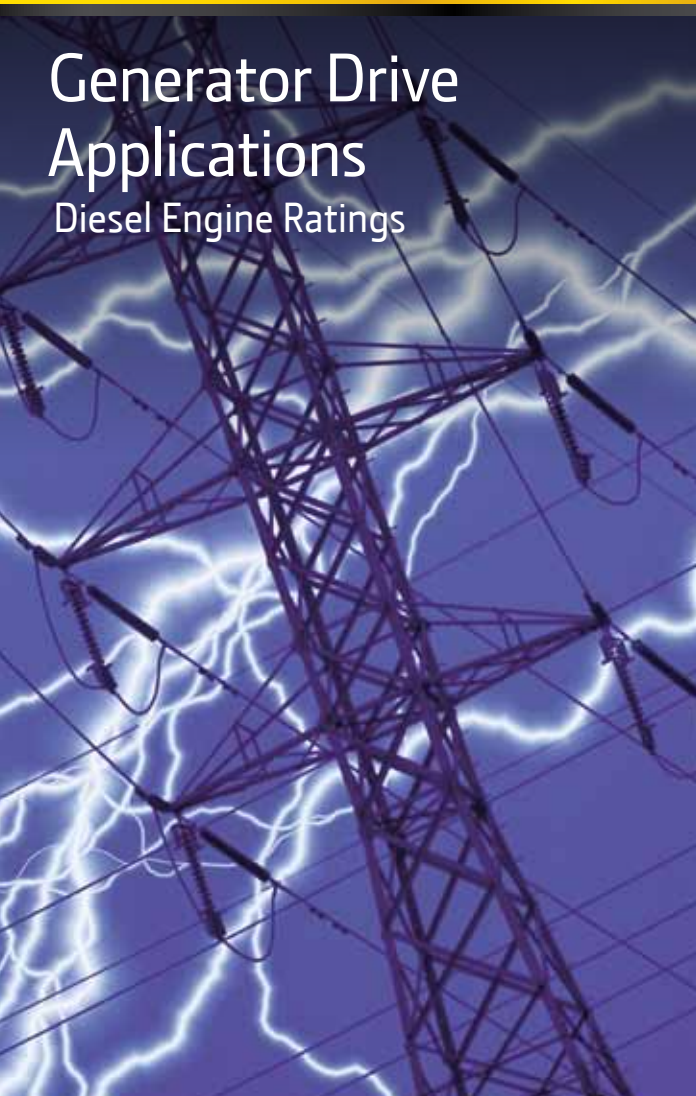
JOHN DEERE

Generator Drive Applications

Diesel Engine Ratings



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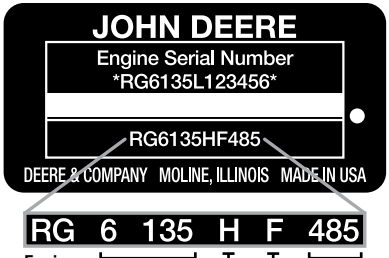
Generator-set engine identification plate



RG 6 135 H F 485

Engine model number

Emissions certification

001, 128, 150, 158, 220, 250, 258, 475	Non emissions certified - 50 Hz
001, 120, 150, 250, 270, 275, 475	Non emissions certified - 60 Hz
270, 275, 279, 475	Stage II
280, 285, 484, 485, G82, G86	Tier 3
G80, G81, G82, G84	Stage III A
281, 290, G92, G93, G94, G95	Interim Tier 4
128, 158, 258	Non-certified Generator Set Power Unit (GSPU)
U70, U72, U74, U79	Stage II Generator Set Power Unit (GSPU)
U80, U81, U82, U84	Stage III A Generator Set Power Unit (GSPU)

Engine controls (starting with some Tier 2/Stage II engines)

0 or 1	Mechanical controls
2 or 6	Electronic controls, 2-valve
3, 4, or 5	Electronic controls, 4-valve

Valves per cylinder (Tier 2, Tier 3, and Stage II engines)

2	2 valves
4	4 valves

Engine type (Tier 3, Interim Tier 4, and Stage III A engines)

G	Generator-set (bare engine)
U	Generator-set power unit (GSPU)
M	Marine

User type

F	OEM (John Deere Power Systems)
XX	Other letters are used to identify John Deere equipment manufacturing locations

Aspiration

D	Naturally aspirated
T	Turbocharged
A	Turbocharged and air-to-coolant aftercooled
H	Turbocharged and air-to-air aftercooled
S	Turbocharged and air-to-sea water aftercooled

Model designation key

Below is a key for the engine models shown in this guide.

A model designated as 6135H is a 6-cylinder, 13.5-liter turbocharged and air-to-air aftercooled engine. A model designated as a 4045T is a 4-cylinder, 4.5-liter turbocharged engine.

6135H

- H — Aspiration
- 135 — Displacement in liters
- 6 — Number of cylinders

Emissions information

The ultimate in performance, fuel economy, and emissions compliance is available with John Deere engines. To meet emissions regulations, John Deere worked closely with equipment manufacturers to identify engine technologies that best suited their needs.

John Deere engines comply with nonroad emissions regulations for the U.S. Environmental Protection Agency (EPA), the European Union (EU), and the California Air Resources Board (CARB).

EPA nonroad emissions regulations new source performance standard (NSPS)

kW	hp	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
0-7	0-10			7.5 0.40							
8-18	11-24			7.5 0.40							
19-36	25-49			7.5 0.30					4.7 0.03		
37-55	50-74			4.7 0.30	Option 1*				4.7 0.03		
				4.7 0.40	Option 2*			4.7 0.03			
56-74	75-99			4.7 0.40				3.4 0.19 0.02			0.40 0.19 0.02
75-129	100-174		4.0 0.30					3.4 0.19 0.02			0.40 0.19 0.02
130-224	175-299										
225-449	300-599		4.0 0.20				2.0 0.19 0.02			0.40 0.19 0.02	
450-559	600-749										
≥560	≥750		6.4 0.20				3.5 0.19 0.10				3.5 0.19 0.04

*In the 50 to 75 horsepower category there are two options. Option 1 requires a reduced PM level (.30 vs .40) but allows Final Tier 4 to be delayed one year (2013).

NOTE: The vertical dashed lines separating the years show when the seven-year life of the Tier 2/3 Equipment Flexibility Provision ends and engines can no longer be placed in vehicle production.

The new source performance standard (NSPS) required most stationary engines to be Tier 1 compatible on 01 April 2006 and meet current nonroad mobile standards after 01 January 2007.

