the end cover of the loader lift spool. On-Off Solenoid Valve stuck in the OFF position.	Turn On-Off switch to the ON position. Adjust, repair or replace the bucket spool microswitch. Repair or replace the float switch. Check the On-Off Solenoid Valve.
Bucket Self-Levels when the On-Off switch on the right front ROPS post is in the OFF position.	Bad On-Off switch or bad wiring. Bad On-Off Solenoid Valve in the loader valve.	Check power supply to the On-Off switch, check the On-Off switch and the wiring between the switch and the On-Off Solenoid in the loader valve. Check function of the On-Off Solenoid valve.
Bucket does not maintain level while raising or lowering at engine speeds other than high idle.	Bucket self-leveling is designed to work optimally at high idle. Bucket self-leveling works best when lift spool is fully stroked.	Run engine at high idle. Fully stroke the lift spool.
Bucket does not maintain level while raising at high idle.	Flow divider cartridge stuck. Incorrect flow divider cartridge installed. Raise counterbalance valve stuck.	Check flow divider cartridge for free operation. Check flow divider cartridge for correct part number. Check raise counterbalance valve for free operation.
Bucket does not maintain level while lowering at high idle.	Flow divider cartridge stuck. Incorrect flow divider cartridge installed. Lower counterbalance valve stuck.	Check flow divider cartridge for free operation. Check flow divider cartridge for correct part number. Check lower counterbalance valve for free operation.
Excessive bucket drift in the dump direction.	Bad bucket cylinder packing. Raise counterbalance valve stuck. Bad A2 Port circuit relief/ Anti-Cavitation check valve. Excessive loader control valve bucket spool port leakage.	Repack cylinder. Check Raise counterbalance valve for free operation. Check A2 Port circuit relief/ Anti-Cavitation check valve. Check for bucket circuit leakage. Replace loader valve.
Excessive bucket drift towards the roll back direction.	Bad bucket cylinder packing. Bad B2 Port circuit relief/ Anti-Cavitation check valve. Bad A1 Port circuit relief/ Anti-Cavitation check valve. Bad B1 Port circuit relief/ Anti-Cavitation check valve. Excessive loader control valve port leakage.	Repack cylinder. Check B2 Port circuit relief/ Anti-Cavitation check valve. Check A1 Port circuit relief/ Anti-Cavitation check valve. Check B1 Port circuit relief/ Anti-Cavitation check valve. Check for bucket circuit leakage. Replace loader valve.

PRESENTATION

Low Range SKID STEER specifications

Model		40XT	60XT	70XT
Engine/Drive				
CASE Engine model		4-390	4-390	4-390T
Number of cylinders		4	4	4
Bore and stroke	mm	102x120	102x120	102x120
Displacement	ltr.	3,9	3,9	3,9
Power net	hp at rpm	60/2000	75/2000	85/2000
Maximum speed	rpm/min	2170	2175	2175
Idle speed	rpm/min	950	950	950
Peak Torque	Nm/rpm	240	255/1200	344/1500
Max Travel Speed	Km/h	11	11,2	11,2
Number of Speeds		1	1	1
ASA Chain Size	ASA	80	100	100
Axle Diameter	m/m	50	50	50
Tires Dimensions		10x16.5	12x16.5	12x16.5
Fuel Tank	Ltr.	84	84	84
Foot Throttle		Option	Option	Option
Hydraulic System				
Hydraulic Flow	Ltr/min.	75	80	80
Main Relief	Bar	210	210	210
Optional High Flow	Ltr.:min	118	121	121
High Flow Relief	Bar	210	210	210
System Type of Pump		Open/Gear	Open/Gear	Open/Gear
Filter Rating	Micron	6	6	6
Control Type		Servo	Servo	Servo
Hydraulic Coupler Type		ISO	ISO	ISO
Loader				
Loader Geometry		Radial	Radial	Radial
Operating Load	Kg	680	820	910
Bucket Breakout	Kg	1900	2250	2620
Lift Breakout	Kg	1685	1970	2075
Dump Angle		40	39	39
Dump Reach		28.1	25.9	25.9
Hinge Pint High		2895	3086	3086
Bucket Rollback		32°	32°	32°
Bucket Size		60-66	60-66	60-66
		72-84	72-84	72-84
2 Way Hydraulic Self Levelling	Number	Option	Option	Option

