

Pursuant to the authority vested in the Air Resources Board by Health and Safety Code Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-14-012;

**IT IS ORDERED AND RESOLVED:** The engine and emission control systems produced by the manufacturer are certified as described below for use in on-road motor vehicles with a manufacturer's GVWR over 14,000 pounds. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	ENGINE SIZES (L)	FUEL TYPE <sup>1</sup>		STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS <sup>2</sup>	ECS & SPECIAL FEATURES <sup>3</sup>		DIAGNOSTIC 5
2017	HRIIE06.8BWL	6.8	LPG		Otto	HDO	TWC, SFI, 2W/R-HO2S, HO2S	EMD+	
PRIMARY ENGINE'S IDLE EMISSIONS CONTROL 4		ADDITIONAL IDLE EMISSIONS CONTROL <sup>4</sup>							
N/A		N/A							
ENGINE (L)		ENGINE MODELS / CODES (rated power, in hp)							
6.8		Please see the attachment.							

<sup>1</sup> =not applicable; GVWR=gross vehicle weight rating; 13 CCR xyz=Title 13, California Code of Regulations, Section xyz; 40 CFR 86.abc=Title 40, Code of Federal Regulations, Section 86.abc; L=liter; hp=horsepower; kw=kilowatt; hr=hour;  
<sup>2</sup> CNG/LNG=compressed/liquefied natural gas; LPG=liquefied petroleum gas; E85=85% ethanol fuel; MF=multi fuel a.k.a. BF=bi fuel; DF=dual fuel; FF=flexible fuel;  
<sup>3</sup> ECS=emission control system; TWC/OC=three-way/oxidizing catalyst; NAC=NOx adsorption catalyst; SCR-U / SCR-N=selective catalytic reduction – urea / – ammonia; WU (prefix) =warm-up catalyst; DPF=diesel particulate filter; PTOX=periodic trap oxidizer; HO2S/O2S=heated/oxygen sensor; HAFS/AFS=heated/air-fuel-ratio sensor (a.k.a., universal or linear oxygen sensor); WR-HO2S=wide range oxygen sensor; TBI=throttle body fuel injection; SFI/MFI=sequential/multi port fuel injection; DGI=direct gasoline injection; GCARB=gaseous carburetor; IDI/DDI=indirect/direct diesel injection; TC/SC=turbo/ super charger; CAC=charge air cooler; EGR / EGR-C=exhaust gas recirculation / cooled EGR; PAIR/AIR=pulsed/secondary air injection; SPL=smoke puff limiter; ECM/PCM=engine/powertrain control module; EM=engine modification; 2 (prefix)=parallel; (2) (suffix)=in series;  
<sup>4</sup> ESS=engine shutdown system (per 13 CCR 1956.8(a)(6)(A)(1)); 30g=30 g/hr NOx (per 13 CCR 1956.8(a)(6)(C)); APS =internal combustion auxiliary power system; ALT=alternative method (per 13 CCR 1956.8(a)(6)(D)); Exempt=exempted per 13 CCR 1956.8(a)(6)(B) or for CNG/LNG fuel systems; N/A=not applicable (e.g., Otto engines and vehicles);  
<sup>5</sup> EMD=engine manufacturer diagnostic system; OBD(F) / (P) / (\$) =full / partial / partial with fine / on-board diagnostic; (2012-08-20)

Following are: 1) the FTP exhaust emission standards, or family emission limit(s) as applicable, under 13 CCR 1956.8; 2) the SET and NTE limits under the applicable California exhaust emission standards and test procedures for heavy-duty diesel engines and vehicles (Test Procedures); and 3) the corresponding certification levels, for this engine family. "Diesel" CO, SET and NTE certification compliance may have been demonstrated by the manufacturer as provided under the applicable Test Procedures in lieu of testing. (For flexible- and dual-fueled engines, the CERT values in brackets [ ] are those when tested on conventional test fuel. For multi-fueled engines, the STD and CERT values for default operation permitted in 13 CCR 1956.8 are in parentheses.).

in g/bhp-hr	NMHC		NOx		NMHC+NOx		CO		PM		HCHO	
	FTP	SET	FTP	SET	FTP	SET	FTP	SET	FTP	SET	FTP	SET
STD	0.14	*	0.05	*	*	*	14.4	*	0.01	*	0.01	*
CERT	0.04	*	0.03	*	*	*	2.7	*	0.002	*	0.001	*
NTE	*		*		*		*		*		*	

<sup>4</sup> g/bhp-hr=grams per brake horsepower-hour; FTP=Federal Test Procedure; SET= supplemental emissions testing; NTE=Not-to-Exceed emission limit; STD=standard or emission test cap; FEL=family emission limit; CERT=certification level; NMHC/HC=non-methane/hydrocarbon; NOx=oxides of nitrogen; CO=carbon monoxide; PM=particulate matter; HCHO=formaldehyde;

**BE IT FURTHER RESOLVED:** That the listed engine family is certified to the Optional Low NOx Emission Standards as specified in 13 CCR 1956.8(c)(1)(B) and section 10.B.1 of the incorporated "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles" adopted Dec. 27, 2002, as last amended Oct. 21, 2014.

**BE IT FURTHER RESOLVED:** The manufacturer has demonstrated compliance with the Greenhouse Gas Emission Standards as specified in Title 13 CCR 1956.8 and the incorporated "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy Duty Otto Cycle Engines and Vehicles" (HDOE Test Procedures) adopted Dec. 27, 2000, as last amended Oct. 21, 2014 using the 2014 model year National Heavy-Duty Engine and Vehicle Greenhouse Gas Program as specified in Section 1036.108 of the HDOE Test Procedures. The manufacturer has submitted the required information and therefore has met the criteria necessary to receive a California Executive Order based on the Environmental Protection Agency's Certificate of Conformity for the above listed engine family.

In g/bhp-hr	EPA CERTIFICATE OF CONFORMITY				PRIMARY INTENDED SERVICE CLASS	
	HRIIE06.8BWL-002				Vocational	
	CO <sub>2</sub>				CH <sub>4</sub>	N <sub>2</sub> O
	FTP		SET			
STD	627		*	0.10	0.10	
FCL	627		*	*	*	
FEL	646		*	*	*	
CERT	614		*	0.03	0.03	

<sup>4</sup> g/bhp-hr=grams per brake horsepower-hour; FTP=Federal Test Procedure; SET=Supplemental emissions testing; STD = standard or emission test cap; FEL=family emission limit; FCL=family certification level; CERT=certification level; CO<sub>2</sub>=carbon dioxide; CH<sub>4</sub>=methane; N<sub>2</sub>O=nitrous oxide; VOCATIONAL=vocational engine; TRACTOR=tractor engine

**BE IT FURTHER RESOLVED:** Certification to the FEL(s) / FCL(s) listed above, as applicable, is subject to the following terms, limitations and conditions. The FEL(s) / FCL(s) is the emission level declared by the manufacturer and serves in lieu of an emission standard for certification purposes in any averaging, banking, or trading (ABT) programs. It will be used for determining compliance of any engine in this family and compliance with such ABT programs.

**BE IT FURTHER RESOLVED:** For the listed engine models the manufacturer has submitted the materials to demonstrate certification compliance with 13 CCR 1965 (emission control labels), 13 CCR 2035 et seq. (emission control warranty) and 13 CCR 1971.1 (on-board diagnostic).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

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

Executed at El Monte, California on this 15<sup>th</sup> day of May 2017.

  
Annette Hebert, Chief

Emissions Compliance, Automotive Regulations and Science Division

Attachment 1/1

A-344-0074  
4/20/2017



LARGE ENGINE MODEL SUMMARY

Manufacturer: Roush Industries, Inc. Manufacturer Family Name: HRIIE06.8BWL  
 EPA Engine Family: HRIIE06.8BWL

