



O.E.C.D. No.: 500
Printed: February 76

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



AGRICULTURAL TRACTOR 2030
=====

Manufactured by: JOHN DEERE WERKE MANNHEIM
D-6800 Mannheim

Date of Tests: June till November 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.F.E.M.A., France) as being in accordance with the O.E.C.D. STANDARD CODE.

Date of Approval: 19th January 1976

Serial No.: 500

This report results in a retest of the JOHN DEERE tractor 2030. It is valid for tractors of this model starting with the serial no. 169208, 030. respectively the engine no. 215739.

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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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: 2030
Type: 4 wheel tractor, unit construction
rear wheel driven
Serial No: 165 839 L

Engine

Make: John Deere France
Model: 4219 DL-03
Type: Watercooled 4 stroke Diesel engine
direct injection
Serial No: 209 137 CD

Cylinders: 4 in line; bore 102 mm, stroke 110 mm
capacity 3595 cm³; compression ratio 16,2 : 1
wet, replaceable cylinders
overhead valves

Fuel system: ROTO Diesel fuel feed pump 2 FS
ROTO Diesel distributor injection pump
DPA R 3442990
manufacturer's production setting 49 mm³/stroke
at rated engine speed and full load
injection timing 16° before TDC
STANADYNE 4 holes injection nozzles AR 73 672;
injection pressure 216 kp/cm²
STANADYNE fuel filter, main and pre-cleaner
with replaceable cartridge;
capacity of fuel tank appr. 75 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 type with maintenance indicator
- Exhaust silencer:** Eberspächer
multichamber muffler with perforated internal pipe
oval-shaped cylinder, cross section 214 mm to 118 mm, 482,5 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 5,7 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 6 blades, 422 mm diameter
coolant capacity 11,4 l
- Starting system:** Electrically
BOSCH starter motor JD 12 V 4 PS
- Electrical equipment:** 12 Volt, negative earth
BOSCH three phase generator G1-14V-28A
2 lead acid batteries 55 Ah at 20 hours rating

Transmission

- Clutch:** Fichtel und Sachs AG
dry single plate, pedal operated
F+S 1864 239 002
- Gear box:** John Deere Werke Mannheim
constant mesh speed change gear, collar-shifted with 4 forward speeds
group gear with 2 forward and 1 reverse group
Hi-Lo group gear
hydraulically under load shiftable
total 16 forward and 8 reverse speeds



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

Oil capacity: 36 l JD type 303

Oil changing period: 1000 hours

Total ratios and speeds see page 7

Power take-off Independent p.t.o. under load engageable and disengageable by hydraulically operated multiplate clutch at rear of tractor
height above ground 654 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)
652 rev/min at rated engine speed
standard p.t.o.-speed 540 rev/min at 2070 rev/min engine speed
distance of end of p.t.o.-shaft from rear axle centre 422 mm

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)
1210 rev/min at rated engine speed
standard p.t.o.-speed 1000 rev/min at 2067 rev/min engine speed
distance of end of p.t.o.-shaft from rear axle centre 412 mm

both standard p.t.o.-speeds may be set by aid of tractormeter

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

Total ratios and speeds (with 15,5-38 rear tyre size)

Group	Speed change gear		Total ratio engine to driving wheel	Theoretical travelling speed at rated engine speed of 2500 rev/min	
	No			km/h	m/s
1 slow	1	low	407,7 : 1	1,68	0,47
		high	320,3 : 1	2,13	0,59
	2	low	285,4 : 1	2,39	0,66
		high	224,0 : 1	3,05	0,85
	3	low	192,3 : 1	3,55	0,99
		high	151,1 : 1	4,52	1,26
	4	low	137,6 : 1	4,97	1,38
		high	108,1 : 1	6,32	1,76
2 fast	5	low	103,9 : 1	6,58	1,83
		high	81,6 : 1	8,37	2,33
	6	low	72,7 : 1	9,40	2,61
		high	57,1 : 1	11,96	3,32
	7	low	49,0 : 1	13,94	3,87
		high	38,5 : 1	17,75	4,93
	8	low	35,1 : 1	19,49	5,41
		high	27,5 : 1	24,81	6,89
reverse	1	low	350,8 : 1	1,95	0,54
		high	275,6 : 1	2,84	0,69
	2	low	245,6 : 1	2,78	0,77
		high	193,0 : 1	3,54	0,98
	3	low	165,5 : 1	4,13	1,15
		high	130,0 : 1	5,25	1,46
	4	low	118,4 : 1	5,77	1,60
		high	93,0 : 1	7,34	2,04

The transmission is optional available for a maximum speed of 30 km/h in the 8th high speed

An mechanical front wheel drive is optional available

is

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 period 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 566 to 684 mm
lifting range above ground with
lifting rods short from 446 to 1016 mm
lifting rods long from 165 to 806 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 180 and 1031mm by power lift
with lower links in horizontal position
distance of centre hole from:
rear axle centre 973 mm
end of 540 rev/min p.t.o.-shaft 551 mm
end of 1000 rev/min p.t.o.-shaft 561 mm



