



**JOHN DEERE**

# Generator Drive Applications

## Diesel Engine Ratings





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# Generator-set engine identification plate



**PE 6 068 H F 285**

Engine model number

## Model designation key

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

A model designated as 6068H is a 6-cylinder, 6.8-liter turbocharged and air-to-air aftercooled engine. A model designated as 4045T is a 4-cylinder, 4.5-liter turbocharged engine.

**6 068 H**

Aspiration  
Displacement in liters  
Number of cylinders

### Emissions certification

129, 150, 250, 258, 475, G55	Non emissions certified – 50 Hz
129, 150, 250, 275, 475, G55	Non emissions certified – 60 Hz
270, 275, 279, 475	Stage II
280, 285, 484, 485, G75,*	Tier 3
G82, G84, G85, G86, G89	
G81, G82, G84, G89	Stage III A
290, G92, G93, G94, G95	Interim Tier 4
G03, G04, G05, G06, G08, G09	Final Tier 4
258, U29, U55	Non-certified Generator Set Power Unit (GSPU)
U89, U70, U72, U74, U79	Stage II Generator Set Power Unit (GSPU)
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, 3, 4, 5, or 6	Electronic controls

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

2	2 valves
4	4 valves

### Engine type (Tier 3, Interim Tier 4, Final 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-seawater aftercooled

\*This PowerTech engine is capable of meeting Tier 2 emissions as required by emergency stationary regulations (>560 kW).

# EPA off-highway emissions regulations

kW	hp	2006	2007	2008	2009	2010	2011	2012	2013
0-7	0-10	7.5 0.80		7.5 0.40					
8-18	11-24	7.5 0.80		7.5 0.40					
19-36	25-49	7.5 0.60		7.5 0.30					4.7 0.03
37-55	50-74	7.5 0.40		4.7 0.30	Option 1*				4.7 0.03
				4.7 0.40	Option 2*			4.7 0.03	
56-74	75-99	7.5 0.40		4.7 0.40				3.4 0.19 0.02	
75-129	100-174	6.6 0.30	4.0 0.30					3.4 0.19 0.02	
130-224	175-299						2.0 0.19 0.02		
225-449	300-599	4.0 0.20					2.0 0.19 0.02		
450-559	600-749						2.0 0.19 0.02		
≥560	≥750	6.4 0.20					3.5 0.40 0.10		
560-900 Generator Sets	750-1200 Generator Sets	6.4 0.20					3.5 0.40 0.10		

\*In the 50 to 74 horsepower category, there are two options. Option 1 requires a reduced PM level (0.30 vs. 0.40) but allows Final Tier 4 to be delayed one year (2013).


**NOTE:** In emergency stationary applications, the EPA does not require engines to use aftertreatment.


## Fuel sulfur regulations

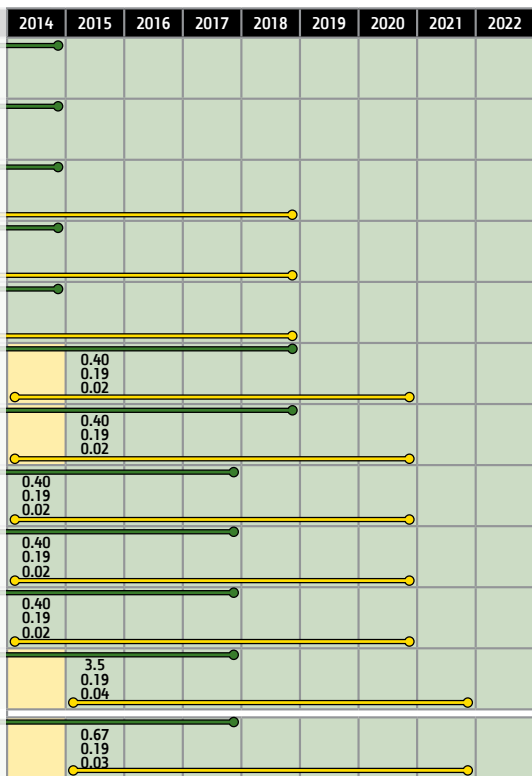
	2006	2007	2008	2009	2010	2011	2012	2013
EPA	5000 ppm		500 ppm				15 ppm	

### Legend

EPA	Tier 2	Tier 3	Interim Tier 4	Final Tier 4
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 General Availability of Tier 4 Equipment Flexibility Provision

 Delayed Availability of Tier 4 Equipment Flexibility Provision



EPA: Environmental Protection Agency

2014	2015	2016	2017	2018	2019	2020	2021	2022
15 ppm								

### Examples

NOx	2.0
NMHC	0.19
PM	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	7.5
PM	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.

# EU off-highway mobile emission regulations — constant speed engines

kW	hp	2007	2008	2009	2010	2011	2012	2013	2014
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							

**NOTES:** Stage V emissions regulations to be finalized in 2016; expected implementation dates are 2019 – 2020.

The EU does not regulate engines to an emission stage for stationary applications. Medium combustion directive regulations for engines above 350 kW (stationary) have expected implementation dates in 2019.

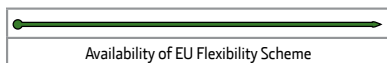
## Fuel sulfur regulations

	2007	2008	2009	2010	2011	2012	2013	2014
EU	2000 ppm	1000 ppm			10 ppm			

### Legend

EU	Stage II	Stage III A
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New emissions regulations take effect January 1 of the year indicated by color change unless otherwise noted.





