

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-19-095;

**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)
2021	MJDXL04.5315	4.5	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS		TYPICAL EQUIPMENT APPLICATION		
Electronic Control Module, Exhaust Gas Recirculation, Selective Catalyst Reduction-Urea, Electronic Direct Injection, Turbocharger, Charge Air Cooler, Oxidation catalyst, Ammonia Oxidation Catalyst		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) and certification levels (CERT) for non-methane hydrocarbon (NMHC), 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
56 ≤ kW < 130	Tier 4 Final	STD	0.19	0.40	N/A	5.0	0.02	N/A	N/A	N/A
		CERT	0.02	0.33	--	0.1	0.02	--	--	--

**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).

**BE IT FURTHER RESOLVED:** That for the listed engine models which include engines from different power categories in the same engine family, the manufacturer is complying with the more stringent set of standards from the 56 ≤ kW < 130 power categories in conformance with the incorporated Section 1039.230 (e) of the "California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Part 1-D" adopted October 20, 2005 and last amended October 25, 2012.

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 on this 25th day of November 2020.



Allen Lyons, Chief  
 Emissions Certification and Compliance Division

## Attachment: Engine Models

EO #: U-R-004-0605

Family: MJDXL04.5315

Attachment Last Revised: 11/11/2020

Model	Code	Trim	Config	Displacement	Displacement - Units	Peak Power	Peak Power - Units	Peak Power - Speed (rpm)	Peak Power - Fueling	Peak Power - Fuel Units	Peak Torque	Peak Torque - Units	Peak Torque - Speed (rpm)	Peak Torque - Fuel	Peak Torque - Fuel Units	OBD	GHG	Special	Notes
4045	4045HFC04A	N/A	L4	4.5	Liters	104	kilowatt	2200	100.9	mm3/stroke	540	N-m	1600	113.7	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04B	N/A	L4	4.5	Liters	104	kilowatt	2200	100.9	mm3/stroke	540	N-m	1600	114.2	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04C	N/A	L4	4.5	Liters	93	kilowatt	2400	88.6	mm3/stroke	493	N-m	1600	103.1	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04D	N/A	L4	4.5	Liters	93	kilowatt	2200	90.8	mm3/stroke	536	N-m	1600	112.7	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04E	N/A	L4	4.5	Liters	86	kilowatt	2400	82.2	mm3/stroke	461	N-m	1600	96.8	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04F	N/A	L4	4.5	Liters	86	kilowatt	2200	84.6	mm3/stroke	506	N-m	1600	105.8	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04G	N/A	L4	4.5	Liters	80	kilowatt	2200	70.4	mm3/stroke	391	N-m	1600	84.2	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04H	N/A	L4	4.5	Liters	74	kilowatt	2400	70.4	mm3/stroke	391	N-m	1600	84.2	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04I	N/A	L4	4.5	Liters	80	kilowatt	2000	73.5	mm3/stroke	427	N-m	1600	89.3	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04J	N/A	L4	4.5	Liters	74	kilowatt	2200	73.5	mm3/stroke	427	N-m	1600	89.3	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04K	N/A	L4	4.5	Liters	68	kilowatt	2200	63.9	mm3/stroke	333	N-m	1600	72.2	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04L	N/A	L4	4.5	Liters	63	kilowatt	2400	63.9	mm3/stroke	333	N-m	1600	72.2	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04M	N/A	L4	4.5	Liters	68	kilowatt	2000	64.2	mm3/stroke	363	N-m	1600	68.4	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04N	N/A	L4	4.5	Liters	63	kilowatt	2200	64.2	mm3/stroke	363	N-m	1600	68.4	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFC04O	N/A	L4	4.5	Liters	110	kilowatt	2200	107.4	mm3/stroke	540	N-m	1600	113.8	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFG04A	N/A	L4	4.5	Liters	99	kilowatt	1800	115.1	mm3/stroke	525	N-m	1800	115.1	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFG04B	N/A	L4	4.5	Liters	80	kilowatt	1800	92.6	mm3/stroke	424	N-m	1800	92.6	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFG04C	N/A	L4	4.5	Liters	67	kilowatt	1800	77.1	mm3/stroke	355	N-m	1800	77.1	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFG04D	N/A	L4	4.5	Liters	80	kilowatt	1500	106.7	mm3/stroke	508	N-m	1500	106.7	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HFG04E	N/A	L4	4.5	Liters	67	kilowatt	1500	90.8	mm3/stroke	427	N-m	1500	90.8	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HLV73	N/A	L4	4.5	Liters	99	kilowatt	2200	98.2	mm3/stroke	540	N-m	1600	113.2	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HLV76	N/A	L4	4.5	Liters	94	kilowatt	2200	81.5	mm3/stroke	519	N-m	1600	107.9	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HLV78	N/A	L4	4.5	Liters	94	kilowatt	2200	93.4	mm3/stroke	519	N-m	1600	107.9	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HLV78A	N/A	L4	4.5	Liters	99	kilowatt	2200	96.8	mm3/stroke	540	N-m	1600	113.7	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HMC05A	N/A	L4	4.5	Liters	104	kilowatt	2200	102	mm3/stroke	540	N-m	1600	113	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HMC05B	N/A	L4	4.5	Liters	90	kilowatt	2000	85	mm3/stroke	480	N-m	1600	101	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HP075	N/A	L4	4.5	Liters	94	kilowatt	2200	93.4	mm3/stroke	519	N-m	1600	107.9	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HP075A	N/A	L4	4.5	Liters	99	kilowatt	2200	96.8	mm3/stroke	540	N-m	1600	113.7	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HPRNT11	N/A	L4	4.5	Liters	109	kilowatt	2200	99.6	mm3/stroke	577	N-m	1600	123.1	mm3/stroke	N/A	N/A	N/A	N/A
4045	4045HT096	N/A	L4	4.5	Liters	94	kilowatt	2200	93.4	mm3/stroke	519	N-m	1600	107.9	mm3/stroke	N/A	N/A	N/A	N/A