O.E.C.D. No.: 489
Printed: December 1975

Report on test in accordance with
O.E.C.D. STANDARD CODE for the Official Testing
of Agricultural Tractors



AGRICULTURAL TRACTOR 3130

Manufactured by: JOHN DEERE WERKE MANNHEIM
D-6800 Mannheim

Date of Tests: April till October 1975

DLG-Testing Station for Agricultural Machinery
D-6114 Groß-Umstadt

DEUTSCHE LANDWIRTSCHAFTS-GESELLSCHAFT e.V.
Prüfungsabteilung für Landmaschinen
D-6000 Frankfurt/Main 1, Zimmerweg 16

This bulletin is based on engineering tests in accordance with the O.E.C.D. STANDARD CODE for the Official Testing of Agricultural Tractors. It does not contain an evaluation of the performance of the tractor on practical work.

This report has been approved by the O.E.C.D. Coordinating Centre (C.N.E.E.M.A., France) as being in accordance with the O.E.C.D. STANDARD CODE.

Date of Approval: 12th December 1975

Serial No.: 489

This report results in a retest of the JOHN DEERE tractor 3130. It is valid for tractors of 3130 this model starting with the serial no. 183699, respectively the engine no. 225913.

This retest was necessary because the combustion of the engine is so improved, that the specific fuel consumption is remarkably reduced. In the rest the tractor is the same as before.

The tractor tested is a preproduction model.

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Printed in Germany

PRÜFUNGS-ABTEILUNG
John Deere 3130 Test No. 75-110

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PRÜFUNGS-ABTEILUNG
John Deere 3130

Test No. 75-110

Tractor manufacturer:	John Deere Werke Mannheim 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 appr. 100 hours Tractor appr. 75 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	John Deere Werke Mannheim
Model:	3130
Type:	Wheel type tractor, unit construction rear wheel driven
Serial No:	165 809

Engine

Make:	John Deere France
Model:	6329 DL 11
Type:	4-stroke Diesel engine, direct injection water cooled
Serial No:	164 710
Cylinders:	6 in line; bore 102 mm, stroke 110 mm capacity 5390 cm; compression ratio 16,2 : 1 wet, replaceable cylinders overhead valves
Fuel system:	A.C/G.M fuel feed pump ROTO Diesel distributor injection pump R 346 2240 manufacturer's production setting 43,5 mm^3/stroke at rated engine speed and full load injection timing 24° before TDC STANADYNE 4 holes injection nozzles AR 73 672 injection pressure 225 kp/cm^2 STANADYNE fuel filter, main and pre-cleaner with replaceable cartridge capacity of fuel tank appr. 106 l
Governor:	mechanically acting variable speed governor incorporated in injection pump governed range of engine speed 660 to 2675 rev/min rated engine speed 2500 rev/min

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Air cleaner:	Donaldson dry paper element type cleaner with maintenance indicator
Exhaust silencer:	Eberspächer multichamber muffler with perforated internal pipe oval shaped cylinder, cross section 257 mm to 139 mm, 610 mm length 140 mm to the left hand side of median plane of tractor above the bonnet mouth showing upward
Lubrication system:	Forced feed from gear type pump strainer in sump PUROLATOR oil filter with by-pass valve replaceable filter cartridge oil capacity 9,5 l oil changing period 100 hours recommended oil viscosity below -23°C SAE 5W or SAE 5W/20 below 0°C SAE 10W or SAE 10W/20, SAE 10W/30 over 0°C SAE 30 or SAE 20W/40
Cooling system:	Water cooled, impeller assisted dual flow thermostat fan with 5 blades, 490 mm diameter coolant capacity 19 l
Starting system:	Electrical BOSCH starter motor JD 12V 4 PS
Electrical equipment:	12 Volt negative earth BOSCH 3-phase alternator G1-14V-28A 2 lead acid batteries 88 Ah at 20 hours rating

Transmission

Clutch:	Fichtel und Sachs AG dry single plate, pedal operated F+S 186 427 0101.95
Gear box:	John Deere Werke Mannheim constant mesh speed change gear, collar shifted with 3 forward speeds group gear with 2 forward and 1 reverse group Hi-Lo group gear hydraulically under load shiftable total 12 forward and 6 reverse speeds

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Rear axle and final drive: Crown wheel and pinion
bevel gear type differential, differential lock operated by pedal or hand lever
self-disengaging
planetary final drive

Oil capacity: 57 l JD Typ 303

Oil changing period: 1000 hours

Total ratios and speeds

Group	Gear No		Total ratio engine to driving wheel	Theoretical travelling speed at rated engine speed of 2500 rev/min km/h	m/s
1 slow	1	low	357,9 : 1	2,00	0,56
		high	281,2 : 1	2,55	0,71
	2	low	216,1 : 1	3,32	0,92
		high	169,8 : 1	4,22	1,17
	3	low	133,6 : 1	5,37	1,49
		high	104,9 : 1	6,83	1,90
2 fast	4	low	99,6 : 1	7,20	2,00
		high	78,2 : 1	9,17	2,55
	5	low	60,1 : 1	11,95	3,32
		high	47,2 : 1	15,21	4,23
	6	low	37,1 : 1	19,30	5,36
		high	29,2 : 1	24,57	6,83
reverse	1	low	297,6 : 1	2,41	0,67
		high	233,8 : 1	3,07	0,85
	2	low	179,7 : 1	3,99	1,10
		high	141,1 : 1	5,08	1,41
	3	low	111,1 : 1	6,47	1,80
		high	87,3 : 1	8,24	2,29

The transmission is optional available for a maximum speed of 30 km/h in the 6th high speed

An electronically controlled hydrostatic front wheel drive is optional available

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Power take-off

Independent p.t.o.
at rear of tractor
under load engageable and disengageable
by hydraulically operated multiplate clutch
height above ground 689 mm
25,4 mm to the left hand side of tractor median plane
2 interchangeable p.t.o.-shafts for 540 rev/min and 1000 rev/min p.t.o.-speeds
by interchanging p.t.o.-stub shafts correct speed ratio is selected

1) 540 rev/min p.t.o.-speed
29 x 34,9 x 8,7 mm 6 spline shaft = 1 3/8"
(DIN 9611 Form 1; BS. 1495; ASAE S 203.5)
620 rev/min at rated engine speed
standard p.t.o.-speed 540 rev/min at
2175 rev/min engine speed
distance of end of p.t.o.-shaft from rear axle centre 530 mm
This p.t.o. should not be used to transmit the full crankshaft torque, the transmittable equivalent crankshaft torque, is limited according to manufacturer's handbook to 19,8 kpm at standard p.t.o. speed 540 rev/min, this corresponds to 60 PS

2) 1000 rev/min p.t.o.-speed
21 spline shaft with involute profile = 1 3/8"
(DIN 9611 Form 2; ASAE S 204.4)
1150 rev/min at rated engine speed
standard p.t.o.-speed 1000 rev/min at
2172 rev/min engine speed
distance of end of p.t.o.-shaft from rear axle centre 520 mm

both standard p.t.o.-speeds by tractormeter setting

direction of rotation for both p.t.o.-speeds clockwise viewed from tractor rear

Power lift	John Deere Werke Mannheim live hydraulic closed centre system power control, position control, variable proportion of power and position control floating position, self regulating 8-piston radial type pump, directly driven by front end of crankshaft gear type feed pump in transmission box; maximum pressure of system 158 kp/cm² working pressure 144 kp/cm² oil circuit is in common for all hydraulically controlled units of the tractor; the power lift assembly is connected to the hydraulic circuit by an oil flow control valve, this valve restricts the oil flow to the power lift at the maximum rate of 23 l/min; overpressure relief valve for ram 280 kp/cm²; John Deere control valve, single acting incorporated in power lift unit, double acting valves are optional available; oil tappings for 1 single or 1 dual acting remote cylinder or 1 oil motor with only 1 dual acting additional John Deere control valve available hydraulically acting linkage lock oil reservoir and oil changing peroid common with gear box, 57 l, up to 30,2 l may be taken off through oil tappings for short time
Implement linkage	Three point linkage category II (DIN 9674) lower links with extractable swing out rear ends; lifting rods length adjustable from 760 to 904 mm lifting range above ground with lifting rods short from 465 to 953 mm lifting rods long from 177 to 745 mm
Drawbar	Fitted on clevis of lower links centre hole and 4 holes at either side 80 mm distance each all holes 33 mm diameter height above ground adjustable in the range between 192 and 968 mm by power lift with lower links in horizontal position distance of centre hole from: rear axle centre 1088 mm end of 540 rev/min p.t.o.-shaft 557 mm end of 1000 rev/min p.t.o.-shaft 567 mm

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Putt attachment

Swinging Drawbar:	Height above ground 402 or 530 mm changeable by reversing swinging drawbar diameter of hole 33 mm distance of hole from the end of 540 rev/min p.t.o.-shaft 355 mm end of 1000 rev/min p.t.o.-shaft 406 mm adjustable by shifting swinging drawbar
Trailer hitch:	Height above ground 897 mm swingable aside when using upper link coupling hole 33 mm ∅ distance from rear axle centre 518 mm permissible supporting force 1200 kp
Towing hitch:	Height above ground 847 mm
Steering	John Deere Werke Mannheim mechanically acting hydraulically assisted central steering hand wheel operated

Brakes

Parking brake:	Mechanically operated wedge band brake acting on a drum on the differential gear box operated by hand lever with ratchet
Foot brake:	Hydraulically operated wet disc brakes acting on discs on final drive shafts pedal operated
Steering brake:	Operated by independent parts of divided foot brake pedal for normal use both parts of pedal are locked together
Safety frame	FRITZMEIER O.E.C.D.-tested: CS no.: 402 from 8th July 1974 (an integrated, air conditioned, soundproof safety cab is optional available O.E.C.D.-tested: CS no. 1004 from 1st Aug.1974

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Wheels

Steering wheels: Two pneumatics at front
7.50-18 AS Front 6 ply (DIN 7808)
maximum permissible weight on each tyre 765 kg at 2,5 kp/cm²;
when transporting mounted implements 960 kg;
track width from 1445 to 1955 mm and after reversing wheels from 1582 to 2093 mm
adjustable in steps of 102 mm by extending front axle
rims 5.50 F x 18

Driving wheels: Two pneumatics at rear
18,4/15-34 AS 8 Ply (DIN 7807)
maximum permissible weight on each tyre 2565 kg at 1,4 kp/cm²;
when transporting mounted implements 2950 kg;
track width from 1600 to 2515 mm stepless adjustable by rack on rear axle shaft and pinion and by offset lugs on rims
(the rear axle half shafts are optional in flange construction for steel or cast iron track adjustment wheels; track widths from 1600 to 2000 mm with steel wheels or 2100 mm with cast iron wheels in steps of 100 mm)
rims W 14 L x 34

wheel base: 2464 mm

Weights

Ready for use as tested with safety frame

		without driver	with driver
Weight of tractor without ballast:	Front	1130 kg	1136 kg
	Rear	2845 kg	2920 kg
	Total	3975 kg	4056 kg
Front ballast:	1 basic weight		80 kg
	10 front weights 42 kg each		420 kg
Rear ballast	4 weights per wheel 65 kg each		520 kg
	water in the tyres		700 kg
Weight of tractor with ballast:	Front	1760 kg	1776 kg
	Rear	3935 kg	4000 kg
	Total	5695 kg	5776 kg

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Seat: Grammer
model DS 20 L 2 H
upholstered mould seat with back and arm rests
adjustable spring with shock absorber
height above ground from 1435 to 1535 mm
adjustable on inclined guideways and additional independent height adjustment
range of fore and aft adjustment 101 mm

