

KOHLER COMPANY

EXECUTIVE ORDER U-R-060-0010 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety 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-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR ENGINE FAMILY		DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)			
2012	CKHXL2.19CH2	1.6494, 2.1992	Diesel	5000			
	FEATURES & EMISSION		TYPICAL EQUIPMENT APPLICATION				
	Indirect Diesel Inje	ection	Loaders, Tractor, Dozer, Pump, Compressor, Generator Set				

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED	EMISSION			E	XHAUST (g/kw-ł	OPACITY (%)				
POWER	STANDARD CATEGORY		нс	NOx	NMHC+NOx	co	PM	ACCEL	LUG	PEAK
19 ≤ kW < 37	Interim Tier 4	STD	N/A	N/A	7.5	5.5	0.30	20	15	50
		CERT			6.1	1.3	0.24	2	1	7

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

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

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this _______ day of December 2011.

Annette Hebert, Chief

Mobile Source Operations Division

Engine Model Summary Template

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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
CKHXL2.19CH2	- while is a final black with the state of t	LDW 1603/G	37.5@2800	34.5	16.07	76.7@1650	36.0	9.88	IDI
CKHXL2.19CH2		LDW 1603	38.9@3000	34.0	16.95	76.7@1650	36.0	9.88	IDI
CKHXL2.19CH2	ng at Plantock benga nanga makandi maransa sahahilin at kanapata sahakilin sangan	LDW 1603/B1	36.2@2800	33.0	15.37	75.2@1650	35.5	9.74	IDI
CKHXL2.19CH2	ada sanak sanak nakangan dakarang ki mala daksi na kanak nakan daksi daksi nakan daksi nakan daksi nakan kanak	LDW 1603/B2	33.9@2600	32.5	14.04	75.2@1600	35.5	9.44	IDI
CKHXL2.19CH2	anako (por propieto) pe no menende um estre la sala estre desde la habenda polo acceptatado destruteres	LDW 2204	49.1@3000	31.0	20.61	97.7@2100	34.0	15.83	EDI
CKHXL2.19CH2	1880年 (17 18 18 18 18 18 18 18 18 18 18 18 18 18	LDW 2204/B1	47.3@2800	31.5	19.56	97.4@1800	34.0	13.56	IDI
CKHXL2.19CH2	gygganami nami oʻrkogʻi oʻrini 2 - irka kalikasini istina ili isti istina oʻrin kalik	LDW 2204GE	30.2@1800	31.0	12.37	FIXED SPEED	FIXED SPEED	FIXED SPEED	
CKHXL2.19CH2	rosen aete jallallister ir ir viairo kun v. ajomas jajona keido illahillistorromasid teorika itsa	LDW 2204/G	47.3@2800	31.5	19.56	95.9@1600	34.0	12.06	IDI
CKHXL2.19CH2	er film top begin hand between methods produced as follows in the film of the	LDW 1503/B5	32.2@2800	32.5	15.12	69.0@2000	33.5	11.13	IDI
CKHXL2.19CH2		LDW 1603/B3	35.5@3000	31.0	15.45	73.0@1650	34.5	9.46	IDI
CKHXL2.19CH2	tid er vortill som til fing var er	LDW 1603/B6	32.9@2500	32.5	13.51	74.5@2000	35.0	11.64	DI
CKHXL2.19CH2	nam en transmittelle sode omdere unt zonen authensissen als blevokken sykvenskannen dettelle	LDW 1603/B4	30.8@2400	32.5	12.96	76.0@1700	35.5	10.03	IDI
CKHXL2.19CH2	والمنافقة والمنا	LDW 2204/B4	42.2@2500	31.0	17.17	97.4@1800	34.0	13.56	IDI
CKHXL2.19CH2		LDW 2204/B5	36.2@2200	·31.0	15.12	97.4@1800	34.0	13.56	IDI
CKHXL2.19CH2		KDW 1603/G	37.5@2800	34.5	16.07	76.7@1650	36.0	9.88	IDI
CKHXL2.19CH2	en a. 1815 ya da karafa ka wa kawa sa sa sa sa sa maka ka maka ka	KDW 1603	38.9@3000	34.0	16.95	76.7@1650	36.0	9.88	IDI
CKHXL2.19CH2	man tiller om av litte stationer om standard state i give som me men state state.	KDW 1603/B1	36.2@2800	33.0	15.37	75.2@1650	35.5	9.74	IDI
CKHXL2.19CH2	enggapartelytingkeringaran with statistics transported by the transported by	KDW 1603/B2	33.9@2600	32.5	14.04	.75.2@1600	35.5	9.44	IDI
CKHXL2.19CH2	germ namel datable is weather merchanism to the base of surface in the circular promotions.	KDW 2204	49.1@3000	31.0	20.61	97.7@2100	34.0	15.83	IDI
CKHXL2.19CH2		KDW 2204/B1	47.3@2800	31.5	19.56	97.4@1800	34.0	13.56	IDI
CKHXL2.19CH2	enterental il 1888 del 1884 en 2000 en	KDW 2204GE	30.2@1800	31.0	12.37	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI
CKHXL2.19CH2	ekk virtikk killik (Syymonomia kirman mållik (Syllik (Syllik) kir i menya tinkk (Syllik	KDW 2204/G	47.3@2800	31.5	19.56	95.9@1600	34.0	12.06	IDI
CKHXL2.19CH2	negrons (; 5 t Marie de Marielland om men am deplectors (* 1880 m.). De samme descriptions de trans	KDW 1503/B5	32.2@2800	32.5	15.12	69.0@2000	33.5	11.13	IDI
CKHXL2.19CH2	akai makai ilikularinna akan aka dahalai tulinin kalingan ing mangusa at ing mga	KDW 1603/B3	35.5@3000	31.0	15.45	73.0@1650	34.5	9.46	IDI
CKHXL2.19CH2	galan krimina kilipiteksyönyöven on kilipiteksi karilah kiri yölkölölö — mayan koon, kiri yölyötek	KDW 1603/B6	32.9@2500	32.5	13.51	74.5@2000	35.0	11.64	
CKHXL2.19CH2	massannika (Massans den se vijes p. s. massandskida	KDW 1603/B4	30.8@2400	32.5	12.96	76.0@1700	35.5	10.03	IDI
CKHXL2.19CH2	authorism a christing phagas ar coma anglita antiditallah in tip ay karawan ja temperatur	KDW 2204/B4	42.2@2500	31.0	17.17	97.4@1800	34.0	13.56	IDI
CKHXL2.19CH2	napolijas vistotili Vilitaiks irks vinsu turba a likku jų vair jūtins, mikas ti vistakas	KDW 2204/B5	36.2@2200	31.0	15.12	97.4@1800	34.0	13.56	IDI

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Engine Model Summary Template

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CKHXL2.19CH2		LDW 2204GE	32.9@1800	34.0	13.56	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI
CKHXL2.19CH2		KDW 2204GE	32.9@1800	34.0	13.56	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI