

HYUNDAI DOOSAN INFRACORE CO., LTD.

EXECUTIVE ORDER U-L-078-0004 New Off-Road Large Spark-Ignition Engines Above 19 Kilowatts

Pursuant to the authority vested in California Air Resources Board by the Health and Safety Code, Division 26, Part 5, Chapters 1 and 2; and

Pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-19-095;

IT IS ORDERED AND RESOLVED: That the following new large spark-ignition engines and emission control systems produced by the manufacturer are certified for use in off-road equipment as described below. 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		
2022	NDICB03.4PMA	3.4	LPG		
DURABILITY HOURS		CIAL FEATURES & I CONTROL SYSTEMS	TYPICAL EQUIPMENT USAGE		
5000	Heated	ay Catalytic Converter, Oxygen Sensors (2), seous Fuel Mixer	Forklift and Other		
	SINE MODELS wer in kilowatt, kW)		See Attachment		

The following are the hydrocarbon plus oxides of nitrogen (HC+NOx) and carbon monoxide (CO) exhaust certification emission standards (Title 13, California Code of Regulations, (13 CCR) Section 2433(b)(1)) and certification emission levels for this engine family in grams per kilowatt-hour (g/kW-hr). Engines within this engine family shall have closed crankcases in conformance with 13 CCR Section 2433(b)(3).

	HC+NOx (g/kW-hr)	CO (g/kW-hr)		
EXHAUST STANDARD	0.8	20.6		
CERTIFICATION LEVEL	0.5	3.0		

The following is the evaporative hydrocarbon emission standard (13 CCR Section 2433(b)(4)) and certification emission level for this engine family in grams per gallon of fuel tank capacity (g/gallon).

Evaporative Certification Method	HC Certification Level (g/gallon)	HC Certification Standard (g/gallon)		
Design Based	N/A	N/A		

BE IT FURTHER RESOLVED: That for the listed engines for the aforementioned model-year, the manufacturer has submitted, and the Executive Officer hereby approves, the information and materials to demonstrate certification compliance with 13 CCR Section 2433(c) (certification and test procedures), 13 CCR Section 2434 (emission control labels), and 13 CCR Sections 2435 and 2436 (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 on this <u>22nd</u> day of December 2021.

Allen Lyons, Chief

Emissions Certification and Compliance Division

LSIE Exhaust Model Summary Template (rev. Aug 2021)					
Date:Nov.19.2021					
Engine Family: _NDICB03.4PMA					

For CARB Use Only
Executive Order: U-L-078-0004
Attachment __1__of__1__

Model Summary

(Use an asterisk (*) to identify worst-case engine model used for certification testing.)

S13. Engine Model	S14. Engine Code	S15. Sales Codes (Check all appropriate)							
		CA Only	49-State	50-State	S16. Engine Displacement (Liters)	S17. Rated Power (kW)	S18. Rated Speed (RPM)	S19. Peak Torque (FT-LB)	S20. Peak Torque Speed (RPM)
PM03VA	PM03-LBF01*	PM03-LBF01	PM03-LBF01	PM03-LBF01	3.4	68	2700	191.77	1600
PM03V	PM03-LBF00	PM03-LBF00	PM03-LBF00	PM03-LBF00	3.4	55	2500	184.39	1500
PM03V	PM03-LBF02	PM03-LBF02	PM03-LBF02	PM03-LBF02	3.4	55	2300	184.39	1500