O.E.C.D. No: 525
Printed: August 1976

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



Agricultural Tractor JOHN DEERE 1130

Manufactured by: JOHN DEERE WERKE MANNHEIM
D-6800 Mannheim

Date of Tests: November 1975 till March 1976

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 Center (C.N.E.E.M.A., France) as being in accordance with the O.E.C.D. STANDARD-CODE.

Date of Approval: 29th July 1976

Serial No.: 525

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

The relation with the former used Technical System of Units is given by the following formulas:

Forces:	1 N = 0,102 kp	or 1 kp	= 9,81 N
Powers:	1 kW = 1,36 PS	or 1 PS	= 0,736 kW
Pressures:	1 bar = 1,02 kp/cm²	or 1 kp/cm²	= 0,981 bar
	1000 mbar = 750,1 mm Hg		

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Printed in Germany

PRÜFUNGS-ABTEILUNG
JOHN DEERE 1130

Test No. 75-253

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Test No. 75-253

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 and tractor appr. 100 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	JOHN DEERE WERKE MANNHEIM
Model:	1130
Type:	Wheeled agricultural tractor, rear wheel driven, unit construction
Serial No:	183 252

Engine

Make:	COMPAGNIE FRANCAISE JOHN DEERE
Model:	3164 DL 13
Type:	4-stroke DIESEL engine, direct injection, watercooled
Serial No:	228 963
Cylinders:	3, in-line; bore 102 mm, stroke 110 mm; displacement 2695 cm^3; compression ratio 16,7:1
Valves:	Overhead
Fuel system:	ROTO DIESEL fuel feed pump 2 FS; ROTO DIESEL distributor injection pump: R 343 2480; manufacturer's production setting 51 mm^3/stroke at rated engine speed and full load; injection timing 17° before TDC; ROOSA MASTER injection nozzles 20631; injection pressure 215 bar; ROOSA MASTER fuel filter, replaceable cartridge; model: Box type master filter; water separator optionally; capacity of fuel tank 62,5 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

Air cleaner:	DONALDSON; dry paper element filter with replaceable cartridge and service indicator; precleaner optionally
Exhaust silencer:	EBERSPÄCHER; multi chamber silencer; 213 x 118 mm oval, 483 mm long; at the left hand side of tractor above the bonnet; mouth showing upwards; mouth 2565 mm above ground; optional at the left hand side beside the gear box with mouth showing rearwards
Lubrication system:	Forced feed from gear type pump; strainer in sump; oil filter in full flow with by-pass valve and replaceable cartridge; oil capacity 5,7 l; oil changing interval 100 hours; recommended oil viscosities: below -23°C SAE 5W or SAE 5W/20 below 0°C SAE 10W or SAE 10W/20 SAE 10W/30 above 0°C SAE 30
Cooling system:	Pressurized water cooling system with pump; overpressure set at 0,4 to 0,5 bar; thermostat with by-pass; fan with 4 blades, 413 mm diameter; cooling water capacity 10,4 l
Starting system:	Electrical; BOSCH screw push starter motor 2,9 kW; CAV flame glow plug in intake pipe or ether starting aid
Electrical equipment:	12 V, negative ground; BOSCH 3-phase alternator: GL 14 V - 28 A 2 lead acid batteries 55 Ah at 20 hours rating

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Transmission

Clutch:	FICHTEL UND SACHS dry single disc clutch, for tractor drive only, pedal operated; disc diameter 280 mm
Gear box:	Own make; speed change gear with 4 speeds, collar shifted; group gear with 2 forward and 1 reverse group, collar shifted; HI-LO torque converter (optionally without HI-LO torque converter); totally 16 forward and 8 reverse speeds
Rear axle and final drive:	Bevel gear drive with crown wheel and pinion; bevel gear differential with lock; operated by hand lever and pedal, self disengaging; planetary final drive
Lubrication:	Oil capacity 36 l, maximum 40 l; recommended oil quality: JOHN DEERE Hy-GARD transmission and hydraulic oil or other comparable oils; oil changing interval 1000 hours

Power take-off

Main p.t.o.:	Independent p.t.o.; at rear of tractor; driven through a wet multiplate clutch, hydraulically operated; under load engageable and disengageable; 604 mm above ground, 25,4 mm left from tractor's 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 (optionally a semi-independent p.t.o. is available with dual disc clutch) 1) 540 rev/min p.t.o. 29 x 34,9 x 8,7 mm = 1 3/8 in, 6 splines; DIN 9611 Form 1; BS 1495; ASAE S 203.7; 651 rev/min at rated engine speed; standard p.t.o. speed 540 rev/min at 2075 rev/min engine speed

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Total ratios and speeds

Group	Gear	Total ratio engine: driving wheel	Nominal travelling speed *) at rated engine speed km/h	at standard p.t.o. speed 540 rev/min km/h
Forward speeds				
slow	1.LO	407,4	1,60	1,33
	1.HI	320,1	2,04	1,70
	2.LO	285,2	2,29	1,91
	2.HI	224,1	2,92	2,42
	3.LO	192,2	3,40	2,83
	3.HI	151,0	4,41	3,60
	4.LO	137,5	4,76	3,96
	4.HI	108,0	6,05	5,03
fast	5.LO	103,8	6,31	5,24
	5.HI	81,6	8,03	6,66
	6.LO	72,7	9,02	7,47
	6.HI	57,1	11.47	9,52
	7.LO	49,0	13,37	11,10
	7.HI	38,5	17,01	14,14
	8.LO	35,0	18,69	15,51
	8.HI	27,5	23,81	19,72
Reverse speeds				
reverse	1.LO	350,6	1,86	1,55
	1.HI	275,5	2,38	1,97
	2.LO	245,4	2,67	2,22
	2.HI	192,8	3,40	2,73
	3.LO	165,4	3,96	3,29
	3.HI	130,0	5,04	4,09
	4.LO	118,3	5,53	4,59
	4.HI	93,0	7,04	5,85

*) Calculated with the INDEX-RADIUS 695 mm as per WdK 154

The transmission is optionally available for a maximum speed of 30 km/h in the 8th HI gear

Optionally a mechanically operating front wheel drive is available

Power take-off

Main p.t.o.: (Continuation)

2) 1000 rev/min p.t.o.
involute profile 1 3/8 in, 21 splines;
DIN 9611 Form 2; ASAE S 204.4;
1210 rev/min at rated engine speed;
standard p.t.o. speed 1000 rev/min at
2066 rev/min engine speed

All p.t.o. speeds may be set by aid
of tractormeter;
direction of rotation clockwise, viewed
from tractor rear

P.t.o. between the axles: Optional, fitted on tractor but not tested;
drive and direction of rotation same
as main p.t.o.;
engageable and disengageable only when
tractor is stationary, independent from
main p.t.o., collar shifted;
if the p.t.o. is engaged, operation under
load through independent main p.t.o. clutch
is possible;
604 mm above ground, 25,4 mm left from
tractor's median plane;
involute profile 1 3/8 in, 21 splines;
DIN 9611 Form 2, ASAE S 204.4;
1210 rev/min at rated engine speed;
standard p.t.o. speed 1000 rev/min at
2066 rev/min engine speed

Belt pulley Optional, not fitted on tractor tested;
only for use with 540 rev/min p.t.o.;
pulley drive attached on p.t.o. shaft;
operated by p.t.o. hand lever;
305 mm diameter, 216 mm width;
1169 rev/min at rated engine speed;
18,7 m/s linear belt speed;
direction of rotation clockwise viewed from
the left hand side of tractor;
oil capacity 1,2 l, JD Hy-GARD or
transmission oil SAE 90 or similar oils

