

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 diesel or incomplete medium-duty vehicles with a manufacturer's GVWR from 8501 to 14000 pounds. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	EMISSION STD CATEGORY ²	FUEL TYPE ¹	STANDARDS & TEST PROCEDURE	ENGINE SIZES (L)	ECS & SPECIAL FEATURES ³	OBD COMPLIANCE	
			Gasoline					Otto
2018	JCRXE06.45Y6	ULEV			6.4	TWC, SFI, HO2S, EGR, EGRC	OBD (F)	
ENGINE MODELS / CODES (rated power, in hp)							ENGINE (L)	OBD COMPLIANCE
ESB / AA100, AA150, AA200, AA250, AA500, AA525, AA550, AA575 (373.9 for all codes)							6.4	OBD (F)

^{*} =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;
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 SULEV / ULEV / LEV=super ultra / ultra / low emission vehicle;
³ ECS=emission control system; TWC/OC=three-way/oxidizing catalyst; WU (prefix) =warm-up catalyst; 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 / EGRC=exhaust gas recirculation / EGR cooler; PAIR/AIR=pulsed/secondary air injection; SPL=smoke puff limiter, OBD(F) / (P) / (\$) =full / partial / partial with a fine / on-board diagnostic; ECM/PCM=engine/powertrain control module; EM=engine modification; 2 (prefix)=parallel; (2) (suffix)=in series.

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

	NMHC		NOx		NMHC+NOx		CO		PM		HCHO	
	FTP	SET	FTP	SET	FTP	SET	FTP	SET	FTP	SET	FTP	SET
STD	0.14	*	0.20	*	*	*	14.4	*	0.01	*	0.01	*
FEL	*	*	*	*	*	*	*	*	*	*	*	*
CERT	0.06	*	0.12	*	*	*	8.0	*	*	*	0.001	*
NTE	*	*	*	*	*	*	*	*	*	*	*	*

⁴ g/bhp-hr=grams per brake horsepower-hour; FTP=Federal Test Procedure; SET=Supplemental emission 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 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	
	JCRXE06.45Y6-001		Vocational	
	CO ₂		CH ₄	N ₂ O
FTP	SET			
STD	*	*	*	*
FCL	999	*	*	*
FEL	1029	*	*	*
CERT	*	*	*	*

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: The listed engine models have been certified to the optional emission standards and test procedures in 13 CCR 1956.8 applicable to diesel or incomplete medium-duty vehicles with a GVWR from 8501 to 14000 pounds and, therefore, shall be subject to 13 CCR 2139(c) (in-use testing of engines certified for use in diesel or incomplete medium-duty vehicles with a 8501-14000 pound GVWR).

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 1968.2 (on-board diagnostic, full or partial compliance), 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 30 day of October 2017.



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

EO#: A-009-1390

10/10/17

Engine Model Summary Template

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
JCRXE06.45Y6	AA100	ESB	373.9@4600	NA	NA	420.1@4143		168.9 @ 4143	TWC, H02S, SFI, EGR, EGRC
JCRXE06.45Y6	AA150	ESB	373.9@4600	N/A	N/A	420.1@4143		168.9 @ 4143	TWC, H02S,
JCRXE06.45Y6	AA200	ESB	373.9@4600	N/A	N/A	420.1@4143		168.9 @ 4143	TWC, H02S,
JCRXE06.45Y6	AA250	ESB	373.9@4600	N/A	N/A	420.1@4143		168.9 @ 4143	TWC, H02S,
X	X	X	X	X	X	X		X	X
JCRXE06.45Y6	AA500	ESB	373.9@4600	NA	NA	420.1@4143		168.9 @ 4143	TWC, H02S,
JCRXE06.45Y6	AA525	ESB	373.9@4600	NA	NA	420.1@4143		168.9 @ 4143	TWC, H02S,
JCRXE06.45Y6	AA550	ESB	373.9@4600	NA	NA	420.1@4143		168.9 @ 4143	TWC, H02S,
JCRXE06.45Y6	AA575	ESB	373.9@4600	NA	NA	420.1@4143		168.9 @ 4143	TWC, H02S,