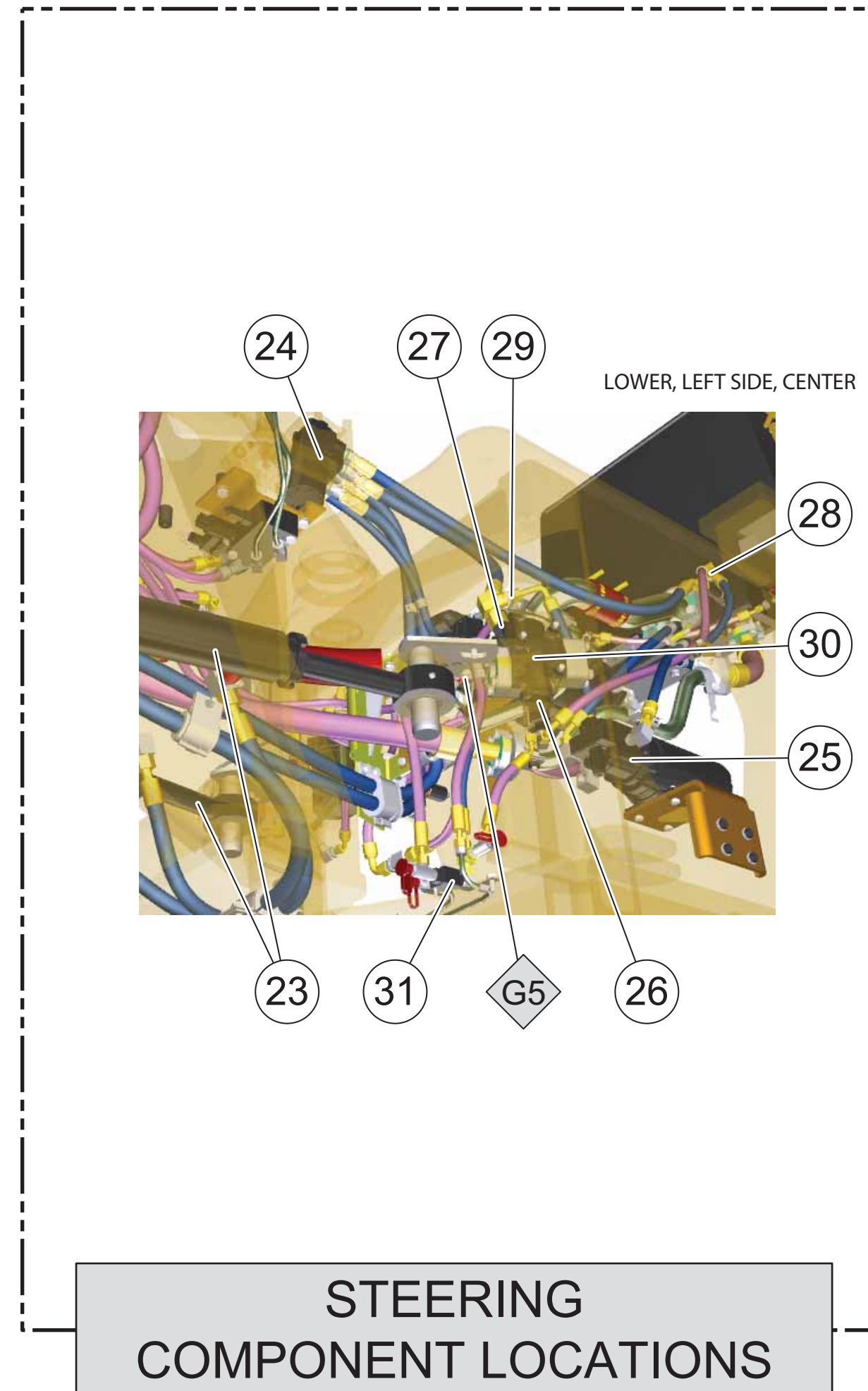


COMPONENT LOCATIONS



STEERING COMPONENT LOCATIONS



Schematic

938H/IT38H Wheel Loader Hydraulic System

938H: MCC1-UP
MJC1-UP
JKM1-UP
LKM1-UP

IT38H: JNJ1-UP

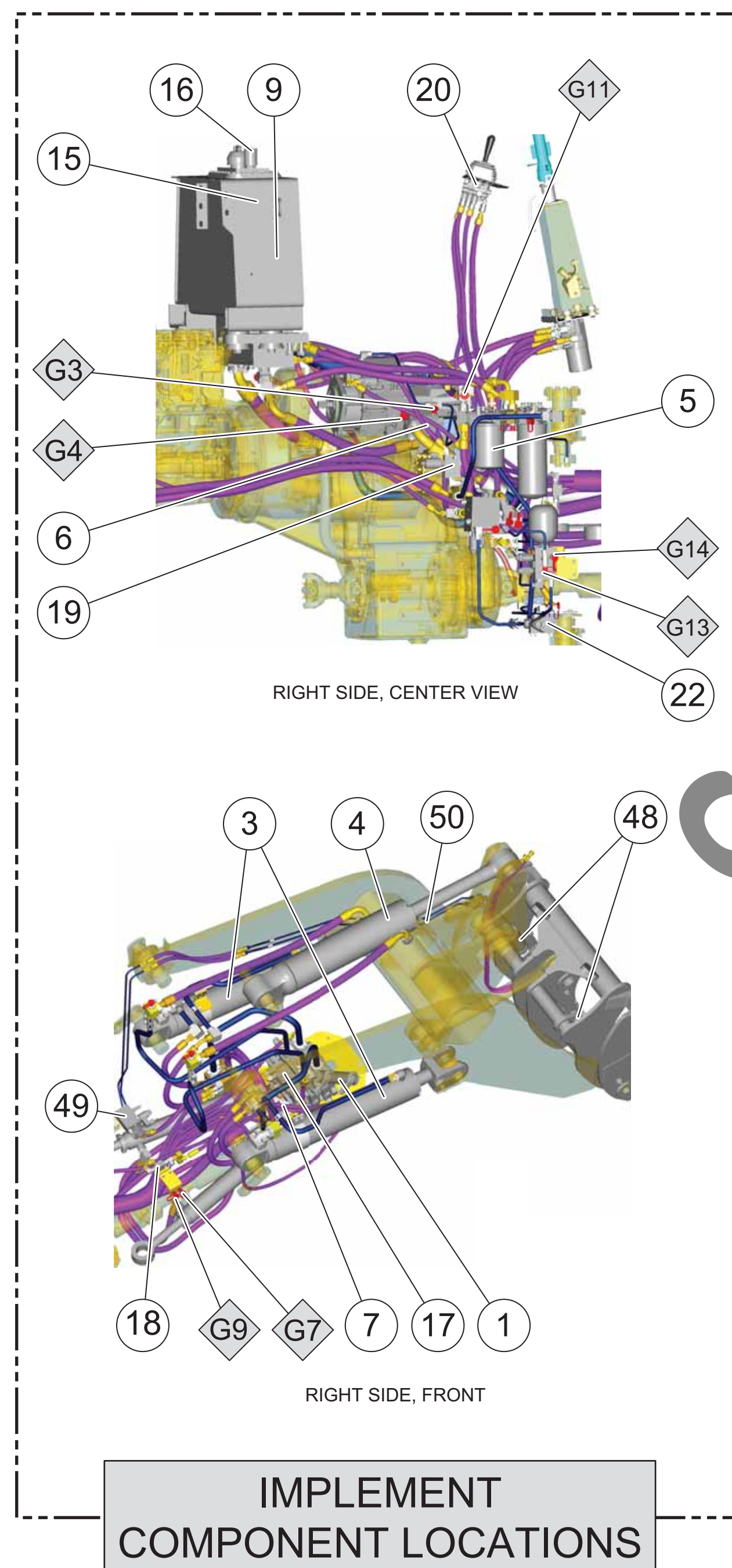
