

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-13-24
Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

DEUTZ AG

Pursuant to the authority vested in the Air Resources Board at Sections 43000.5, 43013, and 43018 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned at Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following diesel engines and exhaust emission control systems produced by the manufacturer are certified as described below for use in heavy-duty off-road equipment:

Model Year: 2000

Typical Equipment Usage: Pump, Generator Set

Engine Power Ratings Range: 175 – 750 horsepower, inclusive

Fuel Type: Diesel

<u>Engine Family</u>	<u>Displacement</u>		<u>Exhaust Emission Control Systems and Special Features</u>
	<u>Liters</u>	<u>Cubic Inches</u>	
YDZXL15.9002	11.9	727	Turbocharger
(BF6/8M 1015C)	15.9	968	Charge Air Cooler Smoke Puff Limiter

The engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values in grams per brake horsepower-hour (g/bhp-h) for total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

	<u>Exhaust Emissions (g/hp-h)</u>				<u>Smoke Opacity (%)</u>		
	<u>THC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
Standard	1.0	8.5	6.9	0.4	20	15	50
Certification	0.2	0.4	4.7	0.1	9	8	21

BE IT FURTHER RESOLVED: That the listed engine models comply with "Exhaust Emission Standards and Test Procedures -- Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with "Emission Control Labels --1996 and Later Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 *et seq.*).

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

Executed at El Monte, California this 7th day of February 2000.



R. B. Summerfield, Chief
Mobile Source Operations Division

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YDZXL15 9002

List of emission related components

Displacement	Engine code	Nominal power 15%	Nominal power 45%	Nominal speed 450rpm	Mean effective pressure at nominal power	Injection rate at nominal power 45mm ³	Peak torque 15%	Speed at nom. torque ± 100rpm	Mean effective pressure at peak torque	Injection rate at peak torque 45mm ³
cm ³		HP	kW	rpm	bar	mm ³ /stroke	Nm	rpm	bar	mm ³ /stroke
15874	C440	536	400	2100	14.40	215	2390	1200	18.93	253
15874	C440/1	536	400	1900	15.91	215	2440	1200	19.32	253
15874	C420	563	420	2100	15.12	231	2674	1200	21.17	286
15874	C400	536	400	2100	14.40	220	2543	1200	20.93	263
15874	C400/3	536	400	2100	14.40	225	2370	1200	18.77	248
15874	C385	516	385	2100	13.66	208	2544	1200	20.14	272
15874	C381	511	381	2100	13.72	206	2517	1200	19.93	268
15874	C370/1	496	370	2100	13.32	197	1905	1200	15.08	197
15874	C370/2	496	370	2100	13.32	210	1905	1200	15.08	197
15874	C364	488	364	2100	13.10	193	2405	1200	19.04	256
15874	C348	468	348	2100	12.53	183	2300	1200	18.21	243
15874	C400/1	536	400	2000	15.12	233	2679	1200	21.21	287
15874	C381/1	511	381	2000	14.40	219	2552	1200	20.21	273
15874	C370	496	370	2000	13.99	211	2478	1200	19.62	265
15874	C364/1	488	364	2000	13.76	206	2438	1200	19.31	259
15874	C348/1	468	348	2000	13.15	194	2331	1200	18.46	247
15874	C400/2	536	400	1900	15.91	220	2719	1200	21.53	279
15874	C400/4	536	400	1900	15.91	230	2613	1200	20.69	275
15874	C381/2	511	381	1900	15.16	208	2590	1200	20.51	264
15874	C364/2	488	364	1900	14.48	197	2475	1200	19.60	251
15874	C348/2	468	348	1900	13.85	186	2368	1200	18.74	240
15874	C348/3	468	348	1900	13.85	186	2200	1200	17.42	223
15874	C380	509	380	1800	15.96	212	2545	1200	20.15	258
15874	C362	485	362	1800	15.20	201	2425	1200	19.20	247
15874	C345	462	345	1800	14.49	191	2311	1200	18.30	234
15874	C330	442	330	1800	13.86	180	2211	1200	17.51	222
15874	D420	563	420	2100	15.12	231	na	na	na	na
15874	D454	608	454	1800	19.07	252	na	na	na	na
15874	D413	553	413	1800	17.34	230	na	na	na	na
15874	D362	485	362	1800	15.20	201	na	na	na	na
11906	C330/1	402	300	2100	14.40	215	1828	1200	19.30	253
11906	C300/5	402	300	1900	15.91	216	1690	1200	17.64	235
11906	C240	322	240	2300	10.52	160	1395	1200	14.73	193
11906	C300	402	300	2100	14.40	207	1981	1200	20.91	274
11906	C300/3	402	300	2100	14.40	222	1776	1200	18.75	249
11906	C286	383	286	2100	13.73	200	1889	1200	19.94	261
11906	C373	366	273	2100	13.10	194	1803	1200	19.04	248
11906	C273/3	366	273	2100	13.10	203	1617	1200	17.07	227
11906	C261	350	261	2100	12.53	188	1724	1200	18.20	238
11906	C300/1	402	300	2000	15.12	211	2009	1200	21.21	277

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YDZXL15 9002

List of emission related components

Displacement	Engine code	HP	Nominal power kW	Nominal power %5	Nominal speed ±50rpm	Mean effective pressure at nominal power	Injection rate at nominal power ±5mm ³	Peak torque ±5%	Speed at nom. torque ±10rpm	Mean effective pressure at peak torque	Injection rate at peak torque ±5mm ³
cm ³					rpm	bar	mm ³ /stroke	Nm	rpm	bar	mm ³ /stroke
11906	C286/1	383	286	2000	14.41	203	1915	1200	20.22	265	
11906	C286/2	350	261	2000	13.15	190	1669	1300	17.62	226	
11906	C280	375	280	2050	13.77	200	1875	1200	19.80	260	
11906	C273/1	366	273	2000	13.76	196	1828	1200	19.30	254	
11906	C281/1	350	261	2050	12.83	189	1745	1200	18.42	240	
11906	C242	324	242	2050	11.90	178	1621	1200	17.11	220	
11906	C300/2	402	300	1900	15.91	216	2039	1200	21.53	280	
11906	C300/4	402	300	1900	15.91	231	1963	1200	20.72	277	
11906	C286/2	383	286	1900	15.17	206	1944	1200	20.52	268	
11906	C286/3	383	286	1900	15.17	221	1868	1200	19.72	258	
11906	C273/2	366	273	1900	14.48	197	1855	1200	19.58	256	
11906	C273/4	366	273	1900	14.48	209	1783	1200	18.82	250	
11906	C267/2	350	261	1900	13.85	188	1774	1200	18.73	244	
11906	C285	382	285	1800	15.96	214	1908	1200	20.14	264	
11906	C271	363	271	1800	15.17	205	1815	1200	19.16	250	
11906	C259	347	259	1800	14.50	197	1734	1200	18.31	239	
11906	C248	332	248	1800	13.89	189	1661	1200	17.54	228	
11906	D341	457	341	1800	19.09	252	na	na	na	na	
11906	D310	415	310	1800	17.36	235	na	na	na	na	
11906	D271	363	271	1800	15.17	205	na	na	na	na	