2017 MODEL YEAR 6.8L-3V ENGINE

Engine Code	Engine Model	BHP@RPM SAE Net	Torque@RPM SAE Net	Fuel Rate		Emission Control
				mm <sup>3</sup> /stroke @ peak torque	lbs/hr @ peak torque	
HHF410TR5	Step Van	320 @ 3900	415 @ 3072	93.2	97.2	TWC, 2WR-HO2S,HO2S,SFI
HHF417TR5	Step Van	Same	Same	Same	Same	Same
HHF4178R5	Step Van	Same	Same	Same	Same	Same
HHF41ATR5	Step Van	Same	Same	Same	Same	Same
HHF416TR5	Step Van	Same	Same	Same	Same	Same
HHF4168R5	Step Van	Same	Same	Same	Same	Same
HHFC10KR5	F-650/750 Chassis Cab	Same	Same	Same	Same	Same
HHFC10NR5	F-650/750 Chassis Cab	Same	Same	Same	Same	Same
HHFC10RR5	F-650/750 Chassis Cab	Same	Same	Same	Same	Same
HHFC10PR5	F-650/750 Chassis Cab	Same	Same	Same	Same	Same
HHFC178R5	F-650/750 Chassis Cab	Same	Same	Same	Same	Same
HHFA10CR5	F-450/550 Chassis Cab	Same	Same	Same	Same	Same
HHFA17CR5	F-450/550 Chassis Cab	Same	Same	Same	Same	Same
HHFA178R5	F-450/550 Chassis Cab	Same	Same	Same	Same	Same
HHF618BR5	Blue Bird Vision Bus	Same	Same	Same	Same	Same
HHF618FR5	Blue Bird Vision Bus	Same	Same	Same	Same	Same

Test Group: HRIIE06.8BWL  
 Issued: January 23, 2017  
 Revised:

19.03.00.01



Pursuant to the authority vested in the Air Resources Board by Health and Safety Code Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-14-012;

**IT IS ORDERED AND RESOLVED:** The following on-road motor vehicles with a manufacturer's GVWR over 14000 pounds are certified as described below. Production vehicles shall be in all material respects the same as those for which certification is granted.

ENGINE DESCRIPTION									
MANUFACTURER	EXECUTIVE ORDER	MODEL YEAR	ENGINE FAMILY	ENGINE SIZES (L)	FUEL TYPE <sup>1</sup>	STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS <sup>2</sup>	ECS & SPECIAL FEATURES <sup>3</sup>	OBD COMPLIANCE <sup>4</sup>
ROUSH INDUSTRIES INC.	A-344-0074	2017	HRIIE06.8BWL	6.8	LPG	Otto	HDO	TWC, HO2S, 2WR-HO2S, SFI	EMD+
Gasoline, LPG or Alcohol Vehicles Only			VEHICLE DESCRIPTION						
EVAPORATIVE		FUEL TANK CAPACITY (gallons)	VEHICLE MODEL YEAR	VEHICLE MAKE & MODELS	ENGINE (L)	ENGINE MODELS / CODES (rated power, in hp)			
FAMILY	UL (K)								
HRIIF0265LPG	150	67.5, 93, 47	2017	Blue Bird Vision School Bus	6.8	Blue Bird Vision Bus / HHF618BR5, HHF618FR5 (320 for all codes)			
		45, 67.5		Roush Step Van		Step Van / HHF410TR5, HHF417TR5, HHF4178R5, HHF41ATR5, HHF416TR5, HHF4168R5 (320 for all codes)			
		49, 53, 73, 67.5, 30, 50		Roush F-650/750 Chassis Cab		F650/750 Chassis Cab / HHFC10KR5, HHFC10NR5, HHFC10RR5, HHFC178R5, HHFC10PR5 (320 for all codes)			
		35, 67.5		Roush F-450/550 Chassis Cab		F-450/550 Chassis Cab/ HHFA10CR5, HHFA17CR5, HHFA178R5 (320 for all codes)			