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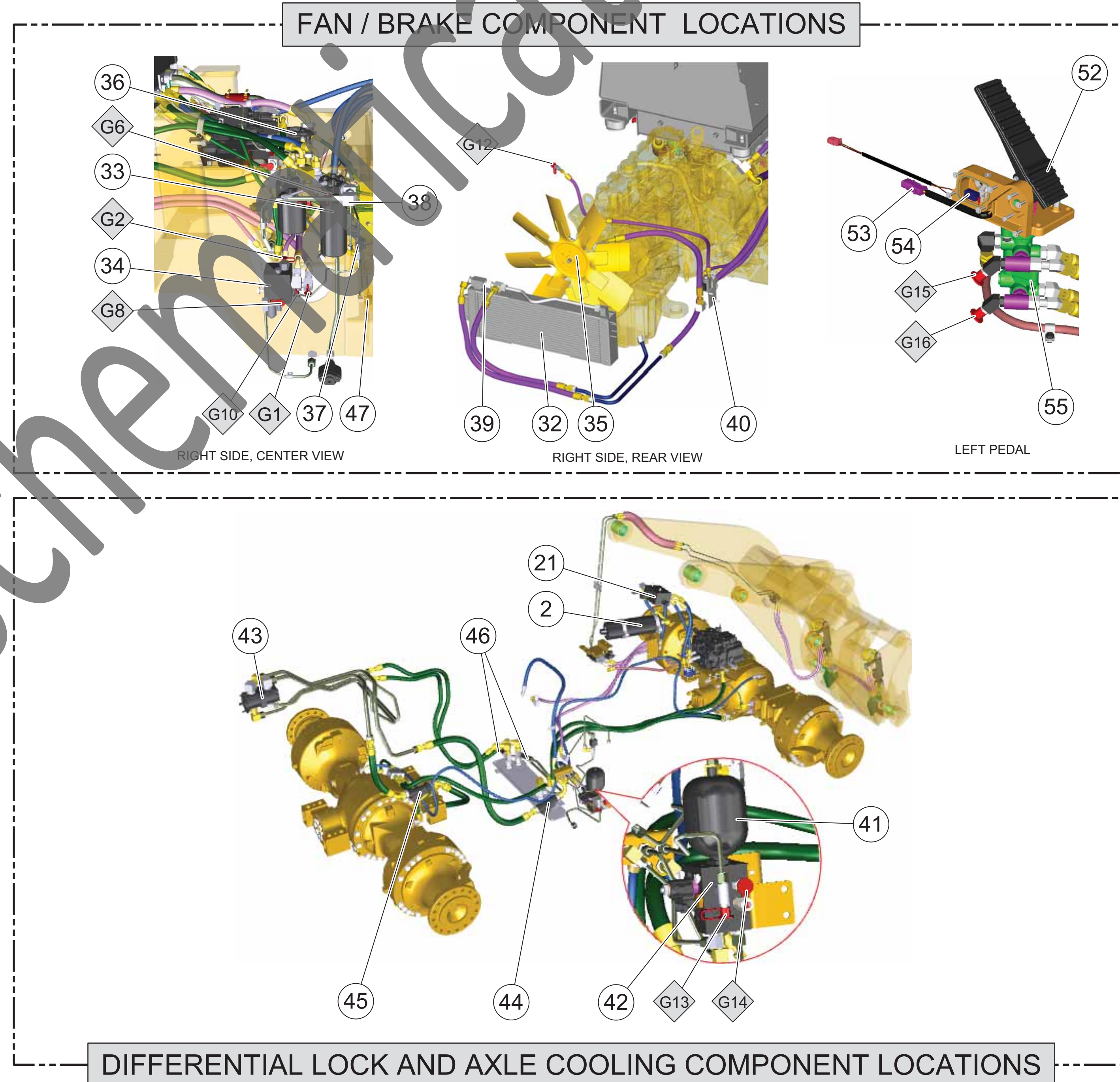
FLUID POWER SYMBOLS			
BASIC COMPONENT SYMBOLS			
PUMP OR MOTOR	FLUID CONDITIONER	SPRING	CONTROL VALVES
RESTRICTION	LINE RESTRICTION (FIXED)	LINE RESTRICTION (ADJUSTABLE)	LINE RESTRICTION (ADJUSTABLE & PRESSURE COMPENSATED)
VALVE ENVELOPES	CONTROL VALVES	CHECK VALVES	FLUID STORAGE RESERVOIRS
MEASUREMENT	COMBINATION CONTROLS	MANUAL CONTROL SYMBOLS	RELEASED PRESSURE
ACCUMULATORS	CROSSING & JOINING LINES	HYDRAULIC & PNEUMATIC CYLINDERS	INTERNAL PASSAGEWAYS

