

Hydraulic System

Steering

The steering system on the Wagner Landfill Compactor consists of the hydraulic pump, the hydraulic control valve, and two hydraulic cylinders.

The joystick in the cab sends a signal to the controller, which then sends a signal to the two solenoid valves on the hydraulic valve section dedicated to steering.

The spool actuator in the valve section is proportional, hydraulically controlled, and spring centered to the neutral position. Pilot-pressure oil is passed to the spool actuators through internal ducts in the valve causing the spool to shift.

As the spool shifts one way or the other, pressurized hydraulic oil from the pump is directed to either the “A” or “B” port on the valve. Each port is connected to the stem end of one cylinder steering, and the base end of the other. This will cause one cylinder stem to extend, and the other to retract. When the spools shifts in the other direction, the flow is reversed and the machine is turned in the opposite direction.

The pump is a variable displacement, load sensing piston pump. Load sense controls are used to match pump flow to system demands, so that oil flow and oil pressure precisely match momentary demands.

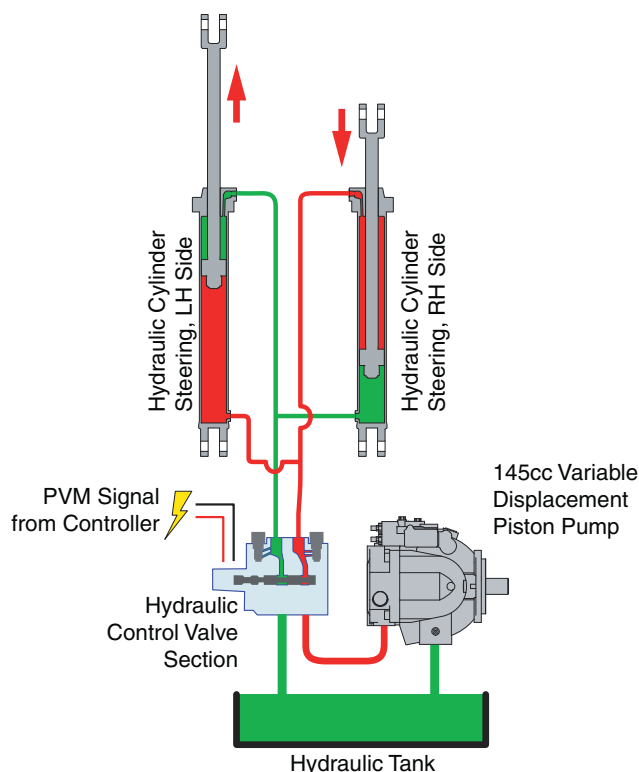


Figure 3-3-1 Steering System (Right Turn)

Brakes

The wet disc brake is applied with hydraulic pressure and released when that pressure tapers off. This system is known as a “wet” system because the discs are cooled by hydraulic oil that is circulated through the brake housing. Hydraulic accumulators allow for several brake actuations, even if all hydraulic power is lost.

Two types of discs are in each housing; stationary discs and friction discs. The stationary discs are locked to the brake housing. The friction discs rotate with the disc driver. Each friction disc is between stationary discs. Hydraulic pressure pushes a piston against the first stationary disc. The piston pushes all of the discs together to stop the rotating of the wheel assembly.

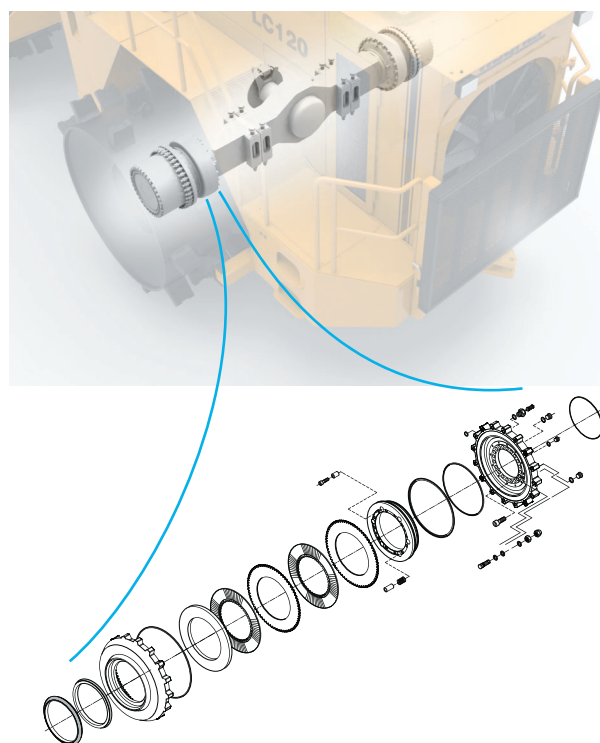


Figure 3-3-2 Wet Disc Brakes

Implements

Implements on a Wagner Landfill Compactor are defined as:

- Blade - Raises and lowers blade
- Steering - Turns the machine right/left

When an implement function is actuated by the operator, control valves allow hydraulic oil under pressure to flow to the appropriate hydraulic cylinder. Flow in one direction causes the hydraulic cylinder to extend, flow in the other direction causes the hydraulic cylinder to retract.

