Report on test in accordance with
OECD STANDARD CODE I for the Official
Testing of Agricultural Tractor Performance

Full Code

OECD No. 1427



Agricultural Tractor
JOHN DEERE 6400 (4WD)
30 km/h version

Manufacturer
John Deere Werke Mannheim
D-6800 Mannheim

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This is a report on a tractor test in accordance with OECD STANDARD CODE for the Official Testing of Agricultural Tractor Performance (C(87)53(Final), Code I) and amendments (C(90)79, C(92)52).

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

Duration of tests: July till September 1992

DLG-Testing Station for Agricultural Machinery, 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: 4th March 1993

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In this report all performance characteristics are given corresponding to the International System of Units.

The reference to the former used Technical System of Units is given by the following relations:

Forces	1 kN	=	1000 N	=	102 kp
Powers			1 kW	=	1,36 PS
Pressures	1 MPa	=	10 bar	=	10,2 kp/cm²
	100 kPa	=	1000 mbar	=	750,10 mm Hg

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Printed in the Federal Republic of Germany, March 1993,
DLG-No. 269

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Tractor manufacturer:	JOHN DEERE D-6800 Mannheim
Location of tractor assembly:	D-6800 Mannheim
Submitted for test by:	Manufacturer
Selected by:	Manufacturer with agreement by DLG
Place of running-in:	Mannheim and Groß-Umstadt
Duration of running-in:	Engine 50 hours, tractor 20 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	JOHN DEERE
Trade name:	6400
Type:	Wheel tractor in full frame design, four wheel driven
Serial no.:	1000 39
1st serial no.:	100 001

Engine

Make:	JOHN DEERE
Model:	4045 TL 003
Type:	Watercooled 4-stroke Diesel-engine (antivibration mounted), direct injection, supercharged
Serial no.:	10 90 28
Cylinders:	4, in line, bore 106,5 mm, stroke 127 mm, displacement 4525 cm^3; compression ratio 17,2 ± 0,5:1; replaceable, wet cylinder liners
Valves:	Overhead

Supercharging

Make:	GARRETT
Model:	T 300 exhaust driven
Max. pressure:	55 ± 5 kPa

Fuel system:	VDO electrical fuel supply pump; LUCAS-CAV distributor injection pump RE 46 122, serial no.: 18343 DKG; manufacturer's production setting 66,5 + 5 mm³/stroke at full load and rated speed; automatic injection timing device, injection timing 20 + 15 degrees before TDC; STANADYNE multihole injection nozzles 28485; injection pressure 24,5 MPa ± 0,5 MPa; replaceable fuel filter; capacity of fuel tank 160 dm³
Governor:	LUCAS-CAV centrifugal variable speed governor, without supercharge pressure compensating device, governed range of engine speed 800 ± 50 to 2460 ± 50 rev/min, rated engine speed 2300 rev/min
Air cleaner:	MANN dry paper element filter with incorporated cyclone type precleaner, replaceable cartridge; electric warning indicator lamp; air intake below bonnet
Exhaust silencer:	ROTH, AL 78267 single-chamber absorption type, 160x275 mm oval, 200 mm long, on the left above the engine, below bonnet; vertical stack, on the right of corner post of cab, mouth showing upwards, forward, 2701 mm above ground
Lubrication system:	Pressure lubricated by gear pump; oil filter in full flow with replaceable cartridge, engine oil/cooling-water heat exchanger between oil filter and socket
Cooling system:	Water cooling with impeller pump, overpressure relief valve set to 70 + 20 kPa; thermostat and by-pass circuit; EATON model 610 viscous drive fan, belt driven, variable fan speed controlled by air flow temperature; 7 blades with 550 mm dia; water capacity 17,5 dm³
Starting system:	Electrical; BOSCH solenoid pre-engaged drive starter motor 3,0 kW; cold starting aid: BERU heating spiral in air intake manifold safety device: Range gear in neutral position
Electrical system:	12 Volt, negative earth; BOSCH 3-phase alternator K1-14V30/85A 1190 W; 1 lead acid battery, 110 Ah at 20 hours rating

Transmission	Universally-jointed propeller shaft between engine and gearbox
Clutch (travel alone):	JOHN DEERE, separate clutch case in front of gearbox; wet multi-plate, 225 mm dia, mechanically actuated by pedal, additionally assisted by low pressure hydraulic circuit
Gear box:	JOHN DEERE FST (12/4) 30 km/h synchromesh speed change gear with 3 forwards speeds and 1 reverse speed, synchromesh 4 speed (A, B, C, D) range gear; total 12 forward and 4 reverse speeds, 2 control levers; forced-feed lubrication, oil cooler in front of engine's water cooler optionally available transmission versions: FST (15/5) 30 km/h identical with FST (12/4) 30 km/h, but 5 speed range gear FST (18/6) 40 km/h identical with FST (12/4) 30 km/h, but 6 speed range gear PPST (16/12) 30 km/h 4 speed power shift change gear, synchromesh 4 speed range gear and power shift reverser (range D is locked in reverse gear) PPST (20/16) 30 km/h identical with PPST (16/12) 30 km/h, but 5 speed range gear (range E is locked in reverse gear) PPST (24/16) 40 km/h identical with PPST (16/12) 30 km/h, but 6 speed range gear (ranges E and F are locked in reverse gear)
Rear axle and final drives:	JOHN DEERE bevel gear drive, bevel gear differential; multi-plate differential lock, under load engageable by foot switch and low pressure hydraulic circuit, disengagement by brake pedals; planetary final drives
Front axle and final drives:	ZF APL 2035 driven by wet multi-plate clutch, propeller shaft (in tractor's median plane) and bevel gear; clutch electro-hydraulically operated by toggle switch through low pressure hydraulic circuit; bevel gear differential with automatic limited slip type lock; planetary final drives

Number of revolutions of front wheels for one revolution of rear wheels: 1,3828

Total ratios and speeds

Range	Gear	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed*) at rated engine speed 2300 rev/min **km/h**
Forward speeds			
A	1	302,27	2,35
	2	215,98	3,29
	3	163,60	4,35
B	1	150,54	4,72
	2	107,56	6,61
	3	81,48	8,73
C	1	92,33	7,70
	2	65,97	10,78
	3	49,97	14,23
D	1	42,94	16,56
	2	30,68	23,17
	3	23,24	30,59
A	R	247,31	2,87
B	R	123,17	5,77
C	R	75,54	9,41
D	R	35,14	20.24