Number of grease points (Whole tractor) 11

Overall dimensions

Overall lenght:	4140 mm with three-point linkage
Overall width:	2278 mm (end of rear axle shafts)
Overall height:	2627 mm to top of safety frame
Maximum ground clearence:	430 mm in median plane of tractor below swinging drawbar

Lighting equipment: Electric
12 V
acc. to the regulations of the several countries

Equipment of tractor tested (acc. to the French Code de la Route)

	Dimensions of area mm	Height above ground to centre mm	Distance from outside edge of tractor *) to centre mm
Head lights	105 ø	985	530
Side lights	70 ø	1640	110
Rear lights	115 x 50	1525	290
Reflectors	75 ø	1215	180

*) ends of rear axle shafts

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All available tyres
Track width adjustment possibilities, permissible loads

Dimensions	Track width from mm	in steps of mm	to*) mm	Permissible load kg
Steering wheels				
7,50-18	1445	102	1955	810
7,50-18	1475	102	1985	875
10,5/80-18	1507	102	2017	875
Driving wheels				
16,9-34	1600	100	2000 **)	2380
18,4-34	1600	100	2000 **)	2565
16,9-38	1600	100	2000	2520
23,1-26 ***)	1750	stepless	2515	2850

*) with R+P axle short stepless to 2365 mm
with R+P axle long stepless to 2515 mm
**) 2100 mm with cast iron wheels
***) only R+P axle available for this tyre

All steering wheels may be put together with all driving wheels

FUEL AND LUBRICANTS USED IN TESTS

Fuel: ARAL-DIESEL fuel (DIN 51601)

specific gravity at 15°C
at laboratory tests 0,832 kg/l
at drawbar tests 0,840 kg/l

Engine oil: HD SAE 30

Transmissions and hydraulic oil: JD type 303

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COMPULSORY TESTS

(1) MAIN POWER TAKE-OFF PERFORMANCE

This power take-off should not be used to transmit the full crankshaft torque, the transmittable equivalent crankshaft torque is limited to 19,8 kpm, this is a power of 60 PS at standard p.t.o.-speed 540 rev/min.

Date of tests: 24th October 1975
Type of dynamometer: SCHENCK hydraulic dynamometer U 1-40

Maximum power

Power PS	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/PSh	Specific energy PSh/l
At maximum power 2-hour test (19,8 kpm for 5 min each)						
70,0	2530	627	17,28	14,35	205	4,05
Overload up to full engine power (23,5 kpm for 1 min each)						
83,0	2500	620	19,48	16,20	195	4,26
At standard p.t.o. speed (540 rev/min)						
60,0	2175	540	14,37	11,92	199	4,18

No load maximum engine speed: 2616 rev/min

Mean atmospheric conditions:
- Temperature 19°C
- pressure 745 mm Hg
- relative humidity 78%

Maximum temperatures:
- coolant 75°C
- engine oil 105°C
- fuel 21°C

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(9) ENGINE PERFORMANCE

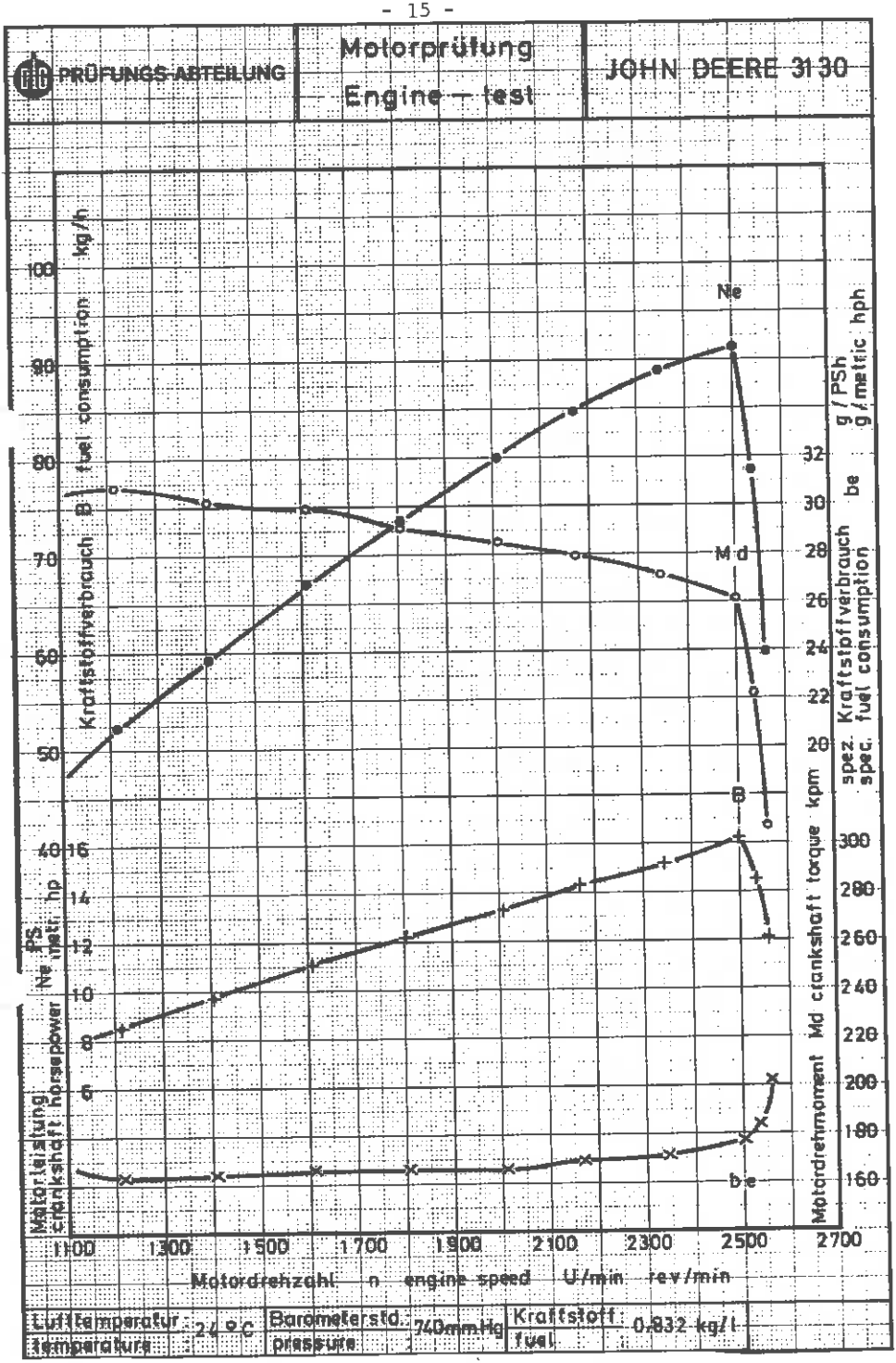
Date of tests: 16th and 17th April 1975
Type of dynamometer: SCHENCK hydraulic dynamometer U1-30