EPA: Environmental Protection Agency
EU: European Union

EU nonroad emissions regulations constant speed

kW	hp	2007	2008	2009	2010	2011	2012	2013	2014	2015
0-7	0-10	Not regulated in EU								
8-18	11-24	Not regulated in EU								
19-36	25-49	8.0 1.5 0.80				7.5 0.60				
37-56	50-74	7.0 1.3 0.40					4.7 0.40			
57-74	75-99	7.0 1.3 0.40					4.7 0.40			
75-129	100-174	6.0 1.0 0.30				4.0 0.30				
130-559	175-749	6.0 1.0 0.20				4.0 0.20				
≥560	≥750	Not regulated in EU								

Legend

EPA	Tier 1	Tier 2	Tier 3	Interim Tier 4	Final Tier 4
EU	Stage I	Stage II	Stage III A	Stage III B	Stage IV

Examples

NOx NMHC PM	2.0 0.19 0.025

2.0, the maximum amount of nitrogen oxides (NOx) allowed in g/kWh.
0.19, the maximum amount of nonmethane hydrocarbons (NMHC) allowed in g/kWh.
0.025, the maximum amount of particulate matter (PM) allowed in g/kWh.

NMHC + NOx PM	7.5 0.80

7.5, the maximum amount of NMHC + NOx allowed in g/kWh.
0.80, the maximum amount of PM allowed in g/kWh.

European Union directive 97/68/EC requires constant speed engines, such as mobile gen-sets, meet Stage II emissions levels on 01 January 2007. The directive also requires constant speed engines meet Stage III A emissions levels beginning 01 January 2011.

Nonstop power wherever you need it

John Deere generator drive engines keep the power on through the most powerful storms and in the most remote locations on earth. Our engines meet emissions regulations while delivering quick-starting, clean-running, and fuel-efficient performance. Plus, they are available with more power in a compact size for installation flexibility.

Power at a moment's notice

John Deere-powered standby generator sets protect critical applications, ensure uninterrupted productivity, and offer peace of mind. The EPA allows emergency standby applications to use current Tier 3 products that do not require aftertreatment. The European Union (EU) does not regulate emergency standby applications.

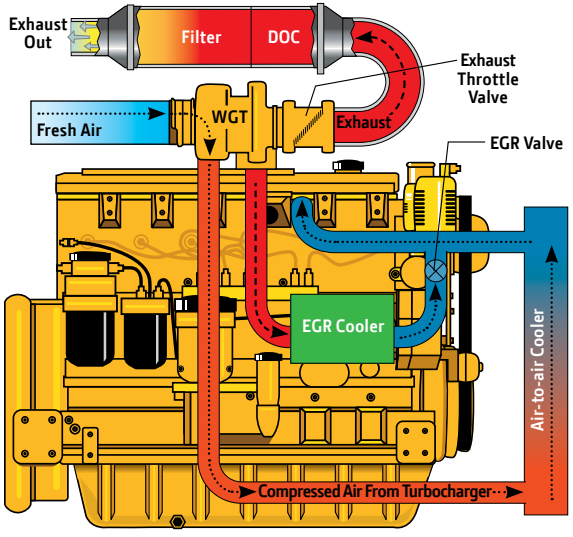
Power in remote locations

John Deere generator drive engines provide prime power for pumping stations, peak shaving, distributed power, mining, and other remote applications. Starting in 2011, prime power applications are required to meet Interim Tier 4 emissions regulations in North America and Stage III A in Europe.

Visit www.JohnDeere.com/gendrive to learn more about reliable John Deere engines for prime and standby power.

PowerTech PWX 4.5L engines EPA Interim Tier 4

PowerTech PWX Interim Tier 4 technology



Wastegated turbocharger

Wastegated turbochargers are designed to develop more air flow 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.

Exhaust filters

These engines utilize an exhaust filter that contains a diesel oxidation catalyst (DOC) and a particulate filter. The DOC reacts with exhaust gases to reduce carbon monoxide, hydrocarbons, and some particulate matter (PM). The downstream filter traps and holds the remaining PM. Trapped particles are oxidized within the filter through a continuous cleaning process called passive regeneration. Regeneration occurs during normal operating conditions when heat from the exhaust stream and catalysts within the exhaust filter trigger the oxidation of the trapped PM.

High-pressure common-rail (HPCR) and engine control unit (ECU)

The HPCR fuel system provides variable common-rail pressure and higher injection pressures up to 1,975 bar (29,000 psi). It also controls fuel injection timing and provides precise control for the start, duration, and end of injection.

4-valve cylinder head

The 4-valve cylinder head provides excellent airflow 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. It enables an engine to meet emissions regulations with better fuel economy and the lowest installed costs.

Compact size

- Simplifies installation
- Mounting points are the same as previous models

John Deere electronic engine controls

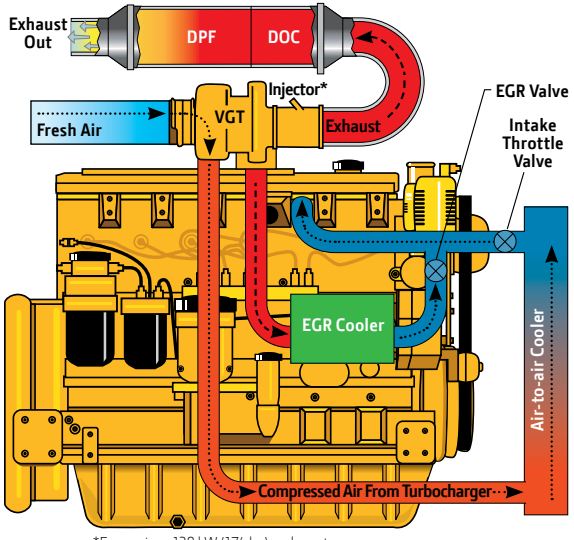
- Faster engine control unit (ECU) manages both the engine and the exhaust filter
  - Full authority electronic controls
  - Four times the memory, twice the RAM, and double the processing speed
  - The input/output capability has increased 40%

Additional features

- Glow plugs
- 500-hour oil change
- Self-adjusting poly-vee fan drive
- Variable-speed fan drive increases fuel economy and decreases noise levels
- R.H. and L.H. engine-mounted final fuel filters
- Optional low-pressure fuel system with electrical transfer pump and “auto-prime” feature

PowerTech PVX
4.5L, 6.8L, and 9.0L engines
EPA Interim Tier 4

PowerTech PVX Interim Tier 4 technology



*For engines 130 kW (174 hp) and greater.

Variable geometry turbocharger (VGT)

Varies exhaust pressure based on load and speed to ensure proper EGR flow. The combination of the cooled EGR and VGT provide low-speed torque, quicker transient response, higher-peak torque, and world-class fuel economy.

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.

Exhaust filters

These engines utilize a catalyzed exhaust filter that contains a diesel oxidation catalyst (DOC) and a diesel particulate filter (DPF). The DOC reacts with exhaust gases to reduce carbon monoxide, hydrocarbons, and some particulate matter (PM). The downstream DPF traps and holds the remaining PM. Trapped particles are oxidized within the DPF through a continuous cleaning process called passive regeneration. Passive regeneration occurs during normal operating conditions when heat from the exhaust stream and catalysts within the exhaust filter trigger the oxidation of the trapped PM. If passive regeneration cannot be achieved due to low temperature, load, or speed, then PM is removed using active regeneration — an automatic cleaning process controlled by the exhaust temperature management system. Engines below 130 kW (174 hp) use an in-cylinder dosing system for active regeneration, while larger engines use an external dosing system.

High-pressure common-rail (HPCR) and engine control unit (ECU)

The HPCR fuel system provides variable common-rail pressure and higher injection pressures up to 1,975 bar (29,000 psi). It also controls fuel injection timing and provides precise control for the start, duration, and end of injection.

4-valve cylinder head

The 4-valve cylinder head provides excellent airflow by utilizing a cross-flow design (4.5L and 6.8L) and a U-flow design (9.0L).

Air-to-air aftercooled

This is the most efficient method of cooling intake air to help reduce engine emissions. 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 exhaust filter
  - Full authority electronic controls
  - Four times the memory, twice the RAM, and double the processing speed
  - The input/output capability has increased 40%

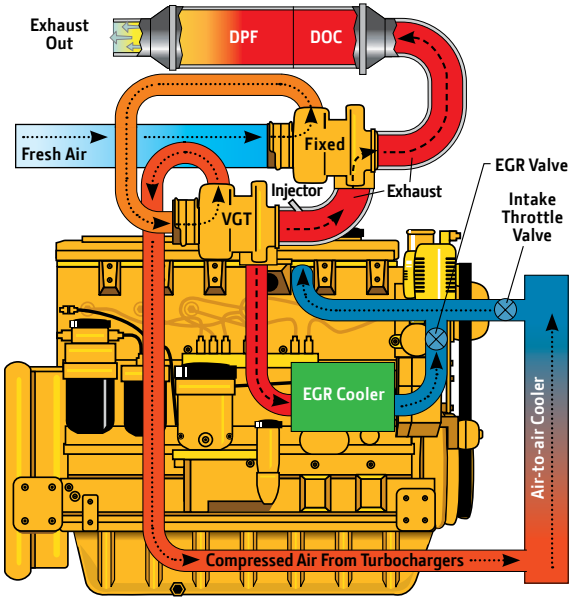
Additional features*

- Glow plugs (4.5L and 6.8L)
- 500-hour oil change
- Self-adjusting poly-vee fan drive
- Variable-speed fan drive increases fuel economy and decreases noise levels
- R.H. and L.H. engine-mounted final fuel filters (6.8L)
- Aluminum piston with integrated oil cooled gallery (6.8L)
- Low-pressure fuel system with electrical transfer pump and “auto-prime” feature (standard on 6.8L and 9.0L, optional on 4.5L)

*Available on all PowerTech PVX engines unless noted

PowerTech PSX 6.8L, 9.0L, and 13.5L engines EPA Interim Tier 4

PowerTech PSX Interim Tier 4 technology



Series turbochargers

Fresh air is first drawn into the low-pressure turbocharger (fixed geometry) and compressed to a higher pressure. The compressed air is then drawn into the high-pressure turbocharger (VGT), where the air is further compressed. The high-pressure air is then routed through a charge air cooler and into the engine's intake manifold. By splitting the work between two turbochargers, both can operate at peak efficiency and at slower rotating speeds — lowering stress on turbocharger components and improving reliability. Series turbocharging delivers more boost pressure than single turbocharger configurations, which results in higher power density, improved low-speed torque, and improved high altitude operation.

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.

Exhaust filters

These engines utilize a catalyzed exhaust filter that contains a diesel oxidation catalyst (DOC) and a diesel particulate filter (DPF). The DOC reacts with exhaust gases to reduce carbon monoxide, hydrocarbons, and some particulate matter (PM). The downstream DPF traps and holds the remaining PM. Trapped particles are oxidized within the DPF through a continuous cleaning process called passive regeneration. Passive regeneration occurs during normal operating conditions when heat from the exhaust stream and catalysts within the exhaust filter trigger the oxidation of the trapped PM. If passive regeneration cannot be achieved due to low temperature, load, or speed, then PM is removed using active regeneration — an automatic cleaning process controlled by the exhaust temperature management system.

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 1,975 bar (29,000 psi). It also controls fuel injection timing and provides precise control for the start, duration, and end of injection (6.8L and 9.0L).

Electronic unit injector (EUI) and engine control unit (ECU)

The EUI fuel system provides higher injection pressures up to 2,275 bar (33,000 psi). It also controls fuel injection timing and provides precise control for start, duration, and end of injection (13.5L).

4-valve cylinder head

The 4-valve cylinder head provides excellent airflow by utilizing a cross-flow design (6.8L and 13.5L) and a U-flow design (9.0L).

Air-to-air aftercooled

This is the most efficient method of cooling intake air to help reduce engine emissions. 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 exhaust filter
  - Full authority electronic controls
  - Four times the memory, twice the RAM, and double the processing speed
  - The input/output capability has increased 40%

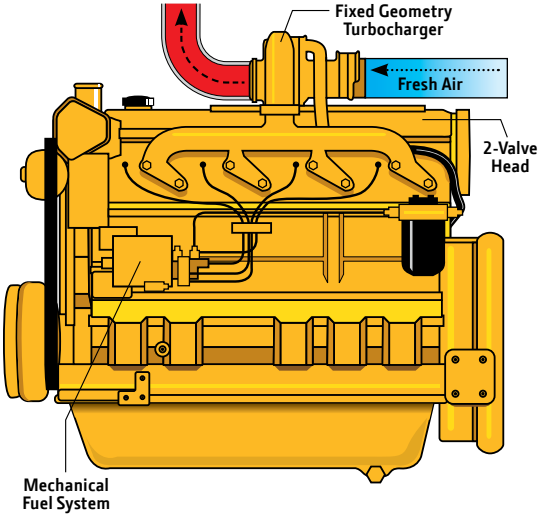
Additional features*

- Glow plugs (6.8L)
- 500-hour oil change
- Self-adjusting poly-vee fan drive
- Variable-speed fan drive increases fuel economy and decreases noise levels
- R.H. and L.H. engine-mounted fuel filters (6.8L)
- Single-piece low-friction steel piston (9.0L and 13.5L)
- Aluminum piston with integrated oil cooled gallery (6.8L)
- Low-pressure fuel system with electrical transfer pump and “auto-prime” feature
- Directed top-liner cooling (9.0L and 13.5L)

*Available on all PowerTech PSX engines unless noted

PowerTech M
2.4L and 4.5L engines

PowerTech M technology



Fixed geometry turbocharger

Fixed geometry turbochargers are sized for a specific power range and optimized to provide excellent performance across the entire torque curve. They are also designed to maximize fuel economy between the engine's rated speed and peak torque.

Mechanical unit pump (MUP) fuel system

This system uses camshaft-driven MUPs, connected to the injectors by a short fuel line. This short fuel line between the unit pumps and the injectors helps to alleviate after-injection, secondary injection, and other injection abnormalities (2.4L).

Mechanical rotary pump

The timing and fuel injection pressures are optimized to maximize performance and fuel economy at a given rated speed (4.5L).

2-valve cylinder head

Cross-flow (4.5L) and U-flow (2.4L) head design provides excellent breathing from a lower-cost 2-valve cylinder head.

Turbocharged

In turbocharged engines, the air is pre-compressed. Due to the higher pressure, more air is supplied into the combustion chamber allowing a corresponding increase in fuel injection, which results in greater engine output.

Compact size

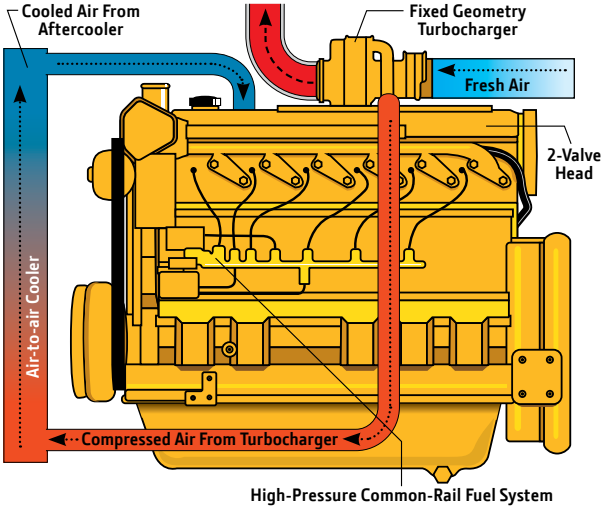
Mounting points are the same as previous engine models.

Additional features

- Self-adjusting poly-vee fan drive
- Forged-steel connecting rods
- Either-side service
- 500-hour oil change
- Glow plugs (2.4L)
- Optional balancer shafts

PowerTech E 2.4L, 3.0L, 4.5L, 6.8L, and 9.0L engines

PowerTech E technology



Fixed geometry turbocharger

Fixed geometry turbochargers are sized for a specific power range and optimized to provide excellent performance across the entire torque curve. They are also designed to maximize fuel economy between the engine's rated speed and peak torque.

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 1,600 bar (23,000 psi). It also controls fuel injection timing and provides precise control for the start, duration, and end of injection (4.5L, 6.8L, and 9.0L).

Electronic unit pump (EUP) fuel system

Regulated rated speed flexibility and improved cold-start and warm-up control (2.4L and 3.0L).

2-valve cylinder head

Cross-flow (3.0L, 4.5L, and 6.8L) and U-flow (2.4L) head design provides excellent breathing from a lower-cost 2-valve cylinder head.

4-valve cylinder head

The 4-valve cylinder head provides excellent airflow (9.0L).

Turbocharged

In turbocharged engines, the air is pre-compressed. Due to the higher pressure, more air is supplied into the combustion chamber, allowing a corresponding increase in fuel injection, which results in greater engine output (4.5L).

Air-to-air aftercooled

This is the most efficient method of cooling intake air to help reduce engine emissions. It enables an engine to meet emissions regulations with better fuel economy and the lowest installed costs.

Compact size

Mounting points are the same as previous engine models.

John Deere electronic engine controls

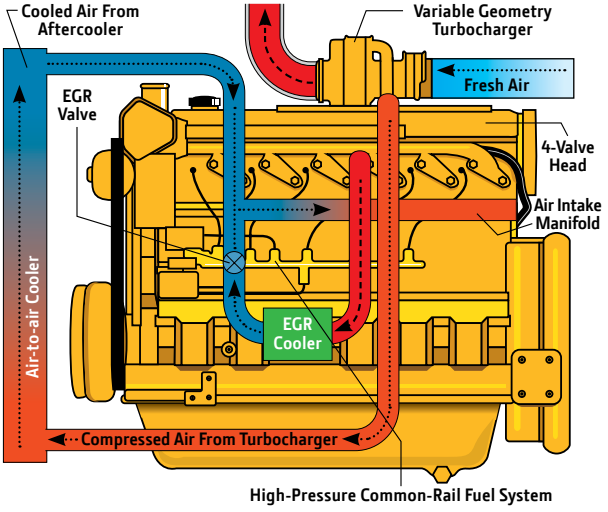
Electronic engine controls monitor critical engine functions, providing warning and/or shutdown to prevent costly engine repairs and eliminate the need for add-on governing components, all lowering total installed costs.

Additional features

- Self-adjusting poly-vee fan drive
- Forged-steel connecting rods
- Replaceable wet-type cylinder liners (4.5L, 6.8L, and 9.0L)
- Either-side service
- 500-hour oil change
- Gear driven auxiliary drive
- Glow plugs (2.4L and 3.0L)
- Optional balancer shafts (2.4L and 4.5L)

PowerTech Plus
4.5L, 6.8L, 9.0L, and 13.5L engines

PowerTech Plus technology



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.

Variable geometry turbocharger (VGT)

Varies exhaust pressure based on load and speed to ensure proper EGR flow and best-in-class fuel economy.

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 1,600 bar (23,000 psi). It also controls fuel injection timing and provides precise control for the start, duration, and end of injection (4.5L, 6.8L, and 9.0L).

Electronic unit injector (EUI) and engine control unit (ECU)

The EUI fuel system provides variable common rail pressure, multiple injections, and higher injection pressures up to 2,000 bar (29,000 psi). It also controls fuel injection timing and provides precise control for start, duration, and end of injection (13.5L).

4-valve cylinder head

The 4-valve cylinder head provides excellent airflow. There are the cross-flow design (4.5L, 6.8L, and 13.5L) and the new 4-valve U-flow head design (9.0L).

Air-to-air aftercooled

This is the most efficient method of cooling intake air to help reduce engine emissions. It enables an engine to meet emissions regulations with better fuel economy and the lowest installed costs.

Compact size

- Horsepower/displacement ratio is best-in-class
- Lower installed cost
- Mounting points are the same as previous engine models

John Deere electronic engine controls

Electronic engine controls monitor critical engine functions, providing warning and/or shutdown to prevent costly engine repairs and eliminate the need for add-on governing components, all lowering total installed costs.

Additional features

- Self-adjusting poly-vee fan drive (4.5L, 6.8L, 9.0L, and 13.5L)
- R.H. and L.H. engine-mounted fuel filters (6.8L)
- Single-piece low friction piston (9.0L and 13.5L)
- Low-pressure fuel system with electrical transfer pump and “auto-prime” feature (9.0L and 13.5L)
- Directed top-liner cooling (9.0L and 13.5L)
- Glow plugs (4.5L and 6.8L)

EPA Interim Tier 4
60 Hz

Engine model	Rated speed	Engine power standby		Standby ratings		Engine power prime		Prime ratings		Typical generator efficiency	Typical fan power
	rpm	kW	hp	kVA	kWe‡	kW	hp	kVA	kWe‡	%	%
PowerTech M											
4024TF281	1800	36	48	38	30	33	44	34	27	88	5
4045TF290	1800	55	74	57	46	50	67	52	42	88	5
PowerTech PWX											
4045HFG92	1800	68	87	69	55	62	79	62	50	88	8
4045HFG92	1800	80	107	81	65	73	97	73	58	88	8
4045HFG92	1800	99	126	100	80	90	115	90	72	88	8
PowerTech PVX											
4045HFG93	1800	105	141	106	85	95	128	96	77	88	8
4045HFG93	1800	124	166	125	100	113	151	113	90	88	8
6068HFG94	1800	150	201	159	127	136	183	143	115	90	6
6068HFG94	1800	180	241	190	152	164	219	172	138	90	6
6090HFG94	1800	237	318	253	203	215	289	229	183	91	6
PowerTech PSX											
6068HFG95	1800	216	290	228	183	196	264	206	165	90	6
6068HFG95*	1800	237	318	251	201	215	289	226	181	90	6
6090HFG95	1800	273	366	292	234	248	333	264	211	91	6
6090HFG95	1800	297	398	318	254	270	362	287	229	91	6
6090HFG95	1800	326	437	349	279	296	397	315	252	91	6
6135HFG95	1800	356	477	385	308	324	434	348	278	92	6
6135HFG95	1800	411	551	444	355	374	501	401	321	92	6
6135HFG95	1800	473	634	511	409	430	576	462	369	92	6

*Later availability

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

Preliminary data; ratings are subject to change.

EPA Tier 3
60 Hz

Engine model	Rated speed	Engine power standby		Standby ratings	
	rpm	kW	hp	kVA	kWe‡
PowerTech M					
4045TF280	1800	56	75	60 – 63	48 – 50
4045TF280	1800	63	85	68 – 70	54 – 56
4045HF280	1800	74	99	79 – 83	63 – 66
PowerTech E					
4024HF285	1800	60	80	63 – 65	50 – 52
5030HF285	1800	72	96	75 – 79	60 – 63
4045TF285	1800	74	99	76 – 79	61 – 63
4045HF285	1800	94	126	98 – 103	78 – 82
4045HF285	1800	99	133	104 – 108	83 – 86
4045HF285	1800	118	158	123 – 129	98 – 103
4045HF285	1800	147	197	155 – 161	124 – 129
6068HF285	1800	147	197	153 – 160	122 – 128
6068HF285	1800	177	237	184 – 193	147 – 154
6068HFG82*	1500	202	271	213 – 223	170 – 179
	1800	212	284	218 – 228	174 – 183
6090HF484	1800	229	307	242 – 253	194 – 202
6090HF484	1800	258	346	273 – 285	219 – 228
6090HF484	1800	287	385	304 – 317	243 – 254
6090HF484	1800	315	422	333 – 348	266 – 278
6090HFG86**	1800	345	463	373 – 389	298 – 311
PowerTech Plus					
4045HF485	1800	147	197	155 – 161	124 – 129
6068HF485	1800	212	284	226 – 236	181 – 189
6068HF485	1800	235	315	243 – 254	194 – 203
6135HF485	1800	345	463	367 – 383	293 – 306
6135HF485	1800	401	538	426 – 445	341 – 356
6135HF485	1800	460	617	500 – 511	400 – 409

Engine power prime		Prime ratings		Typical generator efficiency	Typical fan power
kW	hp	kVA	kWe‡	%	kW
51	68	54 – 56	43 – 45	88 – 92	1.9
57	76	60 – 64	48 – 51	88 – 92	1.9
67	90	71 – 75	57 – 60	88 – 92	2.2
55	74	56 – 59	45 – 47	88 – 92	3.6
65	87	68 – 70	54 – 56	88 – 92	3.6
67	90	68 – 71	54 – 57	88 – 92	5.2
86	115	89 – 93	71 – 74	88 – 92	5.2
90	121	94 – 98	75 – 78	88 – 92	5.2
107	144	111 – 116	89 – 93	88 – 92	6.5
134	179	140 – 146	112 – 117	88 – 92	6.5
134	180	139 – 145	111 – 116	88 – 92	8.1
161	216	166 – 174	133 – 139	88 – 92	9.8
184	246	193 – 202	154 – 162	88 – 92	7.3
193	259	197 – 206	157 – 165	88 – 92	12.6
208	279	218 – 228	175 – 183	90 – 94	13.7
235	315	247 – 258	197 – 206	90 – 94	15.5
258	346	276 – 288	221 – 231	90 – 94	17.2
284	380	303 – 316	242 – 253	90 – 94	18.9
N/A	N/A	N/A	N/A	90 – 94	13.8
134	179	140 – 146	112 – 117	88 – 92	6.5
193	258	205 – 214	164 – 171	88 – 92	6.5
214	286	220 – 230	176 – 184	88 – 92	14.1
311	416	330 – 345	264 – 276	90 – 94	19.9
365	489	388 – 405	310 – 324	90 – 94	22.0
419	561	455 – 465	364 – 372	92 – 94	25.3

*These ratings meet Tier 3 and Stage III A emissions regulations. They also offer dual frequency ratings with the same software.

**Available for emergency stationary applications only.

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

Non-emissions certified
60 Hz

Engine model	Rated speed	Engine power standby		Standby ratings	
	rpm	kW	hp	kVA	kWe‡
4024TF270	1800	36	48	38	30
3029DF120	1800	35	47	35 – 37	28 – 30
3029DF120	1800	48	64	49 – 51	39 – 41
3029TF270	1800	48	64	50 – 52	40 – 42
5030TF270	1800	60	80	63	50
5030HF270	1800	72	96	75	60
4045DF270	1800	50	67	52 – 55	42 – 44
4045DF150	1800	53	71	55 – 58	44 – 46
4045TF150	1800	74	99	78 – 81	62 – 65
4045TF270	1800	74	99	77 – 81	62 – 65
4045TF150	1800	82	110	85 – 90	68 – 72
4045TF250	1800	84	113	88 – 92	70 – 74
4045TF275	1800	84	113	88 – 92	70 – 73
4045TF250	1800	91	122	95 – 100	76 – 80
4045HF150	1800	95	127	99 – 104	79 – 83
4045TF250	1800	100	134	105 – 109	84 – 87
4045HF275	1800	108	145	113 – 118	90 – 94
4045HF275	1800	117	157	121 – 128	97 – 102
4045HF150	1800	123	165	129 – 134	103 – 107
4045HF475	1800	143	192	148 – 156	119 – 124
6068TF150	1800	112	150	116 – 122	93 – 98
6068TF275	1800	123	165	129 – 134	103 – 108
6068TF150	1800	123	165	129 – 134	103 – 107
6068TF250	1800	124	166	129 – 135	103 – 108
6068TF250	1800	142	190	148 – 155	118 – 124
6068HF250	1800	148	198	154 – 161	123 – 129
6068HF275	1800	164	220	171 – 179	137 – 143
6068HF275	1800	187	250	195 – 204	156 – 163
6068HF150	1800	187	251	195 – 204	156 – 163
6068HF275	1800	210	282	219 – 229	176 – 184
6068HF150	1800	210	282	220 – 230	176 – 184
6068HF475	1800	210	282	223 – 233	178 – 186
6068HF475	1800	234	314	245 – 256	196 – 205
6081TF001	1800	157	211	164 – 172	131 – 138
6081AF001	1800	187	250	200 – 209	160 – 167
6081TF001	1800	194	260	208 – 217	166 – 173
6081AF001	1800	224	300	239 – 250	191 – 200
6081HF001	1800	240	322	257 – 268	205 – 214
6081AF001	1800	259	347	277 – 289	221 – 231
6081HF001	1800	308	413	329 – 344	263 – 275
6135HF475	1800	330	442	353 – 368	282 – 295
6135HF475	1800	360	483	385 – 402	308 – 322
6135HF475	1800	420	563	449 – 469	359 – 375
6135HF475	1800	460	617	492 – 513	393 – 411