PRESENTATION

CAPACITIES AND LUBRICANTS

FUEL TANK

Capacity 83.3 litres (22 U.S. gallons)
Specifications See diesel fuel specifications on page 5

COOLING SYSTEM

Capacity 16.6 litres (17.5 quarts)
Recovery bottle capacity 2 litres (2.1 quarts)
Specifications 50% water and 50% ethylene glycol

HYDRAULIC SYSTEM

Capacity - System 50.2 litres (13.3 gallons)
Specifications Case No. 1 Engine Oil SAE 10W30
..... add 1.4 litres (1.5 quarts) HTA Wear Additive

CHAIN COMPARTMENTS

Capacity - Each Side 5.7 litres (6.0 quarts)
Specifications Case No. 1 Engine Oil, SAE 10W30

BATTERY

Quantity As required
Specifications Distilled water

GREASE FITTINGS

Quantity As required
Attachments (If equipped) Quantity as required
Specifications Case molydisulfide grease

ENGINE CRANKCASE OIL

Capacity - with filter change 10.4 litres (11.0 quarts)
Capacity - without filter change 9.5 litres (10.0 quarts)
Specifications Case No. 1 Engine Oil SAE 15W-40 (API service CH-4)
..... (See Oil Viscosity/Temperature Ranges Chart on page 4)

ENVIRONMENT

Before you service this machine and dispose of oil, fluids and lubricants, always remember the environment. Do not put oil or fluids into the ground or into containers that can leak. Check with your local environmental, recycling center or your Case dealer for correct disposal information.

HYDRAULIC TROUBLESHOOTING

PRESSURE CHECKS

Loader Main Relief

NOTE: Flat face couplers are not included with the CAS-1808 Flowmeter Fitting Kit or the CAS-1804 Pressure Test Fitting Kit. The part numbers for the auxiliary hydraulic couplers are 393395A1 (male coupler) and 393394A1 (female coupler).

1. Park the machine on a level surface. Lower the loader bucket to the floor.
2. The oil must be at operating temperature. To heat the oil, do the following steps:
 - A. With the engine running at full throttle, hold the bucket control lever in the ROLLBACK position for 10 seconds.
 - B. Put the bucket control lever in the NEUTRAL position for 10 seconds.

C. Repeat steps A and B until the temperature of the oil is 52°C (125°F) or the side of the reservoir is very warm.

3. Use a pressure gauge with a capacity of at least 276 bar (4000 psi). Connect the pressure gauge to one of the auxiliary hydraulic couplers on the left hand loader arm.
4. Run the engine at full throttle. Actuate the auxiliary hydraulic flow control pedal to pressurize the hydraulic line which has the pressure gauge. Record the indication on the pressure gauge. Then return the auxiliary hydraulic flow control pedal to the Neutral position and decrease the engine speed to low idle. Stop the engine.
5. Compare the indication with the specification on page 3. If the indication is not correct, see page 8

TESTING CIRCUIT RELIEF VALVES WITH A HAND PUMP

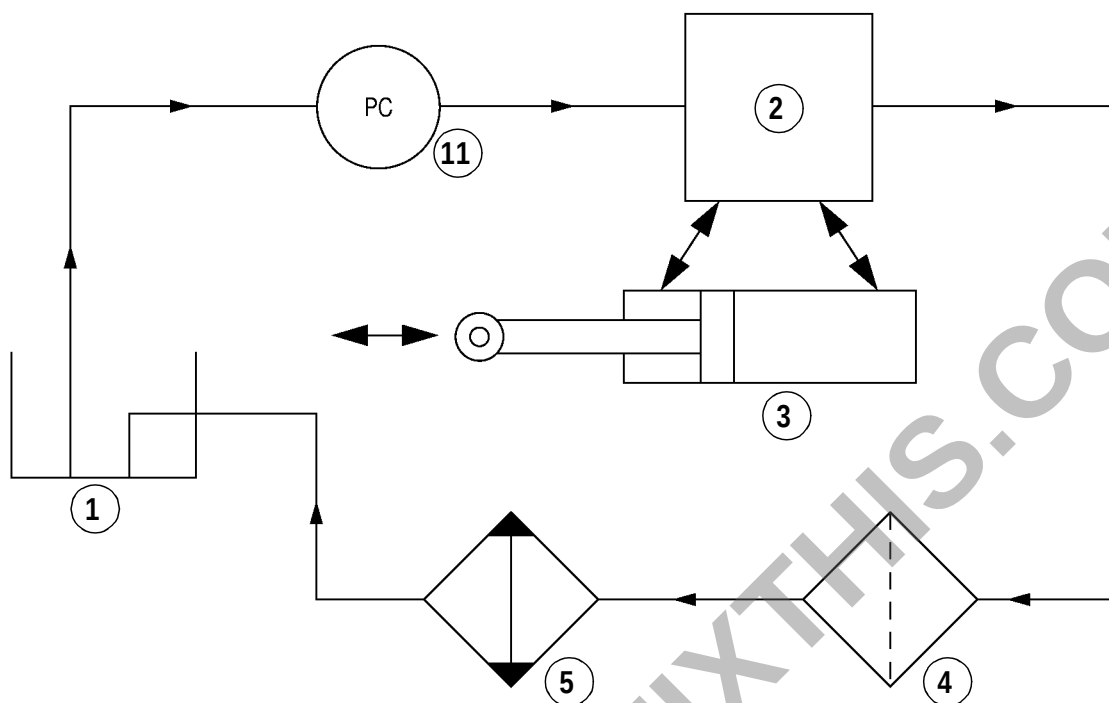
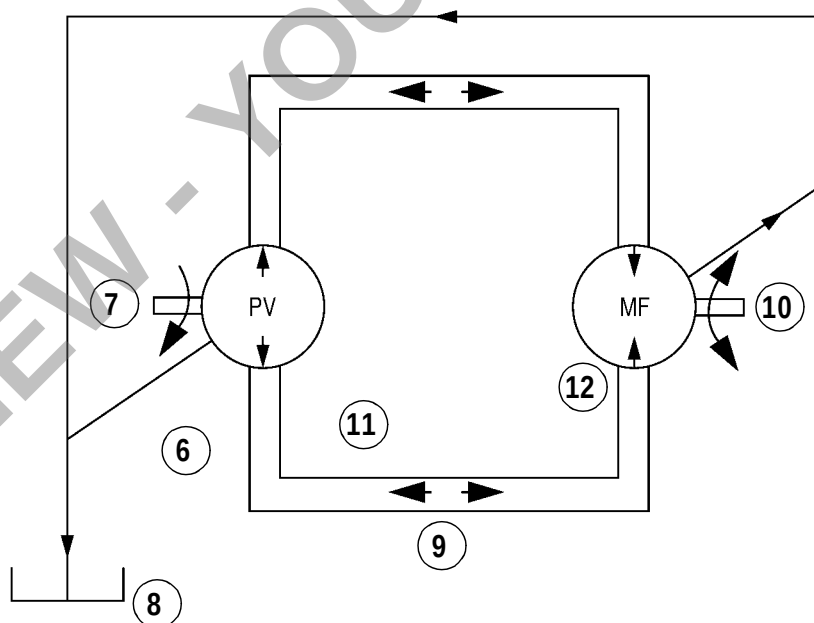
1. Park the machine on a level surface.
2. Lower all attachments to the floor.
3. Stop the engine.
4. Move the control levers in all directions to release any circuit pressure.
5. The best way to connect the hand pump is directly to the control valve. Disconnect the tube from the port of the control valve and connect the hand pump to the port. By connecting directly to the control valve, you avoid the possibility of a bad reading because of cylinder movement.
6. Remove all dirt and grease from the connecting point.
7. Connect the hose of the hand pump to the connecting point, but do not tighten the connection.
8. Make sure that the hand pump is filled with oil. The temperature of the oil must be at least 21°C (70°F).

9. Operate the hand pump to fill the hose of the hand pump with oil. Then tighten the connections.
10. Operate the hand pump and read the pressure gauge. Record the highest indication. Check the pressure several times to make sure that the indications are correct.
11. Compare the indication with the specification on page 3. If the indication is not correct, replace the circuit relief valve.

NOTE: The circuit relief valves for the loader circuit are not adjustable and must be replaced if they do not meet the specification.

12. Repeat this test after installing a new circuit relief valve.

HYDROSTATIC SYSTEM



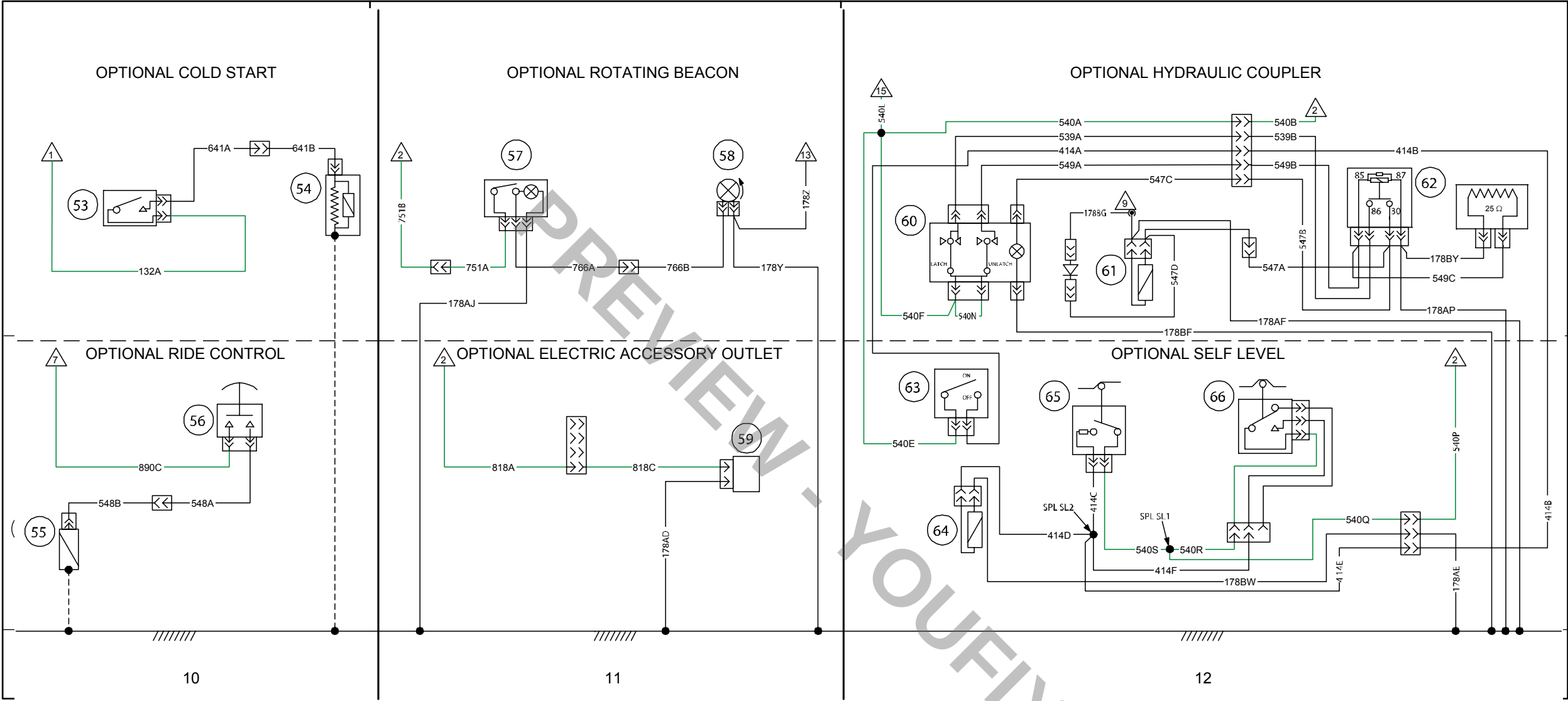
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|------------------|--------------------|------------------------|
| 1. RESERVOIR | 5. HEAT EXCHANGER | 9. FLOW BI-DIRECTIONAL |
| 2. CONTROL VALVE | 6. CASE DRAIN LINE | 10. OUTPUT SHAFT |
| 3. CYLINDER | 7. INPUT SHAFT | 11. PUMP |
| 4. FILTER | 8. RESERVOIR | 12. MOTOR |
- HYDROSTATIC SYSTEM**

INTRODUCTION

PREVIEW - YOUFIXTHIS.COM

ELECTRICAL SYSTEM



Components

53. Cold Start Switch

54. Thermostart Coil

55. Ride Control Solenoid

56. Ride Control Switch
57. Rotating Beacon Switch

58. Rotating Beacon

59. Accessory Outlet

60. Hydraulic Coupler Switch

61. Hyd. Coupler Release Solenoid
62. Hyd. Coupler Release Timer

63. Self Level Override Switch

64. Self Level Override Solenoid

65. Loader Valve Float Spool Switch

66. Loader Valve Tip Spool Switch

Circuits

NO.	GA.	COLOR	FROM:	TO:
132A	1.0	Red	Ignition Switch (Ign)	Cold Start Switch
178Y	1.0	Black	Rotating Beacon	Chassis Ground
178Z	1.0	Black	Rotating Beacon	Dome Light/Switch
178AD	1.0	Black	Accessory Outlet	Chassis Ground
178AE	1.0	Black	Self Level Circuit Connector	Chassis Ground
178AF	1.0	Black	Hyd. Coupler Release Solenoid	Ground
178AJ	1.0	Black	Rotating Beacon Switch	Chassis Ground
178AP	1.0	Black	Hyd. Coupler Release Timer	Ground
178BF	1.0	Black	Hydraulic Coupler Switch	Ground
178BG	1.0	Black	Hyd. Coupler Release Solenoid	Diode
178BW	1.0	Black	Self Level Override Solenoid	Self Level Circuit Connector
178BY	1.0	Black	Hydraulic Coupler Resistor	Hydraulic Coupler Release Timer

Circuits

NO.	GA.	COLOR	FROM:	TO:
414A	1.0	Lt. Blue	Self Level Override Switch	Cab Options Connector
414B	1.0	Lt. Blue	Cab Options Connector	Self Level Circuit Connector
414C	1.0	Lt. Blue	Splice SL2	Loader Valve Float Spool Switch
414D	1.0	Lt. Blue	Splice SL2	Self Level Override Solenoid
414E	1.0	Lt. Blue	Self Level Circuit Connector	Splice SL2
414F	1.0	Lt. Blue	Splice SL2	Loader Valve Tip Spool Switch
539A	1.0	Tan	Hydraulic Coupler Switch	Cab Options Connector
539B	1.0	Tan	Cab Options Connector	Hydraulic Coupler Release Timer
540A	1.0	Red	Cab Options Connector	Splice
540B	1.0	Red	Options Fuse Block (10A)	Cab Options Connector
540E	1.0	Red	Splice	Self Level Override Switch
540F	1.0	Red	Splice	Hydraulic Coupler Switch
540L	1.0	Red	Splice	Aux. Electric Switch #1
540N	1.0	Red	Hydraulic Coupler Switch	Hydraulic Coupler Switch
540P	1.0	Red	Options Fuse Block (10A)	Self Level Circuit Connector
540Q	1.0	Red	Self Level Circuit Connector	Splice SL1
540R	1.0	Red	Splice SL1	Loader Valve Tip Spool Switch
540S	1.0	Red	Splice SL1	Loader Valve Float Spool Switch

Circuits

NO.	GA.	COLOR	FROM:	TO:
547A	1.0	Tan	Hydraulic Coupler Release Timer	Hyd. Coupler Release Solenoid
547B	1.0	Tan	Hydraulic Coupler Release Timer	Cab Options Connector
547C	1.0	Tan	Cab Options Connector	Hydraulic Coupler Switch
547D	1.0	Tan	Hyd. Coupler Release Solenoid	Diode
548A	1.0	Violet	Ride Control Switch	Ride Control Switch Connector
548B	1.0	Tan	Ride Control Switch Connector	Ride Control Solenoid
549A	1.0	Tan	Hydraulic Coupler Switch	Cab Options Connector
549B	1.0	Tan	Cab Options Connector	Hydraulic Coupler Release Timer
549C	1.0	Tan	Hydraulic Coupler Release Timer	Hydraulic Coupler Resistor
641A	1.0	White	Cold Start Switch	Cab Harness Connector (H1)
641B	1.0	White	Cab Harness Connector (H1)	Thermostart Coil
751A	1.0	Red	Options Fuse Block (10A)	Cab Options Connector
751B	1.0	Red	Cab Options Connector	Rotating Beacon Switch
766A	1.0	Pink	Rotating Beacon Switch	Connector
766B	1.0	Pink	Connector	Rotating Beacon
818A	1.0	Red	Options Fuse Block (10A)	Cab Options Connector
818C	1.0	Red	Cab Options Connector	Accessory Outlet
890C	1.0	Red	Horn Switch	Ride Control Switch



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