Component Locations			
Description	Part Number	Machine Location	Schematic Location
Implement System			
Accumulator Gp - Pilot	275-7875	1	C-4, F-3
Accumulator Gp - Ride Ctrl (Atch)	259-4885	2	D-1, F-1
Cylinder Gp - Lift	254-9037	3	C-3, F-2
Cylinder Gp - Tilt	346-1063	4	C-4, F-3
Filter Gp - Pump Case Drain	285-2235	5	C-8
Manifold Gp - Relief	277-8662	6	D-8
Plate - Orifice	317-5574	7	B-4, F-3
Pump Gp - Implement / Steering	304-8308	8	D-8
Screen	37-6227	9	C-7
Tank Gp - Hydraulic Oil	255-2421	15	C-7 to C-8, B-6
Valve - Breaker Relief, Vacuum	258-2829	16	C-8
Valve Gp - 2 Function	336-3819	17	E-1 to F-3, B-1 to B-4
Valve Gp - 3 Function w/ Ride Control (Atch)	336-3819	17	E-1 to F-3, B-1 to B-4
Valve Gp - 3 Function w/ Ride Control (Atch)	336-3821	18	C-4, F-3
Valve Gp - 4 Function (Atch)	336-3822	19	C-4, F-3
Valve Gp - Ball, Dead Engine	112-1817	18	C-4, F-3
Valve Gp - Mating, Power Control	286-8870	19	D-7
Valve Gp - Pilot, 2 Funct. (Atch), 1 Joystick	261-8653	20	F-5 to F-6
Valve Gp - Pilot, 2 Funct. (Atch), 2 Levers	261-8654	20	F-5 to F-6
Valve Gp - Pilot, 3 Funct. (Atch), 1 Joystick	261-8655	20	F-5 to F-6
Valve Gp - Pilot, 3 Funct. (Atch), 3 Levers	261-8656	20	F-5 to F-6
Valve Gp - Pilot, 4 Funct. (Atch), 1 Joystick	261-8657	20	F-5 to F-6
Valve Gp - Pilot, 4 Funct. (Atch), 4 Levers	261-8658	20	F-5 to F-6
Valve Gp - Ride Ctrl (Atch)	314-4008	21	C-1
Valve Gp - Tank Drain	245-5943	22	C-7
Steering System			
Cylinder Gp - Steering	314-0340	23	F-8
Pump Gp - HMD	322-4638	26	F-8
Pump Gp - Sec. Steer (Atch)	319-5562	25	E-8
Screen Gp	306-4025	26	D-8
Valve Gp - Check	128-6847	27	E-8
Valve Gp - Check	303-5914	28	C-8
Valve Gp - Check, Sec. Steer (Atch)	97-1013	29	E-8
Valve Gp - Priority, Steering	317-5563	30	D-8
Valve Gp - Shuttle, Load Sense	81-6875	31	D-7
Fan / Brake System			
Accumulator Gp - Brake (Charged)	279-0063	51	C-6
Cooler - Oil	282-2024	32	D-6
Control Gp - Foot Brake	271-0280	52	D-5
Filter Gp - Fan Return	244-1031	33	D-6
Manifold Gp - Brake / Fan	309-4907	34	C-6
Motor Gp - Fan	265-4925	35	D-6
Motor Gp - Fan, Cold Start Attachment	336-0626	36	D-6
Pump Gp - Fan	254-5145	36	C-7
Sensor Gp - Position (Left Brake Pedal)	267-5222	53	D-5
Switch As - Limit (Stop Light)	105-6117	54	D-5
Valve Gp - Ball, Dead Engine	112-1817	37	C-6
Valve Gp - Brake Control (Service)	275-5719	55	C-5
Valve Gp - Check	175-0447	38	D-6
Valve Gp - Check, Cooler Bypass	145-8963	39	D-6
Valve Gp - Shuttle (Crk Steer Attachment)	332-1161	40	D-7
Axle Hydraulic System (Attachment)			
Accmtr Gp - Diff. Lock (Atch)	245-2975	41	B-7, F-7
Manifold Gp - Mating, Man. Fnd Diff. Lock	244-7139	42	B-7, F-7
Manifold Gp - Mating, Auto. Fnd / Rear Diff. Lock	244-7140	42	B-7, F-7
Pump Gp - Axle Oil Cooling (Atch)	273-1807	43	D-6
Screen Gp - Magnetic, Front Axle Cooling	251-8301	44	D-6
Screen Gp - Magnetic, Rear Axle Cooling	251-8301	45	E-6
Valve Gp - Relief, Axle Oil Cv Bypass	130-5202	46	E-6
Valve Gp - Shuttle, Diff. Lock	81-6875	47	D-8
Quick Coupler (Attachment)			
Cylinder Gp - Quick Coupler (Atch)	311-1463	48	A-3, D-3
Manifold Gp - Cntl. Quick Coupler (Atch)	180-8585	49	A-4, D-3
Valve Gp - Ball, Dead Engine	112-1817	50	A-4, D-3