Maximum power

Power PS	Engine speed rev/min	Fuel consumption total 1/h	Fuel consumption total kg/h	Fuel consumption specific g/PSh	Specific energy PSh/l
At maximum power 2-hour test					
91,3	2500	19,46	16,19	177	4,69
At standard p.t.o. speed (1000 rev/min)					
84,7	2171	17,18	14,29	169	4,93
At the speed recommended for drawbar work					
91,3	2500	19,46	16,19	177	4,69
Part loads					
(i) 85% of torque at maximum power					
78,5	2534	17,39	14,47	184	4,51
(ii) unloaded					
-	2619	6,11	5,08	-	-
(iii) 50% of the load defined in (i)					
40,0	2582	11,51	9,58	239	3,48
(iv) maximum power					
91,3	2500	19,46	16,19	177	4,69
(v) 25% of the load defined in (i)					
20,3	2601	8,81	7,33	361	2,30
(vi) 75% of the load defined in (i)					
59,7	2562	14,51	12,07	202	4,11

Optimum fuel consumption: 164 g/PSh at 52,2 PS and 1500 rev/min
Standard fuel consumption 1/2 (DIN 9606): 8,35/16,15 1/h
No load maximum engine speed: 2619 rev/min
Torque at maximum power: 26,1 kpm
Maximum torque: 30,8 kpm at 1215 rev/min of the engine

Mean atmospheric conditions:	temperature	24°C
	pressure	740 mm Hg
	relative humidity	62%
Maximum temperatures:	coolant	75°C
	engine oil	110°C
	fuel	25°C


PRÜFUNGS-ABTEILUNG
Motorprüfung
Engine – test
JOHN DEERE 3130
Kraftstoffverbrauch B fuel consumption kg/h
Motorleistung Ne Kurbelwellenleistung crankshaft horsepower PS metr. hp
Ne
Md
B
be
Motordrehmoment Md crankshaft torque kpm
spez. Kraftstoffverbrauch be spec. fuel consumption g/PSh g/metric hph
Motordrehzahl n engine speed U/min rev/min
Lufttemperatur temperature 24 °C
Barometerstd. pressure 740 mm Hg
Kraftstoff fuel 0,832 kg/l

PRÜFUNGS-ABTEILUNG

Motorprüfung
Engine - test

JOHN DEERE 3130

Motorleistung Ne crankshaft horsepower PS metric hp

Motordrehzahl n U/min
engine speed rev/min

Kraftstoffverbrauch B fuel consumption kg/h

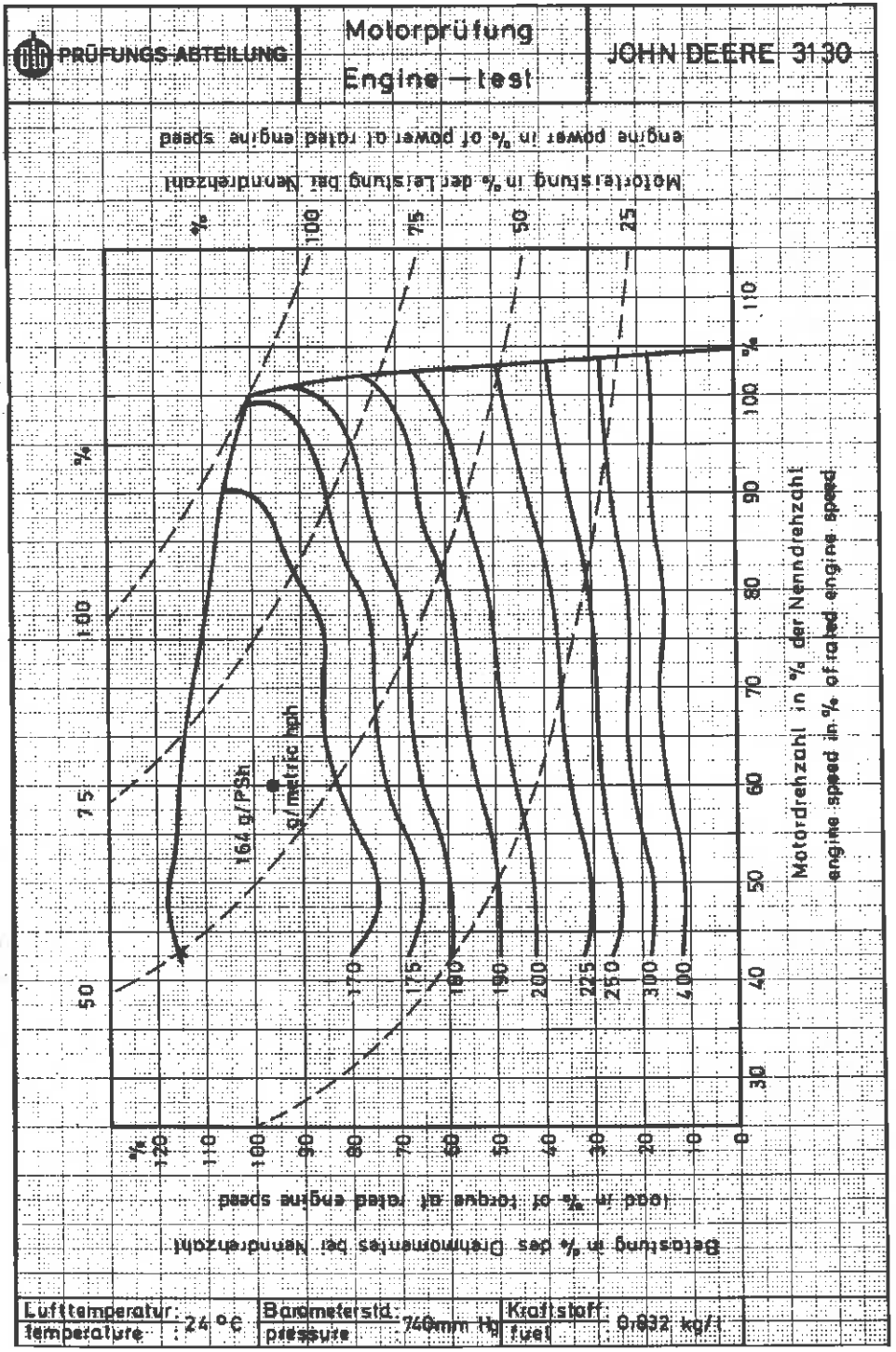
Motordrehmoment Md crankshaft torque kpm

