



Testzentrum Technik und Betriebsmittel



***REPORT on test in accordance with
OECD STANDARD CODE 2 for the
Official Testing of Agricultural Tractor Performance***

OECD No. 2/2 417

Agricultural Tractor

John Deere 6330 NA PowrQuad Plus (4WD) TIER 3

Manufacturer

DEERE & COMPANY, Moline, Illinois, USA

This is a report on a tractor test in accordance with OECD STANDARD CODE for the Official Testing of Agricultural Tractor Performance, 3/2005 Code 2.

It does not contain an evaluation of the tractor on practical work.

Duration of tests: February 2007 till July 2007.

DLG-Test Center Technology and Farm Inputs, Max-Eyth-Weg 1,
D-64823 Gross-Umstadt

This report has been approved by the OECD Co-Ordinating Centre (CEMAGREF, France) as being in accordance with the OECD STANDARD CODE.

Date of approval: 1st July 2008

OECD No. 2/2 417

Statement

The information opposite each item has been validated by the Testing Station. An item marked [C] indicates to the test report user that the information declared by the manufacturer has been checked, an item marked [D] indicates that the manufacturer's declaration has been endorsed.

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DLG-Test No. 2007-102

[C] Tractor manufacturer's name and address:	DEERE & COMPANY, Moline, Illinois, USA
[C] Location of tractor assembly:	JOHN DEERE Werke Mannheim, D-68163 Mannheim
[C] Submitted for test by:	Manufacturer
[C] Selected for test by:	Manufacturer with agreement by DLG
[D] Place of running-in:	Mannheim and Gross-Umstadt
[D] Duration of running-in:	Engine 86 h, tractor 86 h
[C] Location of test:	DLG-Test Center Technology and Farm Inputs, D-64823 Gross-Umstadt

1 SPECIFICATIONS OF TRACTOR

1.1 Identification

1.1.1

[C] - Make:	JOHN DEERE
[C] - Model:	6330
[C] - Type:	4WD, full steel frame design

1.1.2 Numbers

[D] - 1st serial No.:	506574 (15 th September 2006)
[C] - Serial No.:	519016

1.1.3 Other specifications:

[C] - Region version:	NA
[C] - Transmission version:	PowrQuad Plus, 30 km/h
[D] - Engine version:	exhaust emission according to TIER 3, EPA and guideline 2000/25/EG

1.2 Engine

[C] Make/Model/Type:	JOHN DEERE / 4045HL480 (DD21340) / water-cooled 4-stroke Diesel-engine, direct injection, supercharged, antivibration mounted
[C] Serial No.:	L006366

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1.2.1 Cylinders

[C]	Number/disposition:	4 / vertical in line
[D]	Bore/stroke:	106.5 mm / 127 mm
[C]	Capacity:	4525 cm ³
[D]	Compression ratio:	16.7 ± 0.39 : 1
[D]	Arrangement of valves:	Overhead valves, 4 per cylinder
[D]	Cylinder liners:	Wet

1.2.2 Supercharging

[C]	- Make / Model / Type:	BORG WARNER / S 200V(RE530652) / exhaust driven supercharger (variable geometry) with SAMSUNG water cooled intercooler (by low temperature section of water cooler)
[D]	- Pressure	Max. 83 ± 1 kPa

1.2.3 Fuel system

[C]	- Fuel feed system:	Electrical vane type fuel supply pump
	- Fuel filter	
[C]	Make/Model:	JOHN DEERE / -
[C]	Type :	2 replaceable paper element filter
[D]	- Capacity of fuel tank:	185 dm ³
	- Injection pump	
[C]	Make/Model:	DENSO / 0670 (RE522595)
[C]	Type:	high pressure common rail, direct injection, electronically controlled with Intelligent Power management (IPM) (boost activated by loaded pto while driving or by driving faster than 15 km/h)
[C]	Serial no.:	314433
[C]	Manufacturer's production setting:	78 / 84 ± 3 mm ³ /stroke at full load and rated speed; (normal/boost power)
[C]	Flow rate:	21.5 / 23.2 ± 0.8 dm ³ /h at 2300 min ⁻¹ and full load (normal/boost power)
[C]	Timing:	electronically controlled
	- Injectors	
[D]	Make/Model:	DENSO / (RE528224)
[D]	Type :	Multi hole (6 holes)
[D]	Injection pressure:	3240 ± 500 kPa

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1.2.4	Governor	
[D]	- Make/Model/Type:	BOSCH / - / electronically driven all speed governor
[C]	- Governed range of engine speed:	850 ± 50 to $2460 \pm 50 \text{ min}^{-1}$
[C]	- Rated engine speed:	2300 min^{-1}
1.2.5	Air cleaner	
	- Pre-cleaner	
[D]	Make/Model:	DONALDSON / 991220
[C]	Type:	vacuum aspirated (cooling fan) cyclone type pre-cleaner integrated in front cover of main cleaner housing
[C]	Location of air intake:	Above water cooler, below bonnet
	- Main cleaner	
[D]	Make/Model:	DONALDSON / 991220
[C]	Type:	Dry paper element filter with additional safety cartridge
[C]	- Maintenance indicator:	Warning light on dashboard
1.2.6	Lubrication system	
[D]		Pressure lubrication with engine oil/cooling water heat exchanger in engine block
[D]	- Type of feed pump:	Gear pump
[C]	- Type of filter:	Full flow, replaceable cartridge
[C]	- Number of filters:	1
1.2.7	Cooling system	
[C]	Water cooling (high temperature section of water cooler)	
[C]	- Type of coolant:	Water-anti-freeze mixture
[D]	- Type of pump:	Impeller pump
	- Specification of fan	
[C]	Number of fan blades:	7
[C]	Fan diameter:	550 mm
[D]	- Coolant capacity:	29 dm^3



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[C]	- Type of temperature control:	Thermostat and by-pass circuit, BEHR viscous drive fan, belt driven; variable fan speed controlled by air flow temperature
[D]	- Superpressure system:	70 ± 20 kPa
1.2.8	Starting system	
[C]	- Make/Model/Type:	BOSCH EV / 12V / 0 101 260 00 (RE526375) electrical, solenoid pre-engaged drive starter motor, gear reduction starter
[D]	- Starter motor power rating:	3 kW
[C]	- Cold starting aid:	Heating spiral in air intake manifold
[C]	- Safety device:	Forward / reverse lever in neutral position at engine shut off
1.2.9	Electrical system	
[D]	- Voltage:	12 V
	- Generator:	
[C]	Make / Model / Type:	BOSCH / 14 V / 70-115 A / 3-phase alternator
[C]	Power:	1.30 kW
[C]	- Battery:	1 lead acid battery, 12 V / 154 Ah at 20 hours rating
1.2.10	Exhaust system	
[C]	- Make/Model/Type:	EBERSPÄCHER / AL82411 / single-chamber absorption type, oval 175 mm x 275 mm / 215 mm long
[C]	- Location:	Under bonnet, vertical stack at right A-post of cab, mouth showing upward / forward
1.2.11		
[D]	Operating hours meter:	Electronic, counts real hours when engine is running
1.3	Transmission	
1.3.1	Clutch	
[D]	- Make/Model/Type:	JOHN DEERE / Perma Clutch II / wet multi-plate
[D]	- Number of plates:	3
[D]	- Diameter of plates:	225 mm
[C]	- Method of operation:	By pedal and reverse lever, mechanically, assisted by low pressure hydraulic circuit, operated by valve



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1.3.2 Gear box

[C] - Make/Model/Type:

JOHN DEERE / PowrQuad Plus, 30 km/h / mechanical, 30 km/h version

[C] - Description:

Speed change gear with 4 power shifted forward speeds and 4 reverse speeds (1, 2, 3, 4; synchronized); Range gear with 4 ranges (A, B, C, D; synchronized); power shifted reversing gear (power reverser)

		Forward	Reverse
[C]	No. of gears	4	4
[C]	No. of ranges	4	4
[C]	Total	16	16

2 levers (1 range shift lever with gear shift buttons, 1 reverser lever)

[D] - Available options (not fitted):

PowrQuad Plus (24/24) 40 km/h, with or without creeper gear
AutoQuad Plus EcoShift (24/24) 40 km/h, with or without creeper gear
AutoQuad Plus (24/24) 40 km/h or 50 km/h, with or without creeper gear

[D] - Lubrication:

Forced-feed lubrication, oil cooler (ring cooler) at the rear end of engine block, (low temperature section of water cooler), 2 filters

1.3.3 Rear axle and final drives

[D] - Make/Model/Type:

JOHN DEERE / - / bevel gear drive with bevel gear differential and planetary final drives

- Differential lock:

[D] Type:

Wet multi-plate

[C] Engagement:

Electro-hydraulically by foot switch

[C] Disengagement:

By pedal of service brake

1.3.4 Front axle and final drives

[C] - Make/Model/Type:

DANA 733/135 / AL 171549 / swing axle, driving and steering; axle driven through wet multi plate clutch, shaft in median plane of tractor, bevel gear, planetary final drives
clutch electro-hydraulically operated by toggle switch (two positions: engaged / engaged by service brake operation)

- Differential lock:

[D] Type:

Limited slip multi-plate type

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[C]	Engagement:	Automatic
[C]	Disengagement:	Automatic

1.3.5 Total ratios and travelling speeds

	Range	Gear	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed*) at rated engine speed of 2300 min ⁻¹ km/h
	Forward Speed			
[C]	A	1	278.592	2.57
[C]		2	231.424	3.09
[C]		3	193.248	3.70
[C]		4	157.753	4.53
[C]	B	1	138.980	5.15
[C]		2	115.450	6.20
[C]		3	96.405	7.42
[C]		4	78.698	9.09
[C]	C	1	84.511	8.46
[C]		2	70.203	10.19
[C]		3	58.622	12.20
[C]		4	47.855	14.95
[C]	D	1	41.037	17.43
[C]		2	34.089	20.98
[C]		3	28.466	25.13
[C]		4	23.237	30.78
[C]	A	1	-266.891	-2.68
[C]		2	-221.704	-3.23
[C]		3	-185.131	-3.86
[C]		4	-151.127	-4.73
[C]	B	1	-133.143	-5.37
[C]		2	-110.601	-6.47
[C]		3	-92.356	-7.75
[C]		4	-75.392	-9.49
[C]	C	1	-80.962	-8.84
[C]		2	-67.254	-10.64
[C]		3	-56.160	-12.74
[C]		4	-45.845	-15.60
[C]	D	1	-39.313	-18.20
[C]		2	-32.657	-21.90
[C]		3	-27.270	-26.23
[C]		4	-22.261	-32.13

*) Calculated with a speed radius index of 825 mm
(in conformity ETRTO 2004)

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[D] - Number of revolutions of front wheels for one revolution of rear wheels: 1.39034

1.4 Power take-off

1.4.1 Main power take-off

[C] - Type: Independent

[C] - Method of engagement: Driven by wet multi-plate clutch with 197 mm outer and 149 mm inner diameter, electro-hydraulically operated by rotary switch through control valve; response of valve automatically controlled

[C] - Number of shafts: 1

[C] - Method of changing power take-off speeds: Electrically by Command Center (DTI settings)

1.4.1.1 Power take-off proportional to engine speed, 540 min⁻¹ or 1000 min⁻¹ p.t.o.

[C] - Location: At rear of tractor

[C] - Diameter of p.t.o. shaft end: 35 mm

[C] - Number of splines: 6 (540 min⁻¹) in conformity with ISO 500:1991, type 1
21 (1000 min⁻¹) in conformity with ISO 500:1991, type 2

[C] - Height above ground: 750 mm

[C] - Distance from the median plane of the tractor: 0 mm

[C] - Distance behind rear wheel axis: 530 mm

	P.t.o. type	P.t.o. transmission ratio	P.t.o. speed min ⁻¹	Engine speed min ⁻¹	Power restriction kW	Max. torque transmissible Nm
[D]	540	3.9685	540 580	2143 2300	not specified	
[D]	1000	2.2085	1000 1042	2208 2300	not specified	

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- [C] - Direction of rotation
(viewed from behind tractor): Clockwise

- 1.4.1.2 Power take-off proportional
to ground speed: None

- 1.4.2 Optional power take-off: Front p.t.o., independent, not fitted to tractor

- 1.5 Hydraulic power lift**

- [D] - Make/Model/Type: JOHN DEERE / - / desintegrated,
electronically controlled hydraulic power lift, lower
link sensing

- [C] - Type of hydraulic system: Closed center, load sensing pressure and flow
compensated system (PFC)

- [C] - Type and number of
cylinders: 2 external cylinders, single acting, 70 mm bore,
175 mm stroke,

- [C] - Type of linkage lock for
transport: Hydraulic, lock of valve lever

- [D] - Relief valve pressure
setting: 19.2 to 20.7 MPa

- [D] - Opening pressure of
cylinder safety valve: no safety valve

- Lift pump:
- [D] Make: BOSCH REXROTH or BRÜNINGHAUS
HYDROMATIC

- [D] Model: -
- [D] Type: 28 cm³ gear pump with 71 dm³/min delivery at
rated speed, optional 45 cm³ with 114 dm³ delivery

- [D] - Transmission between
pump and engine: Gear driven by transmission

- [C] - Type and number of filters: 2 filters, 1 in feeding line of hydraulic pump, 1 on
transmission housing

- [C] - Site of oil reservoir: Transmission housing

- [C] - Type, number and location
of tapping points: 3 double acting, quick-action couplers at rear of
tractor



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- | | | |
|-----|--|---|
| [D] | - Maximum volume of oil available to external cylinders: | Stationary 25 dm ³ with 10 dm ³ overfill, 10 dm ³ with minimum oil filling, 15 dm ³ with maximum oil filling, driving 15 dm ³ with maximum oil filling |
| [D] | - Oil cooler: | Engine cooling water / transmission-hydraulic oil heat exchanger at the rear end of engine block |

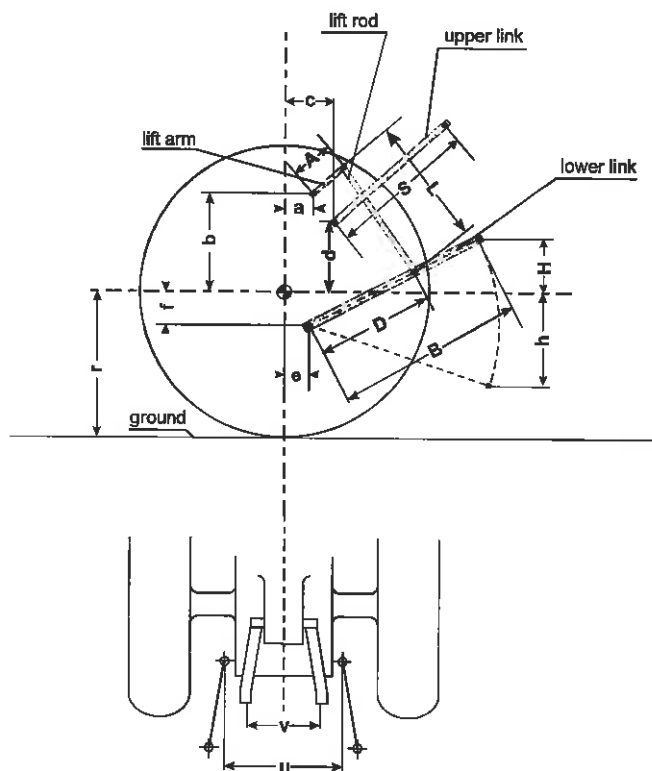
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1.6 Three-point linkage:

1.6.1 Three-point linkage at rear:

- [C] - Category: 2, in conformity with ISO 730-1/1994 + Cor. 1:1995 with extendable lower links
- [C] - Category adapter: None



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Dimensions of rear implement linkage				Projected lengths in mm	
				Dimensions	Settings used in test-page 33
[D] Rear tyres 460/85R38	(r) *			825	
Front tyres 340/85R28	(r') *			625	
[C] Length of lift arms	(A)			320	
[C] Length of lower links	(B)			945	
[C] Distance of lift arm pivot points from rear wheel axis	horizontal	(a)		170	
		(b)		475	
[C] Horizontal distance between the 2 lower link pivot points	(u)			480	
[C] Horizontal distance between the 2 lift arm end points	(v)			535	
[C] Length of upper link	(S)			from 550 to 730	650
[C] Distance of upper link pivot point from rear wheel axis	horizontal	(c)		450	450
		(d)		195	195
[C] Distance of lower link pivot points from rear wheel axis	horizontal	(e)		135	
		(f)		225	
[C] Distance of lower link pivot points from lift rod pivot points on lower links	(D)			505	
[C] Length of lift rods	(L)			from 710 to 850	820
Heights (h, H, H') of lower link hitch points relative to rear wheel axis (situated 825 mm above ground), at different adjustments of L					
These data are valid for unloaded power lift					
[C]	Length of lift rods	(L)		710	850 820
[C]	Linkage distance of lift rods	(D)		505	
[C]	Lowest position	(h)		385	670 625
[C]	Highest position	(H)		275	35 72
[C]	Transport position	(H')		275	35 72

*) Assuming r resp. r' = tyre speed radius index (in conformity with ETRTO 2004)



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1.7 Swinging drawbar

[C]	- Type:	Adjustable in height and length	
[C]	- Height above ground	Maximum:	600 mm
		Minimum:	470 mm
[C]	- Type of adjustment:	Turning the drawbar	
[C]	- Distance of hitch point from rear wheel axis	Horizontal:	780 / 880 / 930 / 1080 mm
[C]	- Distance of hitch point from p.t.o. shaft end	Vertical:	170 / 220 mm
		Horizontal:	250 / 350 / 400 / 550 mm
[C]	- Lateral adjustment (centre of clevis)	Right/left hand side:	187 / 210 / 225 / 259 mm
[C]	- Distance of pivot point from rear-wheel axis, horizontally:		0 mm
[C]	- Diameter of drawbar pin hole:		33 mm
[C]	- Maximum permissible vertical load:		27 kN

1.8 Trailer hitch None

1.9 Holed drawbar None

1.10 Steering

[D]	- Make/Model/Type:	JOHN DEERE and SAUER-DANFOSS/ OSPF 125LS / hydrostatic steering, acting on front wheels	
	- Method of operation		
[D]	Pump:	Steering system connected to main hydraulic circuit	
[C]	Ram:	Integrated cylinder of symmetrical design, 248 mm stroke, 70 mm bore, 36 mm dia of piston rod	
[D]	- Working pressure:	18.5 MPa	

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1.11 Brakes

1.11.1 Service brake

- [D] - Make/Model/ Type: JOHN DEERE / - / muscle power braking system with hydraulic transmission with additional power fill, oil-immersed disc brake with 2 acting faces on each differential half shaft, disc 313 mm dia
- [C] - Method of operation: Pedal operated, acting on rear wheels, front axle drive is automatically engaged when braking
- [C] - Trailer braking take-off: None

1.11.2 Parking brake

- [C] - Type: Parking lock of transmission
- [C] - Method of operation: Range gear lever in "P" position

1.12 Wheels

- Number

- [C] Front: 2, driving and steering
- [C] Rear: 2, driving
- [C] - Wheelbase: 2400 mm

- Track width adjustment:

	Minimum mm	Maximum mm	Adjustment method
[D] Front	1522	2014	adjustable rims
[D] Rear	1446	1916	adjustable rims

1.13 Protective structure

- [C] - Make/Model/Type: JOHN DEERE / SG070 / Cab
- [C] - Manufacturer's name and address: DEERE & COMPANY, Moline, Illinois, USA
- Protective device
- [C] Cab: Welded and screwed profile steel tube construction, mounted on silent blocks, for service (repair) with separate device tiltable to the side
- [C] Tiltable / not tiltable: Not tiltable
- OECD approval
- [C] Approval number: 4/0 970
- [C] Date of approval: 23rd August 2006

1.14 Seat

- 1.14.1 Driver's seat Fitted to tractor
- [C] - Make/Model: Grammer / MSG 95 AL/741
- [C] - Type: upholstered seat with backrest and armrests, pneumatic suspension
- [C] - Seat and steering wheel reversible: No
- [C] - Type of suspension: Pneumatic
- [C] - Type of damping: Hydraulic
- Range of adjustment
- [C] Longitudinal: 195 mm
- [C] Vertical: 380 to 565 mm
- [C] - Safety belt: Yes
- 1.14.2 Optional driver's seats
- [D] - Make/Model/Type: Grammer/MSG 95A; MSG 95AL; MSG 93; MSG 85 / mechanical suspension or pneumatic suspension
- 1.14.3 Passenger seat: Optional, not fitted to tractor tested

1.15 Lighting Electrical, 12 Volt, according to US legislation

		Height above ground of centre mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
[C]	Headlights	1310	140 x 140	180
[C]	Sidelights	n.a.	n.a.	n.a.
[C]	Rearlights	1765	220 x 50	890
[C]	Reflectors	1725	160 x 30	860

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2. TEST CONDITIONS

2.1 Overall dimensions

	Length	Width (track width as in 2.5)	Height at top of	
	mm	mm	protective structure mm	exhaust silencer pipe mm
Unballasted	4270	2300	2760	2730

2.2 Ground clearance 450 mm

- Clearance-limiting part: Bracket for sway blocks

2.3 Tractor mass Unballasted (with cab)

	Without driver kg	With driver kg
Front	1835	1860
Rear	2935	2985
Total	4770	4845

2.4 Track specifications Not applicable

2.5 Tyres and track widths specifications

	Front	Rear
Tyres:	Continental Contract AC 85	Continental Contract AC 85
- Dimensions	340/85R28	460/85R38
- Load index speed index	127 A8	149 A8
- Type	radial ply	radial ply
- Maximum load (tyre manufacturer's)	18.70 kN	34.80 kN
- Maximum load (tractor manufacturer's)	18.50 kN	30.00 kN
at travelling speed	30 km/h	30 km/h
at tyre inflation pressure	160 kPa	160 kPa
dynamic radius index	625 mm	825 mm
Chosen track width:	1850 mm	1810 mm

2.6 Fuel

- Type: ARAL-Diesel-fuel, in conformity with DIN 51601
- Density at 15°C: At p.t.o. tests 0.8377 g/cm³
at drawbar power tests 0.8377 g/cm³

2.7 Oils and lubrication

2.7.1 Capacity and change interval

	Capacity dm ³	Oil change h	Filter- change h
Engine	16	500	500
Gear box and rear axle	53	1500	750
Front axle	6.5	1500	-
Rear axle	in common with gearbox		
Final drives (front each)	0.6	1500	-
Final drives rear (each)	in common with gearbox		
Hydraulic system	in common with gearbox		
Steering	in common with gearbox		

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2.7.2 Specifications:

	Recommended	Used during test
Engine oil: Used in engine Type Viscosity Classification	engine oil SAE 20W40, 15W40, 10W40, JD PLUS-50, API CI-4 Plus; API CI-4; API CH-4; API CG-4; API CF-4; API CF-2; API CF; ACEA - E7; ACEA - E6; ACEA - E5; ACEA - E4; ACEA - E3	Fuchs ACEA E7 engine oil SAE 10W40 ACEA - E2
Transmission oil: Used in gear box, rear axle, hydraulic system, brake system and steering Type Viscosity Classification	John Deere HY-GARD John Deere BIO-HY-GARD II transmission oil SAE 75 JDM J20C or J20D	John Deere HY-GARD transmission oil SAE 75 JDM J20C
Transmission oil: Used in front axle and front final drives Type Viscosity Classification	John Deere HY-GARD, John Deere BIO-HY-GARD II or transmission oil transmission oil SAE 80W90 JDM J20C	JD HY-GARD transmission oil SAE 80W90 JDM J20C

2.7.3 Grease Multi purpose grease GC-LB

- Number of lubrication points: 18

3 COMPULSORY TESTS

3.1 Main power take off performance without Intelligent Power Management (normal power)

Date of tests: 2007-03-14

Location of tests: DLG-Test Center Technology and Farm Inputs

Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed Engine min ⁻¹	P.t.o. min ⁻¹	Fan min ⁻¹	Fuel consumption		specific g/kWh	Specific energy kWh/dm ³
				kg/h	dm ³ /h		

Maximum power

3.1.1 At 1-hour test

75.2	1900	861	1872	18.49	22.07	246	3.41
------	------	-----	------	-------	-------	-----	------

3.1.2 At rated speed

65.4	2300	1042	2050	17.33	20.69	265	3.16
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3.1.3 At standard p.t.o. speed

69.4	2208	1000	2074	17.76	21.20	256	3.27
------	------	------	------	-------	-------	-----	------

3.1.4 Part loads, the governor hand lever in the position corresponding to maximum power at full load (curve a)

3.1.4.1 the torque corresponding to maximum power at rated speed

65.4	2300	1042	2050	17.33	20.69	265	3.16
------	------	------	------	-------	-------	-----	------

3.1.4.2 85% of the torque obtained in 3.1.4.1

57.0	2360	1069	2101	16.07	19.18	282	2.97
------	------	------	------	-------	-------	-----	------

3.1.4.3 75% of the torque defined in 3.1.4.2

43.4	2389	1082	2103	13.61	16.25	314	2.67
------	------	------	------	-------	-------	-----	------

3.1.4.4 50% of the torque defined in 3.1.4.2

29.4	2429	1100	2059	11.20	13.37	381	2.20
------	------	------	------	-------	-------	-----	------

3.1.4.5 25% of the torque defined in 3.1.4.2

14.9	2458	1113	1782	8.55	10.21	574	1.46
------	------	------	------	------	-------	-----	------

3.1.4.6 unloaded

-	2460	1114	1761	6.19	7.40	-	-
---	------	------	------	------	------	---	---

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Power kW	Speed		Fan min ⁻¹	Fuel consumption		specific g/kWh	Specific energy kWh/dm ³
	Engine min ⁻¹	P.t.o. min ⁻¹		hourly kg/h	dm ³ /h		

3.1.5 Part loads, the governor hand lever in the position corresponding to standard p.t.o. speed at full load (curve b)

3.1.5.1 the torque corresponding to maximum power

69.4	2208	1000	2074	17.76	21.20	256	3.27
------	------	------	------	-------	-------	-----	------

3.1.5.2 85% of the torque obtained in 3.1.5.1

60.8	2276	1031	2036	16.32	19.48	268	3.12
------	------	------	------	-------	-------	-----	------

3.1.5.3 75% of the torque defined in 3.1.5.2

46.0	2299	1041	2053	13.78	16.45	300	2.80
------	------	------	------	-------	-------	-----	------

3.1.5.4 50% of the torque defined in 3.1.5.2

31.1	2323	1052	1924	11.11	13.26	357	2.34
------	------	------	------	-------	-------	-----	------

3.1.5.5 25% of the torque defined in 3.1.5.2

15.7	2352	1065	1783	8.30	9.91	529	1.58
------	------	------	------	------	------	-----	------

3.1.5.6 unloaded

-	2369	1073	1708	6.44	7.69	-	-
---	------	------	------	------	------	---	---

PART LOADS AT DIFFERENT ENGINE SPEEDS

Power kW	Speed		Fan min ⁻¹	Fuel consumption		Specific energy kWh/dm ³
	Engine min ⁻¹	P.t.o. min ⁻¹		hourly kg/h	specific dm ³ /h	

3.1.6 Part loads at different engine speeds

3.1.6.1 maximum power at rated engine speed

65.4	2300	1042	2050	17.33	20.69	265	3.16
------	------	------	------	-------	-------	-----	------

3.1.6.2 80% of power obtained in 3.1.6.1 at max. speed setting

52.3	2369	1073	2078	15.23	18.18	291	2.88
------	------	------	------	-------	-------	-----	------

3.1.6.3 80% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed

52.3	2069	937	1593	13.83	16.51	264	3.17
------	------	-----	------	-------	-------	-----	------

3.1.6.4 40% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed

26.2	2071	938	1694	8.90	10.62	340	2.47
------	------	-----	------	------	-------	-----	------

3.1.6.5 60% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed

38.3	1380	625	1260	9.43	11.26	240	3.49
------	------	-----	------	------	-------	-----	------

3.1.6.6 40% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed

26.2	1378	624	1621	7.51	8.97	287	2.92
------	------	-----	------	------	------	-----	------

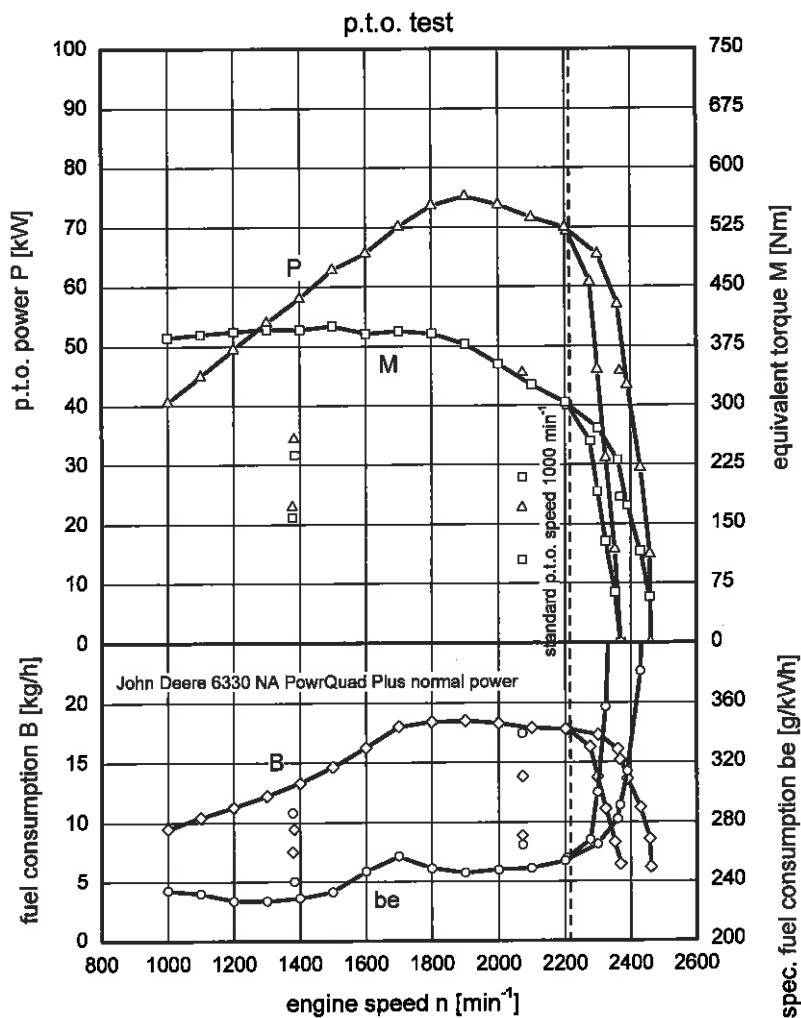
No load maximum engine speed:	2460 min ⁻¹
Equivalent flywheel torque at rated engine speed:	272 Nm
Equivalent flywheel torque at 1-hour test:	378 Nm
at engine speed:	1900 min ⁻¹
Maximum equivalent flywheel torque:	400 Nm
at engine speed:	1500 min ⁻¹

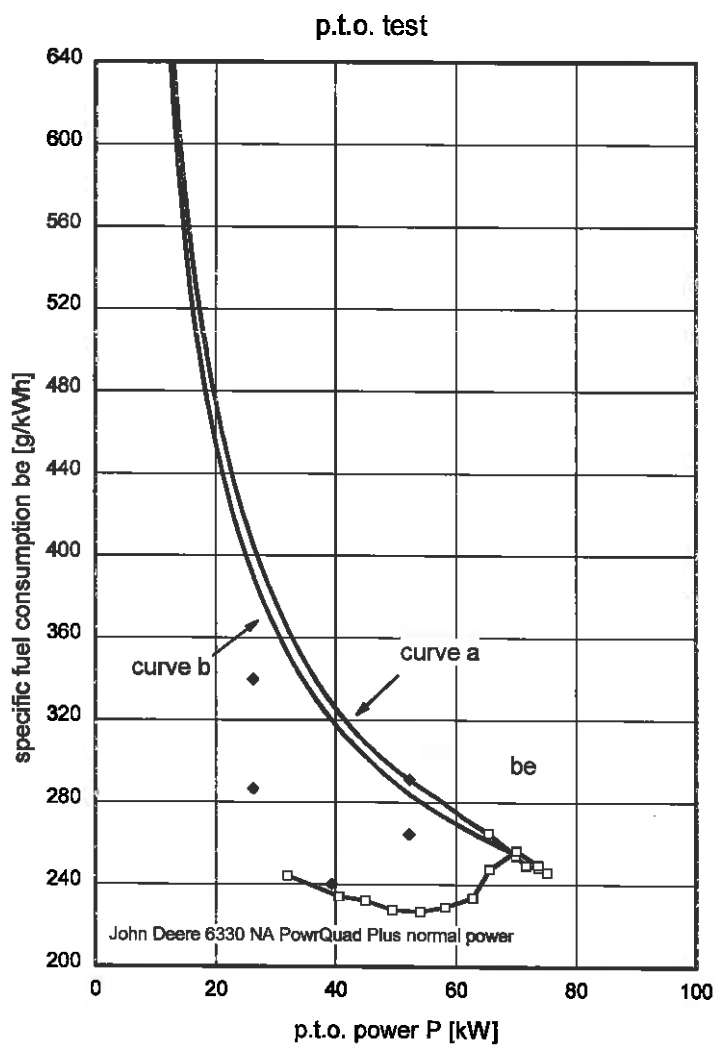
Mean atmospheric conditions

temperature	19 °C
pressure:	100.5 kPa
relative humidity:	40 %

Maximum temperatures

coolant:	80 °C
oil:	104 °C
fuel:	54 °C
air intake:	20 °C





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3.2 HYDRAULIC POWER AND LIFTING FORCE

- Date of tests: 19th March 2007

3.2.1 Hydraulic power test

3.2.1.1 Hydraulic fluid data

- Hydraulic fluid type: Transmission oil
- Viscosity index (ISO 3448+Corr 1:1993): SAE 75
- Viscosity at 65°C: 22.4 mm²/s