Pull attachment

Swinging drawbar: Height above ground 419 or 547 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 860 mm
swingable aside when using upper link
coupling hole 33 mm diameter
distance from rear axle centre 447 mm
permissible supporting force 1000 kp

Towing hitch: Height above ground 815 mm

Steering

John Deere Werke Mannheim
mechanically acting hydraulical assisted
central steering
hand wheel operated

Brakes

Parking brake: Mechanically operated wedge band brake
acting on a drum on the differential
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 pedals
for normal use both parts of pedal are
locked together

Safety frame

FRITZMEIER;
O.E.C.D. tested, CS No. 392a;
dated from 10th April 1974
(an integrated, air conditioned, soundproof
safety cab is optional available
O.E.C.D.-tested: CS 1024 from 12th May 1975)



Wheels

Steering wheels: Two pneumatics at front
 7,50-16 AS Front 6 ply (DIN 7808)
 maximum permissible weight on each tyre 710 kg
 at 2,5 kp/cm² inflation pressure;
 when transporting mounted implements 885 kg;
 track width from 1360 to 1870 mm and after
 reversing wheels from 1498 to 2008 mm
 adjustable in 102 mm steps by extending
 front axle
 rims 5,5 F x 16

Driving wheels: Two pneumatics at rear
 15,5-38 AS 6 ply (DIN 7807)
 maximum permissible weight on each tyre 1690 kg
 at 1,3 kp/cm² inflation pressure;
 when transporting mounted implements 1940 kg;
 track width from 1550 to 1950 mm in 100 mm
 steps changed by offset lug type rims
 (optinal: rack and pinion axle;
 track width stepless from 1550 to 2440 mm)
 rims W 14L x 38

Wheel base: 2178 mm

Weights

Ready for use as tested, with safety frame

		without driver	with driver
without ballast:	front	893 kg	900 kg
	rear	1745 kg	1813 kg
	total	2638 kg	2713 kg
Front ballast:	1 weight		80 kg
	6 front weights 42 kg each		252 kg
Rear ballast:	5 weights per wheel 54 kg each		540 kg
	water in the tyres		465 kg
with ballast:	front	1260 kg	1270 kg
	rear	2715 kg	2780 kg
	total	3975 kg	4050 kg



Seat

Grammer
upholstered mould seat with back and
arm rests, model DS 20 L2H
adjustable spring with shock absorber
height above ground from 1216 to 1316 mm
adjustable by shifting the seat on inclined
guideways and additional independent
elevation adjustment
range of fore and aft adjustment 101 mm

Number of grease points (whole tractor) 11

Overall dimensions

Overall length: 3598 mm with three point linkage
Overall width: 1944 mm at 1550 mm track width
Overall height: 2340 mm to top of safety frame
Maximum ground
clearance: 480 mm in median plane of tractor

Lighting equipment Electric 12 V
acc. to the regulations of the specific
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 \emptyset	975	595
Side lights	70 \emptyset	1540	135
Rear lights	115 x 50	1400	255
Reflectors	75 \emptyset	1135	135



All available tyres

Track width adjustment possibilities, permissible loads

Dimensions	Track width			Permissible loads kg
	from mm	in steps of ++) mm	to ***) mm	
Steering wheels				
7,50-16	1360	102	2008	745
7,50-18 +++)	1360	102	2008	810
Driving wheels				
16,9-30	1550+)	100	1950	1900
13,6-36 **)	1450	100	1950	1615
13,6-38 *)**)	1450	100	1950	1660
15,5-38	1550	100	1950	1765
18,4-30 *)**)	1550	100	1950	2415

- *) no cast iron wheel possible
- ***) no R+P axle possible
- ***) with R+P axle 2440 mm
- +) with cast iron wheel 1500 mm smallest track width
- ++) with cast iron wheels in steps of 102 mm
- +++) 7,50-18 may not be put together with 16,9-30
and 13,6-36

FUEL AND LUBRICANTS USED IN TESTS

Fuel: ARAL Diesel fuel (DIN 51601)
specific gravity at 15°C
at engine tests 0,831 kg/l
at p.t.o. tests 0,834 kg/l
at drawbar tests 0,831 kg/l

Engine oil: HD SAE 30

Transmission and hydraulic oil: JD type 303



COMPULSORY TESTS

(1) MAIN POWER TAKE-OFF PERFORMANCE (540 rev/min)