*) calculated with the radius index (ISO 4251/1-1984) 820 mm

Main p.t.o.: Independent;
driven by wet multi-plate clutch with
197 mm dia; electro-hydraulically operated
by rotary switch through control valve,
response of valve automatically controlled;
1 reversible shaft at tractor's rear, 2 p.t.o. speeds selectable b
lever;
35 mm dia, 6 splines, ISO 500-1979 type 1
and
35 mm dia, 21 splines, ISO 500-1979 type 2

740 mm above ground, 530 mm behind rear wheel centre,in
tractor's median plane;
sense of rotation clockwise (seen from tractor's rear)

p.t.o. type	p.t.o. speed rev/min	engine speed rev/min	p.t.o. transmission ratio	Power restriction kW
540	540 616	2017 2300	3.7347	-
1000	1000 1042	2208 2300	2.2083	-

Power lift

JOHN DEERE;
electronic-hydraulic power lift, with external lift cylinders: draft-, position- and mixed control, floating position, rate of drop control, raise limit, fast raising, electronic lower link sensing

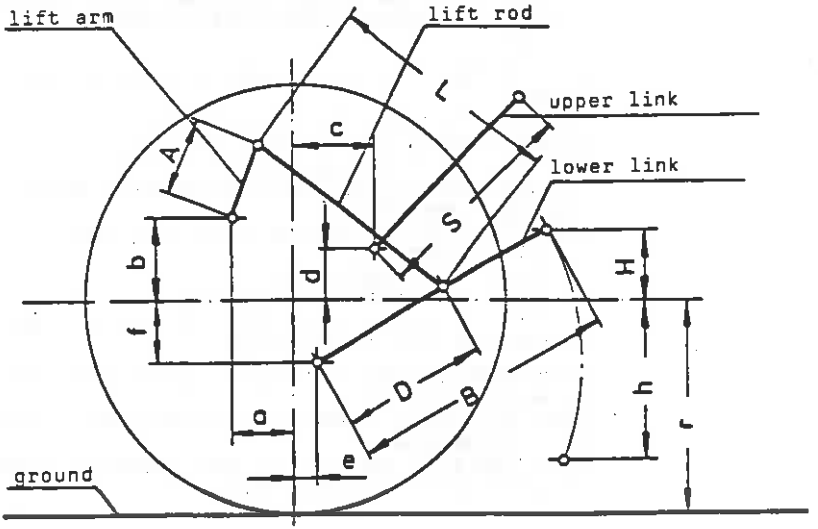
Hydraulic system:

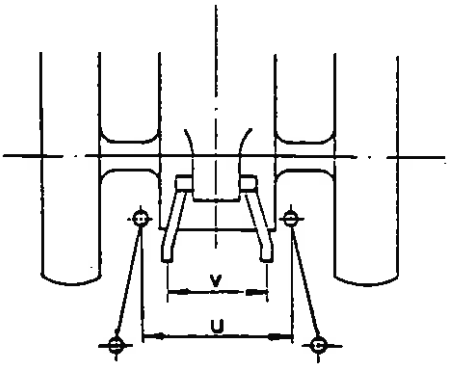
Load sensing, pressure and flow compensated system;
VICKERS variable displacement axial-piston pump, driven by gear box, independent of travel clutch, max. delivery 60 dm³/min at rated engine speed, oil filter in feed line, cooler see page -6-, gear box;

JOHN DEERE control valve, no separate linkage lock for transport;
pressure limitating valve set to 20 ± 0,5 MPa;
2 single acting cylinders with 80 mm bore and 175 mm stroke, safety valve set to 21,5 ± 0,7 MPa;
2 double acting additional HUSCO de-luxe control valves, 4 oil couplings at rear of tractor;
maximum volume of oil, available to external cylinders :
20 dm³ stationary
10 dm³ during driving operation
if required 10 dm³ oil may be added,
then max. available volume increases correspondingly
oil reservoir in common with gear box

the hydraulic system further delivers a high pressure circuit to actuate steering and by
a separate pump low pressure circuit for transmission lubrication and for actuating of:
Drive clutch, p.t.o. clutch and p.t.o. brake, power shift (if fitted), differential lock and front wheel drive clutch

Three-point linkage: Category 2 acc. to ISO 730/1-1990, with WALTERSCHEID quick couplers





Dimensions of rear implement linkage (projected lengths in mm, underlined dimensions are valid for power lift measurements p. 25)

Rear tyres 520/70 R 38	*) radius index	(r)	820
Front tyres 16.9 R 24	*) radius index	(r')	620
Length of lift arms		(A)	305
Length of lower links		(B)	945
Distance of lift arm pivot points from rear axle centre	horizontal	(a)	-170
	vertical	(b)	475
Horizontal distance between lower link pivot points		(u)	478
Horizontal distance between lift arm end points		(v)	535
Length of upper link		(S)	530 to 725, <u>660</u>
Distance of upper link pivot point from rear wheel axis	horizontal	(c)	<u>452</u>, 442, 432
	vertical	(d)	<u>173</u>, 243, 313
Distance of lower link pivot point from rear wheel axis	horizontal	(e)	135
	vertical	(f)	225
Distance of lower link pivot points from lift rod pivot points on lower links		(D)	<u>503</u>, 560
Length of lift rods		(L)	705 to 865, <u>810</u>

Height of lower link hitch points relative to rear wheel axis (situated 820 mm above ground), these data are valid for unloaded power lift:

Length of lift rods	(L)	705	<u>810</u>	865
Linkage distance of lift rods	(D)		503	
Lowest position	(h)	416	620	820
Highest position	(H)	225	60	-58
Transport position	(H')	225	60	-58

*) Assuming r resp. r'= tyre dynamic radius index of ISO 4251/1-1984

*) Assuming r resp. r'= tyre dynamic radius index of ISO 4251/1-1984

Pull equipment

Swinging drawbar:	Longitudinally adjustable	
	height above ground	476 mm
	distance of hitch point	
	from rear wheel axis,	
	horizontally:	780, 880, 930, 1080 mm
	from p.t.o. shaft end	
	vertically:	264 mm
	horizontally:	250, 350, 400,550 mm
	centre of clevis swingable to both sides,	
	with drawbar fully pushed in:	187 mm
	with drawbar fully drawn out:	259 mm
	distance of pivot point from	
	rear wheel axis, horizontally	0 mm
	diameter of drawbar pin hole:	33 mm
	maximum vertical permissible	
	load (drawbar fully pushed in):	2250 kg
Trailer hitch:	Optionally available, not fitted	
Holed drawbar:	Short bar;	
	length between ball guides	825 mm
	9 holes, 33 mm dia with 80 mm distance each,	
	thickness/width of the drawbar	25/80 mm
	height above ground: minimum	0 mm
	maximum	1045 mm
	horizontal distance to p.t.o.	
	shaft end (lower links in horizontal	
	position)	550 mm
Towing hitch:	At front, height above ground	905 mm

