California Environmental Protection Agency AIR RESOURCES BOARD	DEERE POWER SYSTEMS GROUP OF DEERE & COMPANY	EXECUTIVE ORDER U-R-004-0233-1 New Off-Road Compression-Ignition Engines

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 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 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)
2005	5JDXL09.0102	9.0	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Engine Control Module, Turbocharger, Charge Air Cooler, Exhaust-Gas Recirculation	Crane, Loader, Tractor, Dozer, Pump, Compressor, Generator Set

The engine models and codes are attached.

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, 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
130 ≤ kW < 225	Tier 2	STD	N/A	N/A	6.6	3.5	0.20	20	15	50
225 ≤ kW < 450	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	20	15	50
		FEL	-	-	4.0	-	-	-	-	-
		CERT	-	-	3.6	0.5	0.12	8	4	32

BE IT FURTHER RESOLVED: That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

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.

This Executive Order hereby supersedes Executive Order U-R-004-0233 dated May 16, 2005.

Executed at El Monte, California on this 24TH day of January 2006.

Allen Lyons, Chief
Mobile Source Operations Division

Engine Model Summary Form

Attachment 1 of 6
U-A-004-0233-1

John Deere Power Systems of Deere and
gory: Nonroad CI
e Family: 5JDXL09.0102
nily Name: 450HAA
s Code: New Submission

ngine 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
90HF485A	6090H	417.06@2200	162.10@2200	141.65@2200	1231.57@1575	201.11@1575	122.65@1575	EM EGR EC DDI TC, CAC

Engine Model Summary Form

Manufacturer: **John Deere Power Systems of Deere and**
Engine category: **Nonroad CI**
EPA Engine Family: **5JDXL09.0102**
M' Family Name: **450HAA**
. ss Code: **Running Change**

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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
6090HH005A	6090H	383.54@2200	178.70@2200	132.50@2200	1083.34@1600	205.5@1600	110.90@1600	EM EGR EC DOC TC CAC
6090HH005B	6090H	352.69@2200	162.30@2200	120.38@2200	994.11@1600	198.6@1600	107.10@1600	EM EGR EC
6090HF485W	6090H	384.88@1800	179.60@1800	128.31@1800				EM EGR EC
6090HF485X	6090H	345.99@1800	161.20@1800	115.13@1800				EM EGR EC
6090HF485Y	6090H	307.10@1800	142.10@1800	101.46@1800				EM EGR EC
6090HF485V	6090H	422.43@1800	232.00@1800	140.66@1800				EM EGR EC
6090HF485U	6090H	225.30@2000	113.50@2000	76.57@2000	807.53@1500	160.5@1500	81.16@1500	EM EGR EC
6090HF485B	6090H	375.49@2200	172.30@2200	127.89@2200	1147.50@1500	211.7@1500	107.13@1500	EM EGR EC
6090HF485C	6090H	350.01@2200	161.10@2200	119.60@2200	1146.76@1500	211.9@1500	107.41@1500	EM EGR EC
6090HF485D	6090H	350.01@2200	161.10@2200	119.52@2200	1146.76@1500	211.9@1500	107.21@1500	EM EGR EC
6090HF485E	6090H	350.01@2000	175.70@2000	118.50@2000	1146.76@1500	211.9@1500	107.21@1500	EM EGR EC
6090HF485F	6090H	324.53@2200	150.80@2200	111.89@2200	1051.63@1500	192.4@1500	97.36@1500	EM EGR EC
6090HF485G	6090H	324.53@2200	150.40@2200	111.65@2200	1146.76@1500	211.9@1500	107.19@1500	EM EGR EC
6090HF485H	6090H	324.53@2000	161.80@2000	109.15@2000	1146.76@1500	211.9@1500	107.21@1500	EM EGR EC
6090HF485I	6090H	300.39@2200	138.80@2200	103.00@2200	971.24@1500	180.8@1500	91.50@1500	EM EGR EC
6090HF485J	6090H	300.39@2200	138.40@2200	102.67@2200	1051.63@1500	195.3@1500	98.81@1500	EM EGR EC
6090HF485K	6090H	300.39@2000	149.60@2000	100.95@2000	1051.63@1500	195.4@1500	98.86@1500	EM EGR EC
6090HF485M	6090H	274.91@2200	125.70@2200	93.35@2200	885.70@1500	178.1@1500	90.08@1500	EM EGR EC
6090HF485N	6090H	274.91@2200	125.30@2200	93.04@2200	968.29@1500	197.3@1500	99.78@1500	EM EGR EC
6090HF485R	6090H	250.78@2000	123.00@2000	83.01@2000	885.70@1500	179.1@1500	90.59@1500	EM EGR EC
6090HF485S	6090H 168	225.30@2200	107.80@2200	80.03@2200	725.67@1500	142.5@1500	72.07@1500	EM EGR EC
6090HF485T	6090H	225.30@2200	106.50@2200	79.06@2200	807.53@1500	160.3@1500	81.07@1500	EM EGR EC
[illegible]HF485O	6090H	274.91@2000	136.30@2000	91.96@2000	968.29@1500	198.5@1500	100.38@1500	EM EGR EC
[illegible]90HF485Q	6090H	250.78@2200	116.40@2200	86.45@2200	885.70@1500	179.1@1500	90.57@1500	EM EGR EC
6090HF485P	6090H	250.78@2200	117.10@2200	86.89@2200	807.53@1500	160.3@1500	81.09@1500	EM EGR EC

