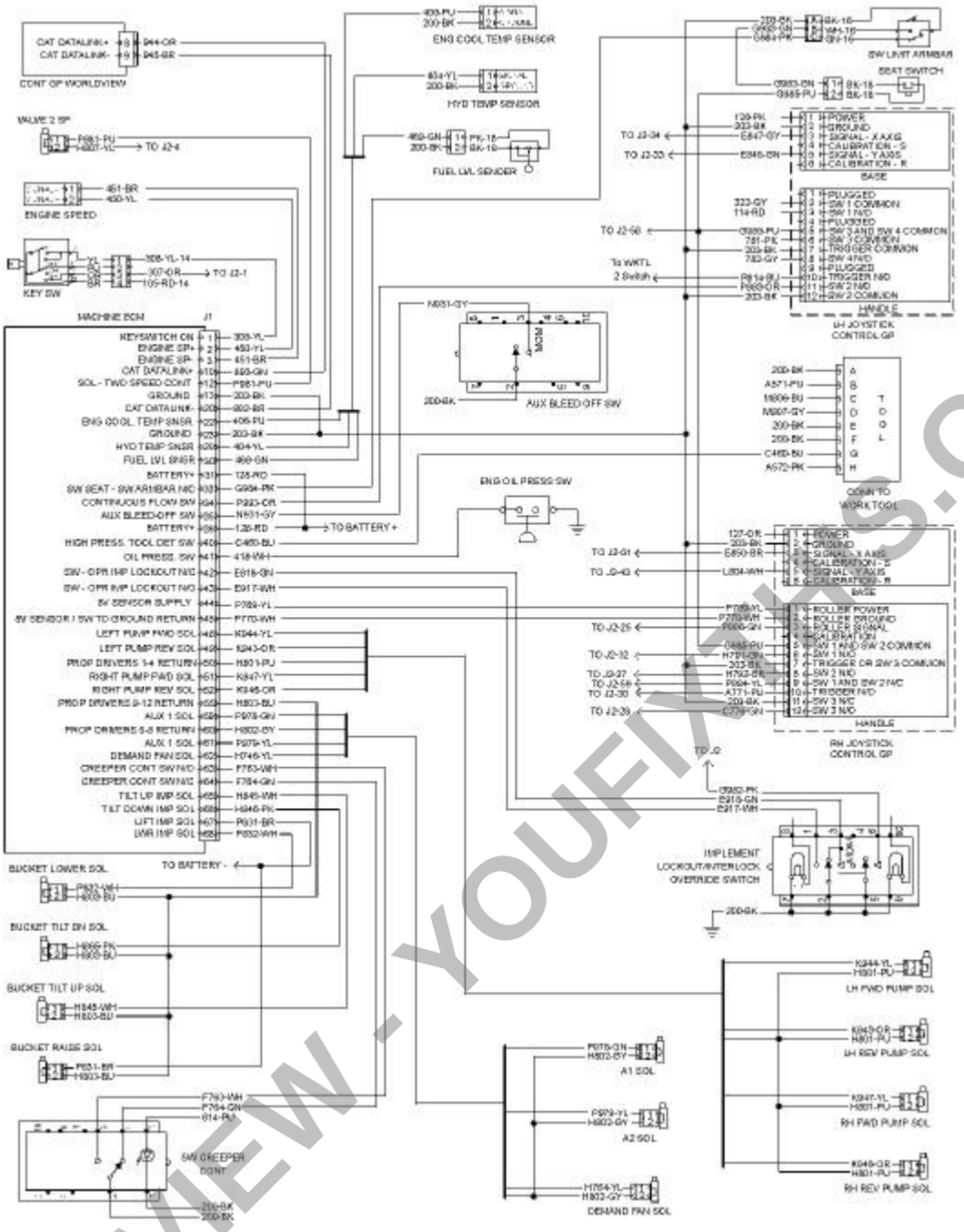


Illustration 1 g01270044

J1 connections

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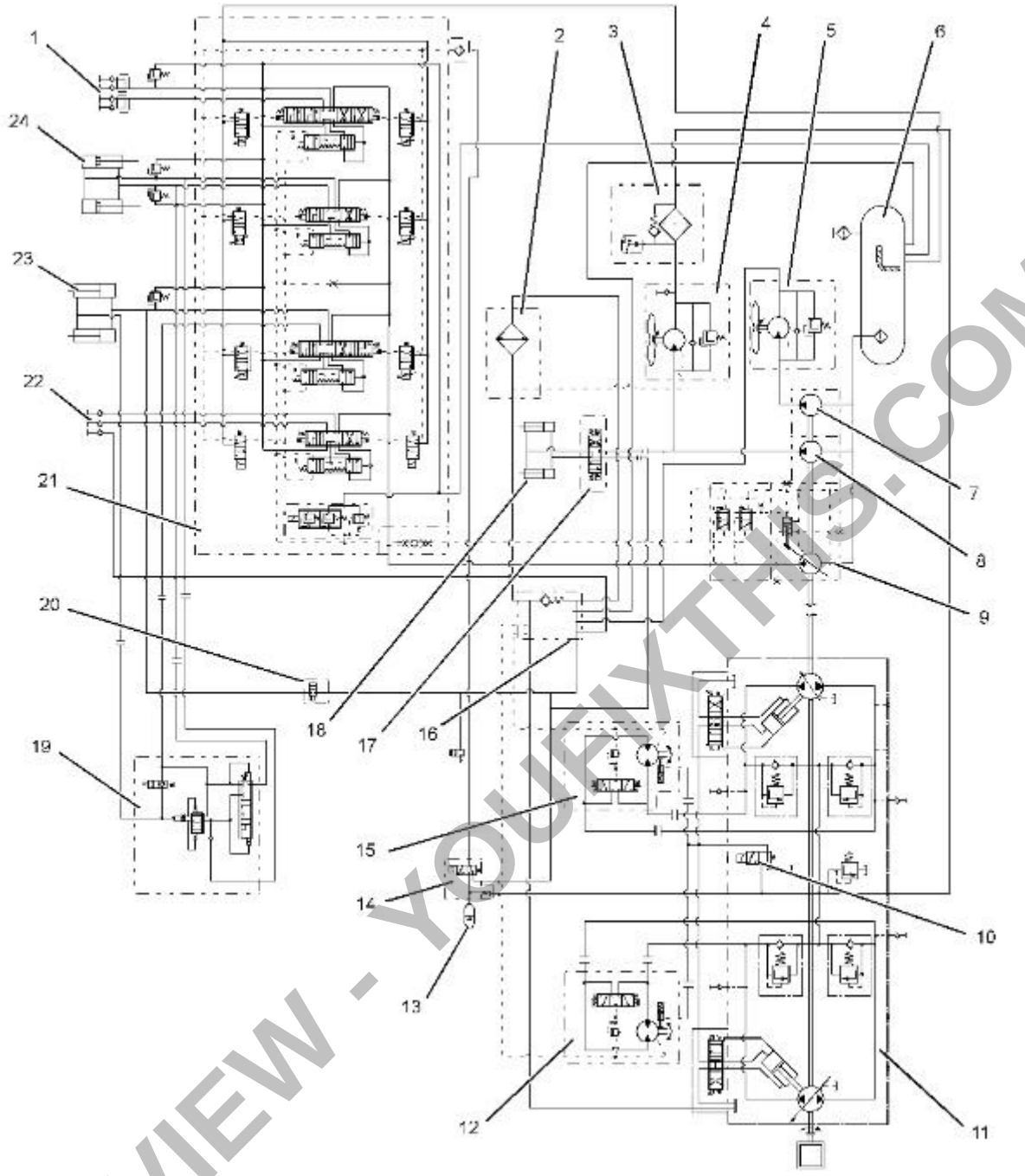


Illustration 1 g01332298

(1) Auxiliary Circuit

(2) Hydraulic Oil Cooler

(3) Hydraulic Oil Filter

(4) Gear Motor (fan drive)

(5) Gear Motor for the aftercooler (if equipped)

(6) Hydraulic Oil Tank

(7) Gear Pump for the aftercooler (if equipped)

(8) Gear Pump (charge oil)

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of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, NENG2500, "Caterpillar Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Do not adjust the main relief valve above the specified pressure. Adjustment of the main relief valve above the specified pressure may cause damage to the gear pump.

Before any tests are performed, prepare the machine for troubleshooting. Refer to Testing and Adjusting, "Machine Preparation". Before any tests are performed, visually inspect the complete hydraulic system. Refer to the Testing and Adjusting, "Visual Inspection".

Note: The oil in the hydraulic system must be at an operating temperature of 50° ± 10°C (122° ± 18°F). In order to increase the oil temperature, start the engine and operate all the cylinders for at least five cycles. Also, drive the machine forward and drive the machine rearward for a few minutes.

The following test is performed in order to determine if the main relief valve for the work tool is damaged or improperly set.

Table 2

Model	Main Relief Valve Setting
All standard flow models	23000 ± 700 kPa (3335 ± 102 psi)
All High Flow Extra Pressure System (XPS) models	23000 ± 1000 kPa (3335 ± 145 psi)

1. Engage the parking brake. Stop the engine.
2. Raise the cab. Refer to Operation and Maintenance Manual, "Cab Tilting" for the proper procedure.

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Table 2

Engine Idle		
TEST	**Specification**	**Actual**
High Idle	2800 ± 50 rpm	
Low Idle	1100 ± 50 rpm	

Table 3

Lift Cylinder Speed Test			
Lift Direction	**Time (sec)**		**Actual**
	279C/ 279C2	**289C/ 289C2/ 299C**	
Raise	3.1 ± 0.5	4.7 ± 0.5	
Raise (High Flow XPS)	3.1 ± 0.5	4.5 ± 0.5	
Lower	2.8 ± 0.5	3.7 ± 0.5	
Lower (High Flow XPS)	2.8 ± 0.5	3.6 ± 0.5	
Float	4.0 ± 0.5	4.6 ± 0.5	
Float (High Flow XPS)	3.6 ± 0.5	4.7 ± 0.5	

Table 4

Tilt Cylinder Speed Test		
Tilt Direction	**Time (sec)**	**Actual**
Tilt Forward	2.5 ± 0.5	
Tilt Back	2.1 ± 0.5	

Table 5

Lift Cylinder Drift			
Bucket Load	**Time**	**Maximum Drift**	**Actual**
1829 mm (72 inch) General Purpose Bucket	1 min	3mm	

Table 6

Tilt Cylinder Drift			
Bucket Load	**Time**	**Maximum Drift**	**Actual**
1829 mm (72 inch) GP Bucket	1 min	3 mm	

Table 7

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High Flow Hydraulic System Test			
Model	**Test**	**Specification**	**Actual**
279C/ 279C2/ 289C/ 289C2/ 299C	Standby Pressure	2900 ± 300 kPa (420 ± 44 psi)	
279C/ 279C2/ 289C/ 289C2/ 299C	Margin Pressure	2400 ± 200 kPa (350 ± 30 psi)	
279C/ 279C2/ 289C/ 289C2/ 299C	Load Sensing Pressure	20600 ± 700 kPa (3000 ± 100 psi)	
279C/ 279C2/ 289C/ 289C2/ 299C	Pump Discharge Pressure	23000 ± 1000 kPa (3335 ± 145 psi)	
279C/ 279C2/ 289C/ 289C2/ 299C	High Pressure Cutoff	28000 + 1500 − 0 kPa (4061 + 218 − 0 psi)	

Table 8

Baseline For The Hydrostatic System				
Test	**Low Idle**		**High Idle**	
	Specification	**Actual**	**Specification**	**Actual**
Charge Pressure	2750 ± 200 kPa (400 ± 30 psi)		3300 ± 200 kPa (480 ± 30 psi)	

Table 9

Hydrostatic System Tests		
Stall Test		
Test	**Specification**	**Actual**
"MB" Pressure Pump 1	38300 ± 2000 kPa (5555 ± 290 psi)	
"MC" Pressure Pump 2	38300 ± 2000 kPa (5555 ± 290 psi)	
Maximum Runout		
High Idle		
Test	**Specification**	**Actual**
Charge Pressure	3300 ± 200 kPa (480 ± 30 psi)	

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Gear Motor (Fan, Demand)

SMCS - 1386-GT

S/N - -

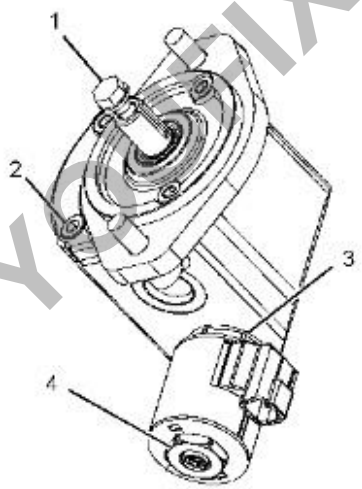


Illustration 1 g03374816

Table 1

Specification for 258-2579 Hydraulic Fan Motor and Mounting Gp			
Item	**Qty**	**Part**	**Specification Description**
1	1	**8T-7547** Bolt	Torque to 30 ± 7 N·m (266 ± 62 lb in).
2	2	**9T-4884** Bolt	Torque to 45 N·m (33 lb ft).
3	1	**277-8862** Solenoid Valve Gp	Torque to 48 ± 2 N·m (35 ± 1 lb ft).
4	1	-	Tighten the nut to 6.1 ± 0.7 N·m (54.0 ± 6.2 lb in).

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