2015	2016	2017	2018
Not regulated in EU			
Not regulated in EU			
Not regulated in EU			

2015	2016	2017	2018
10 ppm			

**Examples**

NOx	2.0
NMHC	0.19
PM	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	7.5
PM	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.

# EPA Final Tier 4 60 Hz

PowerTech technology	Engine model	Standby ratings			
		kWm	hpm	kVA	kWe
EWX	3029HFG03	36	48	39	31
EWX	3029HFG03	48	64	52	41
EWX	3029HFG03	55	74	59	48
EWX	4045TFG03	55	74	57	46
PWL	4045HFG04	68	91	71	57
PWL	4045HFG04	80	107	86	68
PWL	4045HFG04	99	133	106	85
PSS	4045HFG09	105	141	114	91
PSS	4045HFG09	124	166	134	107
PSL	4045HFG06 <sup>(1)</sup>	128	172	138	111
PVS	6068HFG08	150	201	162	130
PVL	6068HFG05 <sup>(1)</sup>	160	214	174	139
PVS	6068HFG08	180	241	195	156
PVL	6068HFG05 <sup>(1)</sup>	192	257	208	167
PSS	6068HFG09	216	289	236	189
PSL	6068HFG06 <sup>(1)</sup>	216	289	236	189
PSS	6068HFG09	240	322	262	210
PSL	6068HFG06 <sup>(1)</sup>	240	322	262	210
PSS	6090HFG09	237	318	259	207
PSS	6090HFG09	273	366	298	239
PSL	6090HFG06 <sup>(1)</sup>	273	366	298	239
PSS	6090HFG09	297	398	325	260
PSS	6090HFG09	326	437	356	285
PSL	6090HFG06 <sup>(1)</sup>	326	437	356	285
PSS	6090HFG09	345	462	377	302
PSL	6090HFG06 <sup>(1)</sup>	345	462	377	302
PSS	6135HFG09	356	477	389	311
PSS	6135HFG09	411	551	449	359
PSS	6135HFG09	473	634	517	413
PSL	6135HFG06 <sup>(1)</sup>	473	634	521	417

<sup>(1)</sup> Dual frequency is available for these engines.

Prime ratings				Generator efficiency	Fan power
kWm	hpm	kVA	kWe	%	kW
33	44	36	28	90	1.4
44	59	47	38	90	1.9
50	67	54	43	90	2.2
50	67	52	41	90	3.9
63	84	65	52	90	4.8
73	98	78	62	92	5.6
90	121	96	76	92	6.9
95	127	102	82	92	6.3
113	151	121	97	92	7.4
117	157	126	101	92	7.7
136	182	146	117	92	9
146	196	158	126	92	9
164	220	176	141	92	10.8
175	235	189	151	92	10.8
196	263	213	170	93	13
196	263	213	170	93	13
218	292	237	189	93	14.4
218	292	237	189	93	14.4
216	289	235	188	93	14.2
249	334	270	216	93	16.4
249	334	270	216	93	16.4
271	363	294	235	93	17.8
298	399	324	259	93	19.6
298	399	324	259	93	19.6
N/A	N/A	N/A	N/A	93	20.7
N/A	N/A	N/A	N/A	93	20.7
325	436	353	282	93	21.4
375	503	407	326	93	24.7
432	579	469	375	93	28.4
432	579	473	379	93	24.7

# EPA Interim Tier 4 60 Hz

PowerTech technology	Engine model	Standby ratings			
		kWm	hpm	kVA	kWe
M	3029TFG89	35	47	37	30
M	3029HFG89	46	62	49	39
M	4045TF290	55	74	58	47
PWX	4045HFG92	67	90	69	55
PWX	4045HFG92	80	107	85	68
PWX	4045HFG92	99	133	105	84
PVX	4045HFG93	105	141	111	89
PVX	4045HFG93	124	166	131	105
PVX	6068HFG94	150	201	162	130
PVX	6068HFG94	180	241	195	156
PSX	6068HFG95	216	289	235	188
PSX	6090HFG95	272	364	297	238
PSX	6090HFG95	297	398	325	260
PSX	6090HFG95	328	440	358	287
PSX	6135HFG95	356	477	389	311
PSX	6135HFG95	411	551	449	359
PSX	6135HFG95	473	634	517	413

Prime ratings				Generator efficiency	Fan power
kWm	hpm	kVA	kWe	%	kW
31	42	32	26	90	2.2
42	56	44	35	90	2.6
50	67	53	42	90	3.3
61	82	63	50	90	5.4
73	98	77	61	92	6.4
90	121	94	76	92	7.9
94	126	98	79	92	8.4
113	151	119	95	92	9.9
136	182	146	117	92	9
164	220	176	141	92	10.8
215	288	233	187	93	14.2
246	330	267	214	93	16.4
267	358	290	232	93	17.8
295	395	320	256	93	19.7
320	429	347	278	93	21.4
370	496	401	321	93	24.7
426	571	462	370	93	28.4