Steering

DANFOSS, OSPC 160 LS
hydrostatic steering, connected to hydraulic circuit; 1 integrated cylinder of symmetrical design; 114 mm stroke, 70 mm bore, 36 mm piston rod, acting on steering levers, working pressure 18,5 MPa

Brakes

Service brake:	JOHN DEERE self-adjusting pedal operated muscle power brake, hydraulically actuated with transmission oil, acting on rear wheels, front axle drive is automatically engaged during braking; oil-immersed disc brake with 1 ring-piston on each differential half shaft, disc diameter 313 mm; hydraulic trailer braking take-off optional, not fitted
Parking brake:	Mechanically operated oil-immersed band type brake, acting on rear wheels, fitted to differential housing; 1 drum, 317 mm dia, 40 mm width, operated by lever with ratchet; additional park lock, operated by range shift lever
Steering brake:	Divided pedal of service brake, for normal use locked together

Wheels

Front:	Steering and driving, 2 pneumatics
Rear:	Driving, 2 pneumatics
Wheelbase:	2400 mm
Track width:	At front from 1516 up to 2016 mm adjustable in steps of about 100 mm by adjustable gauge bowl wheels
	at rear from 1712 up to 1912 mm adjustable in steps of 100 mm by adjustable gauge bowl wheels; with spacers adjustable to 2012 mm

Possible combinations of tyres sizes rear/front

Type of tyres: Diagonal-ply = (D)
radial-ply = (R)

Rear		Front	
18.4 - 30	(D/R)	12.4 - 24	(D/R)
23.1 - 26	(D)	13.6 - 24 14.9 - 24	(D) (D)
18.4 - 34	(D/R)	13.6 - 24 12.4 - 28 14.9 - 24 420/70R24	(D/R) (D) (D/R) (R)
520/70R34	(R)	14.9R24 420/70R24	(R) (R)
23.1 - 30	(D/R)	14.9 - 24 420/70R24	(D/R) (R)
16.9 - 38	(D/R)	12.4 - 28 14.9 - 24 13.6 - 28 420/70R24	(D/R) (D/R) (D/R) (R)
18.4 - 38	(D/R)	14.9 - 24 13.6 - 28 14.9 - 26 16.9 - 24 420/70R24	(D/R) (D/R) (D/R) (D/R) (R)
520/70/R38	(R)	420/70R24 14.9R26 16.9R24	(R) (R) (R)
600/65R38	(R)	480/65R24	(R)

This is the list of the most popular tyre combinations.
More combinations are available.

Protective structure

JOHN DEERE, cab model SG 048;
OECD-tested safety cab with integrated safety frame RG 017, by separate device tiltable to the side; mounted by antivibration silent-blocks on tractor;
OECD approval no. CSS 0201/1

2 doors and 2 steps each,
steps 590 and 890 mm,
driver's platform 1146 mm above ground,
rear window and side windows to open, roof hatch;

combined heating/ventilation system with 4-step blower and cooling-water heat exchanger below cab's floor:
air intake at left and right above side windows,
2 dry air filters;

air outlet jets and defroster louvers in the steering console, 2 recirculation louvers behind the seat

air conditioner optionally available, not fitted

Noise reduction materials:

Roof,		
head liner	foam with perforated vinyl-coating plus self-supporting foam substrate	23 mm
hatch	foam with perforated vinyl-coating	50 mm
Mudguards and uprights	foam with vinyl-coating plus substrate	6 mm
Floor	molded rubber mat	30 mm
Seat support	molded rubber mat	8 mm
Rear wall (pump cover)	composite material and sound barrier	9 mm

Driver's seat

GRAMMER DS 85 H1/90 A
upholstered seat with back rest extension and arm rests, mechanical weight adjustment, hydraulic shock absorber, horizontal suspension, seat rotatable to both sides up to 20°, additionally turnable to the left hand side about 180°;

height of unloaded seat above platform adjustable in 3 steps from 485 to 565 mm,
horizontal adjustment 180 mm

Operating hours meter

Electronic, counts real operating hours when engine is running

Lighting

Electrical, 12 Volt, as per GERMAN legislation

	Height above ground of centre mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
Headlights	1300	162x101	223
Sidelights	1683	110x35	861
Rearlights	1691	210x48	884
Reflectors 1st pair 2nd pair	 1691 890	 210x48 72 dia	 884 515

TEST CONDITIONS

Overall dimensions

	Length mm	Width mm	Height at top of protective structure mm	Height at top of exhaust silencer mm
Unballasted	4194	2260	2710	2701
Ballasted	4575	2680		

Ground clearance (unballasted tractor): 476 mm

Clearance-limiting part: Swinging drawbar

Tractor mass (with cab)

	Unballasted		Ballasted	
	without driver kg	with driver kg	without driver kg	with driver kg
front	1675	1695	2980	3000
rear	2820	2875	4445	4500
total	4495	4570	7425	7500

Ballast

	Weigths		Water
	Number	Total mass kg	kg
front	14	700	430
rear	16	825	1000

Tyres and track widths specifications

	Front	Rear
Tyres:	PIRELLI TM 200	PIRELLI TM 700
dimensions	16.9 R 24	520/70 R 38
load index speed index	134 A8	150 A8
type	radial	radial
maximum load (tyre manufacturer's) 40 km/h	21,2 kN	33,5 kN
maximum load (tyre manufacturer's) 30 km/h	22,7 kN	36,0 kN
inflation pressure (tyre manufacturer's)	160 kPa	160 kPa
radius index	620 mm	820 mm
Chosen track width:	1720 mm	1712 mm
Rims:	W15Lx24	DW 18x38
Technically permissible axle load	30,0 kN	60,0 kN
Technically permissible total weight:	75,0 kN	

Oils and lubrication

Capacity and change interval:

	Capacity dm³	Oil change h	Filter-change h
Engine	12	250	
Gear box, rear axle and final drives, hydraulic system, steering, brake system	52	1500	750
Front axle final drives	6,5 2 x 1,0	1500	-

Specification:

	Recommended	Used during test
Engine oil:		
Type	Engine oil	FUCHS TITAN
Viscosity		SAE 10W/40
Winter	SAE 10W/40	
Summer	SAE 15W/40	
Tropics	SAE 20W/40	
Classification	API CD-SE or MIL-L-2104 C	API CD-SE MIL-L-2104 C
Transmission oil: Used in gearbox, rear axle and rear final drives, hydraulic system, steering, brake system		
Type	Transmission oil	JOHN DEERE HY-GARD
Viscosity	SAE 75	SAE 75
Classification	JD spezif. J 20 C	JD spezif. J 20 C
used in front axle and front final drives		
Type	Transmission oil	FUCHS RENOGEAR
Viscosity	SAE 80W/90	SAE 80W/90
Classification	API GL-5	API GL-5

Grease: Multi purpose grease
number of lubrication points 22

Fuel

Type: ARAL-Diesel-fuel, in conformity with DIN 51601

Density at 15°C:

At p.t.o. test	0,829 g/cm³
at drawbar power test	
tractor unballasted	0,835 g/cm³
tractor ballasted	0,827 g/cm³
at engine test	0,828 g/cm³

TEST RESULTS

JOHN DEERE 6400 **Test No. 92-222**

COMPULSORY TESTS

1. MAIN POWER TAKE OFF PERFORMANCE (1000 rev/min)

Date of tests: 16th July 1992
Location of tests: DLG-Testing Station Groß-Umstadt
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed Engine rev/min	Speed P.t.o. rev/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power						
1.1 At 2-hour test						
68,0	2000	906	18,15	15,05	221	3,74
1.2 At rated speed						
65,1	2300	1042	18,38	15,24	234	3,54
1.3 At standard p.t.o. speed						
66,8	2208	1000	18,30	15,17	227	3,65
1.4 Part loads, the governor hand lever in the position corresponding to maximum power at full load (curve a)						
1.4.1 the torque corresponding to maximum power at rated speed						
65,1	2300	1042	18,38	15,24	234	3,54
1.4.2 85% of the torque obtained in 1.4.1						
57,4	2389	1082	17,13	14,20	247	3,35
1.4.3 75% of the torque defined in 1.4.2						
43,5	2413	1093	14,19	11,76	270	3,07
1.4.4 50% of the torque defined in 1.4.2						
29,2	2432	1101	11,64	9,65	330	2,51
1.4.5 25% of the torque defined in 1.4.2						
14,7	2454	1111	8,66	7,18	487	1,70
1.4.6 unloaded						
-	2474	1120	5,75	4,77	-	-

Power kW	Speed Engine rev/min	Speed P.t.o. rev/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
1.5 Part loads, the governor hand lever in the position corresponding to the standard p.t.o. speed at full load (curve b)						
1.5.1 the torque corresponding to maximum power						
66,8	2208	1000	18,30	15,17	227	3,65
1.5.2 85% of the torque obtained in 1.5.1						
59,1	2297	1040	17,03	14,12	239	3,47
1.5.3 75% of the torque defined in 1.5.2						
44,8	2325	1053	13,99	11,60	259	3,21
1.5.4 50% of the torque defined in 1.5.2						
30,2	2348	1063	11,26	9,34	309	2,68
1.5.5 25% of the torque defined in 1.5.2						
15,2	2367	1072	8,27	6,86	450	1,84
1.5.6 unloaded						
-	2388	1081	5,33	4,41	-	-

No load maximum engine speed: 2474 rev/min
Equivalent flywheel torque at rated engine speed: 270 Nm
Equivalent flywheel torque at 2-hour test: 324 Nm
Maximum equivalent flywheel torque: 379 Nm at 1498 rev/min of the engine

Mean atmospheric conditions

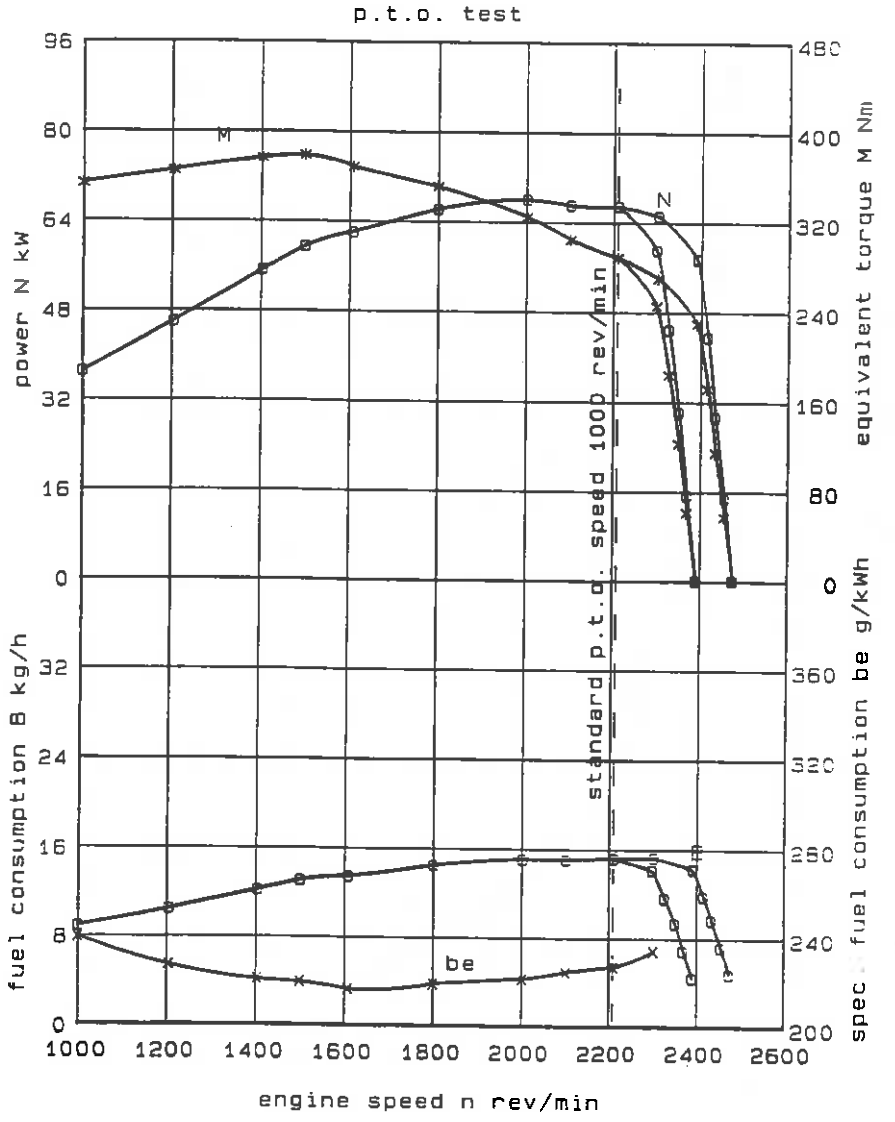
temperature	21 °C
pressure	100 kPa
rel. humidity	55 %

