

**Service Information System**

Shutdown SIS

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Product: COMPACT TRACK LOADER

Model: 279C COMPACT TRACK LOADER MBT

Configuration: 279C Compact Track Loader MBT00001-UP (MACHINE) POWERED BY 3044C Engine

Testing and Adjusting**279C, 279C2, 289C, 289C2 and 299C Compact Track Loaders Machine Systems**

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i02638328

Main Relief Valve - Test and Adjust

SMCS - 5069-025; 5069-081

Table 1

Required Tools			
Tool	Part Number	Description	Qty
A	177-7861	Hose As	1
	6V-4143	Quick Connect Coupler	2
	8T-0860	Pressure Gauge 0 to 40000 kPa (0 to 5800 psi)	1
	6V-3989	Fitting	1

**WARNING**

Personal injury or death can result from escaping fluid under pressure.

Escaping fluid under pressure, even a very small pin-hole size leak, can penetrate body tissue and cause serious injury and possible death. If fluid is injected into your skin, it must be treated immediately by a doctor familiar with this type of injury.

Always use a board or cardboard when checking for a leak.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair 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 $50^{\circ} \pm 10^{\circ}\text{C}$ ($122^{\circ} \pm 18^{\circ}\text{F}$). 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.

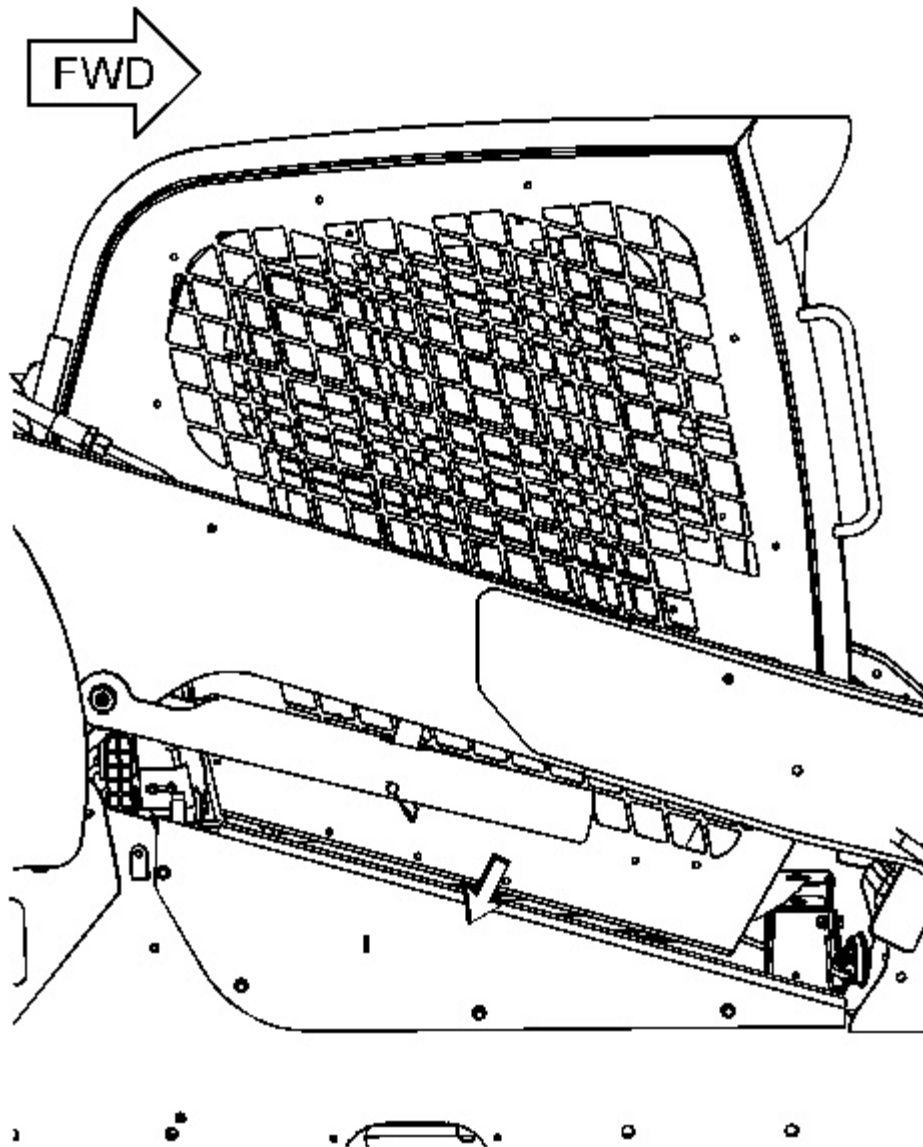


Illustration 1

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3. Remove four bolts in order to remove the cover plate on the right hand side of the machine. This will allow safe routing of the hydraulic test hoses when the cab is lowered. Refer to Illustration 1.
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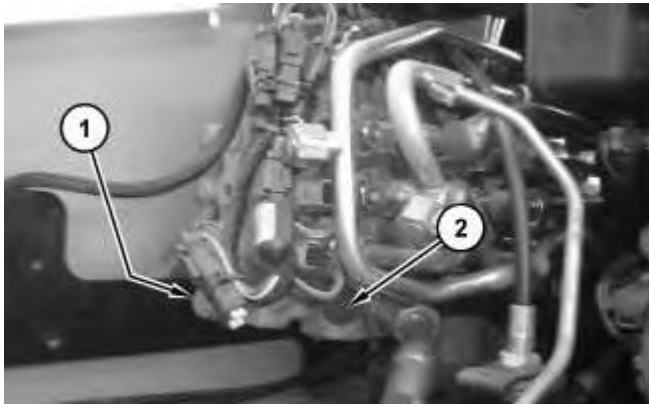


Illustration 2

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(1) Main relief valve

(2) Pressure tap

4. Install Tooling (A) to the pressure tap (2) .
5. Lower the cab. Secure the hydraulic line so that the pressure gauge can be viewed by the operator during the test. Make sure that the hoses are not pinched when the cab is lowered.