spez. Kraftstoffverbrauch be spec. fuel consumption g/PSh g/metric hph

Luftemperatur temperature 24 °C

Barometerstd. pressure 748mmHg

Kraftstoff fuel 0,832 kg/l


PRÜFUNGS-ABTEILUNG
Motorprüfung
Engine — test
JOHN DEERE 3130
Motorleistung in % der Leistung bei Nenndrehzahl
engine power in % of power at rated engine speed
Motordrehzahl in % der Nenndrehzahl
engine speed in % of rated engine speed
Belastung in % des Drehmomentes bei Nenndrehzahl
load in % of torque at rated engine speed
164 g/PSh
g/metric hph
Lufttemperatur
temperature : 24 °C
Barometerstd.
pressure : 740mm Hg
Kraftstoff
fuel : 0,832 kg/l

PRÜFUNGS-ABTEILUNG
John Deere 3130

(2) DRAWBAR PERFORMANCE

Date of tests: 6th till 13th October 1975
Typ of track: Concrete

Gear No. and Group	Speed km/h	Power PS	Drawbar pull kp	Engine speed rev/min	Slip of wheels %	Specific energy PSh/l
(i) MAXIMUM POWER with ballast height of drawbar above ground 640 mm						
1 slow	1,80	34,9	5240	2575	15,0	2,76
1 fast	2,28	44,3	5250	2562	15,0	3.05
2 slow	2,92	56,8	5250	2531	15,0	3,23
2 fast	3,71	68,5	4980	2501	14,3	3,53
3 slow	4,90	69,4	3840	2500	10,7	3,57
3 fast	6,41	71,0	2990	2502	8,3	3,63
4 slow	6,75	70,7	2830	2500	8,0	3,63
4 fast	8,75	72,6	2240	2502	6,4	3,72
5 slow	11,65	69,9	1620	2501	4,5	3,58
(ii) FIVE-HOUR-TEST at 75% of pull at maximum power in 4th gear of slow group						
4 slow	6,99	54,9	2120	2534	6,0	3,20
(iii) FIVE-HOUR-TEST at pull corresponding to 15% wheel slip in test (i)						
2 slow	-	-	5250	2531	-	-
(v) MAXIMUM POWER without ballast height of drawbar above ground 520 mm						
2 slow	2,97	46,8	4250	2558	15,0	3,06
2 fast	3,76	59,0	4240	2529	15,0	3,26
3 slow	4,81	67,5	3790	2500	12,5	3,48
3 fast	6,37	71,0	3010	2501	9,1	3,67
4 slow	6,75	71,0	2840	2501	8,5	3,65
4 fast	8,78	72,5	2230	2500	6,5	3,76
5 slow	11,64	71,1	1650	2502	4,7	3,68

Total oil consumption during ten hours duration of tests (ii) and (iii): 45 g/h

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Specific fuel consumpt. g/PSh	Temperatures Fuel °C	Coolant °C	Engine oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure mm Hg
304	18	85	102	13	85	758
275	18	85	102	13	80	757
259	20	85	105	12	85	757
237	19	85	100	10	81	757
235	19	85	100	10	78	757
230	19	85	105	11	80	756
230	19	85	104	10	72	757
225	19	85	105	9	65	757
234	18	85	100	10	61	757
262	17	85	102	8	75	753
-	17	85	102	8	75	753
274	17	85	100	10	80	757
257	17	85	102	11	82	757
241	18	85	105	10	76	754
229	16	85	104	9	70	754
230	16	85	102	8	70	754
223	17	85	100	10	65	752
229	16	85	104	9	72	757

Test (iii) was carried out with additional ballast,
the figures not quoted are therefore irrelevant

(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 7,50-18 AS Front, 6 ply
rear : 18,4/15-34 AS, 8 ply
Track of wheels front: 1547 mm
rear : 1600 mm

	With brakes left-hand m	With brakes right-hand m	Without brakes left-hand m	Without brakes right-hand m
Radius of turning space	3,63	3,71	4,60	4,69
Radius of turning circle	3,50	3,58	4,47	4,55