Maximum temperatures

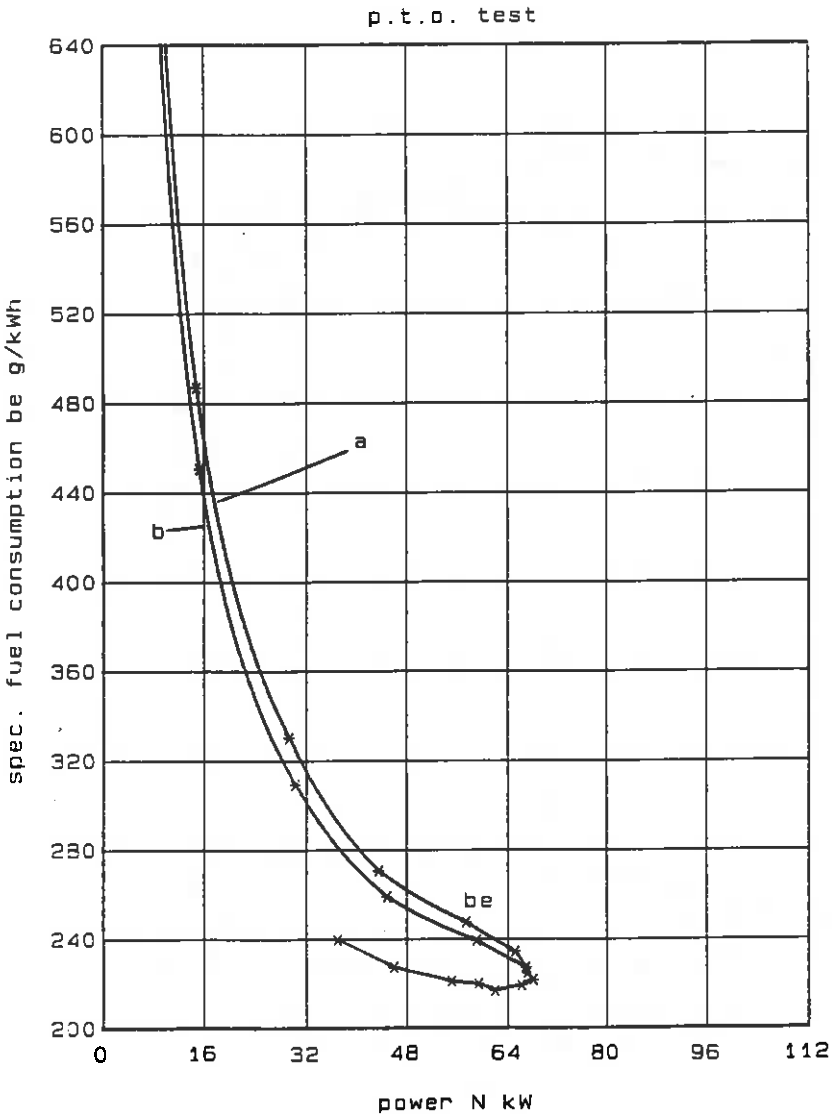
coolant	94 °C
oil	107 °C
fuel	35 °C
air intake	27 °C

JOHN DEERE 6400

Test No. 92-222



JOHN DEERE 6400 **Test No. 92-222**



2 HYDRAULIC POWER AND LIFTING FORCE

Date of tests: 16th September 1992

2.1 Hydraulic power test

Sustained pressure with relief valve open 20,4 MPa
Pump delivery rate at minimum pressure 70,6 l/min

	Hydraulic power kW	Flow rate l/min	Pressure MPa	Oil temperature °C
At 90% of the actual relief valve setting	15,9	52,0	18,4	63
Maximum	18,2	61,4	17,8	63

Tapping point used for test: at rear of tractor, connected with additional control valve no.2

2.2 Power lift test

	At the hitch points	On the frame
Height of lower hitch points above ground in down position	200 mm	
Vertical movement without lifting forces with lifting forces	680 mm 655 mm	880 mm 850 mm
Max. corrected force exerted through full range	33,8 kN	29,0 kN
Corresponding pressure	18,4 MPa	
Moment about rear axle	-	49,0 kNm
Max. tilt angle of mast from vertical		11°

Lifting heights relative to horizontal lower links

mm	-505	-500	-400	-395	-300	-200	-100	0	+100	+200	+260	+300	+345
Lifting forces at hitch points, corrected to 18,4 MPa													
kN				33,8	38,3	42,8	45,9	49,5	52,7	54,9	54,5		
Lifting forces at standard frame, corrected to 18,4 MPa													
kN	29,0	29,3	32,4		34,2	35,6	36,5	36,7	36,7	36,5		35,8	34,7

3 DRAWBAR PERFORMANCE

Date of test: 4th August till 10th September 1992
Type of track:: Concrete

Gear and range	Speed km/h	Drawbar pull kN	Power kW	Engine speed rev/min	Slip of wheels %
3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor)					
3 A	3,78	47,00	49,4	2328	14,9
1 B	3,94	46,96	51,4	2222	14,9
2 B	5,43	37,98	57,3	2001	6,7
1 C	6,44	32,13	57,5	2005	5,0
3 B	7,33	28,87	58,8	2001	4,4
2 C	9,12	22,85	57,9	1996	3,4
3.2 MAXIMUM POWER IN TESTED GEARS (ballasted tractor)					
1 A	2,11	73,59	43,3	2399	14,9
2 A	2,52	74,07	51,8	2049	15,1
3 A	3,57	58,32	57,8	1999	6,5
1 B	3,91	53,53	58,1	1996	5,8
2 B	5,59	37,44	58,1	1999	3,6
1 C	6,57	30,73	56,1	2003	2,8
3 B	7,46	27,96	57,9	1999	2,2
2 C	9,25	21,67	55,7	1999	1,8
3.3.1 FIVE-HOUR-TEST at 75% of pull at maximum power (at rated engine speed)					
2 B	6,38	22,53	42,7	2403	2,0
3.3.2 FIVE-HOUR TEST at pull corresponding to 15% wheel slip					
1 A	2,07	74,07	42,6	2389	-