Declutch

The Declutch system, when engaged, automatically shifts the transmission into neutral when the brakes are applied. This allows more power to be provided to the implements (hoist, etc). Because the power is not being unnecessarily shared, it allows the machine to be more productive. It is controlled by a pressure switch in the brake line which sends an electronic signal to the transmission. The transmission then shifts into neutral, and will return to normal operation when the brake pedal is released.

Parking Brake

The parking brake is a spring applied, and hydraulically released dry disk brake. In the event of loss of hydraulic pressure, immediate application of the parking brake occurs. Oil pressure is required to release the parking brake. It is not required to apply it.

The parking brake system begins with the hydraulic tank oil flow to a pump. The pump sends oil to a high pressure filter. After the high pressure filter, oil is sent through a charge valve to an accumulator. From there, oil is supplied to the parking brake manifold, through a solenoid valve, which opens when energized, and on to the parking brake.

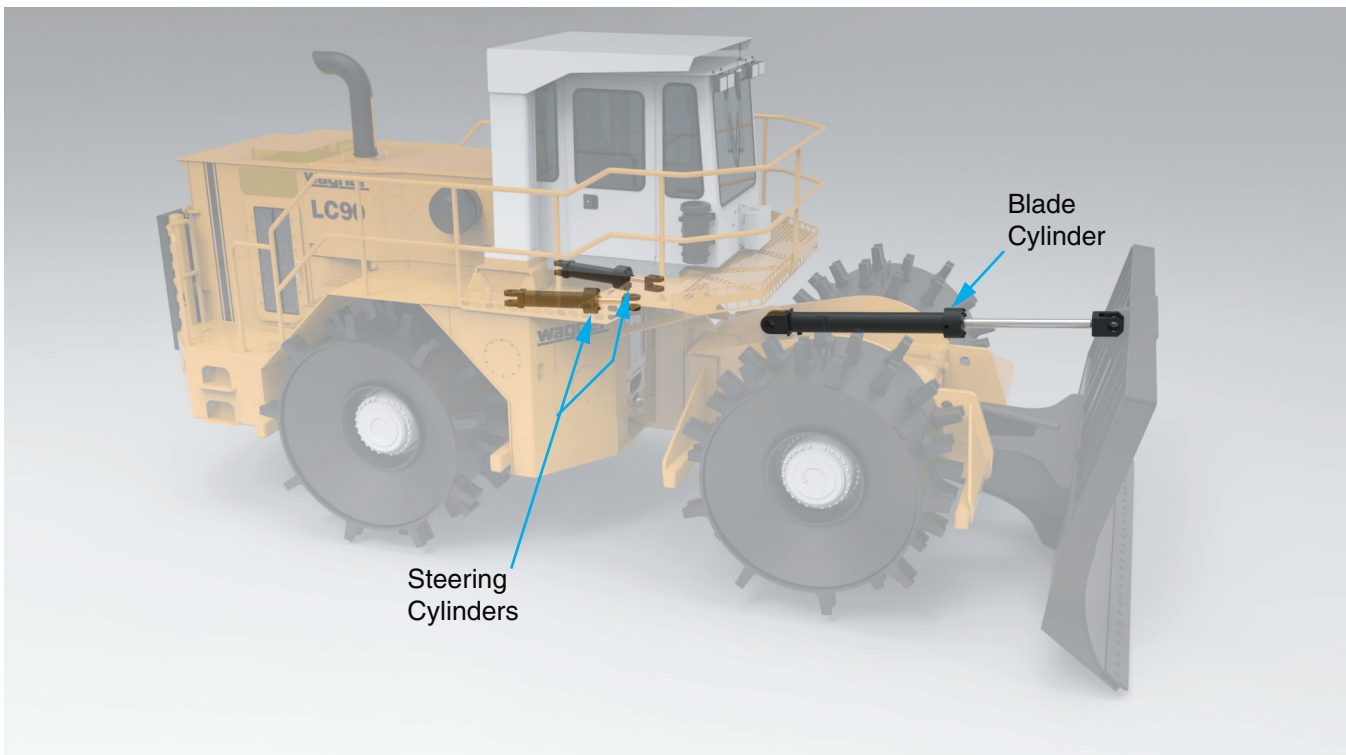


Figure 3-3-3 Implements