3.2.1.2 Compulsory Reporting (Test Results):

	Pressure	Reservoir oil Temperature °C (65°C target)		Engine speed	Flow rate	Power
		Min.	Max.			
	MPa	°C	°C	min ⁻¹	l/min	kW
Rated Engine Speed (Manufacturers Specification)	-	-	-	2300	-	-
3.2.1.2.1 Maximum (sustained) pressure with relief valve open as measured at the coupler Pump stalled: No	20.5 ¹⁾ 20.7 ²⁾	62 ¹⁾ 63 ²⁾	67 ¹⁾ 69 ²⁾	2460 ¹⁾ 2460 ²⁾	-	-
3.2.1.2.2 Flow rate corresponding to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting and corresponding hydraulic power	18.5 ¹⁾ 18.6 ²⁾	67 ¹⁾ 68 ²⁾		2432 ¹⁾ 2409 ²⁾	68.9 ¹⁾ 91.3 ²⁾	21.0 ¹⁾ 28.7 ²⁾
3.2.1.2.3 Maximum available flow and maximum power from one coupler pair	38 15.1	62 65		2458 2412	109.9 105.0	- 26.4
3.2.1.2.4 Maximum available flow and maximum power from coupler pairs operating simultaneously (flow through two or more coupler pairs if required)	31 18.0	63 67		2460 2396	122.1 109.3	- 32.8

- ☒ Tapping point used for test: At rear of tractor. ¹⁾ 1 double acting control valve
²⁾ 2 double acting control valves parallel connection

3.2.2 Power lift test at rear power lift

	At the hitch points								On the frame				
Height of lower hitch points above ground in down position	200 mm												
Vertical movement without lifting forces	697 mm								889 mm				
with lifting forces	651 mm								835 mm				
Max. corrected force exerted through full range	22.77 kN								20.79 kN				
Corresponding pressure	18.5 MPa												
Moment about rear axle	24.59 kNm								35.14 kNm				
Max. tilt angle of mast from vertical	-								12.0 °				
Lifting heights relative to horizontal lower links													
mm	-500	-415	-400	-300	-200	-100	0	+100	+200	+236	+300	+335	
Lifting forces at hitch points, corrected to 18.5 MPa													
kN		22.77	23.74	27.34	30.11	32.41	34.44	35.98	35.60	33.48			
Lifting forces at standard frame, corrected to 18.5 MPa													
kN	20.79		22.91	24.29	25.11	25.56	25.65	25.76	24.78		22.82	21.51	



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3.3 DRAWBAR POWER TEST (unballasted tractor)

Date of tests: 29th and 30th March 2007

Type of track: Concrete

Unballasted	Height of drawbar above ground 520 mm	Tyre inflation pressure	
		Front	Rear
		80 kPa	80 kPa

Gear number and range	Power kW	Drawbar pull kN	Speed km/h	Engine speed min ⁻¹	Slip of wheels %	Fan speed min ⁻¹	Specific fuel consumption g/kWh	Specific energy kWh/dm ³	Temperature				Atmospheric conditions		
									Fuel °C	Coolant °C	Engine oil °C	Tempe- rature °C	Relative humidity %	Pressure kPa	

3.3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor)

A2	37.7	48.89	2.78	2396	15.1	1766	387	2.17	46	78	99	18	44	99.5	
A3	45.4	49.23	3.32	2365	14.9	1773	354	2.37	46	77	100	18	48	99.6	
A4	52.7	49.36	3.85	2257	14.9	1579	337	2.48	37	75	98	10	74	103.5	
B1	56.7	49.21	4.15	2137	15.0	1586	319	2.63	38	76	99	10	76	102.5	
B2	61.5	48.91	4.53	1903	13.3	1576	298	2.81	43	80	103	9	74	99.6	
B3	66.3	41.30	5.78	1900	7.6	1575	282	2.97	46	82	104	9	75	99.8	
C1	66.4	35.50	6.73	1901	5.2	1585	281	2.98	47	82	105	10	75	99.8	
B4	66.4	32.84	7.28	1901	4.5	1583	282	2.97	48	82	105	10	70	99.9	
C2	67.4	29.47	8.23	1902	3.8	1577	277	3.03	47	81	105	10	70	99.7	
C3	68.1	24.64	9.95	1901	3.1	1582	274	3.05	46	80	102	10	72	99.6	
C4	66.3	19.42	12.29	1901	2.4	1616	281	2.98	47	80	103	11	71	99.6	



Gear number and range	Power kW	Drawbar pull kN	Speed km/h	Engine speed min ⁻¹	Slip of wheels %	Fan speed min ⁻¹	Specific fuel consumption g/kWh	Specific energy kWh/dm ³	Temperature			Atmospheric conditions		
									Fuel °C	Coolant °C	Engine oil °C	Temperature °C	Relative humidity %	Pressure kPa

3.3.2 FUEL CONSUMPTION

3.3.2.1 In selected gear nearest to 7.5 km/h at maximum power at rated engine speed

B3	59.6	29.63	7.24	2300	4.0	1669	292	2.87	46	80	102	14	59	99.4
3.3.2.1.1 75 % of pull at maximum power at rated engine speed														
B3	46.7	22.16	7.59	2381	3.0	1834	326	2.57	46	78	102	16	54	99.4
3.3.2.1.2 50 % of pull at maximum power at rated engine speed														
B3	31.8	14.66	7.80	2376	1.9	1758	390	2.15	46	76	101	15	54	99.4

3.3.2.1.3 Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.1.1

C1	46.6	22.08	7.60	2091	2.9	1641	309	2.71	46	78	101	16	53	99.4
3.3.2.1.4 Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.1.2														
C1	31.8	14.72	7.78	2116	1.7	1655	356	2.35	47	78	100	15	54	99.4

3.3.2.2 In selected gear, between 7 km/h and 10 km/h at rated engine speed (same gear as above)

B3	59.6	29.63	7.24	2300	4.0	1669	292	2.87	46	80	102	14	59	99.4
3.3.2.2.1 75 % of pull at maximum power at rated engine speed														
B3	46.7	22.16	7.59	2381	3.0	1834	326	2.57	46	78	102	15	54	99.4
3.3.2.2.2 50 % of pull at maximum power at rated engine speed														
B3	31.8	14.66	7.80	2376	1.9	1758	390	2.15	46	76	101	15	54	99.4

3.3.2.2.3 Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.1

C1	46.6	22.08	7.60	2091	2.9	1641	309	2.71	46	78	101	16	53	99.4
3.3.2.2.4 Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.2														
C1	31.8	14.72	7.78	2116	1.7	1655	356	2.35	47	78	100	15	54	99.4

4 OPTIONAL TESTS

4.1 Main power take off performance with Intelligent power Management

(boost power)

Date of tests: 2007-03-15

Location of tests: DLG-Test Center Technology and Farm Inputs

Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed		P.t.o. min ⁻¹	Fan min ⁻¹	Fuel consumption		Specific energy kWh/dm ³
	Engine min ⁻¹				hourly kg/h	specific dm ³ /h	

Maximum power

4.1.1 At 1-hour test

78.3	2000	906	1922	18.91	22.57	242	3.47
------	------	-----	------	-------	-------	-----	------

4.1.2 At rated speed

73.7	2300	1042	2031	18.65	22.26	253	3.31
------	------	------	------	-------	-------	-----	------