Oil consumption during ten hours duration of tests 3.3.1 and 3.3.2 : 39 g/h

Test No. 92-222

	Height of drawbar above ground	Tyre inflation pressure	
		Front	Rear
unballasted	470 mm	80 kPa	80 kPa
ballasted	470 mm	800 kPa	100 kPa

Specific fuel consumption g/kWh	Specific energy kWh/l	Temperatures Fuel °C	Coolant °C	Engine oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure kPa
309	2,70	32	83	108	22	85	100,0
294	2,84	31	85	110	22	85	100,0
262	3,19	30	85	110	20	85	100,0
259	3,22	30	85	110	20	90	100,0
256	3,26	32	86	110	21	75	100,0
259	3,23	32	86	110	22	75	100,0
325	2,55	27	82	106	18	69	100,0
290	2,85	26	82	106	17	70	100,0
259	3,19	23	82	106	17	72	100,0
259	3,19	28	82	105	18	65	100,0
259	3,19	27	83	105	18	65	100,0
270	3,06	23	83	102	16	80	100,0
258	3,20	27	82	104	18	65	100,0
268	3,08	23	83	102	17	75	100,0
in 2 B gear							
306	2,70	28	84	104	17	86	100,6
with additional ballast: 700 kg							
-	-	27	87	115	23	65	100,6

Those figures not quoted are irrelevant due to the additional ballast.

4 TURNING AREA AND TURNING CIRCLE (front wheel drive disengaged)

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hands m
Radius of turning area	4.30	4.33	5.09	5.07
Radius of turning circle	4.05	4.08	4.84	4.82

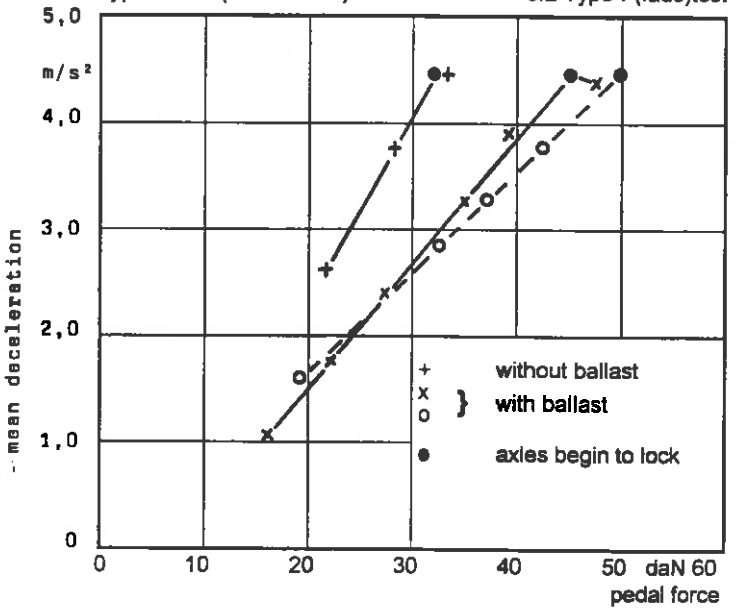
5 LOCATION OF CENTRE OF GRAVITY

Height above ground	1017 mm
Distance forward from rear axle centre	890 mm
Distance from tractor's median plane, to the right	7 mm

6 BRAKING (front wheel drive disengaged)
Date of tests: 2nd and 3rd September 1992

	Tractor mass (with driver) front kg	rear kg	total kg	Speed before application of brakes km/h
Without ballast	1695	2875	4570	33,0
With ballast	3000	4500	7500	32,6

6.1 Type-O-test (cold brakes) ——— 6.2 Type-I-(fade)test - - - - -



No significant deviation of tractor from original course and no abnormal vibrations

Brakes-heating: Actuating of brake for 1 km with pedal force corresponding to 1 m/s²

6.3 Parking brake

	Ballasted tractor on 18%-slope up	down
Braking device control force daN	39	37

7 MEASUREMENT OF EXTERNAL NOISE LEVEL
(Front wheel drive disengaged)

Date of test:	1st September 1992
Type of track:	Concrete
Type of sound level meter:	BRÜEL & KJAER model 2203

Results of test

Gear number:	3 D
Travelling speed before acceleration:	24,9 km/h
Sound level:	82,5 dB(A)