# EPA Tier 3 60 Hz

PowerTech technology	Engine model	Standby ratings			
		kWm	hpm	kVA	kWe
M	4045TF280 <sup>[5]</sup>	56	75	61	49
M	4045TF280 <sup>[5]</sup>	63	84	69	55
M	4045HF280 <sup>[5]</sup>	74	99	81	65
E	4045TF285	74	99	77	62
E	4045TF285	94	126	102	82
E	4045TF285	99	133	108	86
E	4045TF285	118	158	128	103
E	4045HF285	147	197	162	129
Plus	4045HFG85 <sup>[5]</sup>	147	197	162	129
E	6068HF285	147	197	160	128
E	6068HF285	177	237	192	154
E	6068HFG82 <sup>[2]</sup>	212	284	232	185
Plus	6068HFG85 <sup>[5]</sup>	212	284	232	185
E	6090HF484	229	307	250	200
Plus	6068HFG85 <sup>[5]</sup>	235	315	257	205
E	6090HF484	258	346	282	226
E	6090HFG84 <sup>[2]</sup>	258	346	278	222
E	6090HF484	287	385	314	251
E	6090HF484	315	422	344	275
E	6090HFG84 <sup>[2]</sup>	315	422	344	275
Plus	6090HF485 <sup>[5]</sup>	315	422	347	278
E	6090HFG86 <sup>[3]</sup>	345	462	379	303
Plus	6135HF485 <sup>[5]</sup>	345	462	378	302
E	6135HFG84 <sup>[3]</sup>	401	537	448	358
Plus	6135HF485 <sup>[5]</sup>	401	537	441	352
E	6135HFG84 <sup>[3]</sup>	460	616	513	411
Plus	6135HF485 <sup>[5]</sup>	460	616	505	404
E	6135HFG75 <sup>[3][4]</sup>	563	754	628	503

<sup>[2]</sup> 60 Hz/50 Hz dual frequency is available on these engines and meet EPA Interim Tier 4 and EU Stage III A emissions regulations.

<sup>[3]</sup> Available for emergency stationary applications only.

<sup>[4]</sup> This PowerTech engine is capable of meeting Tier 2 emissions as required by emergency stationary regulations (>560 kW).

<sup>[5]</sup> Jet fuel ratings available, contact your John Deere engine distributor for a complete listing.

Prime ratings				Generator efficiency	Fan power
kWm	hpm	kVA	kWe	%	kW
51	68	55	44	90	1.9
57	76	62	50	90	1.9
67	90	73	58	90	2.2
67	90	70	56	90	5.2
86	115	93	74	92	5.2
90	121	98	78	92	5.2
107	143	116	92	92	6.5
134	180	147	117	92	6.5
134	180	147	117	92	6.5
134	180	145	116	92	8.1
161	216	174	139	92	9.8
193	259	210	168	93	12.6
193	259	210	168	93	12.6
208	279	226	181	93	13.7
214	287	232	186	93	14.1
235	315	255	204	93	15.5
235	315	251	201	93	18.9
258	346	280	224	93	17.2
287	385	312	249	93	18.9
287	385	312	249	93	18.9
287	385	315	252	93	16.1
N/A	N/A	N/A	N/A	93	19.3
311	417	338	271	93	19.9
N/A	N/A	N/A	N/A	93	16
365	489	399	319	93	22
N/A	N/A	N/A	N/A	93	18.4
419	561	458	366	93	25.3
N/A	N/A	N/A	N/A	93	22.5

# EPA Tier 2 60 Hz

PowerTech technology	Engine model	Standby ratings			
		kWm	hpm	kVA	kWe
M	4045DF270	50	67	53	43
M	4045TF270	74	99	79	63
M	4045TF275	84	113	90	72
M	4045HF275	108	145	118	94
M	4045HF275	117	157	128	102
M	6068TF275	123	165	134	107
E	4045HF475	143	192	156	125
M	6068HF275	164	220	179	143
M	6068HF275	187	251	206	165
M	6068HF275	210	281	232	186
E	6068HF475	234	314	258	207
Plus	6135HF475 <sup>[6]</sup>	330	442	365	292
Plus	6135HF475 <sup>[6]</sup>	360	482	398	318
Plus	6135HF475 <sup>[6]</sup>	420	563	464	371
Plus	6135HF475 <sup>[6]</sup>	460	616	508	406

<sup>[6]</sup> EU Stage II only.



Prime ratings				Generator efficiency	Fan power
kWm	hpm	kVA	kWe	%	kW
46	62	49	39	90	2.5
67	90	71	57	90	3.7
76	102	81	65	90	4.2
98	131	106	85	92	5.4
106	142	115	92	92	5.9
112	150	122	97	92	6.2
130	174	141	113	92	7.2
149	200	162	130	92	8.2
170	228	187	149	93	9.4
180	241	197	158	93	10.5
213	285	234	187	93	11.7
300	402	330	264	93	16.4
327	438	359	287	93	17.9
382	512	420	336	93	20.9
418	560	459	367	93	23

# Non-emissions certified and Tier 1 60 Hz

PowerTech technology	Engine model	Tier level	Standby ratings			
			kWm	hpm	kVA	kWe
M	3029DF129	NC	35	47	36	29
M	3029TF129	NC	48	64	51	41
M	4045DF150	T1	53	71	57	45
M	4045TF150	T1	74	99	79	63
M	4045TF250	T1	84	113	92	74
M	4045TF250	T1	100	134	109	87
M	6068TF150	T1	112	150	122	98
M	4045HF150	T1	123	165	135	108
M	6068TF250	T1	142	190	155	124
M	6068HF250	T1	148	198	162	129
M	6068HF150	T1	187	251	207	165
M	6068HF150	T1	210	281	232	186
E	6068HF475	NC	210	281	232	186
Plus	6068HFG55 <sup>(1)</sup>	NC	260	348	281	225

<sup>(1)</sup> Dual frequency is available for these engines.

