

Pursuant to the authority vested in the 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)
2016	GJDXL09.0301	9.0	Diesel	8000
<b>SPECIAL FEATURES &amp; EMISSION CONTROL SYSTEMS</b>			<b>TYPICAL EQUIPMENT APPLICATION</b>	
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, Tractor, Loaders, 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	--	0.37	--	--	0.01	--	--	--
		CERT	0.003	0.14	--	0.04	0.004	--	--	--

**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 22<sup>nd</sup> day of December 2015.

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

12-1-2016

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EO#: U-R-004-0518

Engine Model Summary Form

Manufacturer: John Deere Power Systems
Engine category: Nonroad CI
EPA Engine Family: GJDXL09.0301
Mfr Family Name: 450HCA
Process Code: Running Change

Table with 9 columns: 1. Engine code, 2. Engine Model, 3. kW@RPM (SAE Gross), 4. Fuel Rate: mm3/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: mm3/stroke@peak torque, 8. Fuel Rate: (kW/hr)@peak torque, 9. Emission Control Device Per SAE J1930. Rows list various engine models like 6090HDW18A, 6090HFC09A, etc.

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EO#: U-2-004-0518

1. Engine code	2. Engine Model	3. kW@RPM (SAE Gross)	4. Fuel Rate: mm <sup>3</sup> /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 <sup>3</sup> /stroke@peak torque	8. Fuel Rate: (kW/hr)@peak torque	9. Emission Control Device Per SAE J1930
* 6090HTJ20	6090	283@2000	188.5@2000	57.8@2000	1621@1500	225.0@1500	51.6@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090HTJ29	6090	283@2000	188.5@2000	57.8@2000	1621@1500	225.0@1500	51.6@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090HZ015	6090	317@2100	207.5@2100	66.6@2100	1750@1600	246.5@1600	60.3@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW430	6090	272@2100	171.8@2100	55.1@2100	1621@1500	224.5@1500	51.5@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW431	6090	272@2100	171.8@2100	55.1@2100	1621@1500	224.5@1500	51.5@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW434	6090	317@2100	207.5@2100	66.6@2100	1750@1600	246.5@1600	60.3@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW440A	6090	317@2100	207.5@2100	66.6@2100	1750@1600	246.5@1600	60.3@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW440B	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW441A	6090	317@2100	207.5@2100	66.6@2100	1750@1600	246.5@1600	60.3@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW441B	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW442	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW443	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW444	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW445	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW448A	6090	317@2100	207.5@2100	66.6@2100	1750@1600	246.5@1600	60.3@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW448B	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW449A	6090	317@2100	207.5@2100	66.6@2100	1750@1600	246.5@1600	60.3@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW449B	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW450A	6090	317@2100	207.5@2100	66.6@2100	1750@1600	246.5@1600	60.3@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW450B	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW451A	6090	317@2100	207.5@2100	66.6@2100	1750@1600	246.5@1600	60.3@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW451B	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW452	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW452A	6090	317@2100	203.9@2100	66.5@2100	1750@1600	243.0@1600	59.6@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW452B	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW453	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW453A	6090	317@2100	203.9@2100	66.5@2100	1750@1600	243.0@1600	59.6@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW453B	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW454	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW455	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW456	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW457	6090	272@2100	174@2100	55.9@2100	1621@1500	227.1@1500	52.1@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW458	6090	317@2100	203.9@2100	66.5@2100	1750@1600	243.0@1600	59.6@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW459	6090	317@2100	203.9@2100	66.5@2100	1750@1600	243.0@1600	59.6@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW460	6090	317@2100	203.9@2100	66.5@2100	1750@1600	243.0@1600	59.6@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW461	6090	317@2100	203.9@2100	66.5@2100	1750@1600	243.0@1600	59.6@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW462	6090	250@2100	160.4@2100	51.5@2100	1452@1500	205.2@1500	47@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW463	6090	250@2100	160.4@2100	51.5@2100	1452@1500	205.2@1500	47@1500	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW477	6090	317@2100	203.9@2100	66.5@2100	1750@1600	243.0@1600	59.6@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC
6090RW478	6090	317@2100	203.9@2100	66.5@2100	1750@1600	243.0@1600	59.6@1600	EGR ECM PTOX OC SCRC NH3OC DFI TC CAC

\* New rating added for running change