JOHN DEERE

Off-Highway Diesel Engine Ratings

Final Tier 4/Stage IV/Stage V engines

Questions about John Deere Final Tier 4/Stage IV engines?

Check out our Frequently Asked Questions page.

JohnDeere.com/Tier4FAQ

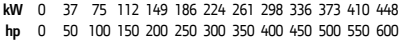
Industrial engine power ratings

Engine	Power ratings	Turbo	Cooled EGR	Aftertreatment
PowerTech EWX 2.9L	36 – 55 kW (48 – 74 hp)	WGT	N/A	DOC/DPF
PowerTech EWX 4.5L	55 kW (74 hp)	WGT	N/A	DOC/DPF
PowerTech PWL 4.5L	63 – 104 kW (85 – 140 hp)	WGT	Yes	DOC/SCR
PowerTech PWS 4.5L	63 – 104 kW (85 – 140 hp)	WGT	Yes	DOC/DPF/SCR
PowerTech PSL 4.5L	93 – 129 kW (125 – 173 hp)	Series	Yes	DOC/SCR
PowerTech PSS 4.5L	93 – 104 kW (125 – 140 hp)	Series	Yes	DOC/DPF/SCR
PowerTech PSS 4.5L	116 – 129 kW (155 – 173 hp)	Series	Yes	DOC/DPF/SCR
PowerTech PVS 6.8L	104 – 129 kW (140 – 173 hp)	VGT	Yes	DOC/DPF/SCR
PowerTech PVS 6.8L	138 – 187 kW (185 – 250 hp)	VGT	Yes	DOC/DPF/SCR
PowerTech PSS 6.8L	168 kW (225 hp)	Series	Yes	DOC/DPF/SCR
PowerTech PSS 6.8L	187 kW (250 hp)	Series	Yes	DOC/DPF/SCR
PowerTech PSS 6.8L	187 – 224 kW (250 – 300 hp)	Series	Yes	DOC/DPF/SCR
PowerTech PSS 9.0L	187 – 242 kW (250 – 325 hp)	Series	Yes	DOC/DPF/SCR
PowerTech PSS 9.0L	261 – 317 kW (350 – 425 hp)	Series	Yes	DOC/DPF/SCR
PowerTech PSS 13.5L	309 – 448 kW (414 – 600 hp)	Series	Yes	DOC/DPF/SCR

CONTENTS

Engine identification 4
Common features..... 6
PowerTech™ EWX engine 7
PowerTech PWL engine 10
PowerTech PWS engine 12
PowerTech PSL engine 14
PowerTech PVS engine 16
PowerTech PSS engine 18
Engine technology glossary 24
Emissions information 28
Diesel exhaust fluid 30
Engine accessories 31
Conversions..... 32
Customer support 33
Worldwide locations 35

	Exhaust filter size	SCR size	Power range
	2	N/A	
	2	N/A	
	2	3	
	2	3	
	3	3	
	3	3	
	4	4	
	3	3	
	4	4	
	4	4	
	4	4	
	5	5	
	5	5	
	6	6	
	7	7	



Engine identification

RG 6 135 H F C09

Engine model number

PowerTech PSS 6.8L

Displacement

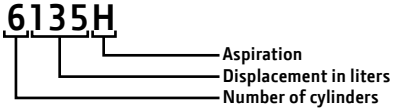
Aftertreatment
S – Exhaust filter and SCR
L – DOC and SCR
X – Exhaust filter

Turbocharger
V – Variable geometry turbocharger (VGT)
S – Series turbochargers
W – Wastegate turbocharger

Technology
P – PowerTech Plus
E – PowerTech E

Model designation key

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.



Emissions certification

281, 290, 295	Interim Tier 4 and Stage III A
92, 93, 94, 95	Interim Tier 4/Stage III B
03, 04, 06, 07, 08, 09	Final Tier 4/Stage IV

Final Tier 4/Stage IV designations

03 = EWX	Example: 3029HFC03
04 = PWL	Example: 4045HFC04
06 = PSL	Example: 4045HFC06
07 = PWS	Example: 4045HFC07
08 = PVS	Example: 6068HFC08
09 = PSS	Example: 6090HFC09
C = Industrial	Example: 6135HFC09

User type

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

Aspiration

T	Turbocharged
H	Turbocharged and air-to-air aftercooled

Common features of John Deere engines

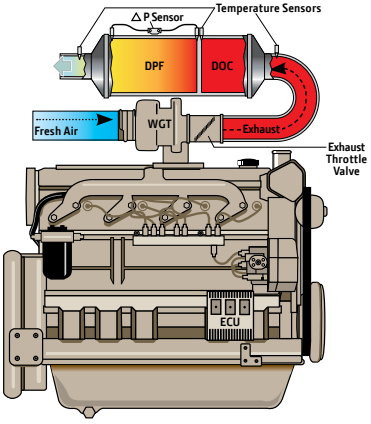
- Engine control unit (ECU)
- High-pressure common-rail (HPCR)[1] fuel system
- Air-to-air aftercooled
- Durable gear-driven auxiliary drives
- Up to 500-hour oil change
- Self-adjusting poly-vee fan drive
- Optional factory installed variable-speed fan drive improves fuel economy and reduces noise levels
- R.H. or L.H. engine-mounted final fuel filters
- Optional low-pressure fuel system with electrical transfer pump and “auto-prime” feature
- Optional exhaust system mounting/module kits[2]
- Optional John Deere cooling packages
- Instrumentation and wiring harness solutions
- DEF tanks[3]

[1]Not installed on PSS 13.5L engine models
[3]Not installed on EWX engine models
[2]Not installed on PSS engine models

PowerTech EWX 2.9L and 4.5L engines

READY TO RUN STAGE V

Compact, powerful, cost-effective, and simple to install.



PowerTech EWX 4.5L engine configuration shown.

Engine	Power ratings	Valves per cylinder	Turbo
PowerTech EWX 2.9L	36 – 55 kW (48 – 74 hp)	2-valve	WGT
PowerTech EWX 4.5L	55 kW (74 hp)	2-valve	WGT

Engine	Cooled EGR	Aftertreatment	Exhaust filter size	Exhaust filter dosing	SCR size
PowerTech EWX 2.9L	No	DOC/DPF	2	Internal	N/A
PowerTech EWX 4.5L	No	DOC/DPF	2	Internal	N/A

PowerTech EWX 2.9L engines

Final Tier 4 and Stage III B/Stage V engines

Engine model	Intermittent power		Continuous power		Rated speed	Peak power		Peak power	Peak torque		Peak torque
	kW	hp	kW	hp	rpm	kW	hp	rpm	Nm	lb-ft	rpm
3029HFC03	36	48	36	48	2400	36	48	2400	190	140	1600
3029HFC03	36	48	36	48	2200	36	48	2200	208	153	1600
3029HFC03	48	64	36	48	2400	48	64	2400	260	192	1600
3029HFC03	48	64	36	48	2200	48	64	2200	260	192	1600
3029HFC03	55	74	36	48	2400	55	74	2400	292	215	1600
3029HFC03	55	74	36	48	2200	55	74	2200	304	224	1600

Torque rise	Low-speed torque (1000 rpm)
up to 33%	up to 117%

Bore		Stroke		Length		Width		Height		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
106	4.2	110	4.3	676	26.6	577	22.7	956	37.6	251	554

Additional features

– High- and low-profile turbo configurations
– Optional engine-mounted exhaust filter