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

Engine power prime		Prime ratings		Typical generator efficiency	Typical fan power	Emissions Level
kW	hp	kVA	kWe‡	%	kW	Tier
32	43	34	27	88	1.8	2
31	42	31 – 33	25 – 26	88 – 92	3.0	Non-certified
43	58	44 – 46	35 – 37	88 – 92	3.0	1
44	59	46 – 48	37 – 38	88 – 92	2.4	2
54	72	56	45	88	3.0	2
65	87	68	54	88	3.6	2
46	62	48 – 50	38 – 40	88 – 92	2.5	2
48	64	50 – 52	40 – 42	88 – 92	2.6	1
67	90	70 – 73	56 – 58	88 – 92	3.7	1
67	90	70 – 73	56 – 58	88 – 92	3.7	2
74	99	76 – 80	61 – 64	88 – 92	4.1	1
76	102	79 – 82	63 – 66	88 – 92	4.1	1
76	102	79 – 83	64 – 66	88 – 92	4.2	2
82	110	85 – 89	68 – 71	88 – 92	4.5	1
86	115	89 – 93	71 – 74	88 – 92	4.8	1
90	121	94 – 98	75 – 78	88 – 92	5.0	1
98	131	102 – 107	82 – 85	88 – 92	5.4	2
106	142	109 – 115	87 – 92	88 – 92	5.9	2
111	149	115 – 120	92 – 96	88 – 92	6.0	1
130	174	134 – 141	107 – 112	88 – 92	7.2	2
101	135	105 – 110	84 – 88	88 – 92	5.6	1
112	150	116 – 122	93 – 97	88 – 92	6.2	2
111	149	115 – 120	92 – 96	88 – 92	6.3	1
112	150	116 – 121	93 – 97	88 – 92	6.3	1
128	172	132 – 139	106 – 111	88 – 92	7.1	1
133	178	137 – 144	110 – 115	88 – 92	7.5	1
149	200	155 – 162	124 – 130	88 – 92	8.2	2
170	228	177 – 185	141 – 148	88 – 92	9.4	2
168	225	174 – 182	139 – 146	88 – 92	9.3	1
191	256	198 – 207	159 – 166	88 – 92	10.5	2
189	253	196 – 205	157 – 164	88 – 92	10.4	1
191	256	201 – 210	161 – 168	89 – 93	10.5	Non-certified
213	286	221 – 231	177 – 185	88 – 92	11.7	2
142	190	147 – 154	118 – 123	88 – 92	7.8	1
168	225	178 – 186	143 – 149	90 – 94	9.3	1
166	223	176 – 184	141 – 147	90 – 94	9.5	1
201	270	213 – 223	171 – 178	90 – 94	11.2	1
218	292	232 – 242	185 – 194	90 – 94	11.9	1
220	295	233 – 243	186 – 194	90 – 94	13.0	1
263	353	279 – 291	223 – 233	90 – 94	15.3	1
300	402	319 – 333	255 – 267	90 – 94	16.4	Stage II
327	439	348 – 363	278 – 291	90 – 94	17.9	Stage II
382	512	406 – 424	325 – 339	90 – 94	20.9	Stage II
418	561	444 – 464	355 – 371	90 – 94	23.0	Stage II

EU Stage III A
50 Hz/ 60 Hz**

Engine model	Rated speed	Engine power standby		Standby ratings		Engine power prime		Prime ratings		Typical generator efficiency	Typical fan power	GSPU* model
	rpm	kW	hp	kVA	kWe‡	kW	hp	kVA	kWe‡	%	kW	
PowerTech M												
3029TFG80	1500	31	42	32 – 34	26 – 27	28	38	29 – 31	24 – 25	88 – 92	1.3	3029TFU80
	1800	35	47	35 – 37	28 – 30	32	42	32 – 34	26 – 27	88 – 92	2.2	
3029HFG80	1500	41	55	43 – 45	35 – 36	37	50	39 – 41	31 – 33	88 – 92	1.4	3029HFU80
	1800	46	62	48 – 50	38 – 40	42	56	43 – 45	34 – 36	88 – 92	2.4	
4045HFG81	1500	63	84	67 – 70	53 – 56	57	77	61 – 63	48 – 51	88 – 92	2	4045HFU81
	1800	67	90	69 – 73	56 – 58	61	82	63 – 66	50 – 53	88 – 92	3.4	
PowerTech E												
4045HFG82	1500	83	111	89 – 93	71 – 74	76	101	81 – 84	64 – 67	88 – 92	2	4045HFU82
	1800	86	115	90 – 95	72 – 76	78	105	82 – 86	65 – 69	88 – 92	3.4	
4045HFG82	1500	103	138	108 – 114	87 – 91	94	126	98 – 103	79 – 82	88 – 92	4	4045HFU82
	1800	106	142	108 – 114	87 – 91	96	129	98 – 103	78 – 82	88 – 92	6.7	
4045HFG82	1500	123	165	128 – 134	102 – 107	112	150	116 – 121	92 – 97	88 – 92	6	4045HFU82
	1800	126	169	126 – 132	101 – 106	115	154	113 – 119	91 – 95	88 – 92	10.3	
6068HFG82	1500	153	205	159 – 167	127 – 133	139	187	144 – 151	115 – 121	88 – 92	7.3	6068HFU82
	1800	156	209	156 – 164	125 – 131	142	190	140 – 148	112 – 118	88 – 92	12.6	
6068HFG82	1500	202	271	213 – 223	170 – 179	184	246	193 – 202	154 – 162	88 – 92	7.3	6068HFU82
	1800	212	284	218 – 228	174 – 183	193	259	197 – 206	157 – 165	88 – 92	12.6	
6090HFG84	1500	253	339	266 – 278	213 – 223	230	309	240 – 252	192 – 201	90 – 94	15.2	6090HFU84
	1800	258	346	267 – 280	213 – 224	235	315	241 – 252	192 – 202	90 – 94	18.9	
6090HFG84	1500	304	408	323 – 338	258 – 271	277	371	292 – 306	234 – 245	90 – 94	15.2	6090HFU84
	1800	315	422	331 – 347	265 – 277	287	384	299 – 313	239 – 251	90 – 94	18.9	

*Generator set power unit (GSPU). A GSPU is a John Deere factory-built gen-set power unit, based on a bare engine with mounting pads, cooling package and air filter.