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	mm	843
Distance forward from the vertical plane containing the axis of the rear wheels	mm	688
Distance of the median plane of the tractor	mm	0

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(5) BRAKING PERFORMANCE

A) FOOT BRAKE

Date of tests: 8th October 1975
Type of track: concrete
Type of decelerometer: MOTO-METER-Bremsverzögerungs- und Pedalkraftschreiber

Weight of ballasted tractor: 5776 kg with driver

Cold brakes

		with ballast	without ballast
Travelling speed	km/h	25,0	25,0
Deceleration	m/s^2	5,0	4,8
Stopping distance	m	5,6	6,3
Force on pedal	kp	45	30
Force on pedal to achieve a deceleration of 2,5 m/s^2	kp	20	18
Brake fade characteristics (hot tests)			
Deceleration hot/cold	%	98	100
Stopping distance cold/hot	%	102	96
Force on pedal cold/hot	%	92	100

B) PARK BRAKE

Tractor facing up slope:
Pull on hand brake 20 kp, tractor does not roll

Tractor facing down slope:
Pull on hand brake 20 kp, tractor does not roll

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(6) AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 21st April 1975
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER type 2203

Results of test

Gear: 6th fast
Travelling speed before acceleration: 18,4 km/h
Sound level: 90 dB(A)

(7) NOISE AT THE DRIVER'S EAR LEVEL

Date of tests: 21st April 1975
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER type 2607
Type of frequency analyser: BRÜEL AND KJAER type 1614
(fitted with octave filter)

The tractor was fitted out with a FRITZMEIER safety cab

Results of tests

Gear	Drawbar pull at which the tractor develops the maximum sound level kp	Travelling speed nominal km/h	Travelling speed effective km/h	Sound level dB(A)
1 slow	3820	2,00	1,55	95
1 fast	3850	2,55	2,07	95
2 slow	3820	3,32	2,95	96
2 fast	3790	4,22	3,55	97
3 slow	3430	5,37	4,92	98
3 fast	2890	6,83	6,37	97
4 slow *	2700	7,20	6,83	97,5
4 fast	2140	9,17	8,86	97,5
5 slow	1530	11,95	11,71	98
5 fast	1190	15,21	15,21	98
6 slow	890	19,30	19,32	97
6 fast	light load	24,57	26,34	95,5

*) The 4th slow gear corresponds to the travelling speed nearest to 7,5 km/h

(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date of tests: 13th October 1975

HYDRAULIC PUMP

The tractor contains one oil circuit for all hydraulically operated tractor units. Power lift assembly is connected to the hydraulic supply circuit by an oil flow control valve. This restricts the oil flow to the power lift cylinder at the maximum rate of 23 l/min.

Circuit of power lift

(1)	Sustained pressure with pump stalled	158	kp/cm²
(2)	Delivery rate at minimum pressure and maximum engine speed	20,5	l/min
(3)	Delivery rate	23,0	l/min
	Delivery pressure	132	kp/cm²
	Hydraulic power, power lift circuit only	6,8	PS

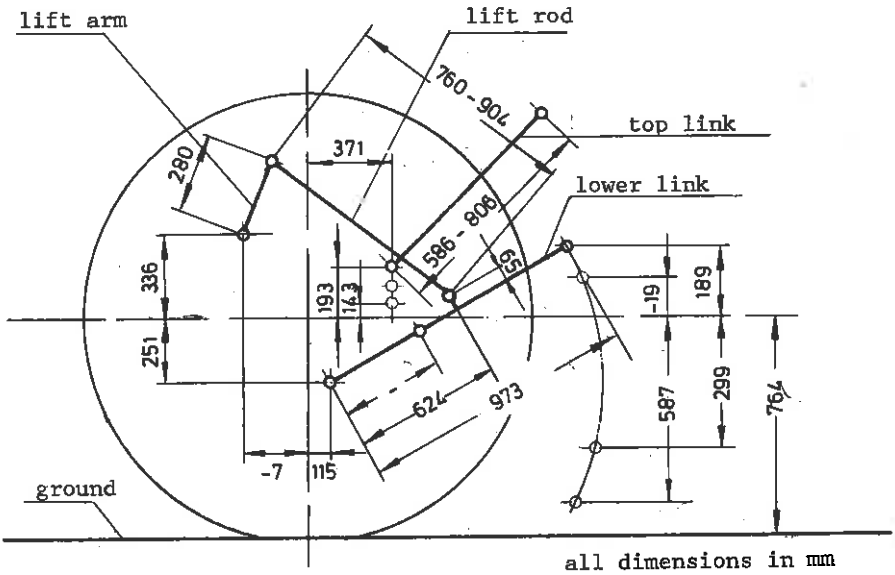
Main circuit through oil tapping

(1)	Sustained pressure with pump stalled	158	kp/cm²
(2)	Delivery rate at minimum pressure and maximum engine speed	51,3	l/min
(3)	Delivery rate	48,8	l/min
	Delivery pressure	142	kp/cm²
	Total hydraulic power power lift circuit included	15,4	PS

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Dimensions of implement linkage for the table on page 25



all dimensions in mm

LINKAGE GEOMETRY when connected to the standard frame	Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view:		
Lower links	973 mm	973 mm
Lift arms	280 mm	280 mm
Lift rods	904 mm	760 mm
Top link	718 mm	720 mm
Distance of lift rod connection point from pivot point of lower link	624 mm	624 mm
The following dimensions are given relative to rear axle centre line 764 mm above ground		
Lower link pivot point	115 mm behind, 251 mm below	115 mm behind, 251 mm below
Top link pivot point	371 mm behind, 193 mm above	371 mm behind, 143 mm above
Lift arm pivot point	7 mm behind, 336 mm above	7 mm behind, 336 mm above
Maximum and minimum height of lower link hitch points	19 mm below, 587 mm below	189 mm above, 299 mm below
Height of lower link hitch points above ground when locked in highest transport position	745 mm	953 mm