✓ added

Engine Model Summary Form

Manufacturer: **John Deere Power Systems of Deere and**

Engine category: **Nonroad CI**

EPA Engine Family: **5JDXL09.0102**

Mfr Family Name: **450HAA**

F ; Code: **Running Change**

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U-R-004-0233-1

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
6090HF485A	6090H		191.00@2200			231@1575		
6090HRW01	6090H 165	219.93@2100	107.30@2100	76.00@2100	741.89@1575	150@1575	79.66@1575	EM EGR EC DOC, TS CAT
6090HRW02A	6090H	278.94@2100	133.90@2100	94.80@2100	976.41@1575	197.5@1575	104.88@1575	EM EGR EC
6090HRW02B	6090H	242.73@2100	115.90@2100	82.10@2100	821.54@1575	164.1@1575	87.13@1575	EM EGR EC
6090HRW05	6090H	219.93@2100	107.30@2100	76.00@2100	741.89@1575	150@1575	79.66@1575	EM EGR EC
6090HRW20	6090H	219.93@2100	107.30@2100	76.00@2100	741.89@1575	150@1575	79.66@1575	EM EGR EC
6090HRW06A	6090H	278.94@2100	133.90@2100	94.80@2100	976.41@1575	197.5@1575	104.88@1575	EM EGR EC
6090HRW21A	6090H	278.94@2100	133.90@2100	94.80@2100	976.41@1575	197.5@1575	104.88@1575	EM EGR EC
6090HRW06B	6090H	242.73@2100	115.90@2100	82.10@2100	821.54@1575	164.1@1575	87.13@1575	EM EGR EC
6090HRW21B	6090H	242.73@2100	115.90@2100	82.10@2100	821.54@1575	164.1@1575	87.13@1575	EM EGR EC
6090HRW08A	6090H	331.24@2100	155.60@2100	110.15@2100	1131.27@1575	210.3@1575	111.65@1575	EM EGR EC
6090HRW23A	6090H	331.24@2100	155.60@2100	110.15@2100	1131.27@1575	210.3@1575	111.65@1575	EM EGR EC
6090HRW08B	6090H	303.08@2100	141.80@2100	100.40@2100	1061.21@1575	197.8@1575	105.01@1575	EM EGR EC
6090HRW23B	6090H	303.08@2100	141.80@2100	100.40@2100	1061.21@1575	197.8@1575	105.01@1575	EM EGR EC
6090HRW04	6090H	303.08@2100	141.80@2100	100.40@2100	1061.21@1575	197.8@1575	105.01@1575	EM EGR EC
6090HRW22	6090H	303.08@2100	141.80@2100	100.40@2100	1061.21@1575	197.8@1575	105.01@1575	EM EGR EC

✓ Test engine (modified)

✓ added

Manufacturer: **John Deere Power Systems of Deere and**

Engine category: **Nonroad CI**

EPA Engine Family: **5JDXL09.0102**

Mfr Family Name: **450HAA**

Process Code: **Running Change**

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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
6090HT001A	6090H	199.15@2100	99.20@2100	70.11@2100	611.36@1575	123.9@1575	65.70@1575	EM EGR EC DOC TC CAC
6090HT001B	6090H	217.25@2100	108.00@2100	76.44@2100	672.57@1575	135.7@1575	72.09@1575	EM EGR EC

Engine Model Summary Form

Manufacturer: **John Deere Power Systems of Deere and**

Engine category: **Nonroad CI**

EPA Engine Family: **5JDXL09.0102**

Mfr Family Name: **450HAA**

F ; Code: **Running Change**

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UR004-0233-1

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
6090HF485L	6090H	399.63@2200	182.40@2200	135.39@2200	1143.07@1600	167.9@1600	116.65@1600	EM EGR EC
6090HDW02	6090H	286.98@2400	126.80@2400	102.58@2400	814.90@1600	148.9@1600	80.32@1600	EM EGR EC
6090HDW01	6090H	312.46@2100	149.50@2100	105.91@2100	1047.94@1500	196.8@1500	99.54@1500	EM EGR EC
6090HN001	6090H	324.53@2200	149.20@2200	110.74@2200	1084.81@1600	202.6@1600	109.35@1600	EM EGR EC

TC DDI CAR

Engine Model Summary Form

Manufacturer: **John Deere Power Systems of Deere and**

Engine category: **Nonroad CI**

EPA Engine Family: **5JDXL09.0102**

M[redacted]mily Name: **450HAA**

P[redacted]s Code: **Running Change**

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U-R-004-0233-1

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
6090HT001A	6090H		96.10@2100	68.08@2100	672.57@1575	132.1@1575	70.18@1575	
6090HT001B	6090H		105.80@2100	74.96@2100	733.78@1575	144.4@1575	76.72@1575	
6090HZ003A	6090H	383.54@2200	178.70@2200	132.50@2200	1083.34@1600	205.5@1600	110.90@1600	EM EGR EC DOI, CR TC
6090HZ003B	6090H	352.69@2200	162.30@2200	120.38@2200	994.11@1600	198.6@1600	107.10@1600	EM EGR EC
6090HZ003C	6090H	327.21@2200	151.70@2200	112.57@2200	914.46@1600	181.1@1600	97.73@1600	EM EGR EC
6090HTJ02	6090H	214.57@2000	110.20@2000	74.39@2000	829.65@1400	161.1@1400	76.20@1400	EM EGR EC
6090HTJ01	6090H	214.57@2000	110.20@2000	74.39@2000	829.65@1400	161.1@1400	76.20@1400	EM EGR EC
6090HTJ05	6090H	241.39@2000	123.70@2000	83.45@2000	907.08@1400	176.7@1400	83.49@1400	EM EGR EC
6090HT002	6090H	282.96@1900	157.00@1900	100.64@1900	1065.64@1400	201.6@1400	95.31@1400	EM EGR EC