Prime ratings				Generator efficiency	Fan power
kWm	hpm	kVA	kWe	%	kW
31	42	32	25	90	3
44	59	47	37	90	2.4
48	64	51	41	90	2.6
67	90	71	57	90	3.7
76	102	83	66	92	4.1
90	121	98	78	92	5
101	135	110	88	92	5.6
111	149	121	97	92	6
128	172	139	111	92	7.1
133	178	144	115	92	7.5
168	225	184	148	93	9.3
189	253	208	166	93	10.4
191	256	210	168	93	10.5
237	318	254	203	93	18.5

# EU Stage III A/EPA Tier 3 Dual frequency 50 Hz/60 Hz

PowerTech technology	Engine model	GSPU model <sup>[8]</sup>	Speed	Standby ratings			
			rpm	kWm	hpm	kVA	kWe
M	3029TFG89 <sup>[2]</sup>	3029TFU89 <sup>[2]</sup>	1500	31	42	33	27
			1800	35	47	37	30
M	3029HFG89 <sup>[2]</sup>	3029HFU89 <sup>[2]</sup>	1500	43	58	47	37
			1800	46	62	49	39
M	4045HFG81	4045HFU81	1500	61	82	59	47
			1800	65	87	56	45
E	4045HFG82	4045HFU82	1500	83	111	91	73
			1800	86	115	93	74
E	4045HFG82	4045HFU82	1500	103	138	114	91
			1800	106	142	114	91
E	4045HFG82	4045HFU82	1500	123	165	135	108
			1800	126	169	133	106
E	6068HFG82	6068HFU82	1500	153	205	168	134
			1800	156	209	165	132
E	6068HFG82	6068HFU82	1500	202	271	226	181
			1800	212	284	232	185
E	6090HFG84	6090HFU84	1500	253	339	276	221
			1800	258	346	278	222
E	6090HFG84	6090HFU84	1500	304	407	336	269
			1800	315	422	344	275

<sup>[2]</sup> 60 Hz/50 Hz dual frequency is available on these engines and meet EPA Interim Tier 4 and EU Stage III A emissions regulations.

<sup>[8]</sup> 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.

Prime ratings				Generator efficiency	Fan power
kWm	hpm	kVA	kWe	%	kW
28	38	30	24	90	1.3
31	42	32	26	90	2.2
39	52	42	34	90	1.5
42	56	44	35	90	2.6
56	75	53	42	90	9
59	79	49	39	90	15.5
76	102	83	67	90	2
78	105	84	67	90	3.4
94	126	104	83	92	4
96	129	103	82	92	6.7
112	150	122	98	92	6
115	154	120	96	92	10.3
139	186	151	121	92	7.3
142	190	149	119	92	12.6
184	247	205	164	93	7.3
193	259	210	168	93	12.6
230	308	250	200	93	15.2
235	315	251	201	93	18.9
277	371	304	243	93	15.2
287	385	312	249	93	18.9

# EU Stage II 50 Hz

PowerTech technology	Engine model	GSPU model <sup>[8]</sup>	Standby ratings			
			kWm	hpm	kVA	kWe
M	4045TF270	4045TFU70	61	82	66	53
M	4045HF275	4045HFU72	83	111	88	70
M	4045HF279	4045HFU79	103	138	111	89
M	4045HF475	N/A	120	161	131	105
M	6068HF275	6068HFU72	123	165	136	109
M	6068HF279	6068HFU79	153	205	165	132
E	6068HF475	6068HFU74	183	245	205	164
E	6068HF475	6068HFU74	207	277	229	183
E	6090HF475	N/A	253	339	279	223
E	6090HF475	N/A	304	407	336	269
E	6135HF475	N/A	355	476	392	314
E	6135HF475	N/A	405	543	447	358
E	6135HF475	N/A	456	611	504	403

<sup>[8]</sup> 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.

Prime ratings				Generator efficiency	Fan power
kWm	hpm	kVA	kWe	%	kW
55	74	60	48	90	2
75	101	79	63	90	4.8
94	126	101	81	92	6.2
109	146	118	95	92	6
111	149	122	98	92	4.5
139	186	149	119	92	9.2
166	222	185	148	93	6.5
188	252	206	165	93	10.4
230	308	253	202	93	12.7
274	367	301	241	93	15.2
323	433	355	284	93	17.8
369	494	405	324	93	20.3
415	556	456	365	93	22.8

# Non-emissions certified 50 Hz

PowerTech technology	Engine model	GSPU model <sup>(8)</sup>	Standby ratings			
			kWm	hpm	kVA	kWe
M	3029DF129	3029DFU29	31	42	33	26
M	3029TF129	3029TFU29	42	56	45	36
M	N/A	4045DF158	44	59	47	38
M	N/A	4045TF158	70	94	75	60
M	4045TF250	N/A	70	94	75	60
M	N/A	4045TF258	83	111	90	72
M	6068TF150	N/A	94	126	104	83
M	N/A	4045HF158	102	137	113	90
M	6068TF250	N/A	104	139	116	92
M	N/A	6068TF158	105	141	117	93
M	N/A	6068TF258	121	162	135	108
M	6068HF250	N/A	123	165	136	109
M	N/A	6068HF158	155	208	172	138
M	N/A	6068HF258	183	245	203	162
E	6068HF475	N/A	207	277	229	183
Plus	6068HFG55 <sup>(1)</sup>	6068HFU55 <sup>(1)</sup>	250	335	279	223

<sup>(1)</sup> Dual frequency is available for these engines.