8 REPAIRS AND REMARKS None

JOHN DEERE 6400 OPTIONAL TEST **Test No. 92-222**

9. ENGINE PERFORMANCE

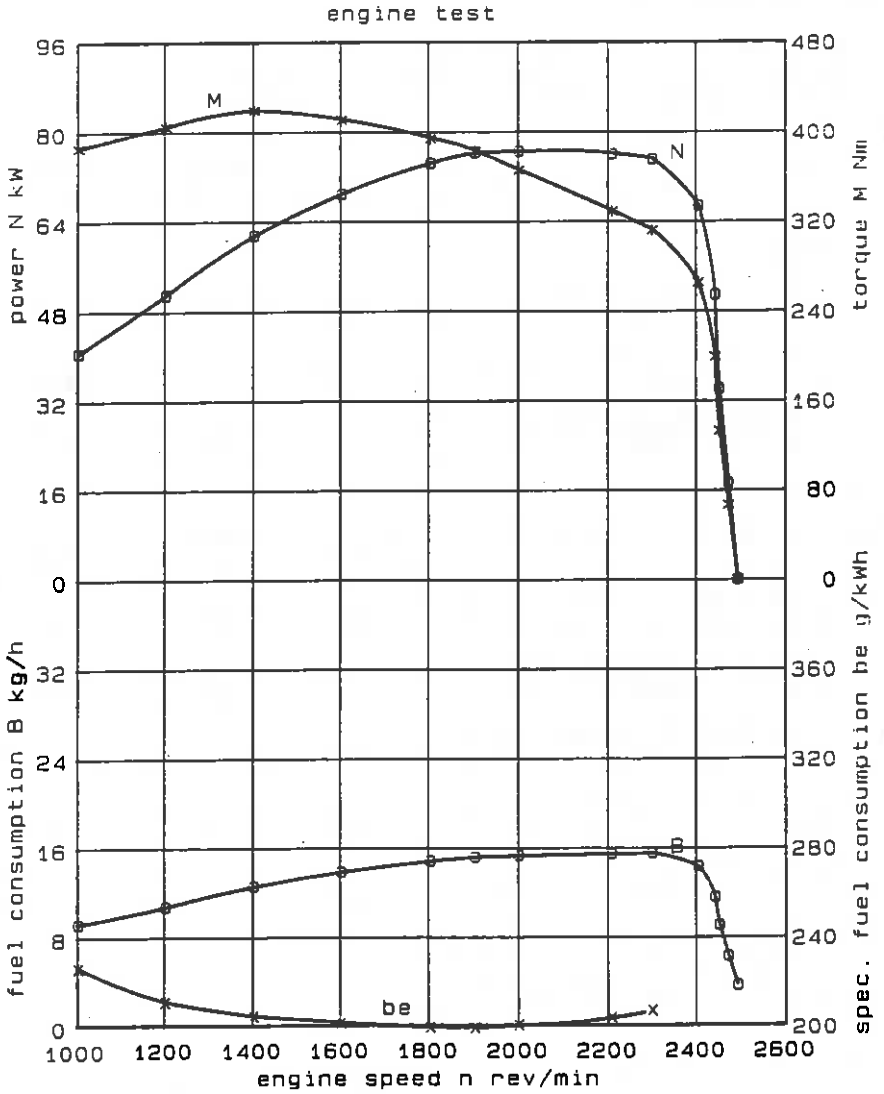
Date of tests: 10th July 1992
Location of tests: DLG-Testing-Station Groß-Umstadt
Type of dynamometer: SCHENCK eddy-current-dynamometer W 150

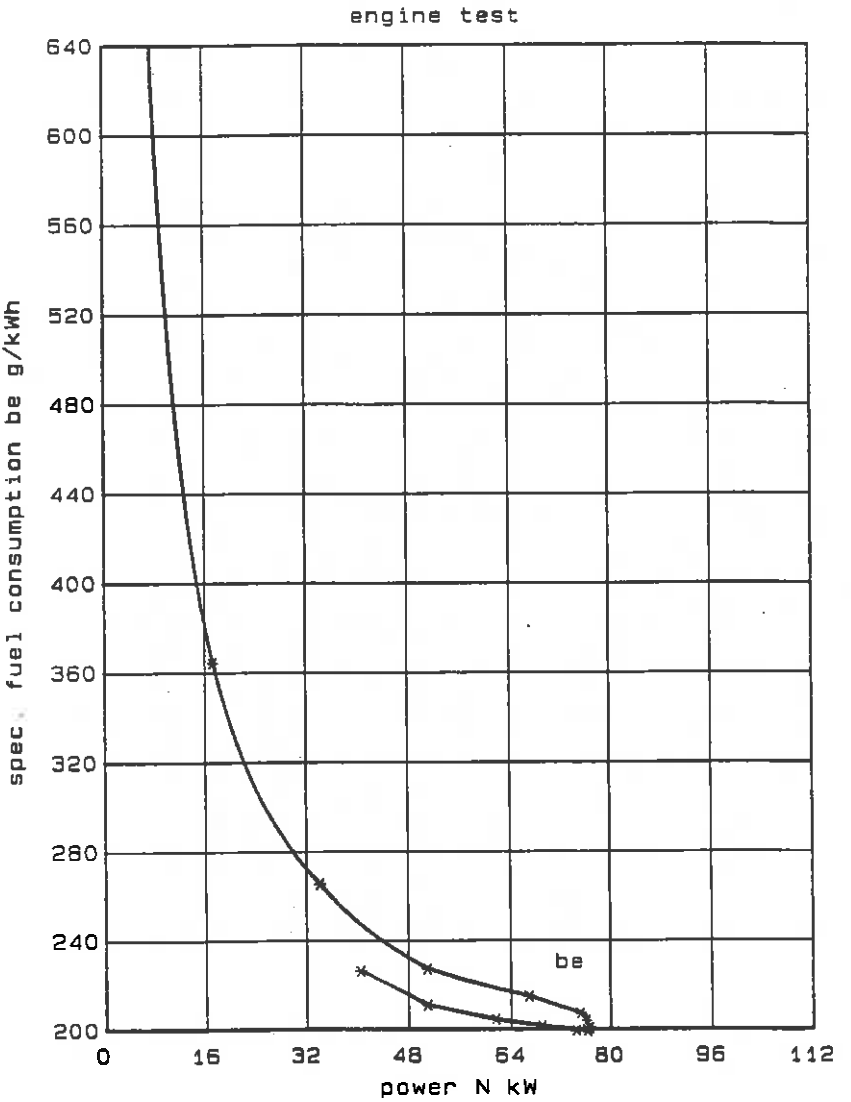
Power kW	Engine speed rev/min	Fuel consumption hourly l/h	hourly kg/h	specific g/kWh	Specific energy kWh/l
Maximum power					
9.1 At 2-hour test					
76,5	2000	18,52	15,33	200	4,13
9.2 At rated engine speed					
75,1	2300	18,78	15,55	207	4,00
9.3 At standard p.t.o. speed (1000 rev/min)					
76,0	2208	18,70	15,48	204	4,07
9.4 Part loads					
9.4.1 the torque corresponding to maximum power at rated speed					
75,1	2300	18,78	15,55	207	4,00
9.4.2 85% of the torque obtained in 8.4.1					
66,8	2404	17,31	14,33	215	3,86
9.4.3 75% of the torque obtained in 8.4.2					
50,9	2443	13,95	11,55	227	3,65
9.4.4 50% of the torque obtained in 8.4.2					
34,1	2453	10,91	9,04	265	3,12
9.4.5 25% of the torque obtained in 8.4.2					
17,2	2473	7,55	6,25	364	2,27
9 4.6 unloaded					
-	2494	4,38	3,62	-	-

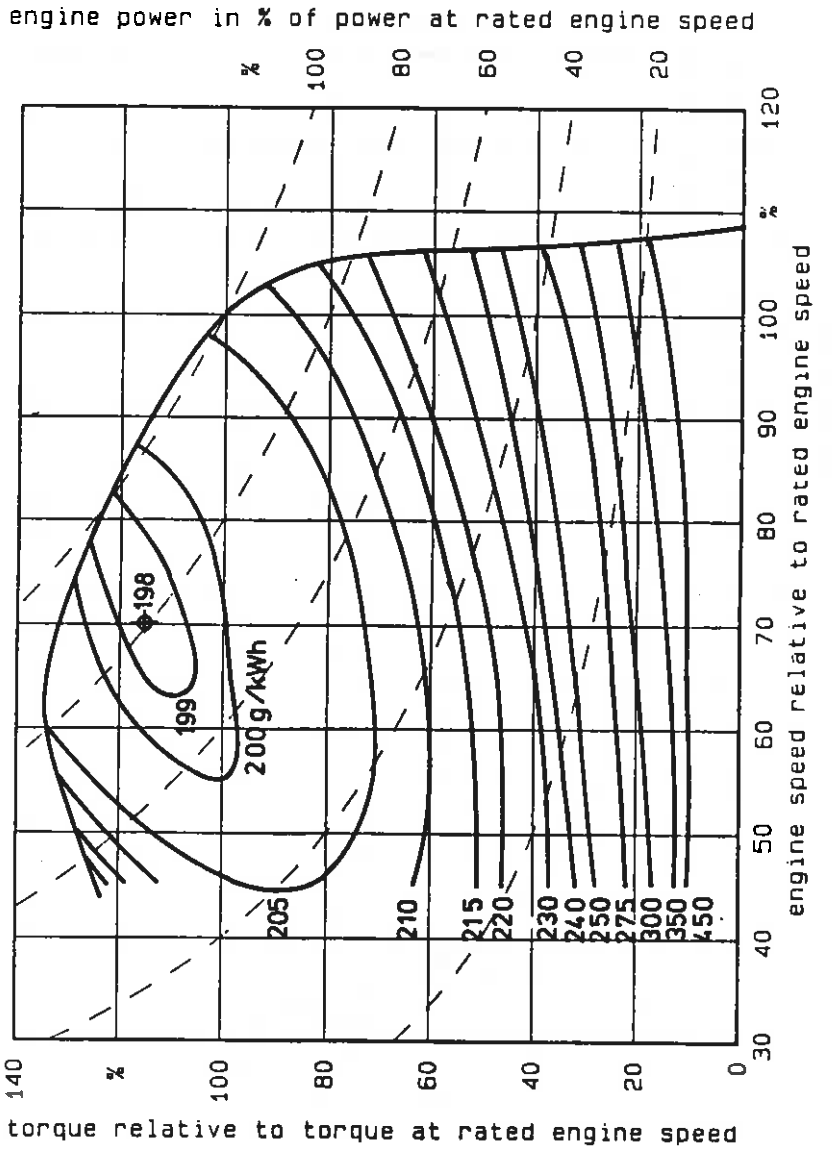
Optimum fuel consumption: 198 g/kWh at 60,5 kW and 1610 rev/min
No load maximum engine speed: 2494 rev/min
Torque at rated engine speed: 312 Nm
Torque at maximum power: 365 Nm
Maximum torque: 419 Nm at 1401 rev/min of the engine

Mean atmospheric conditions	temperature	24 °C
	pressure	100 kPa
	relative humidity	46 %
Maximum temperatures	coolant	78 °C
	oil	98 °C
	fuel	26 °C
	engine air intake	26 °C

JOHN DEERE 6400 **Test No. 92-222**




engine test
spec. fuel consumption be g/kWh
640
600
560
520
480
440
400
360
320
280
240
200
0
16
32
48
64
80
96
112
power N kW
be


engine power in % of power at rated engine speed
%
100
80
60
40
20
120
%
100
90
80
70
60
50
40
30
engine speed relative to rated engine speed
198
199
200 g/kWh
205
210
215
220
230
240
250
275
300
350
450
140
%
100
80
60
40
20
0
torque relative to torque at rated engine speed

ADDITIONAL TESTS UNDER THE RESPONSIBILITY OF THE DLG-TESTING-STATION

10 MEASUREMENTS OF NOISE IN THE SAFETY CAB

Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2233
Date of test: 4th August 1992

According to OECD CODE V

Gear number	Drawbar pull kN		Measured travelling speed km/h		Sound level dB(A)	
	1)	2)	1)	2)	1)	2)
Unloaded test in the gear giving the speed nearest to 7,5 km/h						
1 C	-	-	8,29	8,35	71,0	71,0
Unloaded test in the gear giving the maximum speed						
3 D	-	-	31,72	-	72,5	-
Tests with the drawbar pull for which the tractor gives the maximum sound level (combination of gear giving the nominal speed nearest to 7,5 km/h and also in any gear with a sound level increase of at least 1 dB(A))						
1 C	27,84	26,33	7,35	7,50	73,5	73,5

1) front axle drive disengaged
2) front axle drive engaged

11 LIFTING FORCE (with modified 3-point linkage setting)

Date of tests: 30th September 1992

Length of lift rods		(L)	840 mm
Distance of lower link pivot points to lift rod pivot points on lower links		(D)	560 mm
Distance of upper link pivot point from rear wheel axis,	horizontal	(c)	432 mm
	vertical	(d)	313 mm
Length of upper link		(S)	650 mm

see on pages 11 and 12 for more information

	At the hitch-point	On the frame
Height of lower hitch points above ground in down position	200 mm	
Vertical movement without lifting forces	600 mm	657 mm
Vertical movement with lifting forces	571 mm	628 mm
Max. corrected force exerted through full range	36,7 kN	41,2 kN
Corresponding pressure	18,4 MPa	
Moment about rear axle	-	69,5 kNm
Max. tilt angle of mast from vertical	-	4°

Lifting heights relative to horizontal lower links

mm	-400	-395	-300	-200	-100	0	+100	+176	+200	+228
Lifting forces at hitch points, corrected to 18,4 MPa										
kN		36,7	42,8	47,3	50,4	53,1	56,3	57,2		
Lifting forces at standard frame, corrected to 18,4 MPa										
kN	41,2		44,3	46,1	47,0	47,3	47,0		45,9	45,0

Published
with the support of the Federal Minister for Food, Agriculture and Forestry

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