

## **KOHLER COMPANY**

## **EXECUTIVE ORDER U-R-060-0073**

New Off-Road Compression-Ignition Engines Page 1 of 2

Pursuant to the authority vested in California 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-19-095;

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)					
2021	MKHXL02.5TCR	1.861, 2.482	Diesel	8000					
SPECIAL	FEATURES & EMISSION C	CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION						
	c Direct Injection, Turbo Module, Exhaust Gas R Oxidation Catal	ecirculation, Diesel	Crane, Loaders, Tractor, Gene	erator Set					

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), 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				EXHAUST (g/kw-ł		OPACITY (%)				
POWER CLASS	STANDARD CATEGORY		NMHC	NOx	NMHC+NOx	со	PM	ACCEL	LUG	PEAK	
19 ≤ kW < 56	Tier 4 Final	STD	N/A	N/A	4.7	5.0	0.03	N/A	N/A	N/A	
		CERT			3.9	0.1	0.02				

**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).

**BE IT FURTHER RESOLVED:** That for the listed engine models which include engines from different power categories in the same engine family, the manufacturer is complying with the more stringent set of standards from the 37 ≤ kW < 56 power category in conformance with the incorporated Section 1039.230 (e) of the "California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Part 1-D" adopted October 20, 2005 and last amended October 25, 2012.

**BE IT FURTHER RESOLVED:** The listed engine family is conditionally certified pending submission of additional test data to verify compliance with useful-life emission standards. The manufacturer has until May 24, 2021 to provide test data to confirm or correct the certification emissions levels on this conditional certification. Failure to resolve concerns by the specified date, shall be cause for the Executive Officer to rescind this conditional certification, in which case all engines covered under this conditional certification would be deemed uncertified and subject to civil penalties pursuant to Health and Safety Code Section 43154.



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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 on this <u>30th</u> day of December 2020.

Allen Lyons, Chief

**Emissions Certification and Compliance Division** 

Attachment: Engine Models

EO #: U-R-060-0073

Family: MKHXL02.5TCR

Attachment Last Revised: 12/1/2020

					Displacement -		Peak Power -	Peak Power -	Peak Power -	Peak Power -		Peak Torque -	Peak Torque -	Peak Torque -	Peak Torque -				
Model	Code	Trim	Config	Displacement	Units	Peak Power	Units	Speed (rpm)	Fueling	Fuel Units	Peak Torque	Units	Speed (rpm)	Fuel	Fuel Units	OBD	GHG	Special	Notes
KDI 1903TCR/18	N/a	N/a	13	1.861	Liters	40.2	horsepower	1800	15.15026074	lb/hr	141.6	lb-ft	1350	13.36787712	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/22	N/a	N/a	13	1.861	Liters	48.3	horsepower	2200	18.88006349	lb/hr	166	lb-ft	1500	16.95739968	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/22A	N/a	N/a	13	1.861	Liters	51	horsepower	2200	19.4246807	lb/hr	166	lb-ft	1500	16.95739968	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/22B	N/a	N/a	13	1.861	Liters	55	horsepower	2200	21.4216105	lb/hr	162.3	lb-ft	1500	16.83362304	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/25	N/a	N/a	13	1.861	Liters	48.3	horsepower	2500	19.8042624	lb/hr	166	lb-ft	1500	16.95739968	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/25A	N/a	N/a	13	1.861	Liters	55	horsepower	2500	22.0735008	lb/hr	166	lb-ft	1500	16.95739968	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/26	N/a	N/a	13	1.861	Liters	48.3	horsepower	2600	20.16734054	lb/hr	166	lb-ft	1500	16.95739968	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/26A	N/a	N/a	13	1.861	Liters	40.2	horsepower	2600	20.5964329	lb/hr	132.8	lb-ft	1500	16.95739968	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/26B	N/a	N/a	13	1.861	Liters	56.3	horsepower	2600	23.17098701	lb/hr	166	lb-ft	1500	16.95739968	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/G18A	N/a	N/a	13	1.861	Liters	32.2	horsepower	1800	12.17962138	lb/hr	93.7	lb-ft	1800	12.17962138	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/G18B	N/a	N/a	13	1.861	Liters	44.3	horsepower	1800	16.33851648	lb/hr	126.9	lb-ft	1800	16.33851648	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/G18C	N/a	N/a	13	1.861	Liters	49.6	horsepower	1800	18.71502797	lb/hr	144.6	lb-ft	1800	18.71502797	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/275	N/a	N/a	13	1.861	Liters	48.3	horsepower	2750	20.87699328	lb/hr	166	lb-ft	1500	16.95739968	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 1903TCR/G18	N/a	N/a	13	1.861	Liters	40.2	horsepower	1800	15.15026074	lb/hr	86.3	lb-ft	1800	15.15026074	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 2504TCR/22	N/a	N/a	14	2.482	Liters	64.4	horsepower	2200	24.68931379	lb/hr	221.3	lb-ft	1500	21.94972416	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 2504TCR/22A	N/a	N/a	14	2.482	Liters	73.8	horsepower	2200	26.33526804	lb/hr	221.3	lb-ft	1500	21.94972416	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 2504TCR/23	N/a	N/a	14	2.482	Liters	73.8	horsepower	2300	28.59515443	lb/hr	221.3	lb-ft	1500	21.94972416	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 2504TCR/25	N/a	N/a	14	2.482	Liters	61.7	horsepower	2500	25.3054464	lb/hr	206.5	lb-ft	1500	20.62944	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 2504TCR/25A	N/a	N/a	14	2.482	Liters	73.8	horsepower	2500	29.7063936	lb/hr	221.3	lb-ft	1500	21.94972416	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 2504TCR/26	N/a	N/a	14	2.482	Liters	61.7	horsepower	2600	25.17341798	lb/hr	206.5	lb-ft	1500	20.62944	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 2504TCR/26A	N/a	N/a	14	2.482	Liters	73.8	horsepower	2600	30.03646464	lb/hr	221.3	lb-ft	1500	21.94972416	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 2504TCR/G18	N/a	N/a	14	2.482	Liters	59	horsepower	1800	21.38860339	lb/hr	171.9	lb-ft	1800	21.38860339	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 2504TCR/G18A	N/a	N/a	14	2.482	Liters	63	horsepower	1800	22.97294438	lb/hr	184.4	lb-ft	1800	22.97294438	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 2504TCR/22B	N/a	N/a	14	2.482	Liters	67.1	horsepower	2200	25.17341798	lb/hr	221.3	lb-ft	1500	21.78468864	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 2504TCR/22C	N/a	N/a	14	2.482	Liters	60.3	horsepower	2200	23.23700122	lb/hr	210.2	lb-ft	1500	20.79447552	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC
KDI 2504TCR/22D	N/a	N/a	14	2.482	Liters	53.6	horsepower	2200	20.81648026	lb/hr	188.1	lb-ft	1500	18.48397824	lb/hr	N/a	N/a	N/a	DDI, ECM, DOC, EGR, TC