6. Sit in the operator's seat. Fasten the seat belt. Lower the armrest. Start the engine. Disengage the parking brake.
7. **The oil in the hydraulic system must be at an operating temperature of $50^{\circ} \pm 10^{\circ}\text{C}$ ($122^{\circ} \pm 18^{\circ}\text{F}$). 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.**
8. Run the engine at HIGH IDLE.

Note: Do not stall the hydraulic system for more than 10 seconds. If necessary, release the work tool from the stall condition. After 30 seconds have passed, repeat Step 9.

9. Position the work tool in the full tilt back position. Move the electrohydraulic operated control (work tool) to the full LOWER position. Hold the hydraulic control at that position until a stall condition exists. Record the pressure at the stall condition.
10. If the pressure reading is within specifications, proceed to Step 16. Refer to Table 2.
11. If the pressure reading is not to specifications, the main relief valve needs to be adjusted. Proceed to Step 12 for standard flow machines.

Note: For High Flow XPS machines, perform the margin pressure test and the load sensing pressure test. Refer to Testing and Adjusting, "High Flow Hydraulic System - Test and Adjust".

12. Raise the cab of the machine.

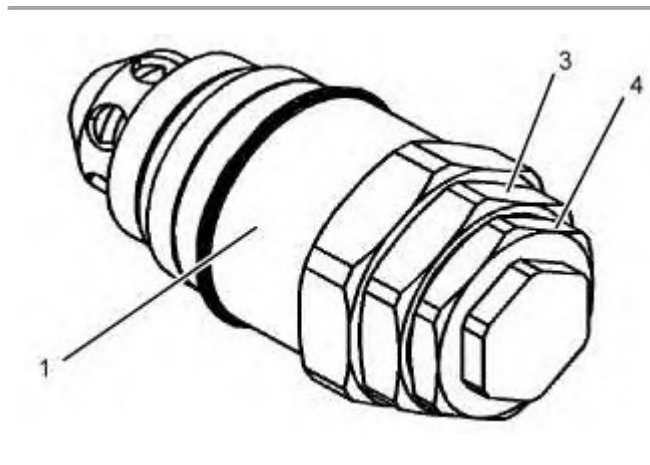


Illustration 3

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(1) Main relief valve

(3) Locknut

(4) Adjustment screw

13. Loosen locknut (3). Turn the adjustment screw (4) clockwise in order to increase the relief valve setting. Turn the adjustment screw (4) counterclockwise in order to decrease the relief valve setting.
14. Tighten the locknut (3) to a torque of 18 ± 2 N·m (13.0 ± 1.5 lb ft).
15. Lower the cab and repeat Steps 6 through 10.
16. Release the hydraulic system pressure. Refer to Testing and Adjusting, "Hydraulic System Pressure - Release" for the proper procedure.
17. Raise the cab and remove Tooling (A) .
18. Lower the cab and bolt down the cab. Refer to the Operation and Maintenance Manual, "Cab Tilting".