PowerTech EWX 4.5L engines

Final Tier 4 and Stage III B/Stage V engines

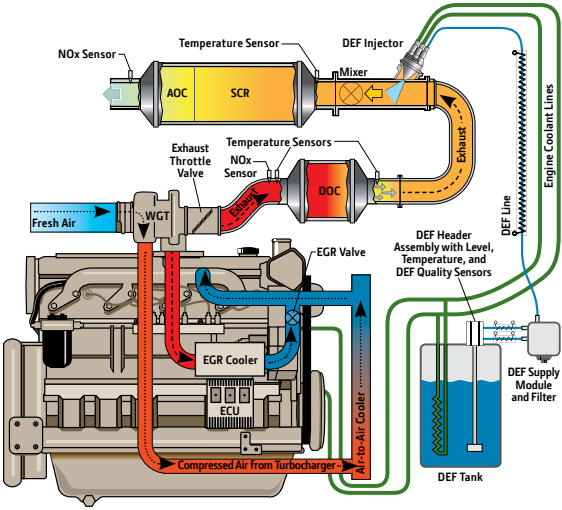
Engine model	Intermittent power		Continuous power		Rated speed	Peak power		Peak power	Peak torque		Peak torque
	kW	hp	kW	hp	rpm	kW	hp	rpm	Nm	lb-ft	rpm
4045TFC03	55	74	55	74	2400	55	74	2400	292	215	1600
4045TFC03	55	74	55	74	2200	55	74	2200	304	224	1600

Torque rise	Low-speed torque (1000 rpm)
up to 33%	up to 120%

Bore		Stroke		Length		Width		Height		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
106	4.2	127	5.0	860	33.9	612	24.1	856	33.7	387	851

PowerTech PWL 4.5L engines

Efficiency, performance, and simplicity.



Engine	Power ratings	Valves per cylinder	Turbo
PowerTech PWL 4.5L	63 – 104 kW (85 – 140 hp)	4-valve	WGT

Engine	Cooled EGR	Aftertreatment	Exhaust filter size	Exhaust filter dosing	SCR size
PowerTech PWL 4.5L	Yes	DOC/SCR	2	N/A	3

PowerTech PWL 4.5L engines

Final Tier 4/Stage IV engines

Engine model	Intermittent power		Continuous power		Rated speed	Peak power		Peak power	Peak torque		Peak torque
	kW	hp	kW	hp	rpm	kW	hp	rpm	Nm	lb-ft	rpm
4045HFC04	63	85	63	85	2400	63	85	2400	333	246	1600
4045HFC04	63	85	63	85	2400	68	91	2200	333	246	1600
4045HFC04	63	85	63	85	2200	63	85	2200	363	268	1600
4045HFC04	63	85	63	85	2200	68	91	2000	363	268	1600
4045HFC04	74	99	74	99	2400	74	99	2400	391	288	1600
4045HFC04	74	99	74	99	2400	80	107	2200	391	288	1600
4045HFC04	74	99	74	99	2200	74	99	2200	427	315	1600
4045HFC04	74	99	74	99	2200	80	107	2000	427	315	1600
4045HFC04	86	115	86	115	2400	86	115	2400	461	340	1600
4045HFC04	86	115	86	115	2200	86	115	2200	490	361	1600
4045HFC04	93	125	86	115	2400	93	125	2400	493	364	1600
4045HFC04	93	125	86	115	2200	93	125	2200	536	395	1600
4045HFC04	100	134	86	115	2400	100	134	2400	540	398	1600
4045HFC04	104	140	86	115	2200	104	140	2200	540	398	1600

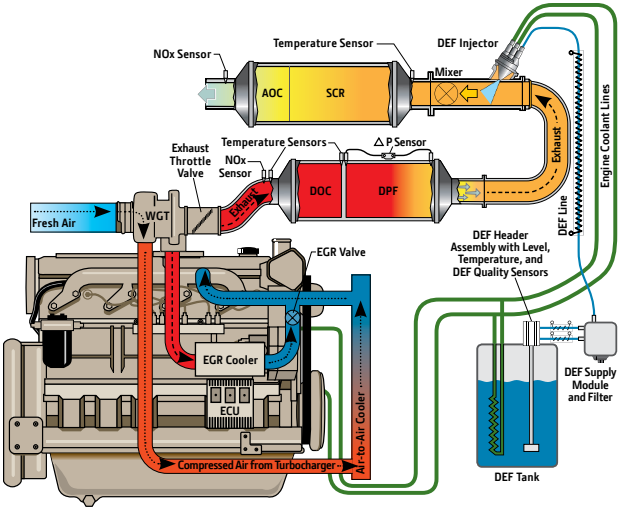
Power bulge	Torque rise	Low-speed torque (1000 rpm)
Up to 8%	Up to 36%	Up to 123%

Bore		Stroke		Length		Width		Height		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
106	4.2	127	5.0	867	34.1	680	26.8	1076	41.5	540	1191

PowerTech PWS 4.5L engines

READY TO RUN STAGE V

Ready to meet Stage V emissions regulations.



Engine	Power ratings	Valves per cylinder	Turbo
PowerTech PWS 4.5L	63 – 104 kW (85 – 140 hp)	4-valve	WGT

Engine	Cooled EGR	Aftertreatment	Exhaust filter size	Exhaust filter dosing	SCR size
PowerTech PWS 4.5L	Yes	DOC/DPF/SCR	2	Internal	3

PowerTech PWS 4.5L engines

Final Tier 4/Stage IV/Stage V engines

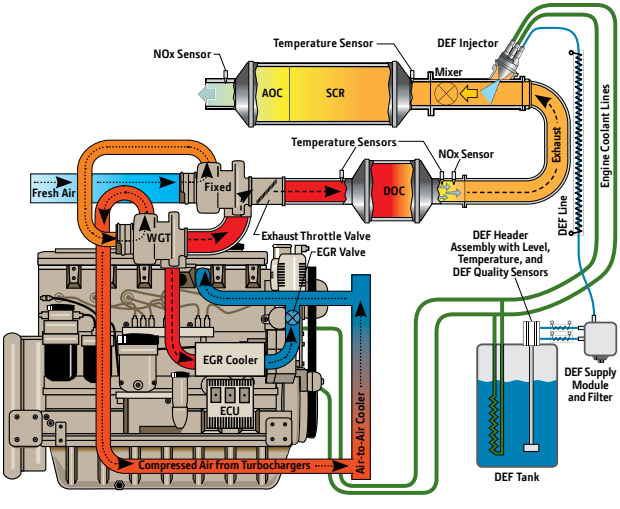
Engine model	Intermittent power		Continuous power		Rated speed	Peak power		Peak power	Peak torque		Peak torque
	kW	hp	kW	hp	rpm	kW	hp	rpm	Nm	lb-ft	rpm
4045HFC07	93	125	86	115	2400	93	125	2400	494	364	1600
4045HFC07	104	140	86	115	2400	104	140	2200	540	398	1600

Power bulge	Torque rise	Low-speed torque (1000 rpm)
Up to 8%	Up to 35%	Up to 122%

Bore		Stroke		Length		Width		Height		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
106	4.2	127	5.0	867	34.1	680	26.8	1076	41.5	540	1191

PowerTech PSL 4.5L engines

Performance and fluid efficiency.



