CALIFORNIA AIR RESOURCES BOARD	JOHN DEERE POWER SYSTEMS	EXECUTIVE ORDER U-R-004-0577 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in California Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-14-012;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2019	KJDXL09.0308	9.0	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Charge Air Cooler, Oxidation Catalyst, Electronic Direct Injection, Electronic Control Module, Exhaust Gas Recirculation, Periodic Trap Oxidizer, Turbocharger, Selective Catalytic Reduction-Urea, Ammonia Oxidation Catalyst	Crane, Loaders, Tractor, Dozer, Pump, Compressor, Generator Set, Other Industrial Equipment

The engine models and codes are attached.

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW ≤ 560	Tier 4 Final	STD	0.19	0.40	N/A	3.5	0.02	N/A	N/A	N/A
		FEL	--	--	--	--	0.01	--	--	--
		CERT	0.001	0.07	--	0.1	0.003	--	--	--

BE IT FURTHER RESOLVED: That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 14 day of December 2018.

Annette Hebert, Chief
Emissions Compliance, Automotive Regulations and Science Division

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Engine Model Summary Form

Manufacturer: John Deere Power Systems
Engine category: Nonroad CI
EPA Engine Family: KJDXL09.0306
Mfr Family Name: 450HCC
Process Code: New Submission

1. Engine code	2. Engine Model	3. kW@RPM (SAE Gross)	4. Fuel Rate: mm/stroke@peak kW (for diesel only)	5. Fuel Rate: (kg/hr)@peak kW (for diesels only)	6. Torque (Nm) @RPM (SEA Gross)	7. Fuel Rate: mm/stroke@peak torque	8. Fuel Rate: (kW/hr)@peak torque	9. Emission Control Device Per SAE J1930
6090HDW29	6090	287@2100	181.7@2100	58.3@2100	1655@1500	226.9@1500	52@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HDW33	6090	287@2100	181.7@2100	58.3@2100	1655@1500	226.9@1500	52@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HDW41	6090	286@1800	207@1800	57@1800	1655@1500	226.9@1500	52@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-A	6090	317@2200	202.4@2200	68.1@2200	1685@1600	239.9@1600	58.7@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-B	6090	298@2200	188.4@2200	63.4@2200	1685@1600	239.1@1600	58.5@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-C	6090	298@2200	187.8@2200	63.2@2200	1685@1600	240.1@1600	58.7@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-D	6090	298@2000	205.3@2000	62.6@2000	1685@1600	238.3@1600	58.3@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-E	6090	280@2200	174.8@2200	58.8@2200	1671@1600	235.6@1600	57.6@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-F	6090	280@2200	174.7@2200	58.7@2200	1671@1600	235.0@1600	57.5@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-G	6090	280@2000	188.9@2000	57.8@2000	1885@1600	237.4@1600	58.1@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-H	6090	261@2200	160.5@2200	54@2200	1563@1600	215.6@1600	52.7@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-I	6090	261@2200	160.5@2200	54@2200	1563@1600	216.2@1600	52.9@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-J	6090	261@2000	173.6@2000	53.1@2000	1685@1600	236.4@1600	57.8@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-K	6090	242@2200	154.3@2200	51.9@2200	1450@1500	204.3@1500	46.9@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-L	6090	242@2200	154.4@2200	51.9@2200	1450@1500	203.1@1500	46.6@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-M	6090	242@2200	165@2200	50.4@2200	1595@1500	224.8@1500	51.6@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-N	6090	224@2200	142.1@2200	47.8@2200	1341@1500	186.9@1500	42.9@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-O	6090	224@2200	142@2200	47.8@2200	1341@1500	187.2@1500	42.9@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-P	6090	224@2000	152.6@2000	48.7@2000	1477@1500	207.3@1500	47.5@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-Q	6090	205@2200	131.1@2200	44.1@2200	1228@1500	170.8@1500	39.2@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-R	6090	205@2200	131.1@2200	44.1@2200	1228@1500	170.8@1500	39.2@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-S	6090	205@2000	139@2000	42.5@2000	1351@1500	188.7@1500	43.3@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-T	6090	187@2200	119.8@2200	40.3@2200	1120@1500	155.5@1500	35.7@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-U	6090	187@2200	119.8@2200	40.3@2200	1120@1500	155.4@1500	35.6@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFC09-V	6090	187@2000	129.1@2000	39.5@2000	1232@1500	171.4@1500	39.3@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFG09-A	6090	326@1800	247.4@1800	68.1@1800				EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFG09-B	6090	297@1800	220.3@1800	60.6@1800				EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFG09-C	6090	273@1800	201.8@1600	55.5@1800				EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFG09-D	6090	237@1800	172.8@1800	47.6@1800				EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HFG09-E	6090	345@1800	264@1800	72.7@1800				EGR PTOX OC SCRC NH3OC DFI TC CAC ECM
6090HH029	6090	335@2200	204.4@2200	68.7@2200	1817@1600	220.0@1600	65@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HN010	6090	320@2200	209.6@2200	70.5@2200	1749@1600	252.7@1600	61.6@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HPRNT6	6090	341@2200	216.5@2200	72.8@2200	1686@1600	266.8@1600	65.3@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HN018	6090	283@2200	177.1@2200	59.6@2200	1655@1500	233.9@1500	53.7@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HT013	6090	289@2000	195.9@2000	59.9@2000	1654@1500	233.5@1500	53.6@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HT013A	6090	283@2200	179.8@2200	60.5@2200	1655@1500	233.5@1500	53.6@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HT014A	6090	289@1900	208.4@1900	59.9@1900	1654@1500	233.5@1500	53.6@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HT018	6090	289@1900	208.4@1900	59.9@1900	1654@1500	233.5@1500	53.6@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HTJ25	6090	289@2000	195.9@2000	59.9@2000	1654@1500	233.5@1500	53.6@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HTJ30	6090	289@2000	194@2000	59.3@2000	1655@1500	229.6@1500	52.6@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HTJ31	6090	289@2000	194@2000	59.3@2000	1655@1500	229.6@1500	52.6@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HTJ32	6090	289@2000	195.9@2000	59.9@2000	1654@1500	233.5@1500	53.6@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HZ027	6090	283@2200	173.7@2200	58.4@2200	1655@1500	226.9@1500	52@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090HZ028	6090	335@2200	204.4@2200	68.7@2200	1817@1600	220.0@1600	65@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC

ANOX

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1. Engine code	2. Engine Model	3. kW@RPM (SAE Gross)	4. Fuel Rate: mm/stroke@peak kW (for diesel only)	5. Fuel Rate: (kg/hr)@peak kW (for diesels only)	6. Torque (Nm) @RPM (SEA Gross)	7. Fuel Rate: mm/stroke@peak torque	8. Fuel Rate: (kW/hr)@peak torque	9. Emission Control Device Per SAE J1930
6090HZ030	6090	327@2100	217.9@2100	70@2100	1749@1600	251.7@1600	61.6@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090RW501	6090	287@2100	185.5@2100	59.6@2100	1655@1500	233.9@1500	53.7@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
6090RW502	6090	327@2100	217.9@2100	70@2100	1749@1600	251.7@1600	61.6@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
*6090RW503A	6090	327@2100	217.9@2100	70@2100	1749@1600	251.7@1600	61.6@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
*6090RW503B	6090	287@2100	181.7@2100	58.3@2100	1655@1500	226.9@1500	52@1500	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC
*6090RW504	6090	335@2100	212.7@2100	68.3@2100	1817@1600	244.9@1600	59.9@1600	EGR PTOX OC SCRC NH3OC ECM DFI TC CAC

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