

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-02-003;

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 ¹		STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS ²	ECS & SPECIAL FEATURES ³		DIAGNOSTIC ⁶
			Diesel				DDI, TC, CAC, ECM, EGR, OC, DPF, SCR, SPL		
2010	AVPTH12.8S01	12.8	Diesel		Diesel	HHDD	DDI, TC, CAC, ECM, EGR, OC, DPF, SCR, SPL		EMD
PRIMARY ENGINE'S IDLE EMISSIONS CONTROL ⁵		ADDITIONAL IDLE EMISSIONS CONTROL ⁵							
30g		N/A							
ENGINE (L)		ENGINE MODELS / CODES (rated power, in hp)							
12.8		See attachment for engine models and ratings (clean idle engines are labeled as 50-State compliant engines)							

¹ =not applicable; GVWR=gross vehicle weight rating; 13 CCR xyz=Title 13, California Code of Regulations, Section xyz; 40 CFR 85.abc=Title 40, Code of Federal Regulations, Section 85.abc; L=liter; hp=horsepower; kw=kilowatt; hr=hour;
² 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;
³ L/M/H HDD=light/medium/heavy heavy-duty diesel; UB=urban bus; HDO=heavy duty Otto;
⁴ 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); 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; SCR = Selective Catalytic Reduction system
⁵ 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);
⁶ EMD=engine manufacturer diagnostic system (13 CCR 1971); OBD=on-board diagnostic system (13 CCR 1971.1);

Following are: 1) the FTP exhaust emission standards, or family emission limit(s) as applicable, under 13 CCR 1956.8; 2) the EURO 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, EURO 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	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO
STD	0.14	0.14	0.20	0.20	*	*	15.5	15.5	*	*	*	*
FEL	*	*	*	*	*	*	*	*	0.00	0.00	*	*
CERT	0.04	0.06	0.11	0.10	*	*	*	*	0.003	0.001	*	*
NTE	0.21		0.30		*		19.4		0.00		*	

⁴ g/bhp-hr=grams per brake horsepower-hour; FTP=Federal Test Procedure; EURO=Euro III European Steady-State Cycle, including RMCSET=ramp mode cycle supplemental emissions testing; NTE=Not-to-Exceed; STD=standard of 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;

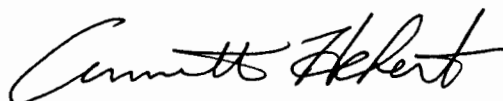
BE IT FURTHER RESOLVED: Certification to the FEL(s) listed above, as applicable, is subject to the following terms, limitations and conditions. The FEL(s) is the emission level declared by the manufacturer and serves in lieu of an emission standard for certification purposes in any averaging, banking, 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) and 13 CCR 2035 et seq. (emission control warranty).

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 9 day of November 2009.


Annette Hebert, Chief
Mobile Source Operations Division

Volvo Powertrain Corporation

ATTACHMENT

A-242-0055

Engine Family	1. Engine Code	2. Engine Model	3. BHP @ RPM (SAE Gross)		4. Fuel Rate: mm/stroke @ peak HP (lbs/hr) (for diesels only)		5. Fuel Rate: mm/stroke @ peak HP (lbs/hr) @ peak HP (SEA Gross)		6. Torque @ RPM (SEA Gross)		7. Fuel Rate: mm/stroke @ peak torque		8. Fuel Rate: (lbs/hr) @ peak torque		9. Emission Control Device Per SAE J1930
			500 @ 1700	475 @ 1800	307.5	279.7	174.5	168.1	1812 @ 1050	1734 @ 1050	336.8	324.6	118.1	113.8	
PTH12.8S01	N/A	D13H - 500	500 @ 1700	475 @ 1800	307.5	279.7	174.5	168.1	1812 @ 1050	1734 @ 1050	336.8	324.6	118.1	113.8	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	D13H - 475	475 @ 1800	435 @ 1700	286.7	273.2	162.7	155.1	1711 @ 1050	1600 @ 1050	317.8	297.7	111.4	104.4	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	D13H - 435	435 @ 1700	405 @ 1700	250.2	236.7	142.0	134.4	1508 @ 1000	1506 @ 1000	278.1	277.6	92.9	92.7	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	D13H - 425	425 @ 1700	375 @ 1700	236.7	213.4	134.4	1506 @ 1000	1506 @ 1000	277.6	277.6	277.6	92.7	92.7	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	D13H - 405	405 @ 1700	375 @ 1700	236.7	213.4	134.4	1506 @ 1000	1506 @ 1000	277.6	277.6	277.6	92.7	92.7	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	D13H - 375	375 @ 1700	375 @ 1700	236.7	213.4	134.4	1506 @ 1000	1506 @ 1000	277.6	277.6	277.6	92.7	92.7	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	D13H - 500P													
PTH12.8S01	N/A	D13H - 435P													
PTH12.8S01	N/A	MP8 - 505E	505 @ 1700	505 @ 1700	308.2	286.0	174.9	162.3	1824 @ 1100	1780 @ 1100	340.3	330.4	125.0	121.3	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	MP8 - 500E	500 @ 1700	455 @ 1700	308.2	282.3	174.9	160.2	1839 @ 1200	1750 @ 1200	340.3	324.7	136.3	130.1	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	MP8 - 455E	455 @ 1700	445 @ 1700	282.3	266.9	160.2	151.5	1750 @ 1200	1702 @ 1100	324.7	296.2	130.1	118.7	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	MP8 - 445E	445 @ 1700	425 @ 1700	286.0	271.8	162.3	154.3	1780 @ 1100	1604 @ 1200	330.4	296.2	121.3	118.7	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	MP8 - 425E	425 @ 1700	415 @ 1700	271.8	266.9	154.3	151.5	1604 @ 1200	1702 @ 1100	296.2	314.4	118.7	115.5	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	MP8 - 415E	415 @ 1700	405 @ 1700	266.9	266.9	151.5	151.5	1702 @ 1100	1824 @ 1100	314.4	336.2	115.5	123.5	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	MP8 - 505C	505 @ 1500	445 @ 1500	341.9	311.3	171.3	155.9	1824 @ 1100	1780 @ 1100	336.2	330.4	123.5	121.3	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	MP8 - 445C	445 @ 1500	415 @ 1500	311.3	290.1	155.9	145.3	1780 @ 1100	1702 @ 1100	330.4	314.4	121.3	115.5	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	MP8 - 415C	415 @ 1500	405 @ 1700	290.1	309.2	145.3	175.5	1702 @ 1100	1837 @ 1100	314.4	340.7	115.5	125.1	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	MP8 - 505M	505 @ 1700	455 @ 1700	309.2	282.1	175.5	160.2	1837 @ 1100	1715 @ 1100	340.7	317.9	125.1	116.8	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	MP8 - 455M	455 @ 1700	425 @ 1700	282.1	274.1	160.2	155.6	1715 @ 1100	1602 @ 1100	317.9	296.6	116.8	109.0	EM, EC, TC, CAC, DI, EGR, DPF, SCR
PTH12.8S01	N/A	MP8 - 425M	425 @ 1700	425 @ 1700	274.1	274.1	155.6	155.6	1602 @ 1100	1602 @ 1100	296.6	296.6	109.0	109.0	EM, EC, TC, CAC, DI, EGR, DPF, SCR

