

# UNIT 1

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## Machine Hydraulic Systems-- 928G Wheel Loader

### Unit Objectives:

Upon completion of this unit, the student will be able to:

1. Identify components in the 928G Wheel Loader pilot operated implement hydraulic system and the LSPC with hand metering unit steering system.
2. State the function of each component in the 928G Wheel Loader pilot operated implement hydraulic system and the LSPC with hand metering unit steering system.
3. Trace the oil flow in both the 928G Wheel Loader pilot operated implement hydraulic system and the LSPC with hand metering unit steering system.
4. Using the procedures in the Service Manual, test and adjust the 928G Wheel Loader implement hydraulic system and the LSPC with hand metering unit steering system.

## Introduction

This unit will discuss the pilot operated hydraulic system and the load sensing, pressure compensated (LSPC) with hand metering unit steering system on the 928G Wheel Loader.

On the manual operated construction equipment, the operator's lever is attached through linkage or cable to the implement control. The work required to move the implement control is performed by the operator.

On the pilot operated equipment, the operator's lever is attached to a pilot control valve that sends pilot oil to move the implement control. The work required to move the implement control is performed by the pilot oil. The pilot operated system gives the operator better control with less effort which results in less operator fatigue, more production and better safety.

The conventional steering system uses a variable (LSPC) pump and shares the oil with the implement pilot system. The LSPC pump is also used in the design of other implement hydraulic and steering systems. However, the pump operation is basically the same. Therefore, many of the concepts used in the LSPC steering system may be transferred to any LSPC system.

The LSPC system differs from the fixed displacement pump system in that the pump output is controlled primarily by the demand of the system and not by the speed of the engine.

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# Lesson 1: Implement Hydraulic System (Pilot Operated System)

## Introduction

The 928G Wheel Loader pilot operated implement hydraulic system is similar to the implement hydraulic system used on other Caterpillar machines. The information learned in this lesson will allow students to understand the pilot operated hydraulic system used on many Caterpillar machines.

## 928G Wheel Loader

- **Implement Hydraulic System  
(Pilot Operated System)**
- **Steering System  
(LSPC with Hand Metering Unit)**

## Objectives

Upon completion of this lesson, the student will be able to:

1. Identify components of the 928G Wheel Loader pilot operated implement hydraulic system.
2. State the function of the 928G Wheel Loader pilot operated implement hydraulic system.
3. Trace the oil flow through the 928G Wheel Loader pilot operated implement hydraulic system schematic in all positions (hold, tiltback, lower, etc...).
4. Perform the testing and adjusting procedures as stated in the 928G Wheel Loader Service Manual Module (Form No. SENR1226)