Power lift	Own make; hydraulic power lift, unit construction; closed centre system, system pressure 155 bar; draft control, position control and mixing load and depth control, floating position; self regulating 8-piston radial type pump, directly driven by front end of crankshaft; gear type feed pump in transmission box; the power lift assembly is connected to the hydraulic circuit by an oil flow control valve which restricts the oil flow to the power lift at the maximum rate of 20,3 l/min at minimum pressure; overpressure relief valve for ram set to 240 to 310 bar overpressure; JOHN DEERE control valve, single acting, incorporated in power lift unit; up to 2 double acting selective control valves with 2 oil tappings each in front and in the rear or only in the rear at the right or the left hand side available; oil reservoir and oil changing interval common with gear box, see page 6; up to 14 l (18 l at 40 l oil capacity) may be taken off through oil tappings for short time; the oil circuit is in common for all hydraulically controlled units of tractor
Implement linkage	Three point linkage category II DIN 9674; category I is possible by turning lower links; lift rods adjustable from 565 to 670 mm; lifting range above ground with short lift rods from 345 to 945 mm long lift rods from 115 to 765 mm
Implement crossbar	Short crossbar, (long crossbar optionally); category II (category I optionally); fitted on clevis of lower links; length between the ball joints 825 mm, thickness of the bar 25 mm; centre hole and 4 holes at either side with 80 mm distance each; all holes 33 mm diameter; height above ground adjustable by power lift from 127 to 957 mm depending on lift rods length, measured at the surface of the bar

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Implement crossbar	(Continuation) within the lifting range steplessly-hydraulically fixable by sink throttle; with lower links in horizontal position distance of centre hole from rear axle centre 928 mm p.t.o. shaft end 506 mm

Pull attachments

Swinging drawbar:	Height above ground 371 mm; hole diamter 33 mm; distance of hole from end of p.t.o. shaft 117, 356 or 397 mm rear axle centre 539, 778 or 819 mm adjustable by shifting drawbar 235 mm swingable to either side; distance of pivot point to rear axle centre 51 mm
Trailer hitch:	Own make; not automatically acting; swingable aside when top link is used; height above ground 834 mm; coupling hole 33 mm diameter; distance of coupling hole from rear axle centre 451 mm; permissible vertical load 1200 kg
Towing hitch:	892 mm above ground

Brakes

Parking brake:	Mechanically acting wet wedge band brake, acting on a drum with 238 mm diameter on the differential housing, operated by hand lever with ratchet
Service brake:	Hydraulically operated wet disc brake; acting on discs with 279 mm diameter on the final drive shafts; pedal operated
Steering brakes:	Divided pedal of service brake; for normal use locked together

Steering

Mechanically acting central steering;
hydraulically assisted;
oil supply from the hydraulic system of power lift with flow control valve
optionally mechanically acting central steering without hydraulical assistance

Wheels

Steering wheels: Two pneumatics at front 7,50-16 AS 6 ply;
maximum permissible load per tyre 857 kg at 2,25 bar inflation pressure and 25 km/h;
track width from 1260 to 1974 mm in steps of 51 mm each, changeable by extending telescopic front axle;
rims 5,50 F x 16

Driving wheels: Two pneumatics at rear 16,9-30 AS 6 ply;
maximum permissible load per tyre 2030 kg at 1,3 bar inflation pressure and 25 km/h;
track widths from 1550 to 1950 mm in steps of 100 mm each by turning wheels and offset lug type rims;
rims W 14 L x 30

Wheel base: 2050 mm

Weights

Ready for use as tested with safety frame

		without driver	with driver
Without ballast:	front	783 kg	793 kg
	rear	1657 kg	1727 kg
	total	2440 kg	2520 kg
Front ballast:	1 basic weight		80 kg
	6 front weights	40 kg each	240 kg
Rear ballast:	3 weights per wheel	35 kg each	210 kg
	water in the tyres		480 kg
With ballast:	front	1170 kg	1180 kg
	rear	2280 kg	2350 kg
	total	3450 kg	3530 kg

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Seat

GRAMMER;
DS 20 L 2 H;
upholstered seat with back and arm rests;
adjustable spring with shock absorber;
height of seat platform above ground 650 mm;
height of seat above platform 600 mm with seat not compressed in downmost position;
adjustable fore and aft 101 mm
adjustable up and down 101 mm steplessly

Dimensions

Total length: 3430 mm with 3 point linkage without ballast
3680 mm with 3 point linkage with ballast

Total width: 1815 mm at smallest track width
2315 mm at largest track width

Total height: 2411 mm to top of frame
2531 mm to top of exhaust pipe

Ground clearence: 355 mm below swinging drawbar

Safety frame

FRITZMEIER;
M 901
O.E.C.D. tested
approval no. CS 1139a or CS 1140d or CS 1142

Lighting equipment

	Dimensions mm	Height above ground of centre mm	Distance from outside edge of tractor to centre *) mm
Head lights	125 Ø	967	640
Additional head lights	130 Ø	1395	395
Side lights	70 x 70	1445	105
Rear lights	66 x 163	1385	237
Reflectors	78 Ø	1149	114

*) at smallest track width

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Number of grease points 8

All available tyres (track widths, permissible loads)

Dimensions	Track width adjustabilities from mm	in steps of mm	to mm	Permissible axle load kg
Front wheels *)				
6,00-16	1260	51	1974	1120
6,50-16	1260	51	1974	1230
7,50-16	1260	51	1974	1490
Driving wheels *)				
9,5-36 ***)	1350	100	1950	2260
12,4-28 ***)	1350	100	1950	2550
12,4-32	1350	100	1950	2710
12,4-36 **)	1350	100	1950	2880
13,6-28	1450	100	1950	2860
13,6-36 **)	1450	100	1950	3230
14,9-28	1450	100	1950	3220
14,9-30 **)	1450	100	1950	3330
16,9-28 **)	1550	100	1950	3680
16,9-30 **)	1550	100	1950	3800

*) All tyres 6 ply

Front wheels 6,00-16 and 6,50-16 may be put together with all driving wheels, front wheel 7,50-16 may be put together with **) marked tyres only

***) Not available ex factory

FUELS AND LUBRICANTS USED IN TESTS

Fuel:	ARAL DIESEL fuel (DIN 51 601)
	specific gravity at 15°C
	at engine tests 0,834 kg/l
	at p.t.o. tests 0,834 kg/l
	at drawbar tests 0,829 kg/l
Engine oil:	SHELL ROTELLA TX 30
Transmission oil:	JOHN DEERE Hy-GARD
Hydraulic oil:	JOHN DEERE Hy-GARD