**50 Hz/60 Hz dual frequency is a standard feature on the entire EU Stage III A range.

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

EU Stage II
50 Hz

Engine model	Rated speed	Engine power standby		Standby ratings	
	rpm	kW	hp	kVA	kWe‡
3029TF270	1500	32	42	33 – 34	26 – 27
3029HF270	1500	41	55	43 – 45	34 – 36
4045TF270	1500	61	81	64 – 68	51 – 54
4045HF275	1500	83	111	86 – 90	69 – 72
4045HF279	1500	103	138	106 – 111	85 – 89
6068HF275	1500	123	165	132 – 138	105 – 110
6068HF279	1500	153	205	159 – 165	127 – 132
6068HF475	1500	183	245	196 – 205	157 – 164
6068HF475	1500	207	278	219 – 229	175 – 183
6090HF475	1500	253	339	270 – 279	216 – 224
6090HF475	1500	304	408	325 – 336	260 – 269
6135HF475	1500	355	476	379 – 392	304 – 314
6135HF475	1500	405	543	433 – 447	346 – 358
6135HF475	1500	456	612	487 – 504	390 – 403

*Generator set power unit (GSPU). A GSPU is a John Deere factory-built gen-set power unit, based on a bare engine with mounting pads, cooling package and air filter.

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

Engine power prime		Prime ratings		Typical generator efficiency	Typical fan power	GSPU* model
kW	hp	kVA	kWe‡	%	kW	
29	38	29 – 30	23 – 24	88 – 92	2.0	3029TFU70
37	50	39 – 40	31 – 32	88 – 92	2.0	3029HFU70
55	74	58 – 61	47 – 49	88 – 92	2.0	4045TFU70
75	101	77 – 81	62 – 65	88 – 92	4.8	4045HFU72
94	126	94 – 99	75 – 79	88 – 92	6.2	4045HFU79
111	149	118 – 124	95 – 99	89 – 93	4.5	6068HFU72
139	186	143 – 150	114 – 120	88 – 92	9.2	6068HFU79
166	223	177 – 185	142 – 148	89 – 93	6.5	6068HFU74
188	252	198 – 206	158 – 165	89 – 93	10.4	6068HFU74
230	308	243 – 251	195 – 201	90 – 93	12.7	N/A
274	367	292 – 302	234 – 242	90 – 93	15.2	N/A
323	433	345 – 357	276 – 285	90 – 93	17.8	N/A
369	494	394 – 407	315 – 326	90 – 93	20.3	N/A
415	556	443 – 458	355 – 367	90 – 93	22.8	N/A

Non-emissions certified
50 Hz

Engine model	Rated speed	Engine power standby		Standby ratings	
	rpm	kW	hp	kVA	kWe‡
3029DF128[1]	1500	31	41	32 – 34	26 – 27
3029TF158[1]	1500	42	56	44 – 46	35 – 37
4024TF220	1500	21	28	23	18
4024TF220	1500	31	42	34	27
5030TF220	1500	42	56	45	36
5030HF220	1500	62	84	66	53
4045DF158[1]	1500	44	59	46 – 49	37 – 39
4045TF158[1]	1500	70	94	73 – 76	58 – 61
4045TF250	1500	70	94	74 – 78	59 – 62
4045TF258[1]	1500	83	111	88 – 92	70 – 74
4045HF158[1]	1500	102	137	108 – 113	86 – 90
4045HF475	1500	120	161	125 – 131	100 – 104
6068TF150	1500	94	126	100 – 104	80 – 83
6068TF250	1500	104	139	110 – 116	88 – 93
6068TF158[1]	1500	105	141	111 – 116	89 – 93
6068TF258[1]	1500	121	162	129 – 135	103 – 108
6068HF250	1500	123	165	130 – 136	104 – 109
6068HF158[1]	1500	155	208	165 – 172	132 – 138
6068HF258[1]	1500	183	245	194 – 202	155 – 162
6068HF475	1500	207	278	216 – 226	173 – 181
6081TF001	1500	131	175	139 – 145	111 – 116
6081AF001	1500	157	210	166 – 174	133 – 139
6081TF001	1500	169	227	179 – 187	143 – 150
6081AF001	1500	187	250	199 – 207	159 – 166
6081HF001	1500	200	268	212 – 222	170 – 178
6081AF001	1500	225	302	239 – 250	191 – 200
6081HF001	1500	268	359	284 – 297	227 – 238

Engine power prime		Prime ratings		Typical generator efficiency	Typical fan power	GSPU* model
kW	hp	kVA	kWe‡	%	kW	
27	36	28 – 29	22 – 23	88 – 92	2.0	3029DF128[1]
38	51	40 – 41	32 – 33	88 – 92	2.0	3029TF158[1]
19	25	20	16	88	0.6	
28	38	30	24	88	1.0	
38	50	40	32	88	1.3	
56	75	60	48	88	1.9	
40	54	41 – 44	33 – 35	88 – 92	2.0	4045DF158[1]
63	84	65 – 68	52 – 54	88 – 92	3.5	4045TF158[1]
63	84	66 – 70	53 – 56	88 – 92	2.5	
75	101	79 – 83	63 – 66	88 – 92	4.8	4045TF258[1]
91	122	96 – 100	77 – 80	88 – 92	4.0	4045HF158[1]
109	146	112 – 118	90 – 94	88 – 92	6.0	
85	114	90 – 94	72 – 75	88 – 92	3.5	
94	126	100 – 104	80 – 83	88 – 92	3.5	
95	127	100 – 105	80 – 84	88 – 92	3.5	6068TF158[1]
109	146	115 – 121	92 – 97	88 – 92	4.0	6068TF258[1]
111	149	117 – 123	94 – 98	88 – 92	4.5	
140	188	148 – 155	118 – 124	88 – 92	5.5	6068HF158[1]
166	223	175 – 183	140 – 147	88 – 92	6.5	6068HF258[1]
188	252	195 – 204	156 – 163	88 – 92	10.4	
119	160	125 – 131	100 – 105	88 – 92	4.5	
142	190	150 – 157	120 – 126	88 – 92	5.5	
144	193	152 – 159	121 – 127	88 – 92	6.0	
168	225	178 – 186	142 – 149	88 – 92	6.5	
182	244	192 – 201	154 – 161	88 – 92	7.0	
192	257	202 – 212	162 – 169	88 – 92	8.0	
231	310	144 – 255	195 – 204	88 – 92	9.5	

*Generator set power unit (GSPU). A GSPU is a John Deere factory-built gen-set power unit, based on a bare engine with mounting pads, cooling package and air filter.

[1] GSPU only. Not available as bare engine.

All ratings are subject to change.