\* =not applicable; GVWR=gross vehicle weight rating; 13 CCR xyz=Title 13, California Code of Regulations, Section xyz; 40 CFR 86.abc=Title 40, Code of Federal Regulations, Section 86.abc; L=liter; K=1000 miles; hp=horsepower; kw=kilowatt;  
<sup>1</sup> CNG/LNG=compressed/liquefied natural gas; LPG=liquefied petroleum gas; E85=85% ethanol fuel; MF=multi fuel a.k.a. BF=bi fuel; DF=dual fuel; FF=flexible fuel;  
<sup>2</sup> L/M/H HDD=light/medium/heavy heavy-duty diesel; UB=urban bus; HDO=heavy duty Otto;  
<sup>3</sup> ECS=emission control system; TWC/OC=three-way/oxidizing catalyst; WU (prefix) =warm-up catalyst; WR-HO2S=wide range oxygen sensor ; DPF=diesel particulate filter; HO2S/O2S=heated/oxygen sensor; HAFS/AFS=heated/air-fuel-ratio sensor (a.k.a., universal or linear oxygen sensor); TBI=throttle body fuel injection; SFI/MFI=sequential/multi port fuel injection; DGI=direct gasoline injection; GCARB=gaseous carburetor; IDI/DDI=indirect/direct diesel injection; TC/SC=turbo/super charger; CAC=charge air cooler; EGR=exhaust gas recirculation; PAIR/AIR=pulsed/secondary air injection; SPL=smoke puff limiter; ECM/PCM=engine/powertrain control module; EM=engine modification; 2 (prefix)=parallel; (2) (suffix)=in series;  
<sup>4</sup> EMD=engine manufacturer diagnostic system; OBD(F) / (P) / (\$) =full / partial / partial with fine / on-board diagnostic; (2012-08-20)

Following are: 1) the FTP exhaust emission standards or family emission limit(s) as applicable under 13 CCR 1956.1 (urban bus) or 13 CCR 1956.8 (other than urban bus); 2) the SET and NTE limits under the applicable California exhaust emission standards and test procedures for heavy-duty diesel engines and vehicles (Test Procedures); and 3) the corresponding certification levels, in g/bhp-hr, for this engine family. "Diesel" CO, SET and NTE certification compliance may have been demonstrated by the manufacturer as provided under the applicable Test Procedures in lieu of testing. (For flexible- and dual-fueled engines, the CERT values in brackets [ ] are those when tested on conventional test fuel. For multi-fueled engines, the STD and CERT values for default operation permitted in 13 CCR 1956.1 or 13 CCR 1956.8 are in parentheses.)

	NMHC		NOx		NMHC+NOx		CO		PM		HCHO	
	FTP	SET	FTP	SET	FTP	SET	FTP	SET	FTP	SET	FTP	SET
STD	0.14	*	0.05	*	*	*	14.4	*	0.01	*	0.01	*
CERT	0.04	*	0.03	*	*	*	2.7	*	0.002	*	0.001	*
NTE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>4</sup> g/bhp-hr=grams per brake horsepower-hour; FTP=Federal Test Procedure; EURO=Euro III European Steady-State Cycle; NTE=Not-to-Exceed emission limit; STD=standard or emission test cap; FEL=family emission limit; CERT=certification level; NMHC/HC=non-methane/hydrocarbon; NOx=oxides of nitrogen; CO=carbon monoxide; PM=particulate matter; HCHO=formaldehyde;

**BE IT FURTHER RESOLVED:** That the listed engine family is certified to the Optional Low NOx Emission Standards as specified in 13 CCR 1956.8(c)(1)(B) and section 10.B.1 of the incorporated "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles" adopted Dec. 27, 2002, as last amended Oct. 21, 2014.

**BE IT FURTHER RESOLVED:** For the listed vehicle models the manufacturer has submitted the materials to demonstrate certification compliance with 13 CCR 1965 (emission control labels), 13 CCR 1971.1 (on-board diagnostic), 13 CCR 1976(b)(1)(F) {evaporative emission standards}, 13 CCR 2035 et seq. (emission control warranty), and 13 CCR 2235 [fill pipes and openings of motor vehicle fuel tanks]. (The braces { } are for gasoline, LPG or alcohol fueled vehicles only. The brackets [ ] are for gasoline or alcohol fueled vehicles only.)

Vehicles certified under this Executive Order must conform to all applicable California emission regulations.

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

Executed at El Monte, California on this 15<sup>th</sup> day of May 2017.

Annette Hebert, Chief  
 Emissions Compliance, Automotive Regulations and Science Division