4.1.3 At standard p.t.o. speed

76.0	2208	1000	1996	18.87	22.53	248	3.37
------	------	------	------	-------	-------	-----	------

4.1.4 Part loads, the governor hand lever in the position corresponding to maximum power at full load (curve a)

4.1.4.1 the torque corresponding to maximum power at rated speed

73.7	2300	1042	2031	18.65	22.26	253	3.31
------	------	------	------	-------	-------	-----	------

4.1.4.2 85% of the torque obtained in 3.1.4.1

64.5	2374	1075	2160	17.57	20.97	272	3.08
------	------	------	------	-------	-------	-----	------

4.1.4.3 75% of the torque defined in 3.1.4.2

48.9	2400	1087	2200	14.64	17.48	299	2.80
------	------	------	------	-------	-------	-----	------

4.1.4.4 50% of the torque defined in 3.1.4.2

33.2	2433	1102	2017	12.00	14.32	361	2.32
------	------	------	------	-------	-------	-----	------

4.1.4.5 25% of the torque defined in 3.1.4.2

16.8	2458	1113	1912	8.93	10.66	532	1.58
------	------	------	------	------	-------	-----	------

4.1.4.6 unloaded

-	2460	1114	1740	6.33	7.56	-	-
---	------	------	------	------	------	---	---

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Power kW	Speed		Fan min ⁻¹	Fuel consumption hourly		specific g/kWh	Specific energy kWh/dm ³
	Engine min ⁻¹	P.t.o. min ⁻¹		kg/h	dm ³ /h		

4.1.5 Part loads, the governor hand lever in the position
corresponding to standard p.t.o. speed at full load (curve b)

4.1.5.1 the torque corresponding to maximum power

76.0	2208	1000	1996	18.87	22.53	248	3.37
------	------	------	------	-------	-------	-----	------

4.1.5.2 85% of the torque obtained in 3.1.5.1

66.9	2288	1036	2098	17.30	20.65	259	3.24
------	------	------	------	-------	-------	-----	------

4.1.5.3 75% of the torque defined in 3.1.5.2

50.6	2307	1045	1884	14.55	17.37	288	2.91
------	------	------	------	-------	-------	-----	------

4.1.5.4 50% of the torque defined in 3.1.5.2

34.1	2327	1054	1919	11.78	14.06	345	2.42
------	------	------	------	-------	-------	-----	------

4.1.5.5 25% of the torque defined in 3.1.5.2

17.1	2349	1064	1757	8.64	10.31	505	1.66
------	------	------	------	------	-------	-----	------

4.1.5.6 unloaded

-	2367	1072	1626	5.90	7.04	-	-
---	------	------	------	------	------	---	---

PART LOADS AT DIFFERENT ENGINE SPEEDS

Power kW	Speed		Fan min ⁻¹	Fuel consumption		specific g/kWh	Specific energy kWh/dm ³
	Engine min ⁻¹	P.t.o. min ⁻¹		hourly kg/h	dm ³ /h		

4.1.6 Part loads at different engine speeds

4.1.6.1 maximum power at rated engine speed

73.7	2300	1042	2031	18.65	22.26	253	3.31
------	------	------	------	-------	-------	-----	------

4.1.6.2 80% of power obtained in 3.1.6.1 at max. speed setting

59.0	2385	1080	2072	16.68	19.91	283	2.96
------	------	------	------	-------	-------	-----	------

4.1.6.3 80% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed

59.1	2069	937	1912	15.32	18.29	259	3.23
------	------	-----	------	-------	-------	-----	------

4.1.6.4 40% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed

29.5	2069	937	1846	9.61	11.47	326	2.57
------	------	-----	------	------	-------	-----	------

4.1.6.5 60% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed

44.2	1378	624	1256	10.42	12.44	236	3.55
------	------	-----	------	-------	-------	-----	------

4.1.6.6 40% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed

29.5	1382	626	1617	7.66	9.14	260	3.23
------	------	-----	------	------	------	-----	------

No load maximum engine speed:	2460 min ⁻¹
Equivalent flywheel torque at rated engine speed:	306 Nm
Equivalent flywheel torque at 1-hour test:	374 Nm
at engine speed:	2000 min ⁻¹
Maximum equivalent flywheel torque:	399 Nm
at engine speed:	1500 min ⁻¹

