



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 December 15, 1998 Settlement Agreement between the Air Resources Board and the manufacturer, and any modifications thereof to the Settlement Agreement;

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 engine and emission control system 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)
2009	9CPXL18.1ESK	18.1	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger, Charge Air Cooler and Engine Control Module			Loader, Tractor and Industrial Equipment	

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 POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
225 < KW ≤ 560	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
		CERT	--	--	4.0	2.4	0.15	9	35	13

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 15 day of January 2009.

Annette Hebert, Chief
Mobile Source Operations Division

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
9CPXL18.1ESK	C18	Cert Test 2	700@1800	402	243	2361@1400	467	220	EM, DI, TC,
9CPXL18.1ESK	C18	1	700@1800	419	254	2361@1400	468	220.5	EM, DI, TC,
9CPXL18.1ESK	C18	2	700@2100	370	261	2361@1400	461	217	EM, DI, TC,
9CPXL18.1ESK	C18	3	525@2100	272	192	1866@1400	365	172	EM, DI, TC,
9CPXL18.1ESK	C18	4	553@1800	319	193	1934@1400	389	183.2	EM, DI, TC,
9CPXL18.1ESK	C18	5	464@1800	265	160.2	1849@1250	373	157	EM, DI, TC,
9CPXL18.1ESK	C18	6	464@1800	268	162.5	1849@1250	382	160.6	EM, DI, TC,
9CPXL18.1ESK	C18	7	700@2100	370	261	2361@1400	461	217	EM, DI, TC,
9CPXL18.1ESK	C18	8	630@2100	337	238	2042@1400	395	186	EM, DI, TC,
9CPXL18.1ESK	C18	9	650@2100	339	239	2051@1500	417	210	EM, DI, TC,
9CPXL18.1ESK	C18	10	650@2000	331	223	2078@1200	404	165.4	EM, DI, TC,
9CPXL18.1ESK	C18	11	523@1800	302	182.5	2004@1200	404	163.2	EM, DI, TC,
9CPXL18.1ESK	C18	12	553@1800	320	194	2116@1200	422	170	EM, DI, TC,
9CPXL18.1ESK	C18	13	523@1800	302	182.5	2005@1200	400	161	EM, DI, TC,
9CPXL18.1ESK	C18	14	555@1800	320	193.6	2004@1200	403	162.8	EM, DI, TC,
9CPXL18.1ESK	C18	15	700@1800	419	254	2359@1400	468	220.5	EM, DI, TC,
9CPXL18.1ESK	C18	16	575@1900	310	198	2005@1300	389	170	EM, DI, TC,
9CPXL18.1ESK	C18	17	588@2100	308	217.9	2090@1400	400	188	EM, DI, TC,
9CPXL18.1ESK	C18	18	575@2100	296	209	1938@1400	381	179	EM, DI, TC,
9CPXL18.1ESK	C18	19	600@2100	310	219	2022@1400	397	187	EM, DI, TC,
9CPXL18.1ESK	C18	20	589@2000	312	210	2064@1300	399	175	EM, DI, TC,
9CPXL18.1ESK	C18	21	525@1800	302	183	1672@1300	346	151	EM, DI, TC,
9CPXL18.1ESK	C18	22	488@1800	276	166.8	1549@1300	309	135.2	EM, DI, TC,
9CPXL18.1ESK	C18	23	598@1800	359	217	1988@1300	405	177	EM, DI, TC,
9CPXL18.1ESK	C18	24	556@1800	334	202	1849@1300	373	163	EM, DI, TC,
9CPXL18.1ESK	C18	25	632@1800	374	227	2107@1300	417	182	EM, DI, TC,
9CPXL18.1ESK	C18	26	596@1800	348	211	1985@1300	391	171	EM, DI, TC,
9CPXL18.1ESK	C18	27	632@1800	374	227	2107@1300	417	182	EM, DI, TC,

Engine Model Summary Template

Engine Family	1.Engine Code	2.Engine Model	4.Fuel Rate:		5.Fuel Rate:		7.Fuel Rate:		8.Fuel Rate:		9.Emission Control Device Per SAE J1930
			3.BHP@RPM (SAE Gross)	mm/stroke @ peak HP (for diesel only)	mm/stroke @ peak HP (for diesels only)	HP	mm/stroke@peak torque	mm/stroke@peak torque	(lbs/hr)@peak torque		
9CPXL18.1ESK	28	C18	596@1800	348	211	1985@1300	391	171	EM, DI, TC,		
9CPXL18.1ESK	30	C18	600@2100	313	221	2022@1400	411	194	EM, DI, TC,		
9CPXL18.1ESK	31	C18	575@2100	292	206	1938@1400	376	177	EM, DI, TC,		
9CPXL18.1ESK	32	C18	630@2100	331	234	2042@1400	387	182	EM, DI, TC,		
9CPXL18.1ESK	33	C18	632@1800	377	228	2107@1300	409	179	EM, DI, TC,		
9CPXL18.1ESK	34	C18	596@1800	357	216	1985@1300	386	169	EM, DI, TC,		
9CPXL18.1ESK	35	C18	630@2100	338	239	2203@1400	425	200	EM, DI, TC,		
9CPXL18.1ESK	36	Cert Engine	700@1800	414	250	2361@1400	467	220	EM, DI, TC,		
9CPXL18.1ESK	37	C18	700@2100	376	266	2361@1400	467	220	EM, DI, TC,		
9CPXL18.1ESK	38	C18	575@1900	323	206	2005@1300	399	175	EM, DI, TC,		
9CPXL18.1ESK	39	C18	525@2100	272	192	1866@1400	365	172	EM, DI, TC,		
9CPXL18.1ESK	40	C18	650@2100	338	239	2051@1500	410	207	EM, DI, TC,		
9CPXL18.1ESK	41	C18	488@1800	274	166	1549@1300	308	135	EM, DI, TC,		
9CPXL18.1ESK	42	C18	588@2100	312	221	2090@1400	412	194	EM, DI, TC,		
9CPXL18.1ESK	43	C18	542@1800	321	195	1762@1300	347	152	EM, DI, TC,		
9CPXL18.1ESK	44	C18	500@2100	298	210	1667@1400	354	167	EM, DI, TC,		
9CPXL18.1ESK	45	C18	440@2100	256	181	1466@1400	309	146	EM, DI, TC,		
9CPXL18.1ESK	46	C18	700@1800	412	250	2361@1400	461	217	EM, DI, TC,		
9CPXL18.1ESK	47	C18	700@2100	376	266	2361@1400	467	220	EM, DI, TC,		
9CPXL18.1ESK	48	C18	746@1900	405	259	2303@1400	453	213	EM, DI, TC,		
9CPXL18.1ESK	49	C18	575@1800	325	197	1946@1400	382	180	EM, DI, TC,		
9CPXL18.1ESK	50	C18	575@2100	296	209	1938@1400	381	179	EM, DI, TC,		
9CPXL18.1ESK	51	C18	700@1800	402	243	2361@1400	467	220	EM, DI, TC,		
9CPXL18.1ESK	52	C18	700@2100	371	262	2361@1400	464	218	EM, DI, TC,		
9CPXL18.1ESK	53	C18	630@2100	337	238	2042@1400	401	189	EM, DI, TC,		
9CPXL18.1ESK	54	C18	700@1800	412	250	2361@1400	461	217	EM, DI, TC,		
9CPXL18.1ESK	55	C18	700@2100	367	259	NA	NA	NA	EM, DI, TC,		
9CPXL18.1ESK	56	C18	700@1900	406	259	NA	NA	NA	EM, DI, TC,		