Tap Location Pressure and Sampling		
Tap Number	Description	Schematic Location
G1	Fan Motor Supply Pressure	D-7
G2	Fan Pump Load Sense Pressure	C-7
G3	Implement / Steering Pump Load Sense	D-8
G4	Implement / Steering Pump Discharge	D-8
G5	Steering Supply Pressure	D-8
G6	Schedule Oil Sampling (SOS)	D-6
G7	Implement Pilot Supply Pressure	F-3, C-4
G8	Brake Accumulator Pressure	D-6
G9	Implement Supply Pressure	E-3, B-4
G10	Fan / Brake Pump Discharge Pressure	C-7
G11	Implement / Steering Pump Case Drain Armbnd	D-8
G12	Fan Motor Case Drain Armbnd	D-6
G13	Differential Lock Pressure	F-7
G14	Differential Lock Accumulator Pressure	F-7
G15	Rear Brake Pressure	C-5
G16	Front Brake Pressure	C-5

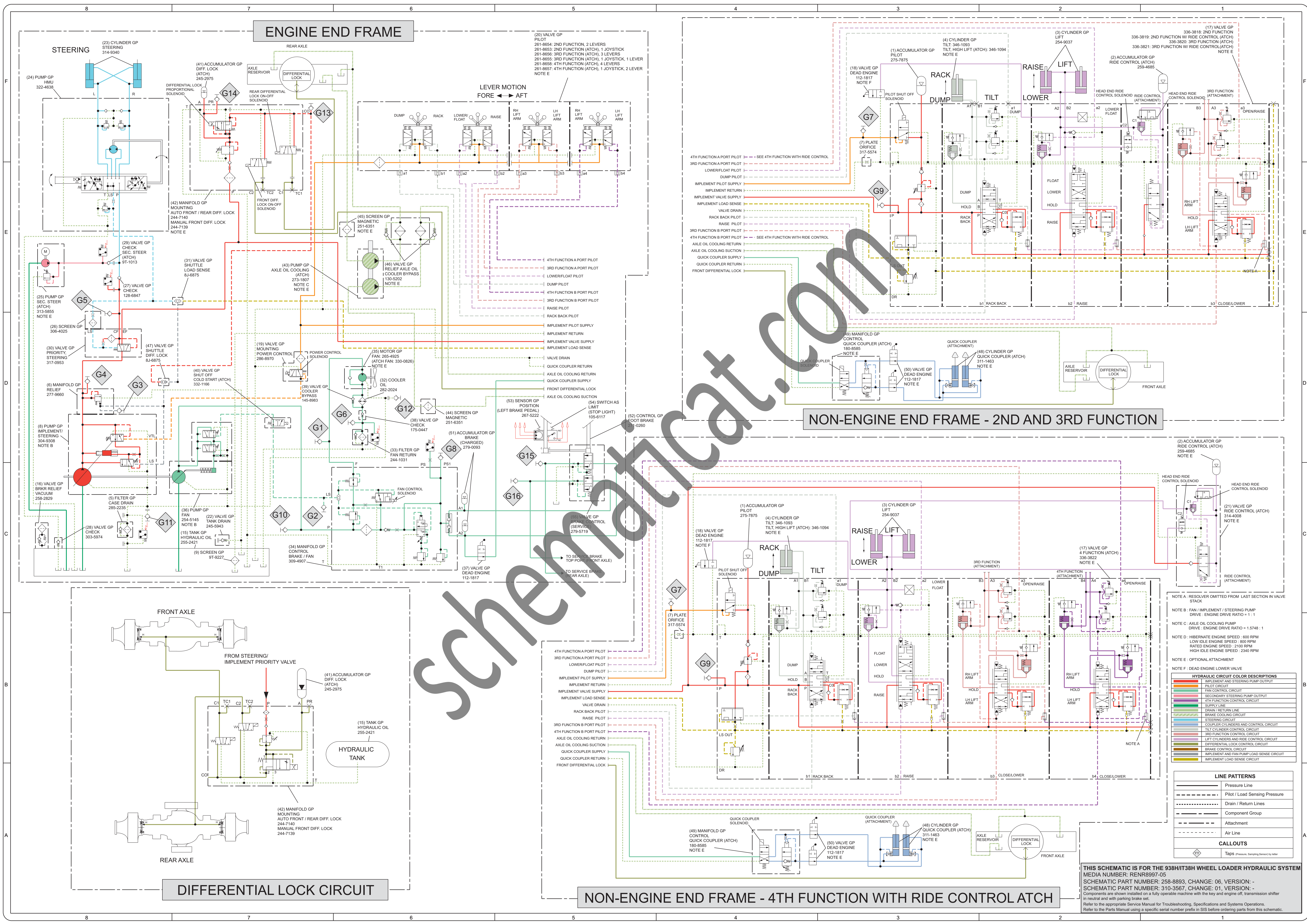


IMPLEMENT COMPONENT LOCATIONS