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COMPULSORY TESTS

(1) MAIN POWER TAKE-OFF PERFORMANCE

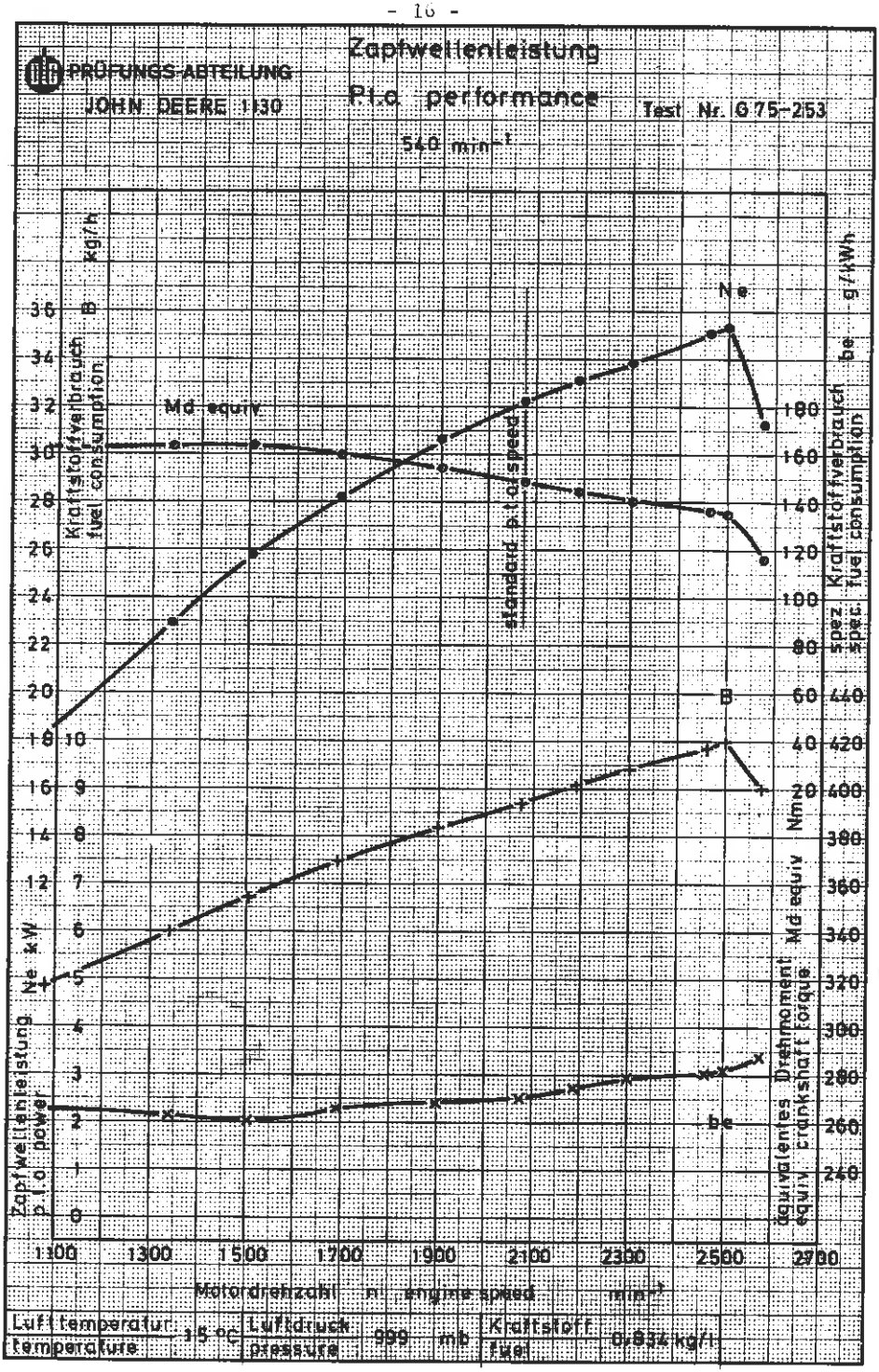
Date of tests: 19th February 1976
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Maximum power

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
At maximum power 2-hour-test						
35.3	2500	651	11.97	9.98	283	2.95
At standard p.t.o. speed (540 rev/min)						
32.2	2075	540	10.43	8.70	270	3.09
At the speed recommended for drawbar work						
35.3	2500	651	11.97	9.98	283	2.95
Part loads						
(i) 85% of the torque at maximum power						
31.2	2574	670	10.79	9.00	288	2.90
(ii) unloaded						
-	2629	684	3.97	3.31	-	-
(iii) 50% of the load defined in (i)						
15.7	2601	677	6.90	5.75	367	2.27
(iv) maximum power						
35.3	2500	651	11.97	9.98	283	2.95
(v) 25% of the load defined in (i)						
7.9	2615	681	5.42	4.52	575	1.45
(vi) 75% of the load defined in (i)						
23.7	2618	681	8.86	7.39	312	2.67

No load maximum engine speed: 2629 rev/min
Equivalent crankshaft torque at maximum power: 135 Nm
Maximum equivalent crankshaft torque: 163 Nm at 1507 rev/min of the engine

Mean atmospheric conditions:	temperature	15 °C
	pressure	999 mbar
	relative humidity	80 %
Maximum temperatures:	coolant	75 °C
	engine oil	110 °C
	fuel	15 °C


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Zapfwellenleistung
P.t.o. performance
Test Nr. G 75-253
540 min⁻¹
Kraftstoffverbrauch kg/h
fuel consumption
Md equiv.
standard p.t.o. speed
Ne
B
spez. Kraftstoffverbrauch be g/kWh
spec. fuel consumption
Zapfwellenleistung Ne kW
p.t.o. power
äquivalentes Drehmoment Md equiv Nm
equiv. crankshaft torque
be
1100 1300 1500 1700 1900 2100 2300 2500 2700
Motordrehzahl n engine speed min⁻¹
Lufttemperatur 15 °C Luftdruck 999 mb Kraftstoff 0,834 kg/l
temperature pressure fuel

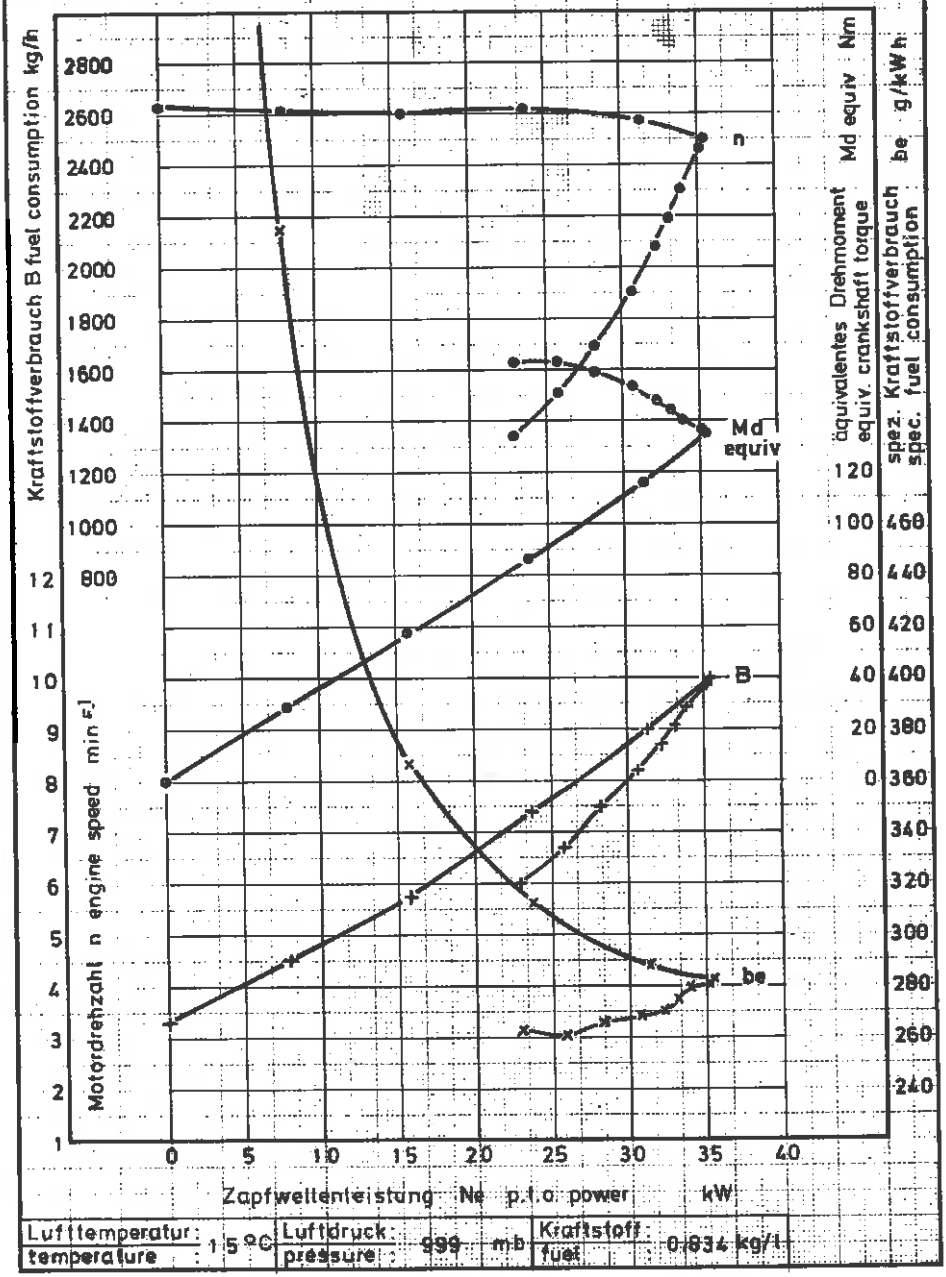
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Zapfwellenleistung
P.t.o. performance