<sup>(8)</sup> 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.



Prime ratings				Generator efficiency	Fan power
kWm	hpm	kVA	kWe	%	kW
27	36	28	23	90	2
38	51	41	32	90	2
40	54	43	34	90	2
63	84	67	54	90	3.5
63	84	67	54	90	3.5
75	101	81	65	92	4.8
85	114	94	75	92	3.5
91	122	100	80	92	4
94	126	104	83	92	3.5
95	127	105	84	92	3.5
109	146	121	97	92	4
111	149	122	98	92	4.5
140	188	155	124	92	5.5
166	222	183	147	92	6.5
188	252	206	165	93	10.4
227	304	252	202	93	10

# 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	Prime power ratings			
		kWm	hpm	kVA	kWe
<b>1500 rpm/50Hz</b>					
4045DFM70	¥	40	54	45	36
4045TFM75	¥	55	74	62	50
4045TFM85	¥	61	82	69	55
4045AFM85	¥	89	119	102	82
6068TFM50	¥	89	119	102	82
6068TFM76	¥	89	119	102	82
6068AFM75	1	139	186	160	128
6068AFM85	1	139	186	160	128
6068SFM85	1	168	226	188	150
6090AFM75	1	195	261	219	175
6090SFM75	1	222	298	250	200
6090AFM85	1	195	261	219	175
6090SFM85	1	222	298	250	200
6135AFM85	1	278	373	313	250
6135SFM85	1	334	448	375	300
<b>1800 rpm/60Hz</b>					
4045DFM70	¥	46	62	50	40
4045TFM75	¥	73	98	81	65
4045TFM85	¥,3	74	99	81	65
4045AFM85	¥,3	110	148	124	99
6068TFM50	¥	115	154	124	99
6068TFM76	¥	110	148	124	99
6068AFM75	1	166	223	188	150
6068AFM85	1,3	166	223	188	150
6068SFM85	1,3	195	262	218	175
6090AFM75	1	222	297	250	200
6090SFM75	1	278	373	313	250
6090AFM85	1,3	222	297	250	200
6090SFM85	1,3	278	373	313	250
6135AFM85	1,3	334	448	375	300
6135SFM85	1,3	416	558	469	375

## Emissions rating:

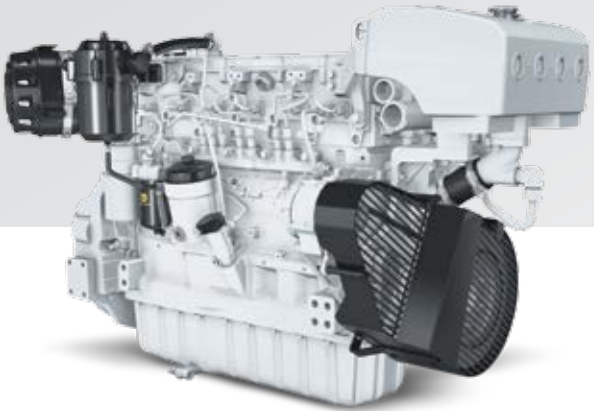
¥. MARPOL Annex VI exempt

1. MARPOL Annex VI compliant, IMO Tier 2

2. NRMM (97/68/EC) as amended, EU Stage III A

3. EPA Marine Tier 3

4. RCD compliant to 1137/2008/EU



10% overload power ratings

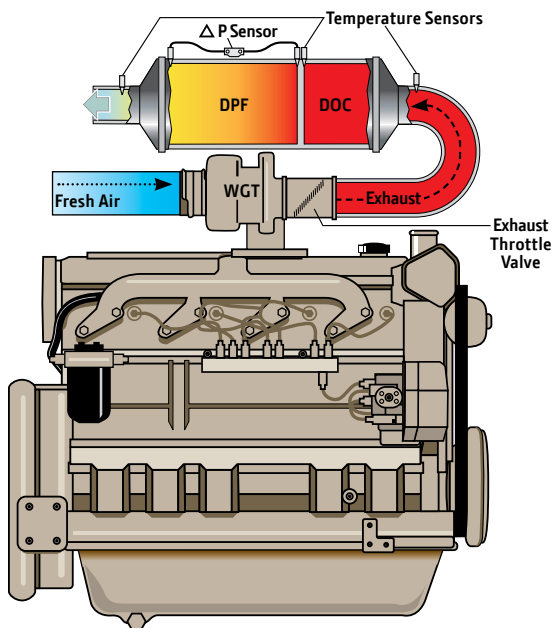
kWm	hpm	kVA	kWe
44	59	50	40
61	82	69	55
67	90	75	60
98	131	113	90
98	131	113	90
98	131	113	90
153	205	176	141
153	205	176	141
185	248	206	165
214	287	240	192
244	328	275	220
214	287	240	192
244	328	275	220
306	410	344	275
367	493	413	330
50	67	55	44
80	107	89	71
81	109	89	71
121	162	136	109
125	168	134	108
121	162	136	109
183	245	207	166
183	245	207	166
215	288	241	192
244	327	275	220
306	410	344	275
244	327	275	220
306	410	344	275
367	492	412	330
458	614	516	413

Overload ratings calculated on a typical generator efficiency range of 88 – 92%.