DIFFERENTIAL LOCK AND AXLE COOLING COMPONENT LOCATIONS

ELECTRICAL SYMBOLS TABLE			
HYDRAULIC SYMBOLS (ELECTRICAL)			
TRANSUCER (FLUID)	TRANSUCER (GAS / AIR)	GENERATOR	ELECTRIC MOTOR
PRESSURE SWITCH	PRESSURE SWITCH (ADJUSTABLE)	TEMPERATURE SWITCH	ELECTRICAL WIRE
ELECTRICAL SYMBOLS (ELECTRICAL)			
PRESSURE SWITCH	TEMPERATURE SWITCH	LEVEL SWITCH	FLOW SWITCH
WIRE NUMBER IDENTIFICATION CODES			
ELECTRICAL SCHEMATIC EXAMPLE CURRENT STANDARD		HYDRAULIC SCHEMATIC EXAMPLE CURRENT STANDARD	
HARNES IDENTIFICATION CODE THIS EXAMPLE INDICATES WIRE 135 IN HARNES "AG"		CIRCUIT NUMBER IDENTIFICATION WIRE COLOR	
CIRCUIT NUMBER IDENTIFICATION	WIRE COLOR	WIRE GAUGE	WIRE COLOR
325-AG135-PK-14	PK	14	325-PK
PREVIOUS STANDARD		EXAMPLE VALVE	
CIRCUIT NUMBER IDENTIFICATION	WIRE COLOR	WIRE GAUGE	
325-PK-14	PK	14	