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

PowerTech marine generator drive ratings

- Quiet, smooth operation
- Preferred provider of generator drive engines worldwide
- Available in 1500 rpm for 50 Hz and 1800 rpm for 60 Hz configurations

Engine model	Emissions rating	Rated speed	Engine prime power		Engine 10% overload power		Typical prime ratings		Typical 10% overload ratings		Typical generator efficiency
		rpm	kW	hp	kW	hp	kVA	kWe‡	kVA	kWe‡	%
1500 rpm											
6135SFM75	1, 2	1500	334	448	366	492	366 – 383	293 – 306	403 – 421	322 – 337	88 – 92
6090SFM75	1, 2	1500	222	298	244	328	244 – 255	195 – 205	268 – 281	215 – 224	88 – 92
6090AFM75	1	1500	195	261	214	287	214 – 224	171 – 179	235 – 246	188 – 197	88 – 92
6068SFM75	1, 2	1500	146	196	160	215	160 – 168	128 – 134	176 – 184	141 – 147	88 – 92
6068AFM75	1, 2	1500	139	186	153	205	153 – 160	122 – 128	169 – 176	135 – 141	88 – 92
6068TFM76	4	1500	89	119	98	131	98 – 102	78 – 82	108 – 113	86 – 90	88 – 92
6068TFM50	4	1500	89	119	98	131	98 – 102	78 – 82	108 – 113	86 – 90	88 – 92
4045TFM50	4	1500	57	76	63	84	62 – 65	50 – 52	68 – 71	55 – 57	88 – 92
4045TFM75	4	1500	55	74	61	82	60 – 64	48 – 51	66 – 70	53 – 56	88 – 92
4045DFM70	4	1500	40	54	44	59	44 – 46	35 – 37	48 – 51	39 – 41	88 – 92
4045DFM50	4	1500	40	54	44	59	44 – 46	35 – 37	48 – 51	39 – 40	88 – 92
1800 rpm											
6135SFM75	1, 2	1800	416	558	458	614	459 – 480	367 – 383	504 – 526	403 – 421	88 – 92
6125AFM75	1, 2	1800	300	402	330	443	330 – 345	264 – 276	363 – 378	290 – 304	88 – 92
6090SFM75	1, 2	1800	278	373	306	410	305 – 320	244 – 256	336 – 353	269 – 282	88 – 92
6090AFM75	1, 2	1800	222	297	244	327	244 – 255	195 – 204	269 – 280	215 – 224	88 – 92
6068SFM75	1, 2	1800	174	233	191	256	191 – 200	153 – 160	210 – 220	168 – 176	88 – 92
6068AFM75	1, 2	1800	166	223	183	245	183 – 191	146 – 153	201 – 210	161 – 168	88 – 92
6068TFM50	4	1800	115	154	125	168	124 – 132	99 – 106	136 – 145	108 – 116	88 – 92
6068TFM76	2, 4	1800	110	148	121	162	121 – 126	97 – 101	133 – 138	106 – 111	88 – 92
4045TFM75	2, 4	1800	73	98	80	107	80 – 84	64 – 67	88 – 92	70 – 74	88 – 92
4045TFM50	4	1800	71	95	78	105	78 – 81	62 – 65	86 – 89	68 – 71	88 – 92
4045DFM50	4	1800	48	64	53	71	52 – 55	42 – 44	58 – 61	47 – 79	88 – 92
4045DFM70	2, 4	1800	46	62	50	67	50 – 53	40 – 42	55 – 58	44 – 46	88 – 92

Emissions rating:

1. MARPOL Annex VI compliant
2. EPA Marine Tier 2
3. NRMM (97/68/EC) as amended
4. IMO Exempt

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

Definitions

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 ISO 3046 and SAE J1995.

Standby power as defined in ISO 8528-1 is the maximum engine power available at varying load factors for up to 200 hours per year. This rating conforms to ISO 3046 and SAE J1995. The 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.

Conversions

Generator drive rating (kWe)

kWe = [Engine power (kW) -
Fan power loss (kW)]
x Generator efficiency

Note: Marine generator sets do not have fan power loss

Power factor (PF)

$$PF = kWe/kVA = \frac{\text{Real power}}{\text{Apparent power}}$$

PF constant = 0.80

Formulas

(Standby power, kWe) =
(Prime power, kWe) * (110% Overload capacity)

kWe rating/.8 = kVA rating

Newton-meter = lb-ft x 1.356

Newton = lb force x 4.448

Meter = ft x 0.3048

Millimeter = in x 25.4

Kilogram = lb x 0.454

Liter = gallon x 3.785

Liter = cu in x 0.01639

Horsepower = kW x 1.34

Kilowatt = hp x 0.746

$$\text{Kilowatt} = \frac{(\text{volts x amps})}{1000}$$

Celsius = (F-32) x 0.556

Customer support

With John Deere, you never have far to go to find expert assistance and advice. The more than 4,000 service locations throughout the world give you peace of mind that you can get service when and where you need it.

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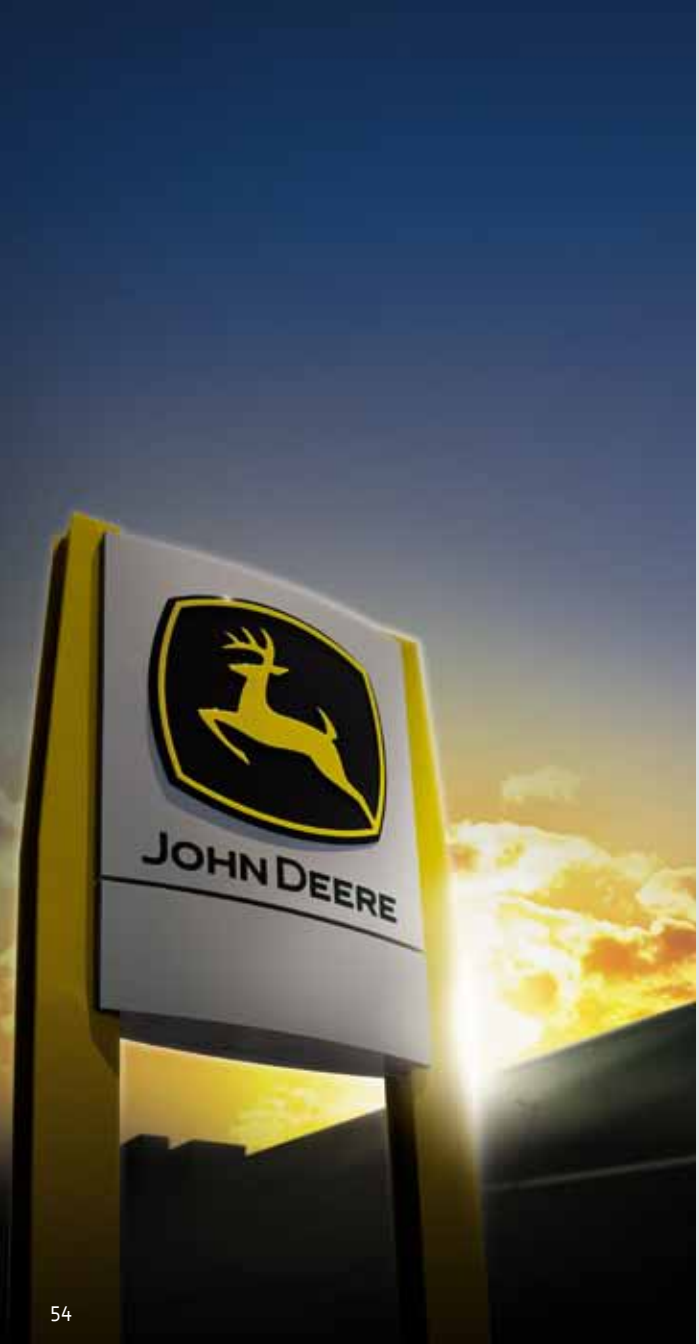
John Deere dealers and distributors are your best source for service, knowledge, and engine accessories. They're one of the many reasons to specify John Deere engines in your equipment.



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