Engine	Power ratings	Valves per cylinder	Turbo
PowerTech PSL 4.5L	93 – 129 kW (125 – 173 hp)	4-valve	Series

Engine	Cooled EGR	Aftertreatment	Exhaust filter size	Exhaust filter dosing	SCR size
PowerTech PSL 4.5L	Yes	DOC/SCR	3	N/A	3

PowerTech PSL 4.5L engines

Final Tier 4/Stage IV

Engine model	Intermittent power		Continuous power		Rated speed	Peak power		Peak power	Peak torque		Peak torque
	kW	hp	kW	hp	rpm	kW	hp	rpm	Nm	lb-ft	rpm
4045HFC06	93	125	93	125	2200	96	129	1900	537	396	1600
4045HFC06	93	125	93	125	2400	95	127	2100	494	364	1600
4045HFC06	104	139	104	139	2200	107	143	1900	601	443	1600
4045HFC06	104	139	104	139	2400	106	142	2100	552	407	1600
4045HFC06	116	156	105	141	2400	116	156	2200	616	454	1600
4045HFC06	129	173	108	145	2200	129	173	2200	667	492	1600
4045HFC06	129	173	105	141	2400	129	173	2200	667	492	1600

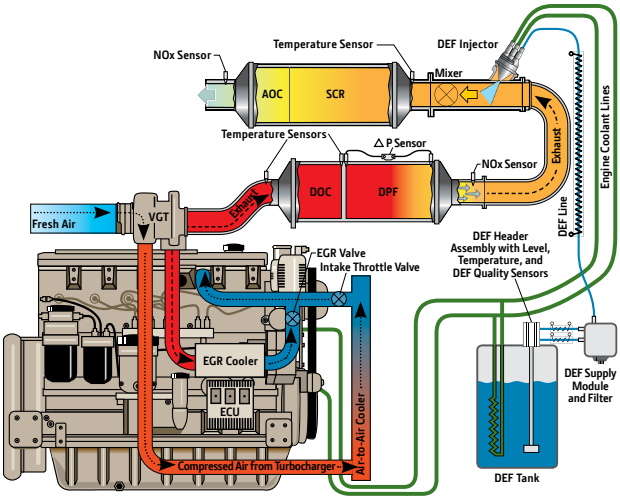
Power bulge	Torque rise	Low-speed torque (1000 rpm)
Up to 3%	Up to 34%	Up to 124%

Bore		Stroke		Length		Width		Height		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
106	4.2	127	5.0	870	34.3	635	25	1130	44.5	570	1257

PowerTech PVS 6.8L engines

READY TO RUN STAGE V

More power and fluid economy.



Engine	Power ratings	Valves per cylinder	Turbo
PowerTech PVS 6.8L	104–129 kW (140–173 hp)	4-valve	VGT
PowerTech PVS 6.8L	138–187 kW (185–250 hp)	4-valve	VGT

Engine	Cooled EGR	Aftertreatment	Exhaust filter size	Exhaust filter dosing	SCR size
PowerTech PVS 6.8L	Yes	DOC/DPF/SCR	3	Internal	3
PowerTech PVS 6.8L	Yes	DOC/DPF/SCR	4	Internal	4

PowerTech PVS 6.8L engines

Final Tier 4/Stage IV/Stage V engines

Engine model	Intermittent power		Continuous power		Rated speed	Peak power		Peak power	Peak torque		Peak torque
	kW	hp	kW	hp	rpm	kW	hp	rpm	Nm	lb-ft	rpm
6068HFC08	104	140	104	140	2400	104	140	2400	552	407	1600
6068HFC08	104	140	104	140	2400	112	150	2200	552	407	1600
6068HFC08	104	140	104	140	2200	104	140	2200	602	444	1600
6068HFC08	104	140	104	140	2200	112	150	2000	602	444	1600
6068HFC08	116	155	116	155	2400	116	155	2400	616	454	1600
6068HFC08	116	155	116	155	2400	125	168	2200	616	454	1600
6068HFC08	116	155	116	155	2200	116	155	2200	670	494	1600
6068HFC08	116	155	116	155	2200	125	168	2000	670	494	1600
6068HFC08	129	173	129	173	2400	129	173	2400	684	504	1600
6068HFC08	129	173	129	173	2400	139	186	2200	684	504	1600
6068HFC08	129	173	129	173	2200	129	173	2200	740	546	1600
6068HFC08	129	173	129	173	2200	139	186	2000	740	546	1600
6068HFC08	138	185	138	185	2400	138	185	2400	741	547	1600
6068HFC08	138	185	138	185	2400	152	204	2200	741	547	1600
6068HFC08	138	185	138	185	2200	152	204	2000	809	597	1600
6068HFC08	138	185	138	185	2000	152	204	1800	890	656	1600
6068HFC08	149	200	149	200	2400	149	200	2400	800	590	1600
6068HFC08	149	200	149	200	2400	164	220	2200	800	590	1600
6068HFC08	149	200	149	200	2200	164	220	2000	873	644	1600
6068HFC08	149	200	149	200	2000	164	220	1800	963	710	1600
6068HFC08	168	225	149	200	2400	168	225	2400	900	664	1600
6068HFC08	168	225	149	200	2400	185	248	2200	900	664	1600
6068HFC08	168	225	149	200	2200	185	248	2000	970	715	1600
6068HFC08	168	225	149	200	2000	185	248	1800	1000	738	1600
6068HFC08	187	250	149	200	2400	190	255	2200	1000	738	1600
6068HFC08	187	250	149	200	2200	190	255	2000	1000	738	1600
6068HFC08	187	250	149	200	2000	187	250	2000	1000	738	1600

Power bulge	Torque rise	Low-speed torque (1000 rpm)
Up to 10%	Up to 35%	Up to 128%

Bore		Stroke		Length		Width		Height		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
106	4.2	127	5.0	1161	45.7	716	28.2	1147	45.2	730	1614

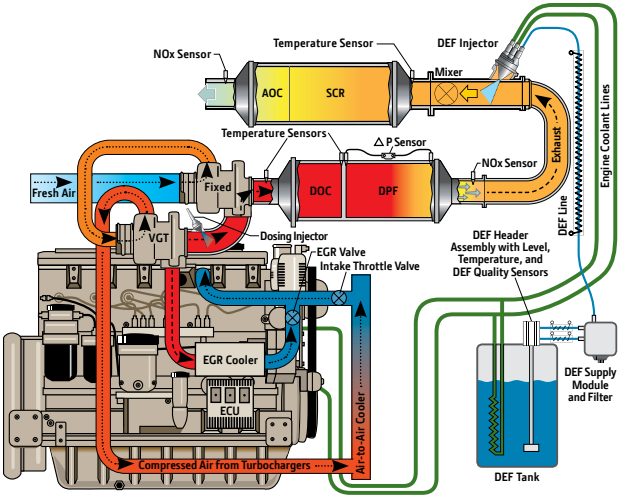
Additional features

- Glow plugs for fast starts in cold climates
- Aluminum piston with integrated oil-cooled gallery
- Low-pressure fuel system with electrical transfer pump and “auto-prime” feature

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

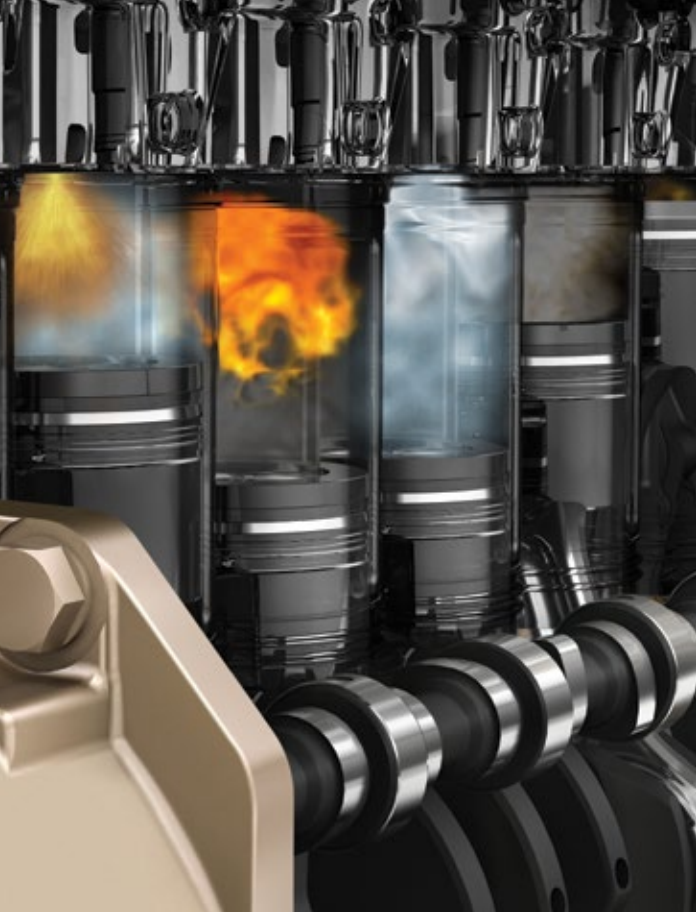
READY TO RUN STAGE V

Best power density and fluid efficiency.



PowerTech PSS 9.0L and 13.5L engine configuration shown.

Engine	Power ratings	Valves per cylinder	Turbo
PowerTech PSS 4.5L	93 – 104 kW (125 – 140 hp)	4-valve	Series
PowerTech PSS 4.5L	116 – 129 kW (155 – 173 hp)	4-valve	Series
PowerTech PSS 6.8L	168 kW (225 hp)	4-valve	Series
PowerTech PSS 6.8L	187 kW (250 hp)	4-valve	Series
PowerTech PSS 6.8L	187 – 224 kW (250 – 300 hp)	4-valve	Series
PowerTech PSS 9.0L	187 – 242 kW (250 – 325 hp)	4-valve	Series
PowerTech PSS 9.0L	261 – 317 kW (350 – 425 hp)	4-valve	Series
PowerTech PSS 13.5L	309 – 448 kW (414 – 600 hp)	4-valve	Series



Cooled EGR	Aftertreatment	Exhaust filter size	Exhaust filter dosing	SCR size
Yes	DOC/DPF/SCR	3	Internal	3
Yes	DOC/DPF/SCR	4	Internal	4
Yes	DOC/DPF/SCR	4	Internal	4
Yes	DOC/DPF/SCR	4	Internal	4
Yes	DOC/DPF/SCR	5	Internal	5
Yes	DOC/DPF/SCR	5	External	5
Yes	DOC/DPF/SCR	6	External	6
Yes	DOC/DPF/SCR	7	External	7

PowerTech PSS 4.5L engines

Final Tier 4/Stage IV/Stage V engines

Engine model	Intermittent power		Continuous power		Rated speed	Peak power		Peak power	Peak torque		Peak torque
	kW	hp	kW	hp	rpm	kW	hp	rpm	Nm	lb-ft	rpm
4045HFC09	93	125	93	125	2400	93	125	2400	494	364	1600
4045HFC09	93	125	93	125	2400	100	134	2200	494	364	1600
4045HFC09	93	125	93	125	2200	93	125	2200	537	396	1600
4045HFC09	93	125	93	125	2200	100	134	2000	537	396	1600
4045HFC09	104	140	104	140	2400	104	140	2400	552	407	1600
4045HFC09	104	140	104	140	2400	112	151	2200	552	407	1600
4045HFC09	104	140	104	140	2200	104	140	2200	601	443	1600
4045HFC09	104	140	104	140	2200	112	151	2000	601	443	1600
4045HFC09	116	155	104	140	2400	116	155	2400	616	454	1600
4045HFC09	116	155	104	140	2400	125	168	2200	616	454	1600
4045HFC09	116	155	104	140	2200	116	155	2200	667	492	1600
4045HFC09	116	155	104	140	2200	125	167	2000	667	492	1600
4045HFC09	129	173	104	140	2400	129	173	2400	667	492	1600
4045HFC09	129	173	104	140	2200	129	173	2200	667	492	1600

Power bulge	Torque rise	Low-speed torque (1000 rpm)
Up to 8%	Up to 33%	Up to 129%

Bore		Stroke		Length		Width		Height		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
106	4.2	127	5.0	867	34.1	826	32.5	987	38.9	575	1265

Additional features

– Glow plugs for fast starts in cold climates

PowerTech PSS 6.8L engines

Final Tier 4/Stage IV/Stage V engines

Engine model	Intermittent power		Continuous power		Rated speed	Peak power		Peak power	Peak torque		Peak torque
	kW	hp	kW	hp	rpm	kW	hp	rpm	Nm	lb-ft	rpm
6068HFC09	168	225	168	225	2400	185	248	2200	1000	738	1600
6068HFC09	168	225	168	225	2200	182	244	2000	1000	738	1600
6068HFC09	187	250	187	250	2400	187	250	2400	1026	757	1600
6068HFC09	187	250	187	250	2200	187	250	2200	1026	757	1600
6068HFC09	205	275	187	250	2400	205	275	2400	1057	780	1700
6068HFC09	205	275	187	250	2200	205	275	2200	1057	780	1700
6068HFC09	224	300	187	250	2400	224	300	2400	1057	780	1700
6068HFC09	224	300	187	250	2200	224	300	2200	1057	780	1700

Power bulge	Torque rise	Low-speed torque (1000 rpm)
Up to 10%	Up to 49%	Up to 120%

Bore		Stroke		Length		Width		Height		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
106	4.2	127	5.0	1161	45	768	30.2	1144	45.0	750	1653

Additional features

- Glow plugs for fast starts in cold climates
- Single-piece low-friction steel piston with integrated oil-cooled gallery
- Directed top-liner cooling

PowerTech PSS 9.0L engines

Final Tier 4/Stage IV/Stage V engines

Engine model	Intermittent power		Continuous power		Rated speed	Peak power		Peak power	Peak torque		Peak torque
	kW	hp	kW	hp	rpm	kW	hp	rpm	Nm	lb-ft	rpm
6090HFC09	187	250	187	250	2200	192	257	2000	1120	826	1600
6090HFC09	187	250	187	250	2200	206	276	2000	1120	826	1600
6090HFC09	187	250	187	250	2000	206	276	1800	1232	909	1600
6090HFC09	205	275	205	275	2200	210	282	2000	1228	906	1600
6090HFC09	205	275	205	275	2200	226	303	2000	1228	906	1600
6090HFC09	205	275	205	275	2000	226	303	1800	1351	996	1600
6090HFC09	224	300	224	300	2200	229	307	2000	1341	989	1600
6090HFC09	224	300	224	300	2200	247	331	2000	1341	989	1600
6090HFC09	224	300	224	300	2000	246	330	1800	1477	1089	1600
6090HFC09	242	325	242	325	2200	248	333	2000	1450	1069	1600
6090HFC09	242	325	242	325	2200	266	357	2000	1450	1069	1600
6090HFC09	242	325	242	325	2000	266	357	1800	1595	1176	1600
6090HFC09	261	350	242	325	2200	267	358	2000	1563	1153	1600
6090HFC09	261	350	242	325	2200	287	385	2000	1563	1153	1600
6090HFC09	261	350	242	325	2000	287	385	1800	1685	1243	1600
6090HFC09	280	375	242	325	2200	286	384	2000	1671	1232	1600
6090HFC09	280	375	242	325	2200	308	413	2000	1671	1232	1600
6090HFC09	280	375	242	325	2000	301	404	1800	1685	1243	1600
6090HFC09	298	400	242	325	2200	298	400	2200	1685	1243	1600
6090HFC09	298	400	242	325	2200	316	424	2000	1685	1243	1600
6090HFC09	298	400	242	325	2000	301	404	1800	1685	1243	1600
6090HFC09*	317	425	242	325	2200	317	425	2200	1685	1243	1600

*Restricted Rating - Requires Application Engineering Approval

Power bulge	Torque rise	Low-speed torque (1000 rpm)
Up to 10%	Up to 38%	Up to 132%

Bore		Stroke		Length		Width		Height		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
118	4.6	136	5.4	1271	50.0	856	33.7	1265	49.8	1044	2301

Additional features

- Single-piece low-friction steel piston with integrated oil-cooled gallery
- Directed top-liner cooling
- Optional rear PTO