ENGINE END FRAME

NON-ENGINE END FRAME - 2ND AND 3RD FUNCTION

NON-ENGINE END FRAME - 4TH FUNCTION WITH RIDE CONTROL ATCH

DIFFERENTIAL LOCK CIRCUIT

NOTE A: RESOLVER OMITTED FROM LAST SECTION IN VALVE STACK

NOTE B: FAN / IMPLEMENT / STEERING PUMP DRIVE: ENGINE DRIVE RATIO = 1 : 1

NOTE C: AXLE OIL COOLING PUMP DRIVE: ENGINE DRIVE RATIO = 1.5748 : 1

NOTE D: HIBERNATE ENGINE SPEED: 600 RPM
LOW IDLE ENGINE SPEED: 800 RPM
RATED ENGINE SPEED: 2100 RPM
HIGH IDLE ENGINE SPEED: 2340 RPM

NOTE E: OPTIONAL ATTACHMENT

NOTE F: DEAD ENGINE LOWER VALVE

HYDRAULIC CIRCUIT COLOR DESCRIPTIONS	
[Red Line]	IMPLEMENT AND STEERING PUMP OUTPUT
[Blue Line]	PILOT CIRCUIT
[Green Line]	FAN CONTROL CIRCUIT
[Orange Line]	SECONDARY STEERING PUMP OUTPUT
[Purple Line]	4TH FUNCTION CONTROL CIRCUIT
[Yellow Line]	SUPPLY LINE
[Light Blue Line]	DRAIN / RETURN LINE
[Light Green Line]	BRAKE COOLING CIRCUIT
[Light Orange Line]	STEERING CIRCUIT
[Light Purple Line]	COUPLER CYLINDERS AND CONTROL CIRCUIT
[Light Yellow Line]	TILT CYLINDER CONTROL CIRCUIT
[Light Cyan Line]	3RD FUNCTION CONTROL CIRCUIT
[Light Magenta Line]	LIFT CYLINDERS AND RISE CONTROL CIRCUIT
[Light Brown Line]	DIFFERENTIAL LOCK CONTROL CIRCUIT
[Light Pink Line]	BRAKE CONTROL CIRCUIT
[Light Grey Line]	IMPLEMENT AND FAN PUMP LOAD SENSE CIRCUIT
[Light Blue-Gray Line]	IMPLEMENT LOAD SENSE CIRCUIT

LINE PATTERNS	
[Solid Line]	Pressure Line
[Dashed Line]	Pilot / Load Sensing Pressure
[Dotted Line]	Drain / Return Lines
[Dash-dot Line]	Component Group
[Long-dash Line]	Attachment
[Short-dash Line]	Air Line

CALLOUTS	
[Diamond]	TapPS (Pressure, Sampling, Demand) by letter

THIS SCHEMATIC IS FOR THE 938H/IT38H WHEEL LOADER HYDRAULIC SYSTEM
 MEDIA NUMBER: REN8997-05
 SCHEMATIC PART NUMBER: 258-8893, CHANGE: 06, VERSION: -
 SCHEMATIC PART NUMBER: 310-3567, CHANGE: 01, VERSION: -
 Components are shown installed on a fully operative machine with the key and engine off, transmission shifter in neutral and with parking brake set.
 Refer to the appropriate Service Manual for Troubleshooting, Specifications and Systems Operations.
 Refer to the Parts Manual using a specific serial number prefix in SIS before ordering parts from this schematic.