

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER B-58-2

Relating to Conversion of Vehicles and Engines to Alternative Fuels

ROUSH INDUSTRIES, INC.

Pursuant to the authority vested in the Air Resources Board by Sections 43004 and 43006 of the Health and Safety Code and Section 10753(d) of the Revenue and Taxation 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 dedicated liquified petroleum gas (LPG) retrofit system, manufactured by Roush Industries, Inc. (Roush) of 12249 Levan Road, Livonia, Michigan 48150, is certified as described below for the following 2012 model-year Ford Motor Company heavy-duty gasoline engine:

Fuel Type: Gasoline

Test Group: CFMXE06.8BW5 Displacement: 6.8 liter

Evaporative Families: CFMXF0265GAT, CFMXF0415GET, CFMXF0265NAV, DFMXF0265NAT, and DFMXF0415GET

Models: F450/F550 Chassis Cab, F650 Chassis Cab, Step Van, and Motor Home

Major Retrofit System Components: See Attachment A.

All emission control systems, excluding the gasoline fuel and evaporative emission control systems, and the vehicle manufacturer's tune-up label shall be retained. The vehicle shall be adjusted to Roush's 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 this test group in grams per brake horsepower-hour are:

Emission Standards	<u>NMHC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>HCHO</u>
>14,000 GVWR@ 110,000 Miles	0.14	14.4	0.20	0.01	0.01

The certification exhaust emission values for this test group with the dedicated LPG retrofit system in grams per brake horsepower-hour are:

Certification Levels		<u>NMHC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>HCHO</u>
	@ 110,000 Miles	0.07	2.2	0.08	0.000	0.000

The certification evaporative emission standards for these evaporative families in grams per test are:

LEVII Evaporative Standards		<u>Hot Soak+ 2-Day diurnal</u>	<u>Running Loss</u>	<u>Hot Soak+ 3-Day diurnal</u>	<u>ORVR</u>
	@ 150,000 Miles	1.25	N/A	1.00	N/A
Certification Levels	@ 150,000 Miles	0.92	N/A	1.00	N/A

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 Regulation, Section 2030(c), to the alternative fuel system described in the certification application of its test group CRIIE06.8BW6 which was certified by ARB per Executive Order A-344-0033. 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 vehicle 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 in 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.

BE IT FURTHER RESOLVED: At the request of the retrofit system manufacturer, the alternative fuel retrofit system described herein is certified conditionally upon the Office of Administrative Law's approval of the "California Certification and Installation Procedures for Alternative fuel Retrofit Systems for 2004 and Subsequent Model Year On-road Motor Vehicles and Engines", and the amendments to title 13, CCR sections 2030 and 2031, which were approved by the Board at its September 26, 2013 public hearing. The retrofit system manufacturer acknowledges and accepts the risks pertaining to such conditional certification.

~~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 at El Monte, California this 23rd day of April 2014


Annette Hebert, Chief

Emissions Compliance, Automotive Regulations and Science Division

ATTACHMENT A



SECTION 6 – EXHAUST EMISSIONS PARTS LIST

• Test Group: CRIIE06.8BW6

FORD 2012 MODEL YEAR ENGINE

Part Name	Vehicle Line	Part Number (12650)	Roush LPG Software ID (03P100)	Part Differs from OEM
PCM Assembly				
CRA18Y0520	F-450/F-550	BC3A – XX*	P12EB – AA	@
CRB18Y0520	Chassis Cab	CC3A – XX*		
CRC18Y0520				
CRD18Y0520				
CRE18Y0520				
CRA18N0520	F-450/F-550	BC3A – XX*	P12EB – AA	@
CRB18N0520	Chassis Cab	CC3A – XX*		
CRC18N0520				
CRD18N0520				
CRE18N0520				
CRA18R0520	Step Van	BU9A – XX* CU9A – XX*	TBD	@
CRA18Q0520	Motor Home	BU9A – XX* CU9A – XX*	TBD	@
CRA18A0520	F-650	CC4A – XX*	P12BB – AA	@
CRB18A0520	Chassis Cab			

*Suffix is same as OEM. Unique Roush LPG calibration

Catalyst	F-450/F-550	9C34 – 5E212 – AC		
	Motor Home, Step Van	9U94 – 5E212 – AC		
	F-650	8C34 – 5E212 – AC (CB alternate)		@
Fuel Pump (2)		P11BB – 10A020 – AA		@
Cylinder Head Temperature Sensor		9L8A – 6G004 – CB; – CA (alt)		
Camshaft Position Sensor		1W7E – 6B288 – AB		
Crankshaft Position Sensor		1W7E – 6C315 – AA		
PCV Valve		9L1E – 6A666 – BA; – AA (alt)		
Univ. Heated Oxygen Sensor – Upstream (2)		8F9A – 9Y460 – GA; – EA (alt); – BA (alt)		
Heated Oxygen Sensor – Downstream	F-450/F-550	F85F – 9G444 – BB; – BA (alt)		
Fuel Injectors (10)		P11BB – 03D021 – AA		@
Fuel Rail Pressure Control Module		P10C2 – 9G866 – CA		@
Pedal Position Sensor Assembly (ETC) - Adjustable		BC34 – 9F836 – AA		
Pedal Position Sensor Assembly (ETC) - Fixed		BC3A – 9F836 – DB		
Mass Airflow/Intake Air Temperature Sensor		BR31 – 12B579 – AA		
Knock Sensor (2) (deactivated)		AL3A – 12A699 – BA		
Electric Throttle Body		9C3E – 9F991 – CA; – BA (alt)		
Throttle Body Position Sensor		AG1E – 9E928 – AA; 6L2E – 9E928 – AA (alt)		
Integrated Fuel Pressure Temperature Sensor (IPTS)		P10C3 – 9G756 – AA		@
SRM (Smart Relay Module) (Interfaces IPTS sensor to PCM via CAN)				
<u>Calibration Prefix</u>		<u>LPG Fuel Tank Configuration</u>		
CRA18Y,N,R and Q		P12EB – 03P200 – AA (Aft-axle)		@
CRB18Y,N,R and Q		P12EB – 03P200 – BA (Aft-cab)		@
CRC18Y,N,R and Q		P12EB – 03P200 – CA (In-bed)		@
CRD18Y,N,R and Q		P12EB – 03P200 – DA (Aft-axle + Aft-cab)		@
CRE18Y,N,R and Q		P12EB – 03P200 – EA (Aft-axle + In-bed)		@

NOTES: Except where specifically noted, F450/F550 includes Step Vari and Motor Home

TEST GROUP: CRIIE06.8BW6
ISSUED: December 20th, 2011
REVISED: