

State of California  
AIR RESOURCES BOARD

## EXECUTIVE ORDER U-R-4-17

## Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

## DEERE POWER SYSTEM GROUP OF DEERE &amp; COMPANY

Pursuant to the authority vested in the Air Resources Board by Sections 43000.5, 43013 and 43018 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-45-9;

IT IS ORDERED AND RESOLVED: That the following Deere Power System Group of Deere & Company 1997 model-year engine, with rated power between 175 and 750 horsepower, and exhaust emission control systems are certified as described below for use in heavy-duty off-road equipment:

Typical Equipment Usage: Generator Set, Tractor

Fuel Type: Diesel

<u>Engine Family</u>	<u>Displacement in Liters</u>	<u>Exhaust Emission Control Systems and Special Features</u>
VJD10.R6DBRA (500HA)	10.1	Turbocharger Charge Air Cooler

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

<u>Exhaust Emissions (g/bhp-hr)</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>
1.0	3.5	6.9	0.4	20	15	50

The THC, CO, NOx and PM exhaust emission certification values, in g/bhp-hr, and the opacity of smoke emission certification values, in percent (%), for this engine family are:

<u>Engine Family</u>	<u>Exhaust Emission (g/bhp-hr)</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>
VJD10.R6DBRA (500HA)	0.4	2.0	6.0	0.2	15	7	28

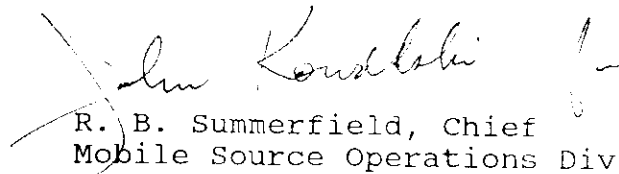
BE IT FURTHER RESOLVED: That the listed engine models comply with the "Exhaust Emission Standards and Test Procedures--Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with the "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, Section 2425 et seq.).

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

Executed at El Monte, California this 23<sup>rd</sup> day of December 1996.

  
R. B. Summerfield, Chief  
Mobile Source Operations Division

# ENGINE MODEL SUMMARY

Model Number:

Manufacturer: Deere Power Systems Group of Deere & Company

EPA Eng Family: VJD10.R6DBRA

Manufacturer Family Name: 500HA

Engine Code	Engine Model	BHP @ RPM (SAE Gross)	Fuel Rate: mm/stroke @ peak (for diesel only)	Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	Torque @ RPM (SEA Gross)	Fuel Rate: mm/stroke @ peak torque	Fuel Rate: (lbs/hr) @ peak torque	Emission Control Device Per SAE J1930
6101HF010A		375 @ 2100	193 @ 2100	137 @ 2100	1228 @ 1400	236 @ 1400	111 @ 1400	TC, CAC, EM
6101HF010B		375 @ 2100	193 @ 2100	137 @ 2100	1221 @ 1400	236 @ 1400	111 @ 1400	TC, CAC, EM
6101HF010C		349 @ 2100	178 @ 2100	126 @ 2100	1133 @ 1400	216 @ 1400	102 @ 1400	TC, CAC, EM
6101HF010D		319 @ 2100	163 @ 2100	116 @ 2100	1003 @ 1400	191 @ 1400	90 @ 1400	TC, CAC, EM
6101HF010E		402 @ 1800	242 @ 1800	147 @ 1800	NA	NA	NA	TC, CAC, EM
6101HRW10		357 @ 2100	184 @ 2100	131 @ 2100	1232 @ 1200	223 @ 1200	90 @ 1200	TC, CAC, EM
6101HRW11		311 @ 2100	158 @ 2100	112 @ 2100	1073 @ 1200	191 @ 1200	77 @ 1200	TC, CAC, EM
6101HZ013		349 @ 2100	179 @ 2100	125 @ 2100	1213 @ 1400	222 @ 1400	104 @ 1400	TC, CAC, EM

A. 50 State Codes:

B. Federal Codes

C. California Codes