Test Nr. G 75-253

540 min^{-1}



Lufttemperatur: temperature: 15 °C	Luftdruck: pressure: 999 mb	Kraftstoff: fuel: 0,834 kg/l

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(2) DRAWBAR PERFORMANCE

Date of tests: 18th till 31st March, 1976
Type of track: Concrete

Gear No. and Group	Speed km/h	Power kW	Drawbar pull N	Engine speed rev/min	Slip of wheels %	Specific energy kWh/l
(i) MAXIMUM POWER with ballast height of drawbar above ground 560 mm						
1 LO	1,45	13,2	32880	2580	14,8	1,82
1 HI	1,82	16,6	32900	2568	14,7	2,04
2 LO	2,04	18,6	32890	2557	14,9	2,08
2 HI	2,57	23,4	32810	2538	15,0	2,23
3 LO	2,96	26,3	32200	2500	14,8	2,19
3 HI	3,94	27,7	25340	2501	10,5	2,33
4 LO	4,38	27,5	22640	2500	9,2	2,31
4 HI	5,71	28,7	18080	2500	6,8	2,45
5 LO	5,97	28,7	17330	2500	6,6	2,40
5 HI	7,70	29,4	13760	2501	5,2	2,46
6 LO	8,70	28,9	11940	2501	4,4	2,39
6 HI	11,15	28,7	9270	2500	3,6	2,41
(ii) FIVE-HOUR-TEST at 75% of pull at maximum power in 5th LO gear						
5 LO	6,20	22,4	13000	2548	4,8	2,33
(iii) FIVE-HOUR-TEST at pull corresponding to 15% wheel slip in test (i)						
2 HI	-	-	32900	-	-	-
(v) MAXIMUM POWER without ballast height of drawbar above ground 500 mm						
3 LO	3,02	21,4	25470	2562	14,8	2,15
3 HI	3,79	26,6	25310	2539	15,0	2,28
4 LO	4,23	27,4	23360	2500	12,3	2,29
4 HI	5,57	28,5	18410	2500	9,0	2,40
5 LO	5,85	28,9	17760	2500	8,3	2,39
5 HI	7,59	29,4	13930	2501	6,7	2,44
6 LO	8,61	28,8	12040	2500	5,7	2,38
6 HI	11,04	29,3	9540	2500	4,6	2,43
7 LO	12,99	28,5	7890	2500	3,5	2,36

Total oil consumption during ten hours duration of tests (ii) and (iii): 90 g/h

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Tyres make and size — front: VEITH-PIRELLI 7,50-16 6 ply
rear: VEITH-PIRELLI 16,9-30 6 ply

Tread bar height at the beginning of drawbar tests:
89% of the value when new

Specific fuel consumpt. g/kWh	Temperatures: Fuel °C	Coolant °C	Engine-oil °C	Atmospheric conditions: Tempe-rature °C	Relative humidity %	Pressure mbar
tyre inflation pressure 1,3 bar rolling radius of tyres under static load 699 mm						
456	15	80	103	12	90	1006
406	13	80	106	9	98	1006
399	13	80	97	9	98	1006
371	15	80	105	9	98	1006
379	16	80	104	9	97	1006
356	20	80	102	20	70	1014
358	20	80	104	18	74	1014
347	18	80	106	14	80	1014
346	16	80	106	14	81	1014
338	16	80	104	14	80	1014
348	16	80	105	14	82	1014
345	16	80	106	14	81	1014
357	14	80	106	14	81	1014
-	17	80	114	20	80	1014
tyre inflation pressure 1,3 bar rolling radius of tyres under static load 701 mm						
387	7	80	103	3	83	1003
364	12	80	106	1	77	1003
363	12	80	106	10	95	1004
346	13	80	105	10	96	1004
348	17	80	106	8	98	1004
339	16	80	106	12	99	1002
348	18	80	106	12	96	1002
341	17	80	104	12	98	1002
351	17	80	105	12	99	1002

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

(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 7,50-16 AS Front 6 ply
rear: 16,9-30 AS 6 ply

Track of wheels front: 1464 mm
rear: 1550 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	3,13	3,12	3,50	3,49
Radius of turning circle	2,99	2,98	3,36	3,35

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	853 mm
Distance forward from the vertical plane containing the axis of the rear wheels	656 mm
Distance of the median plane on the tractor's left hand side	6 mm

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(5) BRAKING PERFORMANCE

A) SERVICE BRAKE

Date of tests: 24th and 29th March, 1976
Type of track: Concrete
Type of decelerometer: MOTO-METER-Bremsverzögerungs- und Pedalkraftschreiber

Weight of ballasted tractor: 3530 kg with driver

Cold brakes

		With ballast	Without ballast
Travelling speed	km/h	25,0	25,0
Deceleration	m/s^2	4,6	4,6
Stopping distance	m	6,4	6,2
Force on pedal	N	510	400
Force on pedal to achieve a deceleration of 2,5 m/s^2	N	245	185

Brake fade characteristics (hot tests)

Deceleration	hot/cold	%	100	100
Stopping distance	cold/hot	%	100	89
Force on pedal	cold/hot	%	98	102

B) PARKING BRAKE

Tractor facing up slope:
Pull on hand brake 60 N, tractor does not roll

Tractor facing down slope:
Pull on hand brake 60 N, tractor does not roll

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(6) AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 22nd and 29th March, 1976
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2203

Results of test

Gear: 8th HI
Travelling speed before acceleration: 18,9 km/h
Sound level: 90 dB(A)

(7) NOISE AT THE DRIVER'S EAR LEVEL

Date of tests: 22nd March 1976
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2607
Type of frequency analyser: BRÜEL AND KJAER model 1614
(fitted with octave filter)

A safety frame was fitted on tractor O.E.C.D. tested, approval no. CS 1139a or CS 1140d or CS 1142

