

Pursuant to the authority vested in California 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 ¹	STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS ²	ECS & SPECIAL FEATURES ³	DIAGNOSTIC ⁵
2019	KNVXH07570SA	12.4	Diesel	Diesel	HHDD	DDI, TC, CAC, ECM, EGR, OC, PTOX, SCR-U, AMOX	OBD (\$)
PRIMARY ENGINE'S IDLE EMISSIONS CONTROL ⁵		ADDITIONAL IDLE EMISSIONS CONTROL ⁵					
30g		N/A					
ENGINE (L)	ENGINE MODELS / CODES (rated power, in hp)						
12.4	See attachment for engine models and ratings						

* =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;
¹ 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;
² L/M/H HDD=light/medium/heavy heavy-duty diesel; UB=urban bus; HDO=heavy duty Otto;
³ 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; SFV/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; AMOX=ammonia oxidation catalyst
⁴ 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);
⁵ 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.)⁴

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	0.14	0.20	0.20	*	*	15.5	15.5	0.01	0.01	*	*
CERT	0.01	0.005	0.11	0.11	*	*	0.05	0.01	0.001	0.000	*	*
NTE	0.21		0.30		*		19.4		0.02		*	

⁴ 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: 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 Diesel-Engines and Vehicles" (HDDE Test Procedures) adopted Dec. 27, 2002, 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 HDDE 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	
	KNVXH07570SA-001				TRACTOR / VOCATIONAL	
	CO ₂				CH ₄	N ₂ O
	FTP		SET			
STD	555		460	0.10	0.10	
FCL	513		455	*	*	
FEL	528		469	0.10	0.10	
CERT	508		450	0.00	0.08	

⁴ 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; CO₂=carbon dioxide; CH₄=methane; N₂O=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 1971.1 (on-board diagnostic, full or partial compliance), and 13 CCR 2035 et seq. (emission control warranty).

BE IT FURTHER RESOLVED: Except in vehicle applications exempted per 13 CCR 1956.8(a)(6)(B), 30g rating engines in this engine family certified under 13 CCR 1956.8(a)(6)(C) [30 g/hr NO_x] and section 35.B.4 of the incorporated "California Exhaust Emissions Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles" adopted December 12, 2002, as last amended September 1, 2017, shall be provided with an approved "Certified Clean Idle" label that shall be affixed to the vehicle into which the engine is installed.

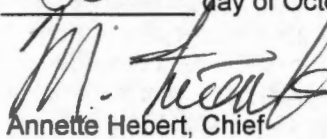
BE IT FURTHER RESOLVED: That the manufacturer has elected to include engine models in this engine family which are identified for "emergency vehicle use only". These "emergency vehicle use only" engines are exempt from requirements imposed pursuant to California law and the regulations adopted pursuant thereto for motor vehicle pollution control devices per California Vehicle Code Section 27156.2. The manufacturer must clearly label these engines for "emergency vehicle use only" on the engines' emission control label.

BE IT FURTHER RESOLVED: The listed engine models are conditionally certified in accordance with 13 CCR Section 1971.1(k) (deficiency and fines provisions for certification of malfunction and diagnostic system) because the heavy-duty on-board diagnostic system of the listed engine models has been determined to have five deficiencies. The listed engine models are approved subject to the manufacturer paying a fine of \$100 per engine for the third through fifth deficiencies in the listed engine family that is produced and delivered for sale in California. On a quarterly basis, the manufacturer shall submit to the Air Resources Board reports of the number of engines produced and delivered for sale in California and pay the full fine owed for that quarter pursuant to this conditional certification. Payment shall be made payable to the State Treasurer for deposit in the Air Pollution Control Fund no later than thirty (30) days after the end of each calendar quarter during the 2019 model-year production period. Failure to pay the quarterly fine, in full, in the time provided, may be cause for the Executive Officer to rescind this conditional certification, effective from the start of the quarter in question, in which case all engines covered under this conditional certification for that quarter and all future quarters would be deemed uncertified and subject to a civil penalty of up to \$37,500 per engine pursuant to HSC Section 43154.

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 30th day of October 2018.


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

Attachment 1/2

Engine Model Summary Template

A-004-0480
5-9-2019

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	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
KNVXH07570SA	G7055, G7045	A475	475@1700	267	154.0	1700@1000	298	101	DDI, ECM, TC(1), OC
	G7056, G7046								CAC(1), EGR, SCR-U,
	G7047, G7057								PTOX, AMOX
KNVXH07570SA	G7012, G7015	A450H	450@1700	250	143.8	1700@1000	298	101	SAME
	G7013, G7051								
	G7052, G7014								
KNVXH07570SA	G7015, G7016	A450MT	450@1700	250	143.8	1550/1700	298	101	SAME
	G7019					@ 1000			
KNVXH07570SA	G7009, G7040	A430	430@1700	237	136.4	1550@1000	269	91.3	SAME
	G7010, G7041								
	G7042, G7011								
KNVXH07570SA	G7007, G7008	A410MT	410@1700	225	129.7	1450/1650	288	97.7	SAME
						@1000			
KNVXH07570SA	G7004, G7035	A410H	410@1700	225	129.7	1450@1000	252	85.3	SAME
	G7005, G7036								
	G7037, G7006								
KNVXH07570SA	G7017	A400MT	400@1700	220	126.6	1550/1750	315	104.0	SAME
						@975			
KNVXH07570SA	G7030, G7031	A390	390@1700	214	123.5	1450@1000	252	85.3	SAME
	G7032								
KNVXH07570SA	G7001, G7025	A370	370@1700	203	116.7	1350@1000	234	79.3	SAME

Attachment 2/2

Engine Model Summary Template

A-004-0480
5-9-2019

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	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
	G7002, G7026								
	G7027, G7003								
KNVXH07570SA	G7020, G7021	A365	365@1700	200	115.1	1250@1000	216	73.4	SAME
	G7022								
* KNVXH07570SA	G7067, G7068	A500	500@1700		162.3	1750@1000	303	105.8	SAME
	G7069								
EMERGENCY VEHICLES									
HNVXH07570SA	G7023, G7024	A365	365@1700	200	115.1	1250@1000	216	73.4	SAME
HNVXH07570SA	G7028, G7029	A370	370@1700	203	116.7	1350@1000	234	79.3	SAME
HNVXH07570SA	G7033, G7034	A390	390@1700	214	123.5	1450@1000	252	85.3	SAME
HNVXH07570SA	G7038, G7039	A410	410@1700	225	129.7	1450@1000	252	85.3	SAME
HNVXH07570SA	G7043, G7044	A430	430@1700	237	136.4	550@1000	269	91.3	SAME
HNVXH07570SA	G7053, G7054	A450	450@1700	250	143.8	1700@1000	298	101	SAME
HNVXH07570SA	G7048, G7049	A475	475@1700	267	154.0	1700@1000	298	101	SAME
* HNVXH07570SA	G7070, G7071	A500	500@1700		162.3	1750@1000	303	105.8	SAME

* added per running change