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LIFTING FORCES

Lifting heights relative to horizontal lower links

mm	-336	-300	-200	-100	-78	-48	0
at hitch points maximum mechanical advantage							
kp						2220	2370
minimum mechanical advantage							
kp	2060	2270	2510	2570			2580

Max. force exerted throughout the whole range 2220 kp

Force at which front of tractor lifts with maximum allowable front ballast – kp

at test frame maximum mechanical advantage							
kp	2330	2390	2510	2540			2510
minimum mechanical advantage							
kp					2000		2170

Max. force exerted throughout the whole range 2250 kp

Force at which front of tractor lifts with maximum allowable front ballast 2540 kp

+100	+200	+232	+300	+400	+440	+500	+554	
lift rods 760 mm long								
2650	2800		2870	2880	2880			
lift rods 904 mm long								
2600	2640	2650						

lift rods 904 mm long, high top link pivot point

2410	2290	2250						

lift rods 760 mm long, low top link pivot point

2300	2280		2210	2120		2000	1950	

All values of forces for pressure at max. hydraulic power 132 kp/cm², see page 23 ; calculated from measurements at max. oil pressure 158 kp/cm²

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OPTIONAL TESTS

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

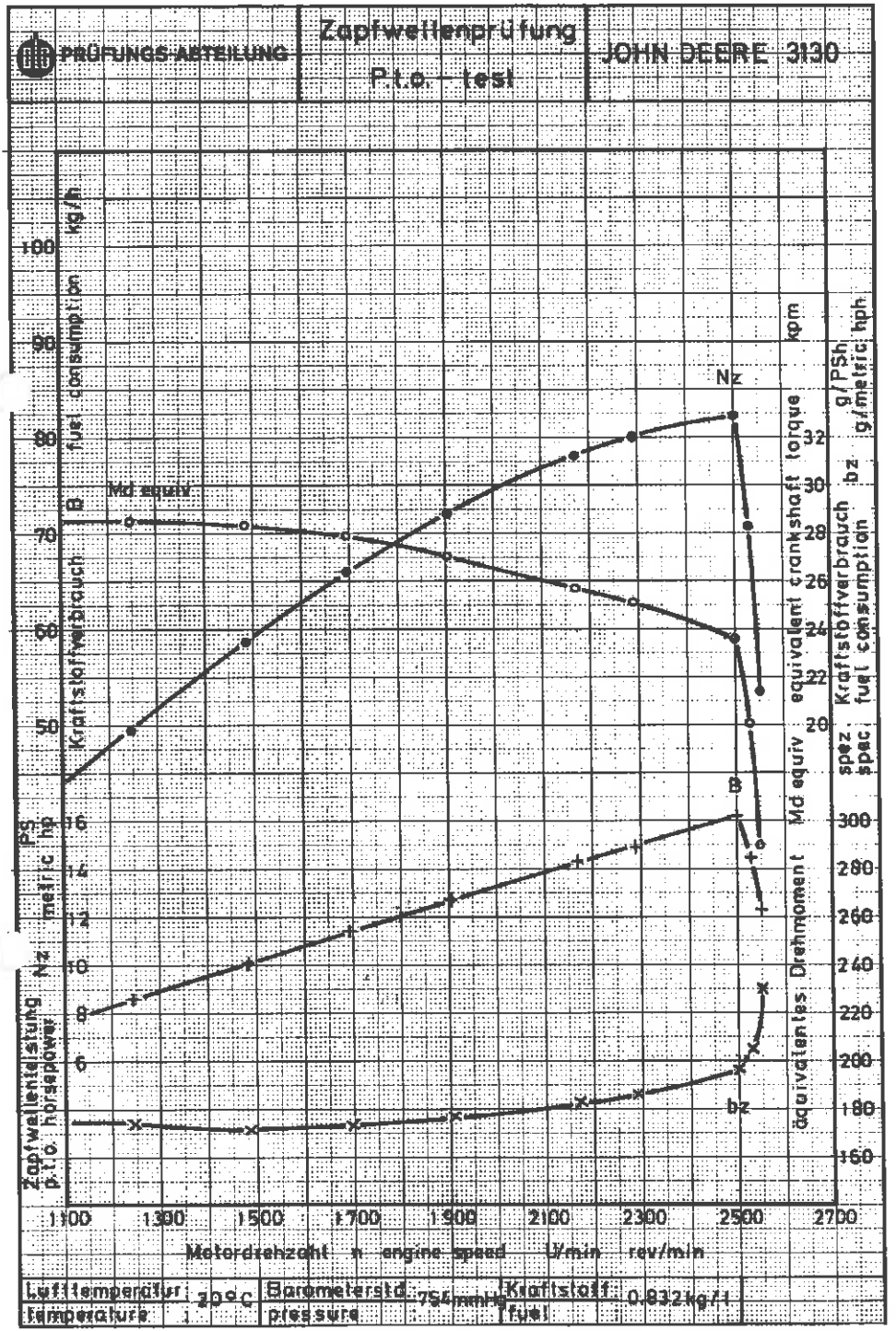
Date of tests: 24th April 1975
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