*Ratings are subject to change.*

# PowerTech EWX 2.9L and 4.5L engines

EPA Final Tier 4

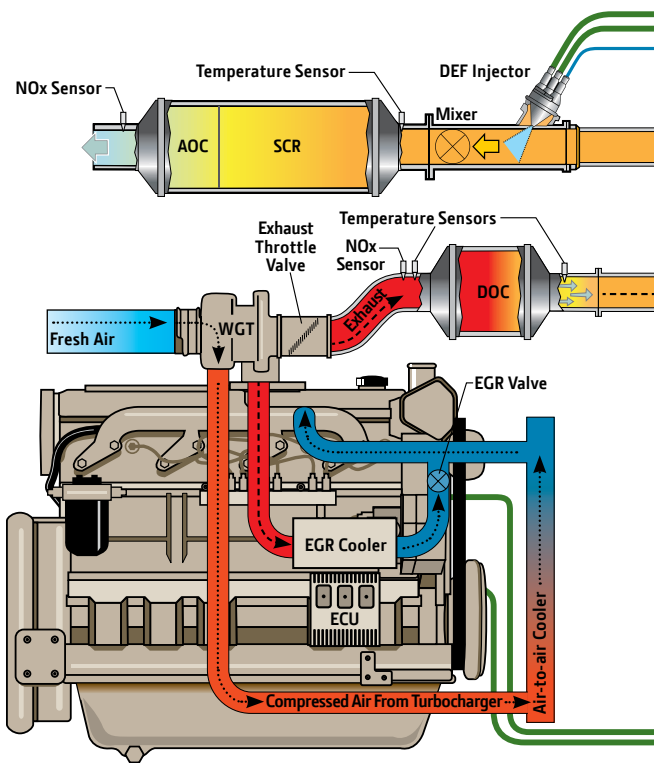


PowerTech EWX 4.5L engine configuration shown.

For more information and to see a full list of PowerTech EWX generator-set engine options, please visit [JohnDeere.com/gendriveEWX](http://JohnDeere.com/gendriveEWX).

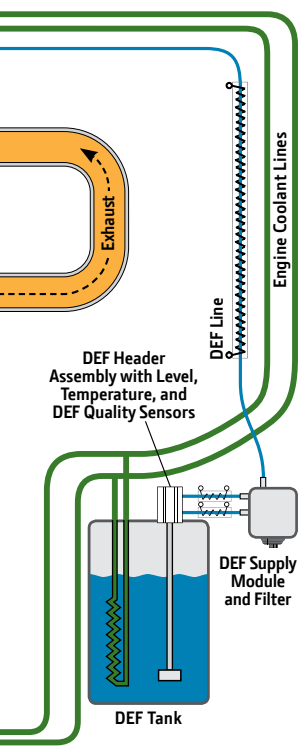
- Wastegated turbocharger
- Exhaust filter
- High-pressure common-rail (HPCR) and engine control unit (ECU)
- 2-valve cylinder head
- Air-to-air aftercooled (2.9L)
- Compact size
- John Deere electronic engine controls
- Additional features
  - Gear-driven auxiliary drives
  - 500-hour oil change
  - Replaceable wet-type cylinder liners
  - Oil-cooled pistons with hardened ring groove insert
  - Forged-steel connecting rods
  - Engine-mounted full flow oil cooler

PowerTech PWL 4.5L engines  
PowerTech PVL 6.8L engines  
PowerTech PSL 4.5L, 6.8L, 9.0L, and  
EPA Final Tier 4



PowerTech PWL 4.5L engine configuration shown.

# 13.5L engines



- Wastegated turbocharger (PWL)
- Variable geometry turbocharger (VGT) (PVL)
- Series turbochargers (PSL)
- Cooled exhaust gas recirculation (EGR)
- Diesel oxidation catalyst (DOC)
- Selective catalytic reduction (SCR)
- High-pressure common-rail (HPCR) and engine control unit (ECU)
- 4-valve cylinder head
- Air-to-air aftercooled
- Compact size
- John Deere electronic engine controls

