Power Unit

Figure 3-1-1 Power Unit (Model L490 with Cummins Tier 3 Engine Shown)

General

Your Wagner's power unit consists of a powerful, efficient Tier 3 diesel engine. This section will also discuss the air intake and engine cooling systems.

Engine

See Figure 3-1-2. The heart of the machine is the Tier 3 diesel engine, carefully selected for the intended use of the vehicle. The engine provides the power for the drivetrain, hydraulic system, and electrical system.

The Tier 3 engine provides:

- Improved fuel efficiency
- Power and performance
- Reliability
- Reduced emissions
- Long life

Refer to the operation and maintenance manual from the engine manufacturer for additional information.

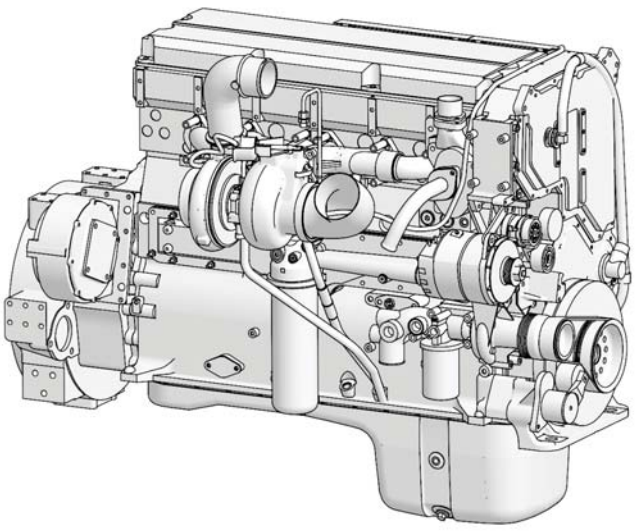

Figure 3-1-2 Tier 3 Engine

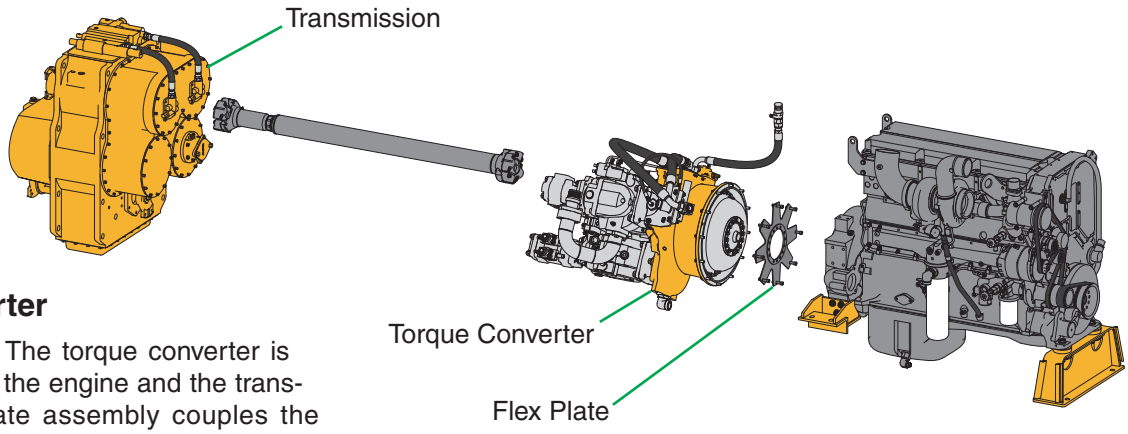

Figure 3-1-3 Torque Converter

Torque Converter

See Figure 3-1-3. The torque converter is mounted between the engine and the transmission. A flexplate assembly couples the converter to the engine. The flexplate assembly is connected to an impeller inside the converter, which rotates along with the engine. A turbine is mounted just inside the impeller. Transmission oil is the only connection between the turbine and the impeller. As the impeller is driven by the engine, the oil is put into motion, which turns the turbine. The turbine is coupled to the output shaft, which is coupled to the transmission input.

Radiator

The water pump on the engine draws coolant from a reservoir, and forces it through the engine block. The coolant absorbs heat from the engine block, and is then directed through the radiator.

The radiator consists of multiple aluminum tubes with fins to increase surface area. As the hot coolant is forced through the tubes, the copper absorbs heat from the coolant. The cooling fan(s) blows cool air over the copper tubes, dispersing the heat to atmosphere.

With the heat transferred away from the coolant, it returns to the reservoir, where begins the process again.

The radiator on your Logstacker may be accessed on the left side of the machine, and is mounted along with the charge air cooler (see Figure 3-1-4). A similar cooling package on the right side of the machine contains a hydraulic oil cooler, and transmission oil cooler, a fuel cooler, and an AC condenser. The fans are mounted in doors that may be swung out for easy cleaning of the cooling cores.