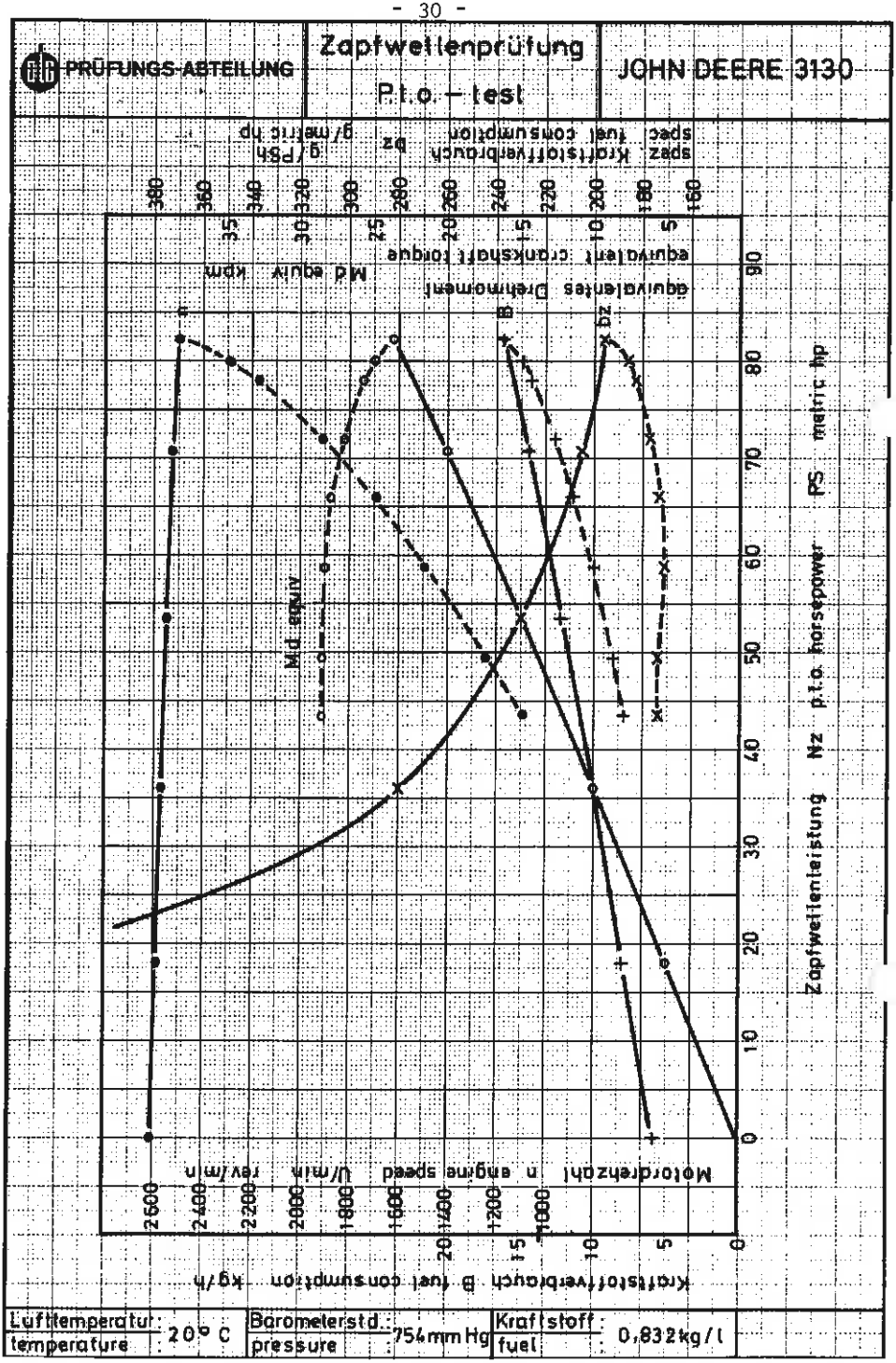
Maximum Power

Power PS	Speed Engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/PSh	Specific energy PSh/l
At maximum power 2-hour test						
82,3	2500	1151	19,46	16,17	196	4,23
At standard p.t.o. speed (1000 rev/min)						
78,0	2172	1000	17,18	14,28	183	4,54
At the speed recommended for drawbar work						
82,3	2500	1151	19,46	16,17	196	4,23
Part loads						
(i) 85% of the torque at maximum power						
70,8	2528	1164	17,47	14,52	205	4,05
(ii) unloaded						
-	2613	1203	7,10	5,90	-	-
(iii) 50% of the load defined in (i)						
36,0	2570	1183	12,14	10,09	280	2,97
(iv) maximum power						
82,3	2500	1151	19,46	16,17	196	4,23
(v) 25% of the load defined in (i)						
18,1	2592	1193	9,69	8,05	445	1,87
(vi) 75% of the load defined in (i)						
53,5	2550	1174	14,81	12,31	230	3,61

No load maximum engine speed: 2613 rev/min
Equivalent crankshaft torque at maximum power: 23,6 kpm
Maximum equivalent crankshaft torque: 28,5 kpm at 1244 rev/min of the engine

Mean atmospheric conditions:	temperature	20°C
	pressure	754 mm Hg
	relative humidity	74%
Maximum temperatures:	coolant	75°C
	engine oil	110°C
	fuel	23°C


PRÜFUNGS-ABTEILUNG
Zapfwellenprüfung
P.t.o. – test
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Zapfwellenleistung Nz p.t.o. horsepower PS metric hp
Kraftstoffverbrauch B fuel consumption kg/h
Md equiv
Nz
B
bz
äquivalentes Drehmoment Md equiv equivalent crankshaft torque kpm
spez. Kraftstoffverbrauch bz spec. fuel consumption g/PSh g/metric hph
Motordrehzahl n engine speed U/min rev/min
Lufttemperatur temperature 20 °C
Barometerstd. pressure 754 mmHg
Kraftstoff fuel 0.832 kg/l


PRÜFUNGS-ABTEILUNG
Zapfwellenprüfung
P.t.o. – test
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Zapfwellenleistung Nz p.t.o. horsepower PS metric hp
Motordrehzahl n engine speed U/min rev/min
Kraftstoffverbrauch B fuel consumption kg/h
Md equiv
äquivalentes Drehmoment
equivalent crankshaft torque Md equiv kpm
spez. Kraftstoffverbrauch bz spec. fuel consumption g/PSh g/metric hp
Lufttemperatur: 20° C
temperature
Barometerstd.: 754 mm Hg
pressure
Kraftstoff: 0,832 kg/l
fuel