Results of tests

Gear	Drawbar pull at which the tractor develops the maximum sound level N	Travelling speed nominal km/h	Travelling speed effective km/h	Sound level dB(A)
1 LO	25350	1,60	1,44	96
1 HI	25490	2,04	1,80	96,5
2 LO	25470	2,29	2,04	97
2 HI	25480	2,92	2,59	97
3 LO	25430	3,40	2,98	97,5
3 HI	25400	4,41	3,70	99
4 LO	22900	4,76	4,25	99
4 HI	18340	6,05	5,60	98,5
5 LO	17750	6,31	5,84	98
5 HI *)	13910	8,03	7,61	99
6 LO	12070	9,02	8,58	99
6 HI	9520	10,58	11,10	99
7 LO	7650	13,37	12,98	99
7 HI	6270	17,01	16,77	99
8 LO	5420	18,69	18,50	98
8 HI	light load	23,81	25,50	97,5

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

PRÜFUNGS-ABTEILUNG
JOHN DEERE 1130

Test No. 75-253

(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date of tests: 3rd November, 1975

HYDRAULIC PUMP

The tractor contains one 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 20,3 l/min at minimum pressure

Circuit of power lift

(1) Sustained pressure with pump stalled	155 bar
(2) Delivery rate at minimum pressure and maximum engine speed	20,3 l/min
(3) Delivery rate	24,0 l/min
Delivery pressure	125 bar
Hydraulic power (power lift circuit only)	5,0 kW

Main circuit through oil tapping

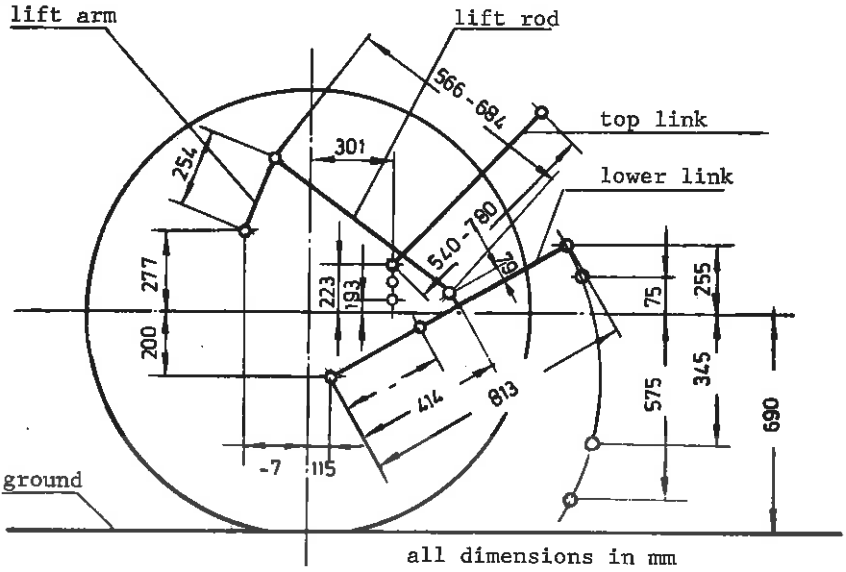
(1) Sustained pressure with pump stalled	155 bar
(2) Delivery rate at minimum pressure and maximum engine speed	52,5 l/min
(3) Delivery rate	49,5 l/min
Delivery pressure	141 bar
Total hydraulic power power lift circuit included	11,6 kW

PRÜFUNGS-ABTEILUNG
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POWER LIFT

Dimensions of implement linkage for the table on page 25



LINKAGE GEOMETRY when connected to the standard frame	Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view:		
Lower links	813 mm	813 mm
Lift arms	254 mm	254 mm
Lift rods	670 mm	565 mm
Top link	625 mm	625 mm
Distance of lift rod connection point from pivot point of lower link	414 mm	414 mm
The following dimensions are given relative to rear axle centre line 690 mm above ground		
Lower link pivot point	115 mm behind, 200 mm below	115 mm behind, 200 mm below
Top link pivot point	301 mm behind, 223 mm above	301 mm behind, 193 mm above
Lift arm pivot point	7 mm behind, 277 mm above	7 mm behind, 277 mm above
Maximum and minimum height of lower link hitch points	75 mm above, 575 mm below	255 mm above, 345 mm below
Height of lower link hitch points above ground when locked in highest transport position	765 mm	945 mm

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LIFTING FORCES
Category II measured

Lifting heights relative to horizontal lower links

mm	-375	-373	-300	-200	-163	-145	-100	0
at hitch points	maximum mechanical advantage							
N						9020	10110	11700
	minimum mechanical advantage							
N	9050		10100	11110			11900	12640

Max. force exerted throughout the whole range 9050 N

Front of tractor does not lift with maximum allowable front ballast

at test frame		maximum mechanical advantage						
N		10500	10780	11250			11650	11650
	minimum mechanical advantage							
N					8090		9080	9840

Max. force exerted throughout the whole range 10500 N

Front of tractor does not lift with maximum allowable front ballast

PRÜFUNGS-ABTEILUNG

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+100	+200	+275	+300	+313	+400	+455	+500	+600
lift rods 565 mm long								
12900	13690		14310		15070	15650		
lift rods 670 mm long								
13290	13840	14400						

lift rods 670 mm long								
11450	11300		11250	11180				
lift rods 565 mm long								
10270	10460		10270		9870		9470	9160

All values of forces for pressure at max. hydraulic power 125 bar, see page 23; calculated from measurements at max. oil pressure 155 bar

PRÜFUNGS-ABTEILUNG
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Test No. 75-253

OPTIONAL TESTS

(1) ENGINE PERFORMANCE

Date of tests: 12th February 1976
Type of dynamometer: SCHENCK eddy-current dynamometer W 150

Maximum Power

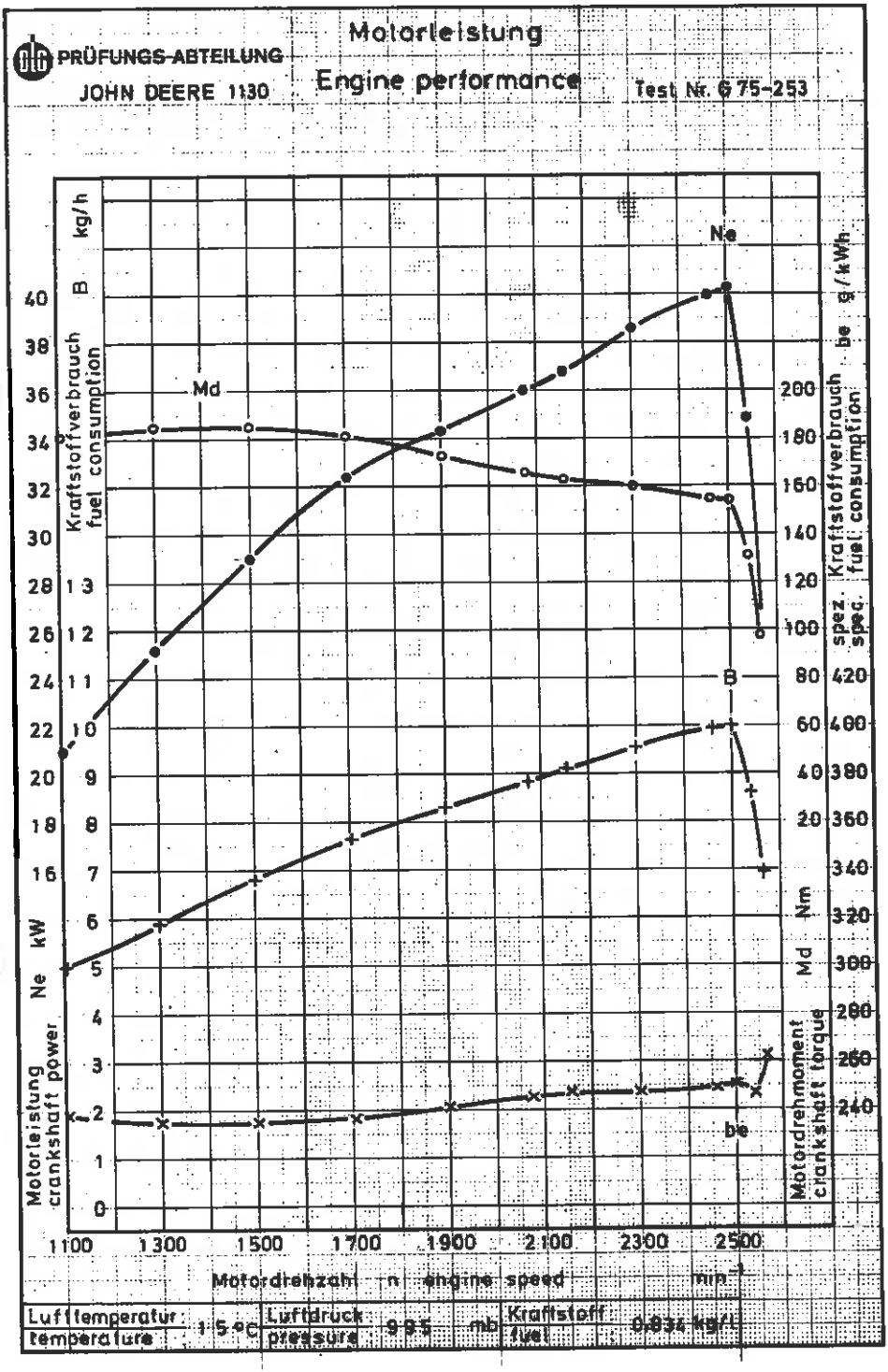
Power kW	Engine speed rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
At maximum power 2-hour-test					
40.3	2500	12.07	10.07	250	3.34
At standard p.t.o. speed (540 rev/min)					
36.0	2075	10.59	8.83	245	3.40
At the speed recommended for drawbar work					
40.3	2500	12.07	10.07	250	3.34

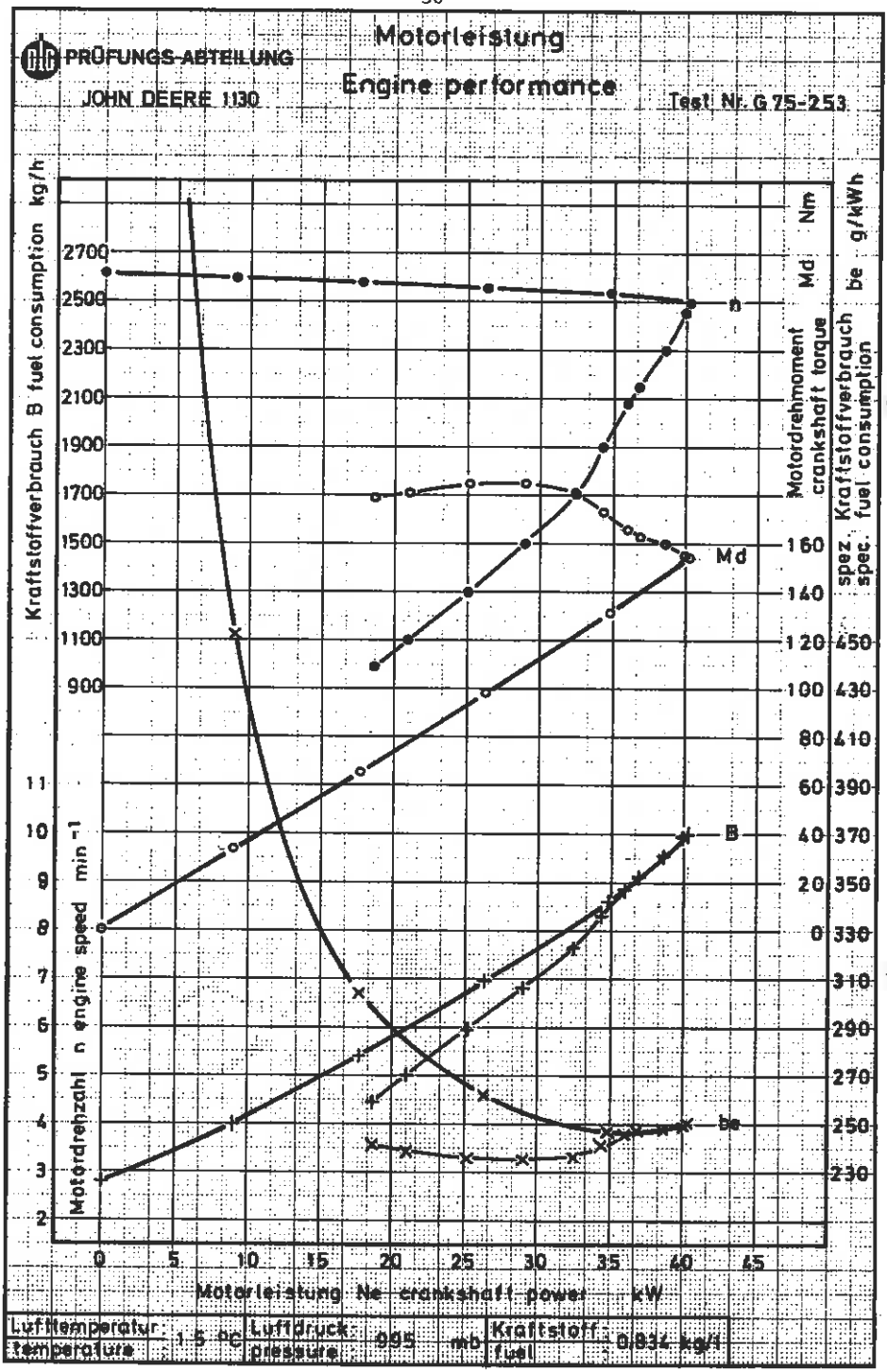
Fuel consumption at part loads

(i) 85% of torque at maximum power					
34.8	2541	10.29	8.58	247	3.38
(ii) unloaded					
-	2625	3.32	2.77	-	-
(iii) 50% of the load defined in (i)					
17.7	2582	6.46	5.39	305	2.74
(iv) maximum power					
40.3	2500	12.07	10.07	250	3.34
(v) 25% of the load defined in (i)					
8.9	2601	4.82	4.02	452	1.85
(vi) 75% of the load defined in (i)					
26.4	2564	8.31	6.93	262	3.18

Optimum fuel consumption: 229 g/kWh at 24.6 kW and 1654 rev/min
Standard fuel consumption 1/2 (DIN 9606): 4.87/9.54 l/h
No load maximum engine speed: 2625 rev/min
Torque at maximum power: 154 Nm
Maximum torque: 185 Nm at 1498 rev/min of the engine

Mean atmospheric conditions:	temperature	15 °C
	pressure	995 mbar
	relative humidity	80 %
Maximum temperatures:	coolant	75 °C
	engine oil	110 °C
	fuel	14 °C