PowerTech PSS 13.5L engines

Final Tier 4/Stage IV/Stage V engines

Engine model	Intermittent power		Continuous power		Rated speed	Peak power		Peak power	Peak torque		Peak torque
	kW	hp	kW	hp	rpm	kW	hp	rpm	Nm	lb-ft	rpm
6135HFC09	309	414	309	414	2100	326	437	1700	1986	1465	1550
6135HFC09	309	414	309	414	2100	352	472	1900	1985	1464	1550
6135HFC09	317	425	317	425	2100	335	449	1700	2037	1502	1550
6135HFC09	317	425	317	425	2100	361	485	1900	2037	1502	1550
6135HFC09	336	450	336	450	2100	355	476	1700	2160	1593	1550
6135HFC09	336	450	336	450	2100	376	505	1900	2160	1593	1550
6135HFC09	373	500	373	500	2100	394	528	1700	2397	1768	1550
6135HFC09	373	500	373	500	2100	418	560	1900	2397	1768	1550
6135HFC09	392	525	373	500	2100	413	554	1700	2520	1859	1550
6135HFC09	392	525	373	500	2100	439	589	1900	2520	1859	1550
6135HFC09	410	550	373	500	2100	432	579	1700	2640	1947	1550
6135HFC09	410	550	373	500	2100	459	616	1900	2640	1947	1550
6135HFC09	448	600	373	500	2100	460	617	1900	2750	2028	1550

Power bulge	Torque rise	Low-speed torque (1000 rpm)
Up to 14%	Up to 42%	Up to 122%

Bore		Stroke		Length		Width		Height		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
132	5.2	165	6.5	1547	60.9	961	37.8	1547	60.9	1542	3400

Additional features

- Single-piece low-friction steel piston with integrated oil-cooled gallery
- Directed top-liner cooling
- Optional rear PTO

Engine technology glossary

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.

Air-to-air aftercooled

This is the most efficient method of cooling that helps reduce engine emissions while maintaining low-speed torque, transient response time, and peak torque.

Turbocharged

In turbocharged engines, the air is precompressed. 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.

Wastegate turbocharger (WGT)

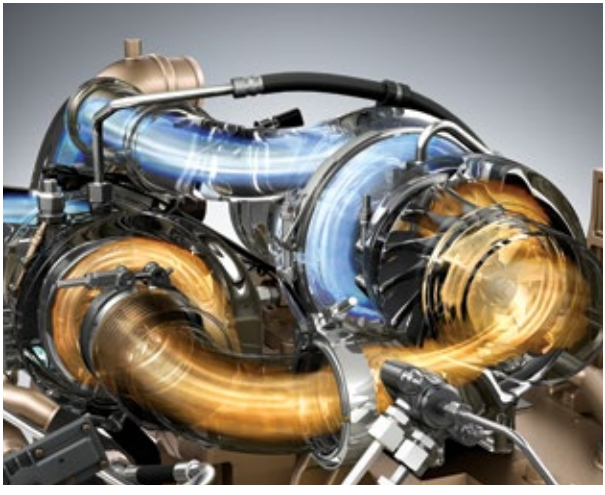
Wastegate turbochargers are designed to develop more airflow at lower engine speeds to improve low-speed torque. They deliver improved low installed cost, transient response, and higher peak torque without compromising engine envelope size.

Variable geometry turbocharger (VGT)

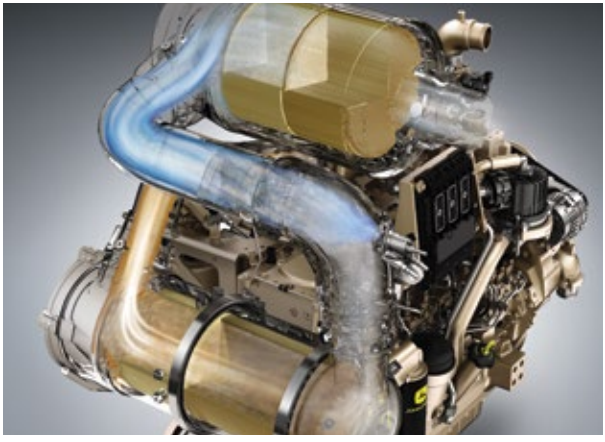
The VGT varies exhaust pressure based on load and speed to ensure proper EGR flow. The combination of the cooled EGR and VGT provide low-speed torque, quicker transient response, higher peak torque, and world-class fluid economy.

Series turbochargers

Fresh air is drawn into the low-pressure turbocharger (fixed geometry), where air pressure is boosted. This pressurized or boosted air is then drawn into the high-pressure turbocharger (VGT or WGT), where air intake pressure is further raised. Series turbocharging delivers higher power density, improved low-speed torque, increased durability, and improved high-altitude operation.



Engine technology glossary continued



Exhaust filters

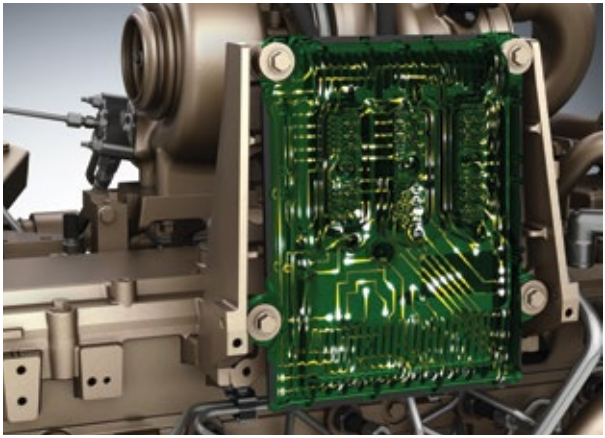
Exhaust filters are used to reduce particulate matter. Engines with diesel particulate filter (DPF) technology are Stage V ready.

Diesel oxidation catalyst (DOC)

The DOC reacts with exhaust gases to reduce carbon monoxide, hydrocarbons, and some PM.

Selective catalytic reduction (SCR)

Ammonia in the diesel exhaust fluid (DEF) mixes with engine exhaust gases in the SCR catalyst to reduce NOx — converting it to nitrogen and water vapor.



Engine control unit (ECU)

The ECU is an electronic interface that manages both the engine and the aftertreatment system.

High-pressure common-rail (HPCR)

The HPCR fuel system and ECU provide variable common-rail pressure, multiple injections, and higher injection pressures. They also control fuel injection timing and provide precise control for the start, duration, and end of injection.

Electronic unit injector (EUI)

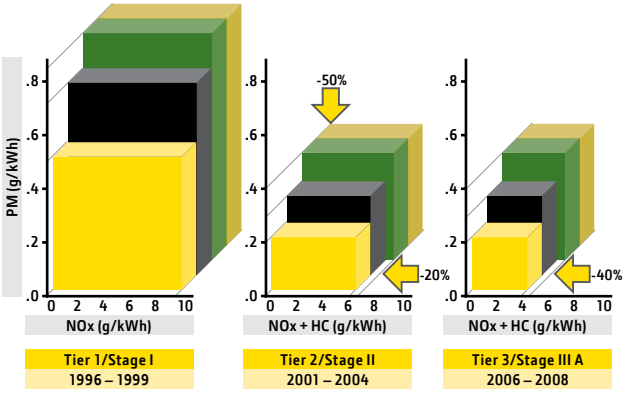
The EUI fuel system and ECU provide higher injection pressures up to 2,350 bar (34,000 psi). They also control fuel injection timing and provide precise control for start, duration, and end of injection.

Emissions information

John Deere worked closely with equipment manufacturers to identify customer needs. The result is engines that provide the ultimate in performance, uptime, efficiency, and emissions compliance.

John Deere engines comply with nonroad emissions regulations for the U.S. Environmental Protection Agency (EPA), the European Union (EU), the California Air Resources Board (CARB), many air-quality districts, and most nonattainment zones.

EPA and EU nonroad emissions regulations:



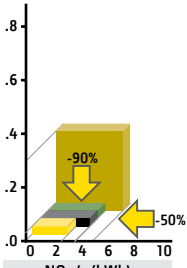
NOx – Nitrogen oxides, which react in the atmosphere with hydrocarbons
HC – Hydrocarbons, a byproduct of combustion
PM – Particulate matter, a non-gaseous product of combustion

Questions about emissions technology?

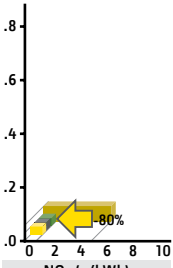
Our Frequently Asked Questions page is a great place to start.

