



EXECUTIVE ORDER B-58-35

Relating to Conversion of Engines to Alternative Fuels

ROUSH INDUSTRIES, INC.

Pursuant to the authority vested in California Air Resources Board by Sections 43004 and 43006 of the Health and Safety Code and Section 27156 of the Vehicle 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: The dedicated liquefied petroleum gas (LPG) retrofit system, manufactured by Roush Industries, Inc. (Roush) of 12249 Levan Road, Livonia, MI 48150, is certified as described below for use as retrofit conversion of the following 2022 model year Ford Motor Company (OEM) gasoline vehicle models:

<u>Fuel Type:</u>	Gasoline to LPG	<u>Displacement:</u>	7.3 liter
<u>OEM Engine Families:</u>	NFMXE07.3BWU, NFMXE07.3BV2		
<u>OEM Evaporative Families:</u>	NFMXF0210GCJ, NFMXF0210GDJ, NFMXF0360NGJ		
<u>Models:</u>	E-Series, GVWR: 10,001-14,000 pounds		

Major Retrofit System Components: See Attachment A

All emission control systems, excluding the gasoline fuel and evaporative emission control systems, and the engine manufacturer's tune-up label shall be retained. The engine shall be adjusted to Roush tune-up specifications. The production retrofit system shall be in all material respect the same as that for which certification is granted.

The certification exhaust emission standards for these engine families in grams per brake horsepower-hour are:

	FTP Emissions (grams/brake horsepower-hour)							
	NMHC	NOx	CO	PM	HCHO	CO ₂	CH ₄	N ₂ O
HDO 150k-Mile Standards	0.14	0.20	14.4	0.01	0.01	627	0.10	0.10

The evaporative emission standards for the LPG retrofit system, are

Emission Standards	@ 150,000 Miles	<u>3DHS¹</u>	<u>2DHS¹</u>	<u>R/L¹</u>	<u>ORVR¹</u>
		0.600	0.600	n/a	n/a

The certification exhaust emission values for these engine families with the dedicated LPG retrofit system in grams per brake horsepower-hour are:

	FTP Emissions (grams/brake horsepower-hour)							
	NMHC	NOx	CO	PM	HCHO	CO ₂	CH ₄	N ₂ O
Certification Level @150k Miles	0.10	0.03	5.3	0.001	0.000	543	0.04	0.02

The certification evaporative emission values for this test group with the dedicated LPG retrofit system are:

Emission Standards	@ 150,000 Miles	<u>3DHS¹</u> 0.406	<u>2DHS¹</u> 0.380	<u>R/L¹</u> n/a	<u>ORVR¹</u> n/a
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¹3DHS/2DHS [g HC/test]: 3/2 days diurnal plus hot soak; RL [g/mile]: running loss; ORVR [g/gallon dispensed]: on-board refueling vapor recovery.

BE IT FURTHER RESOLVED: The retrofit system manufacturer has submitted and the Executive Officer hereby approves the materials in the application to demonstrate certification compliance with the emission standards set forth in Section 4 of the “California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines.”

BE IT FURTHER RESOLVED: The retrofit system manufacturer has stated that the retrofit system described above is identical, as defined in Title 13, California Code of Regulations, Section 2030(c), to the alternative fuel system described in the certification applications of its engine family NRIIE07.3BWU, certified by CARB per Executive Order A-344-0145 and evaporative families NRIIF0210LP2 and NRIIF0360LP2, which were certified by CARB per Executive Order A-344-0146. At the request of the manufacturer, the retrofit system is certified under Section 2030(c) (expedited approval using carry-over / carry-across of data from new engine certification).

BE IT FURTHER RESOLVED: The retrofit system manufacturer has submitted and the Executive Officer hereby approves the materials in the application to demonstrate certification compliance with the on-board diagnostic system requirements to Section 6 of the “California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines.”

BE IT FURTHER RESOLVED: The retrofit system manufacturer shall provide a supplemental emission control information label, which shall be affixed in a permanent manner adjacent to the original Vehicle Emission Control Information label, and shall comply with the labeling requirements described in Section 3(e) of the “California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines.”

BE IT FURTHER RESOLVED: The retrofit system manufacturer has submitted and the Executive Officer hereby approves the materials required to demonstrate certification

compliance with the warranty requirements, including warranty notification under Sections 3(f)(5), 3(g), and 9 of the “California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines.”

BE IT FURTHER RESOLVED: The retrofit system manufacturer may be subject to in-use enforcement emission testing as described in Section 12 of the “California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-road Motor Vehicles and Engines.”

BE IT FURTHER RESOLVED: The retrofit system manufacturer shall maintain a record of each vehicle on which the retrofit system is installed as required in Section 3(h) of the “California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-road Motor Vehicles and Engines.” The manufacturer shall supply a copy of installation information upon request and annually report the annual sales by March 1 of the following calendar year.

The retrofit system certified under this Executive Order must conform to all applicable California emission regulations. Certification of the retrofit system shall not be construed as a certification to sell, offer for sale, or advertise any component of the retrofit system as an individually certified part.

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

Executed on this 2nd day of March 2023.

A handwritten signature in blue ink that reads "Robin U. Lang". The signature is written in a cursive, flowing style.

Robin U. Lang, Chief
Emissions Certification and Compliance Division

EXHAUST EMISSIONS PARTS LIST

- Engine Family: NR1IE07.3BWU
- Evaporative Families: NR1IF0210LP2, NR1IF0360LP2

2022 Model Year Vehicles

<u>Part Name Calibration ID</u>	<u>Vehicle</u>	<u>OEM PCM Assembly Number</u>	<u>Roush Hardware/ Calibration Number</u>
NNE31FHR505	E-Series	PNC2A-12A650-BA*	P22HK-03P100-JAA
NNE31FVR505	E-Series	PNC2A-12A650-HA*	P22HK-03P100-JBA
NNE31F2R505	E-Series	PNC2A-12A650-EA*	P22HK-03P100-JCA
NNE31RHR505	E-Series	PNC2A-12A650-AA*	P22HK-03P100-KAA
NNE31RVR505	E-Series	PNC2A-12A650-GA*	P22HK-03P100-KBA
NNE31R2R505	E-Series	PNC2A-12A650-DA*	P22HK-03P100-KCA

Part Name (Quantity if > 1)	Part Number
Fuel Pump Assembly	P-10A020-AA P11BB-10A020-AB (alt.) P11BB-10A020-AA (alt.)
Fuel Injectors (8)	P11BB-03D021-AA
Fuel Rail Pressure Control Module (FRPCM)	P20EK-10E200-AA
Fuel Pressure Temperature Sensor (FPTS) **	P16JC-03P400-AB
Alternate Fuel Control Module (AFCM) (Smart Relay Module)	P20EK-03P240-CA P20EK-03P240-CB (alt.) P20EK-03P240-CC (alt.)
Injector Voltage Control Module (IVCM)(opt.)	P-14A100-AA

* - indicates that ending characters may vary

** - part of the fuel tank assembly

SECTION 6 – EVAPORATIVE EMISSIONS PARTS LIST

- Engine Family: NR1IE07.3BWU
- Evaporative Families: NR1IF0210LP2, NR1IF0360LP2

Part Name	Part Number
Fuel Filler Valve	A13100005 PV1855BRCN (alt) 22-4945 (Euro)
FRPCM Bleed Port Orifice	P16MB-10E215-BA
Evaporative System Pressure Sensor - FTPT	9U5A - 9C052 – CD 9U5A - 9C052 – BC (alt.)