



DOOSAN INFRACORE CO., LTD.

EXECUTIVE ORDER U-R-019-0182
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-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	MDICL01.8LEB	1.794	Diesel	5000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Exhaust Gas Recirculation, Diesel Oxidation Catalyst, Electronic Direct Injection, Turbocharger, Charge Air Cooler, Electronic Control Module			Loader, Tractor, Compressor, Generator Set, Auxiliary Power Unit, Excavator, Forklift, Utility Terrain Vehicle	

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
19 ≤ kW < 56	Tier 4 Final	STD	N/A	N/A	4.7	5.0	0.03	N/A	N/A	N/A
		CERT	--	--	3.6	0.3	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 37 ≤ kW < 56 power category 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 18th day of December 2020.

Allen Lyons, Chief
Emissions Certification and Compliance Division

Attachment: Engine Models

EO #: U-R-019-0182

Family: MDICL01.8LEB

Attachment Last Revised: 11/16/2020

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 Units	OBD	GHG	Special	Notes	
DM01-LEP00	DM01P		I3	1.794	Liters	45.0	kilowatt	2600	51.9	mm3/stroke	202	N-m	1800	62.8	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEP01	DM01P		I3	1.794	Liters	41.0	kilowatt	2500	49.1	mm3/stroke	190	N-m	1600	60.5	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEP02	DM01P		I3	1.794	Liters	41.0	kilowatt	2200	55.2	mm3/stroke	190	N-m	1600	60.5	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEP03	DM01P		I3	1.794	Liters	36.7	kilowatt	2500	44.5	mm3/stroke	180	N-m	1600	54.9	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEP04	DM01P		I3	1.794	Liters	31.3	kilowatt	2200	41.1	mm3/stroke	155	N-m	1600	47.6	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEP05	DM01P		I3	1.794	Liters	24.6	kilowatt	2400	32.5	mm3/stroke	110	N-m	1600	35.3	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEE00	DM01P		I3	1.794	Liters	31.3	kilowatt	2200	41.1	mm3/stroke	155	N-m	1600	47.6	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEE01	DM01P		I3	1.794	Liters	36.4	kilowatt	2200	47.7	mm3/stroke	180	N-m	1600	54.9	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEG00	DM01PP		I3	1.794	Liters	38.1	kilowatt	1800	62	mm3/stroke	202	N-m	1800	62	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEG00	DM01PP		I3	1.794	Liters	30.2	kilowatt	1500	60.8	mm3/stroke	192	N-m	1500	60.8	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEE20	DM01P		I3	1.794	Liters	24.6	kilowatt	2400	32.5	mm3/stroke	110	N-m	1600	35.3	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LER00	DM01P		I3	1.794	Liters	36.2	kilowatt	1800	35.1	mm3/stroke	165	N-m	1800	50.1	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEG01	DM01PP		I3	1.794	Liters	29.5	kilowatt	1800	47.6	mm3/stroke	156.4	N-m	1800	47.6	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEG01	DM01PP		I3	1.794	Liters	26.0	kilowatt	1500	51.0	mm3/stroke	165.5	N-m	1500	51	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEG02	DM01PP		I3	1.794	Liters	36.4	kilowatt	1800	58.4	mm3/stroke	193	N-m	1800	58.4	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM

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Family: MDICL01.8LEB

Attachment Last Revised: 11/16/2020

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 Units	OBD	GHG	Special	Notes	
DM01-LEG02	DM01PP		I3	1.794	Liters	29.1	kilowatt	1500	56.1	mm3/stroke	185	N-m	1500	56.1	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01-LEE04	DM01P		I3	1.794	Liters	24.6	kilowatt	2400	32.5	mm3/stroke	110	N-m	1600	35.3	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01_LEE05	DM01P		I3	1.794	Liters	31.3	kilowatt	2200	41.1	mm3/stroke	155	N-m	1600	47.6	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01_LEE06	DM01P		I3	1.794	Liters	36.4	kilowatt	2200	47.7	mm3/stroke	180	N-m	1600	54.9	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01_LEE07	DM01P		I3	1.794	Liters	36.4	kilowatt	2200	47.7	mm3/stroke	180	N-m	1600	54.9	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01_LEA00	DM01P		I3	1.794	Liters	36.9	kilowatt	2400	45.6	mm3/stroke	200	N-m	1600	60.1	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM
DM01_LEA01	DM01P		I3	1.794	Liters	29.3	kilowatt	2350	37.9	mm3/stroke	160	N-m	1400	49.2	mm3/stroke	N/A	N/A	N/A	EGR, DOC, DFI, TC, CAC, ECM