JohnDeere.com/Tier4FAQ

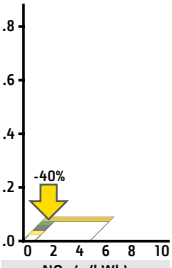
37 – 560 kW (50 – 750 hp)



Interim Tier 4/Stage III B
2008 – 2013



Final Tier 4/Stage IV
Beginning 2012



Stage V*
Beginning 2019

*John Deere engines with a diesel particulate filter are ready to meet Stage V emissions regulations.

LEGEND:
- **37 – 55 kW (50 – 74 hp)**
- **56 – 74 kW (75 – 99 hp)**
- **75 – 129 kW (100 – 173 hp)**
- **130 – 560 kW (174 – 750 hp)**

Using diesel exhaust fluid

What is DEF?

DEF, or diesel exhaust fluid, is used in a selective catalytic reduction (SCR) system to remove nitrogen oxides (NOx) from engine exhaust.

Handling and storing diesel exhaust fluid

DEF should be stored in a sealed container, in the shade where possible, and out of extreme temperatures.
DEF should be crystal clear with a light ammonia smell.
If DEF appears cloudy, has a colored tint, or has a profound ammonia smell, it should not be used.

One source for maintenance fluids

DEF joins the John Deere family of fluid solutions including Plus-50™ II engine oil and Cool-Gard™ II coolant. Your John Deere dealer is one source for all your service fluid needs.

Packaging will vary worldwide.

Proven engine accessories built for tough off-highway use

Save development time

Because all engine accessories and parts are qualified by John Deere, you know they will work seamlessly. That means you can integrate our engines into your machines with shorter program lead times and fewer engineering requirements.

Fully supported by the John Deere network

Whether you need a complete engine package or an individual part, you can get fast service and support from your John Deere engine distributor or any of our 4,000+ service dealers around the world.

Conversions

From English to SI (Metric)

Torque
Nm = 1.3558 x lb-ft
lb-ft = .73756 x Nm
Nm = (9549 x kW)/rpm
lb-ft = (5252 x hp)/rpm

Power
hp = kW x 1.341
kW = hp x .746
kW = (torque (Nm) x rpm)/9549
Hp = (torque (lb-ft) x rpm)/5252

Nm = Newton meters
lb-ft = foot-pounds
kW = kilowatts
hp = horsepower

Torque Rise
% Torque rise = max torque/torque at rated speed

Power Bulge
Power bulge = maximum power/power at rated speed

Intermittent Power Rating*
For industrial applications that operate where power and/or speeds are cyclic and do not exceed an average load or annual usage factor. Typical applications include air compressors, concrete saws, compactors, crushers, forklifts, street sweepers, specialty harvesters, winches, and wood chippers.

Continuous Power Rating*
For industrial applications where the engine is operated at a constant power and speed, on a continuous basis (100% of time), without interruption. Typical applications are dewatering pumps and irrigation pumps.

*Descriptions and applications are for reference only. Contact your John Deere engine distributor or dealer for final determination of the appropriate rating.

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.

We have centralized parts warehouses in the United States and Europe, plus numerous worldwide depots that employ overnight parts shipping — so you'll never have to wait long for parts.

In addition, John Deere service personnel are highly qualified technicians who stay on top of changing engine technologies and service techniques.

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.


JOHN DEERE

Worldwide locations

North America, South America, Brazil, and Caribbean
John Deere Power Systems
3801 West Ridgeway Avenue
P.O. Box 5100
Waterloo, IA 50704-5100
Phone: +1 800 533 6446 (U.S.)
Phone: +1 319 292 6060 (Canada)
Fax: +1 319 292 5075
Email: jdpower@JohnDeere.com

Mexico and Central America
Industrias John Deere S.A. de C.V.
Boulevard Diaz Ordaz No. 500
Garza Garcia, Nuevo Leon 66210
Mexico
Phone: +52 81 8288 1212
Fax: +52 81 8288 8284
Email: mexweb@JohnDeere.com

Europe, Africa, and Middle East
John Deere Power Systems
Orléans-Saran Unit
La Foulonnerie – B.P. 11013
45401 Fleury-les-Aubrais Cedex
France
Phone: +33 2 38 82 61 19
Fax: +33 2 38 84 62 66
Email: jdengine@JohnDeere.com

Australia and New Zealand
John Deere Limited
Power Systems Division
P.O. Box 1545, Browns Plains BC
QLD 4118 Australia
Phone: + 61 7 3802 3222
Fax: +61 7 3803 6555
Email: 23powersystems@JohnDeere.com
JohnDeere.com.au
JohnDeere.co.nz

Far East
John Deere Asia (Singapore) Pte. Ltd.
#06-02/03 Alexandra Point
438 Alexandra Road
119958 Singapore
Phone: +65 (68) 79 88 00
Fax: +65 (62) 78 03 63
Email: JDAsiaEngines@JohnDeere.com

JOHN DEERE

SAFETY
live with it

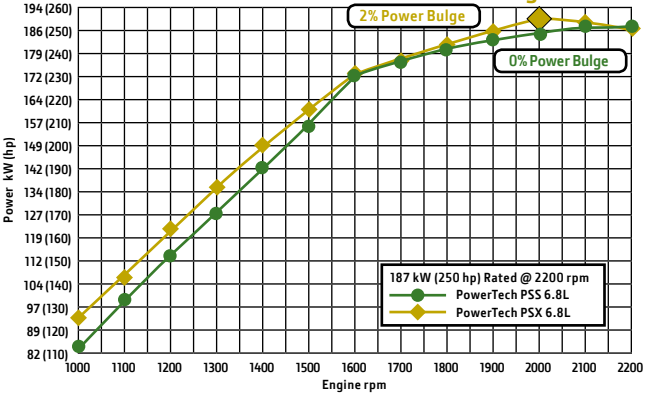
DSWT89 Litho in U.S.A. (17-02)

JohnDeere.com/Engines

Engine performance curves

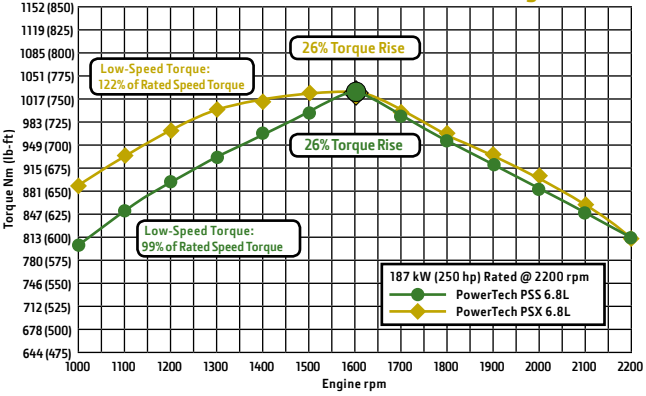
Power curves

PowerTech PSS 6.8L Final Tier 4/Stage IV vs. PowerTech PSX 6.8L Interim Tier 4/Stage III B



Torque curves

PowerTech PSS 6.8L Final Tier 4/Stage IV vs. PowerTech PSX 6.8L Interim Tier 4/Stage III B



PowerTech PSS 9.0L engines

- Power range: 187 – 317 kW (250 – 425 hp)
- Power bulge — up to 10%
- Peak torque — up to 1,685 Nm (1,243 lb-ft)
- Torque rise — up to 38%
- Low-speed (1000 rpm) torque — up to 132% of rated speed torque
- Transient response comparable to Interim Tier 4/Stage III B
- Cold-starting capabilities that meet or exceed Interim Tier 4/ Stage III B