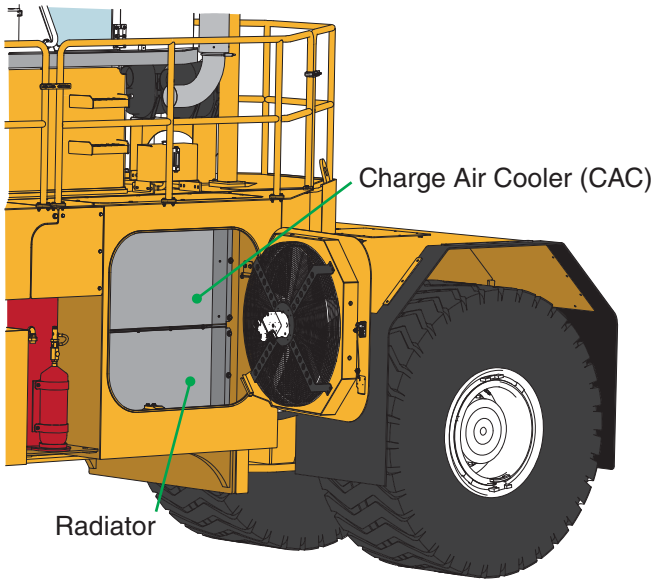

Figure 3-1-4 Cooling System

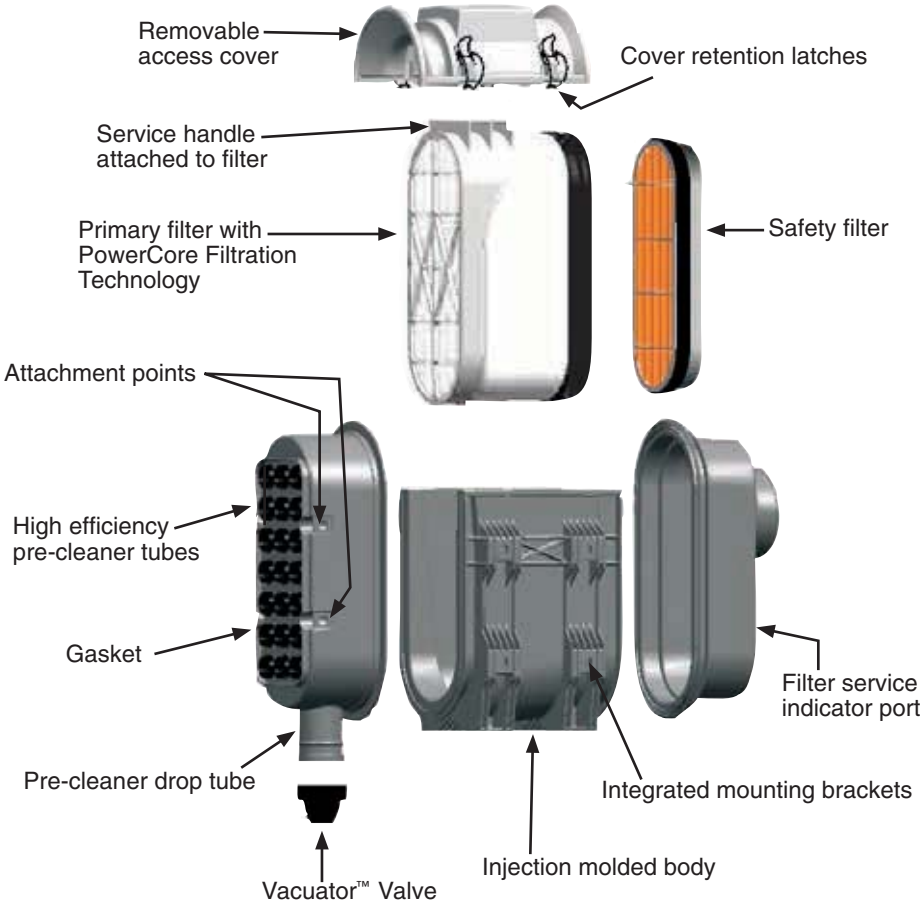

Figure 3-1-5 Air Cleaner Assembly

Air Intake

See Figure 3-1-5 and Figure 3-1-6 . The two-stage air cleaner is critical to the life of the engine. It prevents dust and debris from entering the engine air system causing premature engine wear and possible failure.

This air cleaner offers two-stage filtration in a single, compact unit that delivers superior filtration performance.

This design offers:

- Metal-free, lightweight materials
- Rugged construction
- Straight-through airflow technology
- Advanced sealing technology
- Inertial particle separation technology

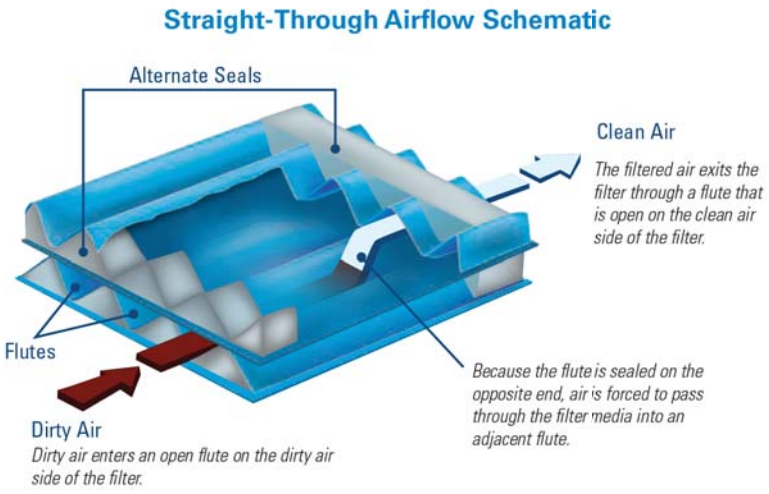

Figure 3-1-6 Airflow Schematic

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