PRÜFUNGS-ABTEILUNG
JOHN DEERE 1130
Motorleistung
Engine performance
Test Nr. G 75-253
Ne
Md
B
be
Motorleistung crankshaft power Ne kW
Kraftstoffverbrauch fuel consumption B kg/h
Motordrehmoment crankshaft torque Md Nm
spez. Kraftstoffverbrauch spec. fuel consumption be g/kWh
1100 1300 1500 1700 1900 2100 2300 2500
Motordrehzahl n engine speed min⁻¹
Lufttemperatur temperature 15 °C
Luftdruck pressure 995 mb
Kraftstoff fuel 0,835 kg/l


PRÜFUNGS-ABTEILUNG
JOHN DEERE 1130
Motorleistung
Engine performance
Test Nr. G 75-253
Kraftstoffverbrauch B fuel consumption kg/h
Motordrehzahl n engine speed min⁻¹
Motordrehmoment crankshaft torque Md Nm
spez. Kraftstoffverbrauch spec. fuel consumption be g/kWh
n
Md
B
be
Motorleistung Ne crankshaft power kW
Lufttemperatur temperature 15 hc
Luftdruck pressure 995 mb
Kraftstoff fuel 0,834 kg/l

PRÜFUNGS-ABTEILUNG
JOHN DEERE 1130
Motorleistung
Engine performance
Test Nr. G 75-253
Motorleistung in % der Leistung bei Nenndrehzahl
engine power in % of power at rated engine speed
Belastung in % des Drehmomentes bei Nenndrehzahl
load in % of torque at rated engine speed
Motordrehzahl in % der Nenndrehzahl
engine speed in % of rated engine speed
229 g/kWh
Lufttemperatur °C
Kraftstoff 0,836 kg/l
Luftdruck mb

PRÜFUNGS-ABTEILUNG

JOHN DEERE 1130

Test No. 75-253

(2) MAIN POWER TAKE-OFF PERFORMANCE

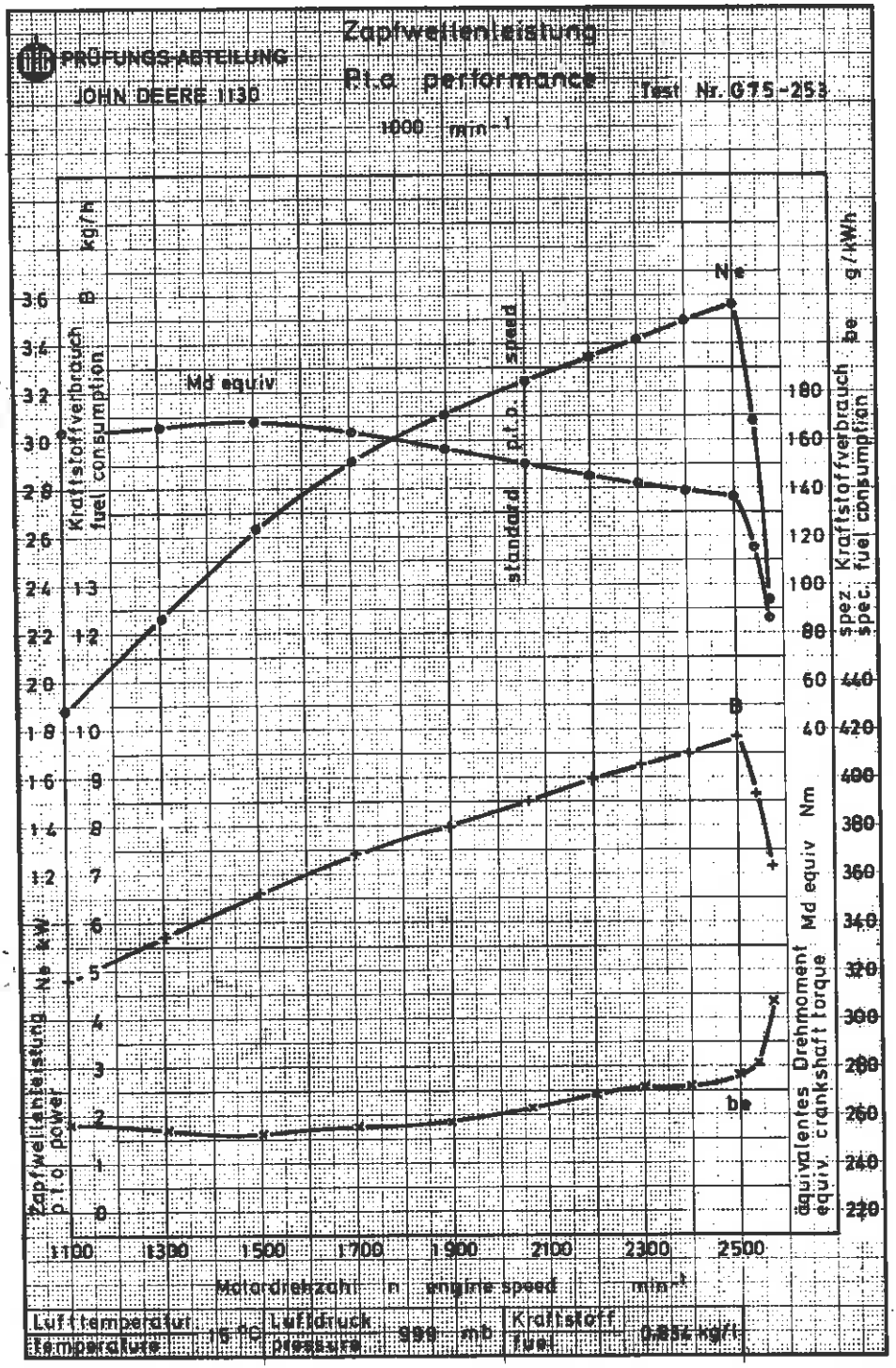
Date of tests: 19th February 1976
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Maximum power

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
At maximum power 2-hour-test						
35.6	2500	1210	11.83	9.87	277	3.01
At standard p.t.o. speed (1000 rev/min)						
32.4	2066	1000	10.23	8.53	263	3.17
At the speed recommended for drawbar work						
35.6	2500	1210	11.83	9.87	277	3.01
Part loads						
(i) 85% of the torque at maximum power						
30.8	2542	1230	10.40	8.67	282	2.96
(ii) unloaded						
-	2625	1271	3.53	2.94	-	-
(iii) 50% of the load defined in (i)						
15.7	2588	1253	6.89	5.75	367	2.27
(iv) maximum power						
35.6	2500	1210	11.83	9.87	277	3.01
(v) 25% of the load defined in (i)						
7.9	2606	1261	5.33	4.44	563	1.48
(vi) 75% of the load defined in (i)						
23.4	2573	1245	8.61	7.18	307	2.71

No load maximum engine speed: 2625 rev/min
Equivalent crankshaft torque at maximum power: 136 Nm
Maximum equivalent crankshaft torque: 167 Nm at 1502 rev/min of the engine