PowerTech PSS 9.0L
Final Tier 4 /Stage IV engines

Engine model	Intermittent power		Continuous power		Rated speed	Peak power		Peak power	Peak torque		Peak torque
	kW	hp	kW	hp	rpm	kW	hp	rpm	Nm	lb-ft	rpm
6090HFC09	187	250	187	250	2200	192	257	2000	1120	826	1600
6090HFC09	187	250	187	250	2200	206	276	2000	1120	826	1600
6090HFC09	187	250	187	250	2000	206	276	1800	1232	909	1600
6090HFC09	205	275	205	275	2200	210	282	2000	1228	906	1600
6090HFC09	205	275	205	275	2200	226	303	2000	1228	906	1600
6090HFC09	205	275	205	275	2000	226	303	1800	1351	996	1600
6090HFC09	224	300	224	300	2200	229	307	2000	1341	989	1600
6090HFC09	224	300	224	300	2200	247	331	2000	1341	989	1600
6090HFC09	224	300	224	300	2000	246	330	1800	1477	1089	1600
6090HFC09	242	325	242	325	2200	248	333	2000	1450	1069	1600
6090HFC09	242	325	242	325	2200	266	357	2000	1450	1069	1600
6090HFC09	242	325	242	325	2000	266	357	1800	1595	1176	1600
6090HFC09	261	350	242	325	2200	267	358	2000	1563	1153	1600
6090HFC09	261	350	242	325	2200	287	385	2000	1563	1153	1600
6090HFC09	261	350	242	325	2000	287	385	1800	1685	1243	1600
6090HFC09	280	375	242	325	2200	286	384	2000	1671	1232	1600
6090HFC09	280	375	242	325	2200	308	413	2000	1671	1232	1600
6090HFC09	280	375	242	325	2000	301	404	1800	1685	1243	1600
6090HFC09	298	400	242	325	2200	298	400	2200	1685	1243	1600
6090HFC09	298	400	242	325	2200	316	424	2000	1685	1243	1600
6090HFC09	298	400	242	325	2000	301	404	1800	1685	1243	1600
6090HFC09*	317	425	242	325	2200	317	425	2200	1685	1243	1600

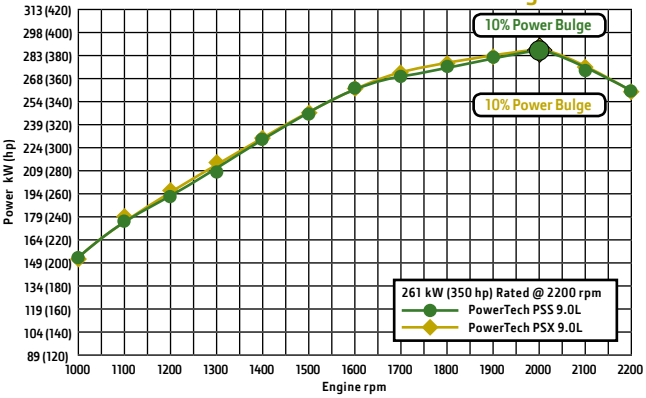
*Restricted Rating - Requires Application Engineering Approval

Bore		Stroke		Length		Width		Height		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
118	4.6	136	5.4	1271	50.0	856	33.7	1265	49.8	1044	2301

Engine performance curves

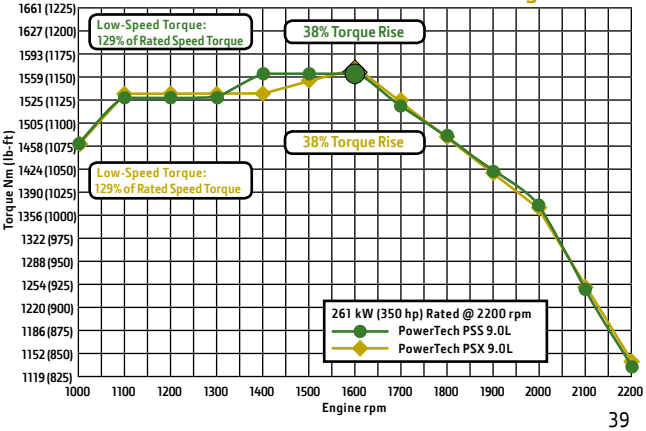
Power curves

PowerTech PSS 9.0L Final Tier 4/Stage IV vs. PowerTech PSX 9.0L Interim Tier 4/Stage III B



Torque curves

PowerTech PSS 9.0L Final Tier 4/Stage IV vs. PowerTech PSX 9.0L Interim Tier 4/Stage III B



PowerTech PSS 13.5L engines

- Power range: 309 – 448 kW (414 – 600 hp)
- Power bulge — up to 14%
- Peak torque — up to 2,750 Nm (2,028 lb-ft)
- Torque rise — up to 42%
- Low-speed (1000 rpm) torque — up to 122% of rated speed torque
- Transient response comparable to Interim Tier 4/Stage III B
- Cold-starting capabilities that meet or exceed Interim Tier 4/ Stage III B

PowerTech PSS 13.5L
Final Tier 4/Stage IV engines

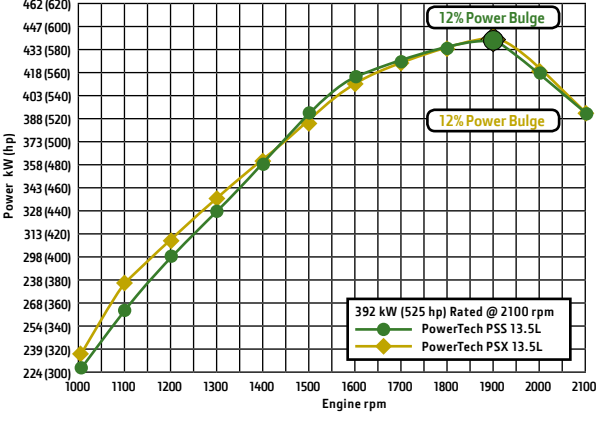
Engine model	Intermittent power		Continuous power		Rated speed	Peak power		Peak power	Peak torque		Peak torque
	kW	hp	kW	hp	rpm	kW	hp	rpm	Nm	lb-ft	rpm
6135HFC09	309	414	309	414	2100	326	437	1700	1986	1465	1550
6135HFC09	309	414	309	414	2100	352	472	1900	1985	1464	1550
6135HFC09	317	425	317	425	2100	335	449	1700	2037	1502	1550
6135HFC09	317	425	317	425	2100	361	485	1900	2037	1502	1550
6135HFC09	336	450	336	450	2100	355	476	1700	2160	1593	1550
6135HFC09	336	450	336	450	2100	376	505	1900	2160	1593	1550
6135HFC09	373	500	373	500	2100	394	528	1700	2397	1768	1550
6135HFC09	373	500	373	500	2100	418	560	1900	2397	1768	1550
6135HFC09	392	525	373	500	2100	413	554	1700	2520	1859	1550
6135HFC09	392	525	373	500	2100	439	589	1900	2520	1859	1550
6135HFC09	410	550	373	500	2100	432	579	1700	2640	1947	1550
6135HFC09	410	550	373	500	2100	459	616	1900	2640	1947	1550
6135HFC09	448	600	373	500	2100	460	617	1900	2750	2028	1550

Bore		Stroke		Length		Width		Height		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
132	5.2	165	6.5	1547	60.9	961	37.8	1547	60.9	1542	3400

Engine performance curves

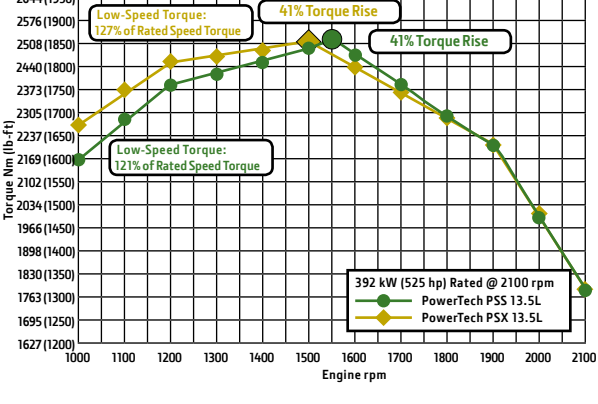
Power curves

PowerTech PSS 13.5L Final Tier 4/Stage IV vs. PowerTech PSX 13.5L Interim Tier 4/Stage III B