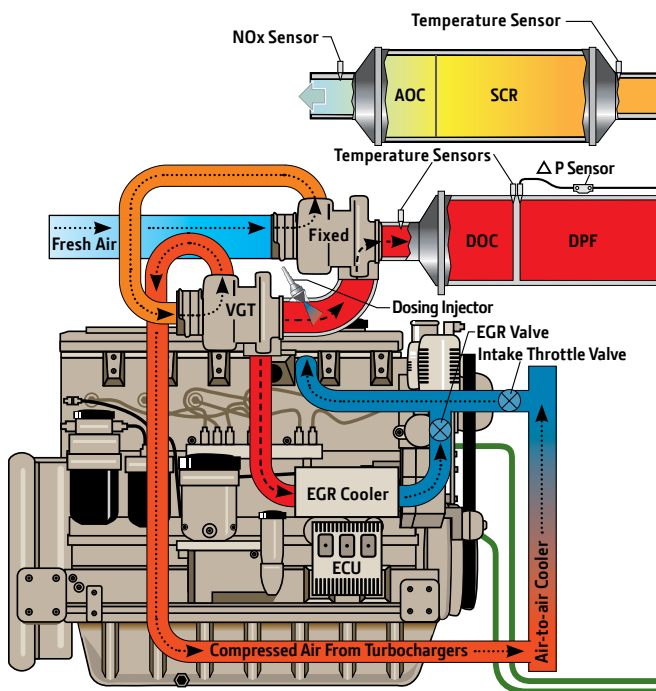
For more information and to see a full list of PowerTech PWL, PVL, and PSL generator-set engine options, please visit [JohnDeere.com/gendrivePWL](http://JohnDeere.com/gendrivePWL), [JohnDeere.com/gendrivePVL](http://JohnDeere.com/gendrivePVL), and [JohnDeere.com/gendrivePSL](http://JohnDeere.com/gendrivePSL).



## – Additional features

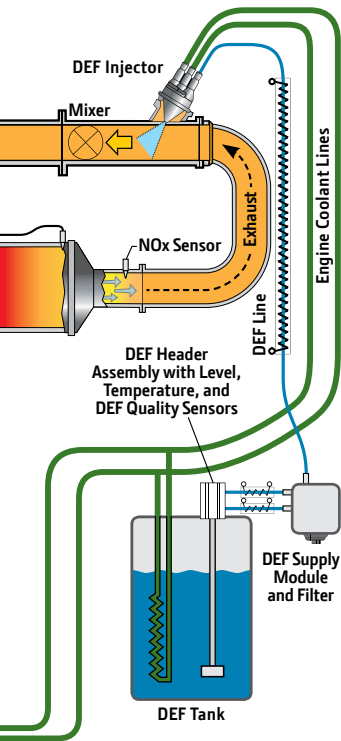
- Gear-driven auxiliary drives
- 500-hour oil change
- Replaceable wet-type cylinder liners
- Oil-cooled pistons with hardened ring groove insert
- Single-piece low-friction steel piston with directed top-liner cooling (6.8L, 9.0L, and 13.5L, PSL)
- Optional variable-speed fan drive improves fuel economy and reduces noise levels
- Low-pressure fuel system with electrical transfer pump and “auto-prime” feature
- R.H. and L.H. engine-mounted final fuel filters

# PowerTech PVS 6.8L engines PowerTech PSS 4.5L, 6.8L, 9.0L, and EPA Final Tier 4



PowerTech PSS 9.0L and 13.5L engine configuration shown.

# 13.5L engines



- Series turbochargers (PSS)
- Variable geometry turbocharger (VGT) (PVS)
- Cooled exhaust gas recirculation (EGR)
- Exhaust filters
- Selective catalytic reduction (SCR)
- High-pressure common-rail (HPCR) and engine control unit (ECU) (4.5L, 6.8L, and 9.0L)
- Electronic unit injector (EUI) and engine control unit (ECU) (13.5L)
- 4-valve cylinder head
- Air-to-air aftercooled
- Compact size
- John Deere electronic engine controls

For more information and to see a full list of PowerTech PVS and PSS generator-set engine options, please visit [JohnDeere.com/gendrivePVS](http://JohnDeere.com/gendrivePVS) or [JohnDeere.com/gendrivePSS](http://JohnDeere.com/gendrivePSS).

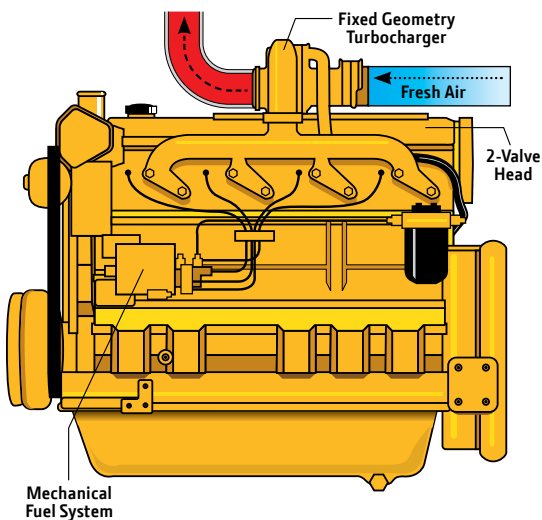
## – Additional features\*

- Glow plugs (4.5L and 6.8L)
- Gear-driven auxiliary drives
- Gear-driven water pump (9.0L and 13.5L)
- 500-hour oil change
- Replaceable wet-type cylinder liners
- Directed top-liner cooling (6.8L, 9.0L, and 13.5L)
- Single-piece low-friction steel piston with integrated oil-cooled gallery (6.8L, 9.0L, and 13.5L)
- Optional variable-speed fan drive improves fuel economy and reduces noise levels
- Low-pressure fuel system with electrical transfer pump and “auto-prime” feature

\*Available on all PowerTech PSS and PVS engines unless noted.

# PowerTech M 2.9L and 4.5L engines

EPA Interim Tier 4 and EPA Tier 3/EU Stage III A



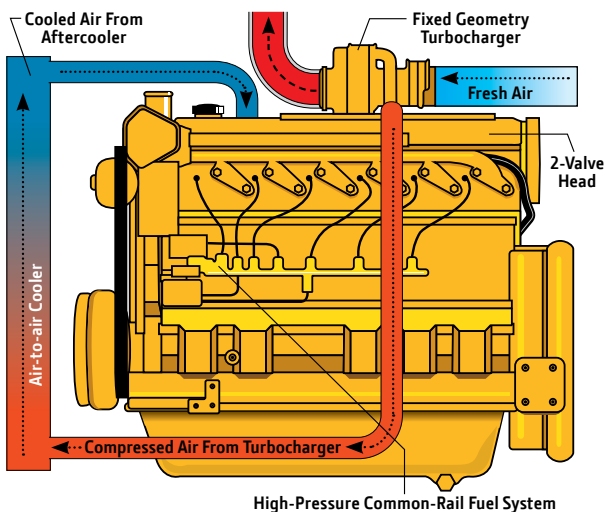
For more information and to see a full list of PowerTech PTM generator-set engine options, please visit [JohnDeere.com/gendrivePTM](http://JohnDeere.com/gendrivePTM).

- Fixed geometry turbocharger
- Turbocharged
- Mechanical rotary pump
- 2-valve cylinder head
  - Cross-flow design
- Air-to-air aftercooled
- Compact size
- Additional features
  - Glow plugs (4.5L)
  - Gear-driven auxiliary drives
  - 500-hour oil change
  - Replaceable wet-type cylinder liners
  - Oil-cooled pistons with hardened ring groove insert
  - Forged-steel connecting rods

# PowerTech E

## 4.5L, 6.8L, 9.0L, and 13.5L\* engines

EPA Tier 3/EU Stage III A



\*13.5L engines are EPA Tier 3-compliant only.

For more information and to see a full list of PowerTech PTE generator-set engine options, please visit [JohnDeere.com/gendrivePTE](http://JohnDeere.com/gendrivePTE).

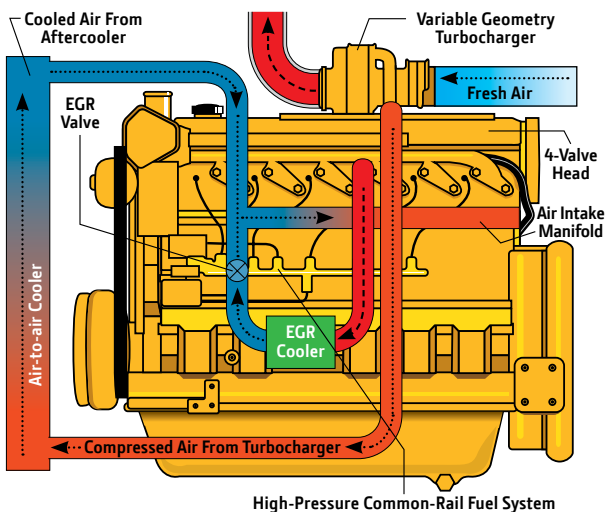


- Fixed geometry turbocharger
- High-pressure common-rail (HPCR) and engine control unit (ECU)
- Electronic unit injector (13.5L)
- 2-valve cylinder head  
Cross-flow design
- 4-valve cylinder head (9.0L and 13.5L)
- Air-to-air aftercooled
- Compact size
- John Deere electronic engine controls
- Additional features
  - Gear-driven auxiliary drives
  - Gear-driven water pump (9.0L and 13.5L)
  - 500-hour oil change
  - Replaceable wet-type cylinder liners
  - Directed top-liner cooling (9.0L and 13.5L)
  - Single-piece low-friction steel piston with integrated oil-cooled gallery (9.0L and 13.5L)
  - Low-pressure fuel system with electrical transfer pump and “auto-prime” feature

# PowerTech Plus

## 4.5L, 6.8L, 9.0L, and 13.5L engines

EPA Tier 3



- Variable geometry turbocharger (VGT)
- Cooled exhaust gas recirculation (EGR)

For more information and to see a full list of PowerTech PTP generator-set engine options, please visit [JohnDeere.com/gendrivePTP](http://JohnDeere.com/gendrivePTP).

- High-pressure common-rail (HPCR) and engine control unit (ECU) (4.5L and 6.8L)
- Electronic unit injector (EUI) and engine control unit (ECU) (13.5L)
- 4-valve cylinder head
- Air-to-air aftercooled
- Compact size
- John Deere electronic engine controls
- Additional features
  - Glow plugs (4.5L and 6.8L)
  - Gear-driven auxiliary drives
  - Gear-driven water pump (9.0L and 13.5L)
  - 500-hour oil change
  - Replaceable wet-type cylinder liners
  - Directed top-liner cooling (9.0L and 13.5L)
  - Single-piece low-friction steel piston with integrated oil cooled gallery (13.5L)
  - Low-pressure fuel system with electrical transfer pump and “auto-prime” feature

# 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)

$$\text{kWe} = [\text{Engine power (kW)} - \text{Fan power loss (kW)}] \times \text{Generator efficiency}$$

Note: Marine generator sets do not have fan power loss

## Power factor (PF)

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

PF constant = 0.80

## Formulas

$$\begin{aligned} &(\text{Standby power, kWe}) = \\ &(\text{Prime power, kWe}) * (110\% \text{ Overload capacity}) \\ &\text{kWe rating}/0.8 = \text{kVA rating} \end{aligned}$$

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



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# JOHN DEERE



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