

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-4-18

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

DEERE POWER SYSTEM GROUP OF DEERE & 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.R6DBRB (500AA)	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	8.5	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.R6DBRB (500AA)	0.4	1.3	6.0	0.2	18	7	37

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*  
 R. B. Summerfield, Chief  
 Mobile Source Operations Division

# LARGE ENGINE MODEL SUMMARY

Model Summary

Manufacturer: Deere Power Systems Group of Deere & Company

EPA Engine Family: VJD10.R6DBRB

Manufacturer Family Name: 500AA

Engine Code	Engine Model	BHP @ RPM (SAE Gross)	Fuel Rate: mm <sup>3</sup> /stroke @ peak HP (for diesel only)	Fuel Rate: (lb/hr) @ peak HP (for diesels only)	Torque @ RPM (SEA Gross)	Fuel Rate: mm <sup>3</sup> /stroke @ peak torque	Fuel Rate: (lb/hr) @ peak torque	Emission Control Device Per SAE J1930
A. 50 State Codes								
6101AF010A		338@2100	178@2100	126@2100	1152@1400	225@1400	106@1400	TC, CAC, EM
6101AF010B		325@2100	170@2100	121@2100	1069@1400	209@1400	99@1400	TC, CAC, EM
6101AF010C		325@2100	171@2100	121@2100	1055@1400	204@1400	97@1400	TC, CAC, EM
6101AF010D		300@2100	157@2100	112@2100	977@1400	189@1400	89@1400	TC, CAC, EM
6101AF010E		276@2100	146@2100	103@2100	892@1400	179@1400	82@1400	TC, CAC, EM
6101AF010F		300@2100	157@2100	112@2100	977@1400	189@1400	89@1400	TC, CAC, EM
6101AT012		282@2100	153@2100	108@2100	1117@1400	221@1400	104@1400	TC, CAC, EM
6101AT010		296@2000	166@2000	110@2000	997@1400	194@1400	90@1400	TC, CAC, EM
6101AT013		282@2100	153@108	108@2100	1117@1400	221@1400	104@1400	TC, CAC, EM

B. Federal Codes

C. California Codes