Torque curves

PowerTech PSS 13.5L Final Tier 4/Stage IV vs. PowerTech PSX 13.5L Interim Tier 4/Stage III B

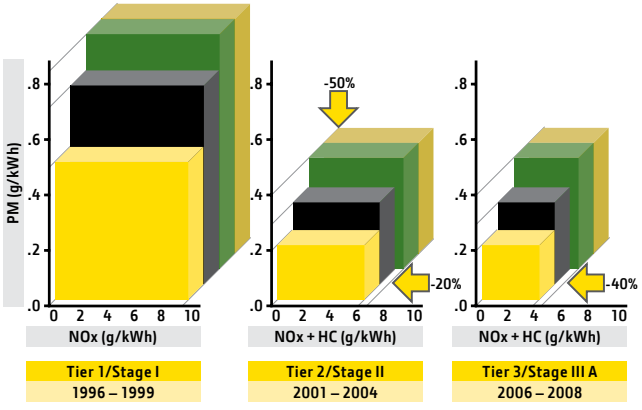


Emissions information

John Deere worked closely with equipment manufacturers to identify customer needs. The result is engines that provide the ultimate in performance, uptime, efficiency, and emissions compliance.

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 and EU nonroad emissions regulations:

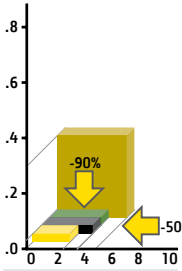


Questions about emissions technology?

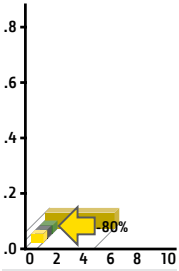
Our Frequently Asked Questions page is a great place to start.

JohnDeere.com/tier4FAQ

37 – 560 kW (50 – 750 hp)



Interim Tier 4/Stage III B
2008 – 2013



Final Tier 4/Stage IV
2012 – 2015

LEGEND:

- 37 – 55 kW (50 – 74 hp)
- 56 – 74 kW (75 – 99 hp)
- 75 – 129 kW (100 – 173 hp)
- 130 – 560 kW (174 – 750 hp)

Using diesel exhaust fluid

What is DEF?

DEF, or diesel exhaust fluid, is used in a selective catalytic reduction (SCR) system to remove nitrogen oxides (NOx) from engine exhaust. The main components of the SCR system include the SCR catalyst, the DEF injector, the DEF tank, and the DEF supply module and filter. DEF is injected into the exhaust stream prior to the SCR catalyst. NOx is converted into harmless nitrogen and water through a chemical reaction.

DEF is 32.5 percent high purity urea and 67.5 percent demineralized water. This ratio provides the lowest possible freeze point. It is colorless, nonflammable, and nontoxic.

Packaging will vary worldwide.

Handling and storing diesel exhaust fluid

DEF should be stored in a sealed container, in the shade where possible, and out of extreme temperatures. DEF freezes at -11° C (12° F), but may be used upon thawing. Exposure to high heat for sustained periods can degrade the quality of DEF. When stored properly, DEF has shelf life that is similar to oils and coolants.

DEF should be crystal clear with a light ammonia smell. If DEF appears cloudy, has a colored tint, or has a profound ammonia smell, it should not be used.

One source for maintenance fluids

Diesel exhaust fluid joins the John Deere family of fluid solutions including Plus-50™ II engine oil and Cool-Gard™ II coolant. Your John Deere dealer is one source for all your service fluid needs.

Proven engine accessories built for tough off-highway use

John Deere engine accessories and trim kits are designed to fit a wide range of engines, models, and applications. This interchangeability lets John Deere engine distributors and OEMs assemble complete engine packages quickly and efficiently. And it offers more selection and component availability.

You can count on John Deere engine accessories to get the job done in agricultural, construction, forestry, mining, generator drive, marine, and other off-highway applications.

Save development time

Because all engine accessories and parts are qualified by John Deere, you know they will work seamlessly. That means you can integrate our engines into your machines with shorter program lead times and fewer engineering requirements. Our application engineering team stands ready to help you integrate John Deere engines into your equipment.

Fully supported by the John Deere network

Whether you need a complete engine package or an individual part, you can get fast service and support from your John Deere engine distributor or any of our 4,000+ service dealers around the world.

Conversions

From English to SI (Metric)

Torque
Nm = 1.3558 x lb-ft
lb-ft = .73756 x Nm
Nm = (9549 x kW)/rpm
lb-ft = (5252 x hp)/rpm

Power
hp = kW x 1.341
kW = hp x .746
kW = (torque (Nm) x rpm)/9549
Hp = (torque (lb-ft) x rpm)/5252

Nm = Newton meters
lb-ft = foot-pounds
kW = kilowatts
hp = horsepower

Torque Rise
% Torque rise = max torque/torque at rated speed

Power Bulge
Power bulge = maximum power/power at rated speed

Intermittent Power Rating*
For industrial applications that operate where power and/or speeds are cyclic and do not exceed an average load or annual usage factor. Typical applications include air compressors, concrete saws, compactors, crushers, forklifts, street sweepers, specialty harvesters, winches, and wood chippers.

Continuous Power Rating*
For industrial applications where the engine is operated at a constant power and speed, on a continuous basis (100% of time), without interruption. Typical applications are dewatering pumps and irrigation pumps.

*Descriptions and applications are for reference only. Contact your John Deere engine distributor or dealer for final determination of the appropriate rating.

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.

We have centralized parts warehouses in the United States and Europe, plus numerous worldwide depots that employ overnight parts shipping — so you'll never have to wait long for parts.

In addition, John Deere service personnel are highly qualified technicians who stay on top of changing engine technologies and service techniques.

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.


JOHN DEERE

Worldwide locations

North America, South America, Brazil, and Caribbean
John Deere Power Systems
3801 West Ridgeway Avenue
P.O. Box 5100
Waterloo, IA 50704-5100
Phone: +1 800 533 6446 (U.S.)
Phone: +1 319 292 6060 (Canada)
Fax: +1 319 292 5075
Email: jdpower@JohnDeere.com

Mexico and Central America
Industrias John Deere S.A. de C.V.
Boulevard Diaz Ordaz No. 500
Garza Garcia, Nuevo Leon 66210
Mexico
Phone: +52 81 8288 1212
Fax: +52 81 8288 8284
Email: mexweb@JohnDeere.com

Europe, Africa, and Middle East
John Deere Power Systems
Orléans-Saran Unit
La Foulonnerie – B.P. 11013
45401 Fleury-les-Aubrais Cedex
France
Phone: +33 2 38 82 61 19
Fax: +33 2 38 84 62 66
Email: jdengine@JohnDeere.com

Australia and New Zealand
John Deere Limited
Power Systems Division
P.O. Box 1545, Browns Plains BC
QLD 4118 Australia
Phone: + 61 7 3802 3222
Fax: +61 7 3803 6555
Email: 23powersystems@JohnDeere.com
JohnDeere.com.au
JohnDeere.co.nz

Far East
John Deere Asia (Singapore) Pte. Ltd.
#06-02/03 Alexandra Point
438 Alexandra Road
119958 Singapore
Phone: +65 (68) 79 88 00
Fax: +65 (62) 78 03 63
Email: JDAsiaEngines@JohnDeere.com

JOHN DEERE

This literature has been compiled for worldwide circulation. While general information, pictures and descriptions are provided, some illustrations and text may include finance, credit, insurance, product options and accessories NOT AVAILABLE in all regions. PLEASE CONTACT YOUR LOCAL DEALER FOR DETAILS. John Deere reserves the right to change specification and design of all products described in this literature without notice.

SAFETY
live with it

DSWT89 Litho in U.S.A. (15-03)

JohnDeere.com/tier4