Mean atmospheric conditions

temperature	
:	18 °C
pressure:	100.2 kPa
relative humidity:	35 %

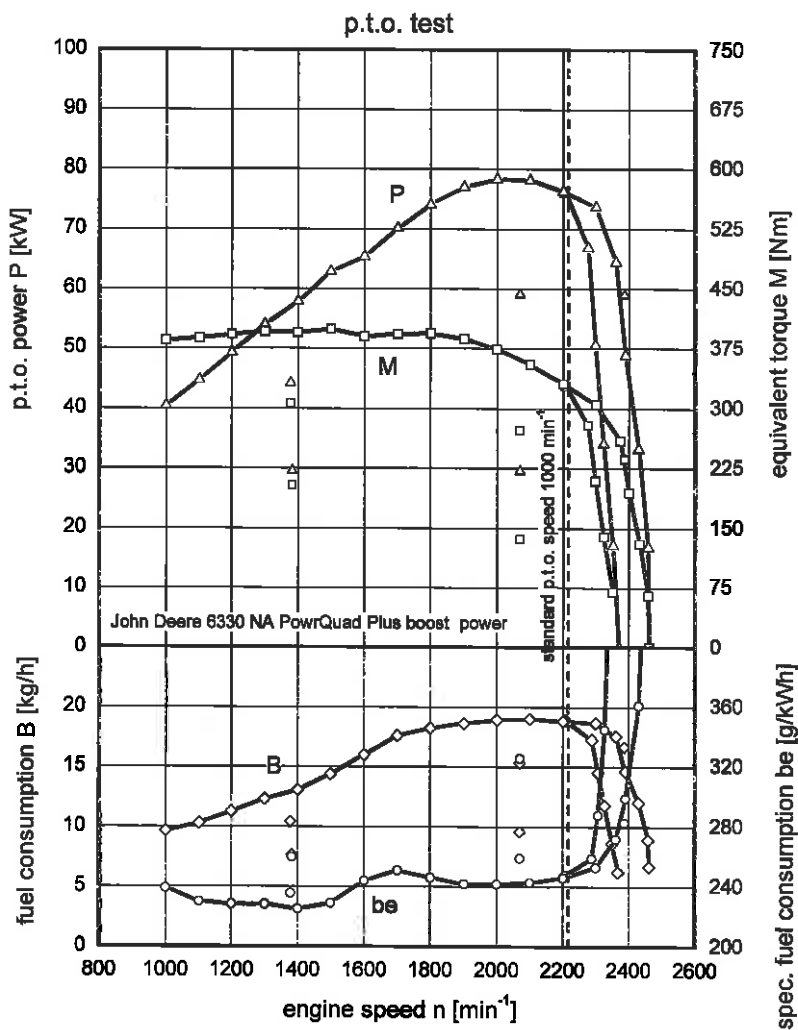
Maximum temperatures

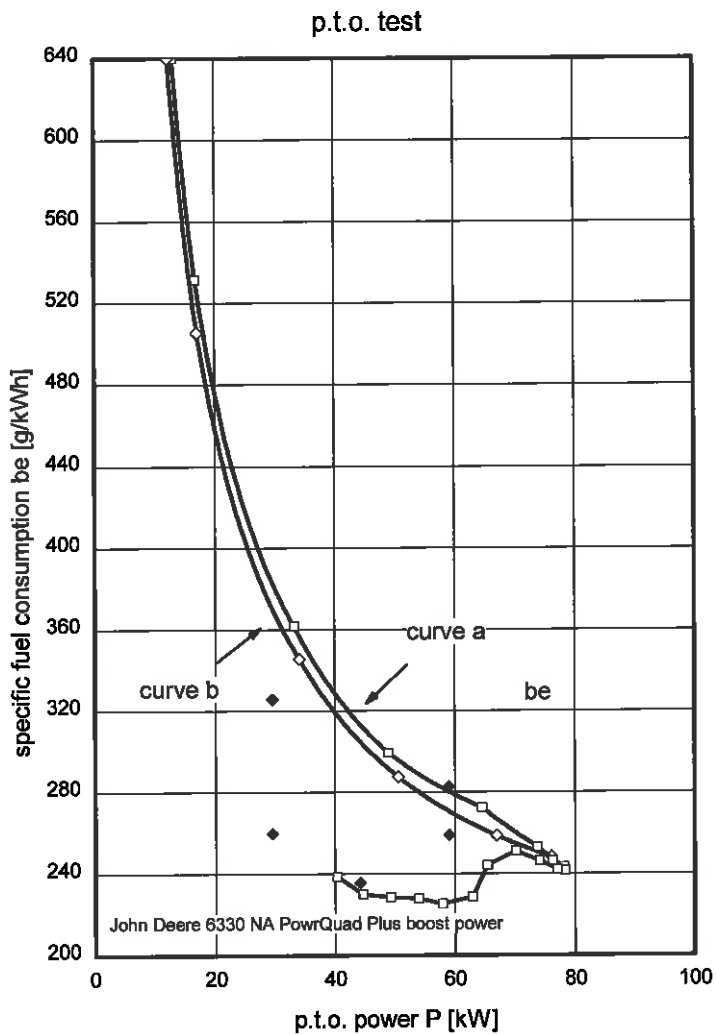
coolant:	80 °C
oil:	103 °C
fuel:	52 °C

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air intake: 20 °C







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4.2 OPTIONAL DRAWBAR POWER TEST IN GEAR WITH MAXIMUM POWER

Gear number and range	Power kW	Drawbar pull kN	Speed km/h	Engine speed min ⁻¹	Slip of wheels %	Fan speed min ⁻¹	Specific fuel consumption	Specific energy kWh/dm ³	Temperature			Atmospheric conditions		
									Fuel °C	Coolant °C	Engine oil °C	Temperature °C	Relative humidity %	Pressure kPa

4.2.1.1 In selected gear at maximum power at rated engine speed

C3	59.4	17.54	12.20	2304	2.3	1626	291	2.88	48	80	103	10	71	99
----	------	-------	-------	------	-----	------	-----	------	----	----	-----	----	----	----

4.2.1.1.1 75 % of pull at maximum power at rated engine speed

C3	45.6	12.94	12.66	2380	1.9	1713	360	2.33	47	80	104	10	70	99.4
----	------	-------	-------	------	-----	------	-----	------	----	----	-----	----	----	------

4.2.1.1.2 50 % of pull at maximum power at rated engine speed

C3	30.4	8.47	12.94	2417	1.0	1725	405	2.07	47	79	103	10	71	99.4
----	------	------	-------	------	-----	------	-----	------	----	----	-----	----	----	------

4.2.1.1.3 Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.3.1.1

C4	45.5	12.60	12.70	1948	1.5	1587	309	2.71	46	79	102	16	69	99.4
----	------	-------	-------	------	-----	------	-----	------	----	----	-----	----	----	------

4.2.1.1.4 Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.3.1.2

C4	30.2	8.40	12.93	1973	1.0	1583	358	2.34	48	79	101	11	68	99.4
----	------	------	-------	------	-----	------	-----	------	----	----	-----	----	----	------

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4.3 Turning area and turning circle

	Without steering brakes			
	Right hand		Left-hand	
	m		m	
	4WD	2WD	4WD	2WD
Radius of turning area	10.66	9.86	9.56	9.46
Radius of turning circle	10.20	9.30	9.10	9.00

4.4 Location of centre of gravity

- Height above ground 1001 mm
- Distance from vertical plane containing the axis of the rear wheels 925 mm
- Distance from the median longitudinal plane of the tractor -19 mm

5 OTHER TESTS

5.1 Measurement of noise at the driving position carried out in accordance with OECD CODE 5 (not covered by the approval)

Results of sound level test - "Under load" procedure

Date of test: 29th March 2007

Type of track: Concrete

Type of sound level meter: NORSONIC 118

Gear number and range	Drawbar pull	Engine speed	Measured travelling speed	Number of driving wheels	Sound level
	kN	min ⁻¹	km/h		dB(A)
5.1.1	Test with the drawbar pull for which the tractor gives the maximum sound level (gear ratio giving the nearest nominal forward speed to 7.5 km/h and also in any speed settings with a sound level increase of at least 1 dB(A))				
51.1.1	All openings closed				
B3	28.85	2301	7.24	4	72.3
B3	29.27	2300	7.01	2	71.8
D2	10.67	2316	20.97	2	73.3
5.1.1.2	All openings open*)				
B3	29.02	2302	7.23	4	79.7

*) Openings: 2 side windows, rear window, roof hatch



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Gear number and range	Drawbar pull	Engine speed	Measured travelling speed	Number of driving wheels	Sound level
	kN	min ⁻¹	km/h		dB(A)
5.1.2 Unloaded test in the gear ratio giving the forward speed nearest to 7.5 km/h					
5.1.2.1 All openings closed					
B3	0	2460	8.05	4	71.4
B3	0	2462	8.02	2	71.4
5.1.2.2. All openings open *)					
B3	0	2460	8.06	4	79.0
B3	0	2455	8.02	2	78.5
5.1.3 Unloaded test in the gear ratio giving the maximum forward speed					
5.1.3.1 All openings closed					
D4	0	2460	32.77	2	72.0
5.1.3.2 All openings open *)					
D4	0	2460	32.77	2	76.5

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6 REPAIRS None

7	REMARKS	None
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Head of Vehicle Technology

Test carried out by

Sepa Shu



Friedrich Müllig

Dipl.-Ing. (FH) Stefan Schulze

Date: 31st October 2008

Dipl.-Landw. Friedrich Uhlig



John Deere 6330 NA PowerQuad Plus (4WD) TIER 3

DLG-Test No. 2007-162



Wir setzen Maßnahme

DLG e.V.

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