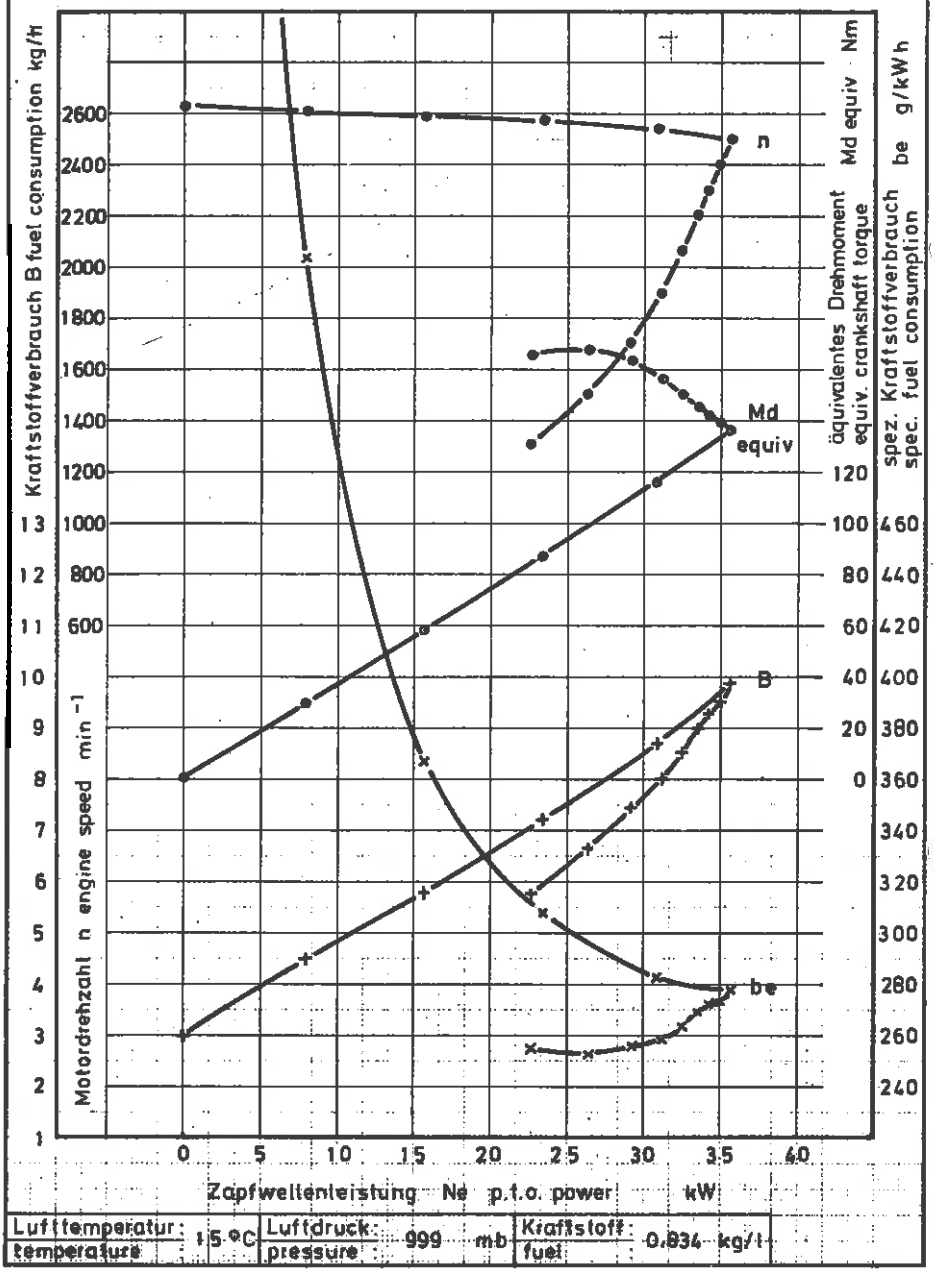
Mean atmospheric conditions:	temperature	15 °C
	pressure	999 mbar
	relative humidity	80 %
Maximum temperatures:	coolant	75 °C
	engine oil	115 °C
	fuel	15 °C


Zapfwellenleistung
PTO performance
PRÜFUNGS-ABTEILUNG
JOHN DEERE 1130
Test Nr. G75-253
1000 min⁻¹
Ne
Md equiv
standard p.t.o. speed
B
be
Zapfwellenleistung Ne kW
p.t.o. power
Kraftstoffverbrauch B kg/h
fuel consumption
äquivalentes Drehmoment Md equiv Nm
equiv. crankshaft torque
spez. Kraftstoffverbrauch be g/kWh
spec. fuel consumption
Motordrehzahl n engine speed min⁻¹
Lufttemperatur 15 °C Luftdruck 999 mb Kraftstoff 0.851 kg/l
air temperature pressure fuel

PRÜFUNGS-ABTEILUNG
JOHN DEERE 1130

Zapfwellenleistung
P.t.o. performance

Test Nr. G 75-253



Lufttemperatur / temperature	15 °C	Luftdruck / pressure	999 mb	Kraftstoff / fuel	0.834 kg/l

PRÜFUNGS-ABTEILUNG
JOHN DEERE 1130

Test No. 75-253

ADDITIONAL TEST

out of the O.E.C.D. Code under the responsibility of the DLG Testing Station

(1) MAIN POWER TAKE-OFF PERFORMANCE
at the engine speed corresponding to the standard p.t.o. speed (540 rev/min)

Date of tests: 20th February 1976
Type of dynamometer: Schenck hydraulic dynamometer U1-40

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power at standard p.t.o. speed						
32,2	2075	540	10,43	8,70	270	3,09
Part loads at standard p.t.o. speed						
(i) 85% of the torque at maximum power						
27,6	2110	549	9,10	7,59	275	3,04
(ii) unloaded						
-	2219	578	3,19	2,66	-	-
(iii) 50% of the load defined in (i)						
14,2	2169	564	5,86	4,89	345	2,42
(iv) maximum power						
32,2	2075	540	10,43	8,70	270	3,09
(v) 25% of the load defined in (i)						
7,2	2195	571	4,34	3,62	504	1,65
(vi) 75% of the load defined in (i)						
21,0	2143	558	7,43	6,20	294	2,82

Equivalent crankshaft torque at standard p.t.o. speed 148 Nm

Mean atmospheric conditions:	temperature	15°C
	pressure	999 mbar
	relative humidity	82%
Maximum temperatures:	coolant	75°C
	engine oil	116°C
	fuel	15°C

PRÜFUNGS-ABTEILUNG
JOHN DEERE 1130

Test No. 75-253

ADDITIONAL TEST

out of the O.E.C.D. Code under the responsibility of the DLG Testing Station

(2) MAIN POWER TAKE-OFF PERFORMANCE
at the engine speed corresponding to the standard p.t.o. speed (1000 rev/min)

Date of tests: 20th February 1976
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power	Speed		Fuel consumption			Specific energy
	engine	p.t.o.	total		specific	
kW	rev/min	rev/min	l/h	kg/h	g/kWh	kWh/l
Maximum power at standard p.t.o. speed						
32,4	2066	1000	10,23	8,53	263	3,17
Part loads at standard p.t.o. speed						
(i) 85% of the torque at maximum power						
28,5	2108	1020	9,06	7,56	268	3,11
(ii) unloaded						
-	2205	1067	3,51	2,93	-	-
(iii) 50% of the load defined in (i)						
14,4	2168	1050	5,84	4,87	338	2,47
(iv) maximum power						
32,4	2066	1000	10,23	8,53	263	3,17
(v) 25% of the load defined in (i)						
7,3	2190	1060	4,40	3,67	503	1,66
(vi) 75% of the load defined in (i)						
21,4	2138	1035	7,48	6,24	291	2,86

Equivalent crankshaft torque at standard p.t.o. speed 150 Nm

Mean atmospheric conditions:	temperature	16°C
	pressure	1000 mbar
	relative humidity	75%
Maximum temperatures:	coolant	75°C
	engine oil	119°C
	fuel	21°C