

ENGINE DATASHEET



PowerTech™ PWL

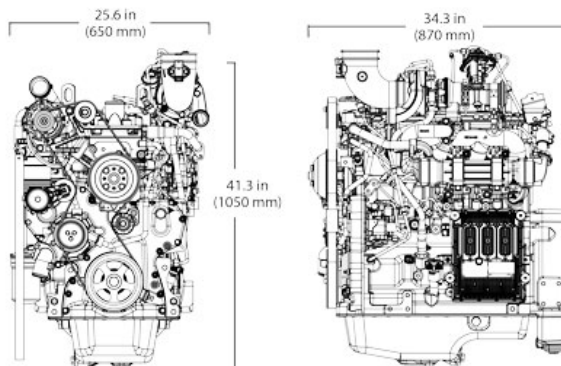
4045HFG04 Diesel Engine

Generator Drive Engine Specifications



4045HFG04 shown

Engine dimensions



Dimensions may vary according to options selected. Call your distributor for more information.

Emissions

CARB

EPA Tier 4

General data

Model	4045HFG04	Length - mm (in) to rear of block	870 (34.3)
Number of cylinders	4	Width - mm (in)	650 (25.6)
Displacement - L (cu in)	4.5 (275)	Height-- mm (in)	1050 (41.3)
Bore and Stroke-- mm (in)	106 x 127 (4.17 x 5.00)	Weight, dry - kg (lb)	550 (1213)
Compression Ratio	17.0 : 1		
Engine Type	In-line, 4-cycle		
Aspiration	Turbocharged and air-to-air aftercooled		

Performance data range

Rated speed	Engine power				Generator efficiency	Rated fan power		Power factor	Calculated generator set output			
	Prime		Standby			kW	hp		Prime		Standby	
	kW	hp	kW	hp					kWe*	kVA	kWe	kVA
Hz(rpm)					%							
60(1800)	61-90	82-122	67-99	90-133	88-92	4.7-6.9	6.3-9.3	0.8	50-77	62-96	55-85	69-106

Prime power is the nominal power an engine is capable of delivering with a variable load for an unlimited number of hours per year. This rating conforms to ISO3046 and SAE J1995.

Standby power is the maximum engine power available at varying load factors for up to 200 hours per year when applied to conform with ISO 8528-1. This rating conforms to ISO 3046 and SAE J1995. Calculated generator set rating range for standby applications is based on minimum engine power (nominal -5 percent) to provide 100 percent meet-or-exceed performance for assembled standby generator sets.

*Electrical power is calculated from the typical generator efficiency and fan power percentages shown. Applications may vary.

DOC Dimensions

Size	2
Diameter - mm (in)	209.1 (8.2)
Length - mm (in)	431 (17.0)
Weight - kg (lb)	14.9 (32.8)

See your John Deere Power Systems engine distributor for more information on available filter size options.

SCR Catalyst Dimensions

Size	3
Diameter - mm (in)	318 (12.5)
Length - mm (in)	638 (25.1)
Weight - kg (lb)	34 (75.0)

Features and Benefits

Wastegated Turbocharger

- Wastegated turbochargers are designed to develop more airflow at lower engine speeds to improve low-speed torque. The wastegate control device bleeds off a portion of the exhaust flow at higher engine speeds. Wastegated turbos deliver improved transient response and higher peak torque without compromising engine envelope size. They also provide the lowest installed cost across a given power range.

Cooled Exhaust Gas Recirculation (EGR)

- EGR cools and mixes measured amounts of cooled exhaust gas with incoming fresh air to lower peak combustion temperatures, thereby reducing NOx.

Diesel Oxidation Catalyst (DOC)

- PowerTech PWL 4.5L engines for Final Tier 4/Stage IV produce near-zero levels of particulate matter (PM) without a filter thanks to an optimized combustion system and engine calibration. Remaining PM and other hydrocarbons are oxidized passively in a flow-through DOC without the need for regeneration.

High-Pressure Common-Rail (HPCR) and Engine Control Unit (ECU)

- The HPCR fuel system provides variable common-rail pressure, multiple injections, and higher injection pressures up to 2,500 bar (36,000 psi). It also controls fuel injection timing and provides precise control for the start, duration, and end of injection.

Selective Catalytic Reduction (SCR)

- John Deere engines feature an SCR system that utilizes a urea-based additive, sometimes referred to as diesel exhaust fluid (DEF). The ammonia in the urea reacts with engine exhaust gases in the SCR catalyst to reduce NOx — converting it to nitrogen and water vapor.

4-Valve Cylinder Head

- The 4-valve cylinder head provides excellent airflow resulting in greater low-speed torque and better transient response time by utilizing a cross-flow design.

Air-to-Air Aftercooled

- This is the most efficient method of cooling intake air to help reduce engine emissions while maintaining low-speed torque, transient response time, and peak torque. It enables an engine to meet emissions regulations with better fuel economy and the lowest installed costs.

Compact Size

- Lower installed cost
- Mounting points are the same as previous engine models

John Deere Electronic Engine Controls

- Faster engine control unit (ECU) manages both the engine and the aftertreatment
- Premium software option integrates with equipment or vehicles to reduce engineering and installation costs
- Electronic engine controls can be engine or remote mounted

Additional Features

- Gear-driven auxiliary drives
- 500-hour oil change
- Self-adjusting poly-vee fan drive
- Optional factory installed variable-speed fan drive improves fuel economy and reduces noise levels
- RH and LH engine-mounted final fuel filters
- Replaceable (wet) cylinder liners
- Low-pressure fuel system with electrical transfer pump and "auto-prime" feature