Date of tests: 15th July 1975

Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Maximum power

Power PS	Speed		Fuel consumption			Specific energy PSh/l
	engine rev/min	p.t.o. rev/min	total l/h	kg/h	specific g/PSh	
<u>At maximum power 2-hour test</u>						
61,6	2500	652	14,70	12,26	199	4,19
<u>At standard p.t.o. speed (540 rev/min)</u>						
55,9	2070	540	12,64	10,54	189	4,42
<u>At the speed recommended for drawbar work</u>						
61,6	2500	652	14,70	12,26	199	4,19
<u>Part loads</u>						
(i) 85% of the torque at maximum power						
53,1	2537	661	12,88	10,74	202	4,12
(ii) unloaded						
-	2622	683	5,88	4,90	-	-
(iii) 50% of the load defined in (i)						
27,0	2578	672	8,55	7,13	264	3,16
(iv) maximum power						
61,6	2500	652	14,70	12,26	199	4,19
(v) 25% of the load defined in (i)						
13,6	2600	678	6,62	5,52	406	2,05
(vi) 75% of the load defined in (i)						
40,1	2558	667	10,61	8,85	221	3,78

No load maximum engine speed: 2622 rev/min

Equivalent crankshaft torque at maximum power: 17,7 kpm

Maximum equivalent crankshaft torque: 20,7 kpm at 1300 rev/min
of the engine

Mean atmospheric conditions: temperature 23°C
pressure 747 mm Hg
relative humidity 85%

Maximum temperatures: coolant 83°C
engine oil 125°C
fuel 26°C



PRÜFUNGS-ABTEILUNG

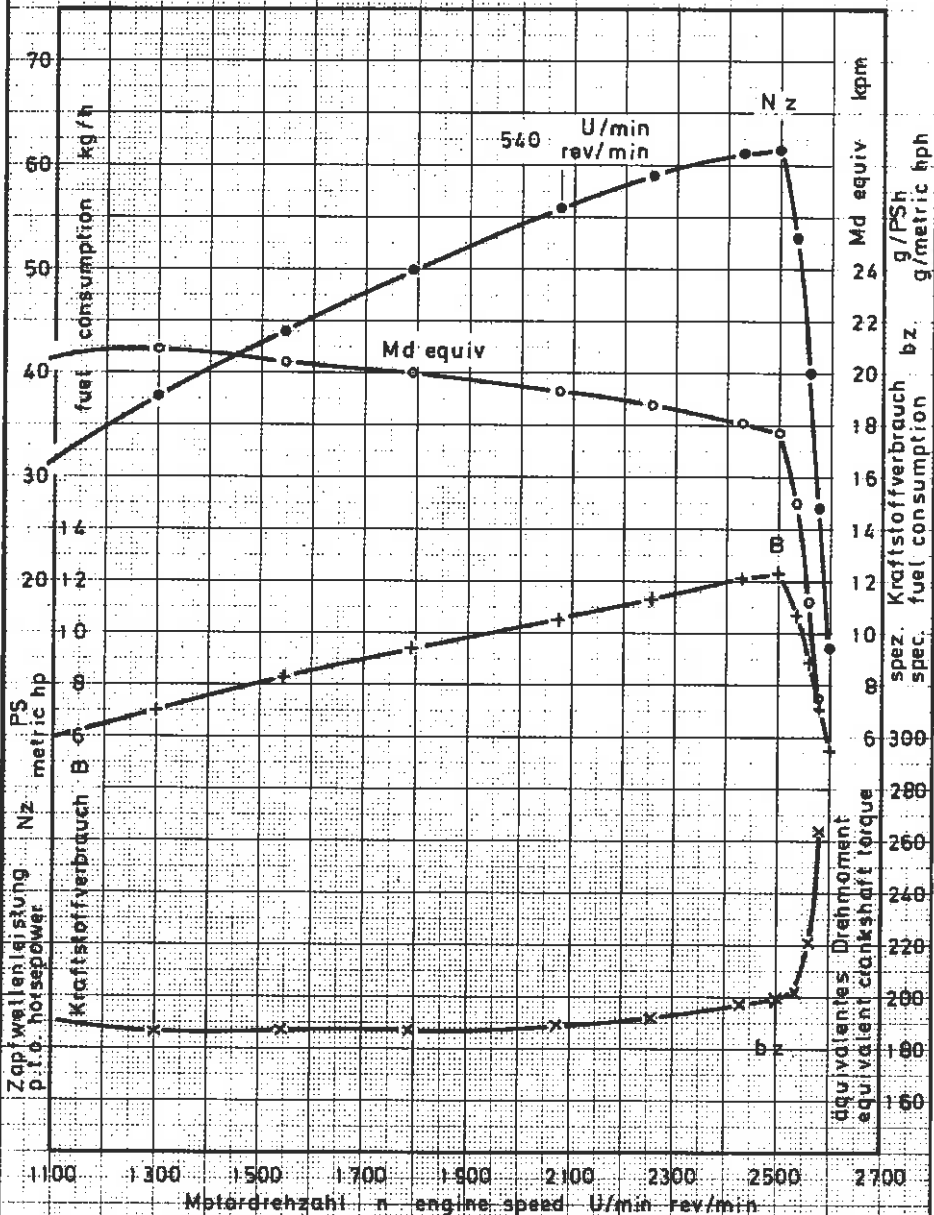
Zapfwellenprüfung

JOHN DEERE

P.t.o. - test

2030

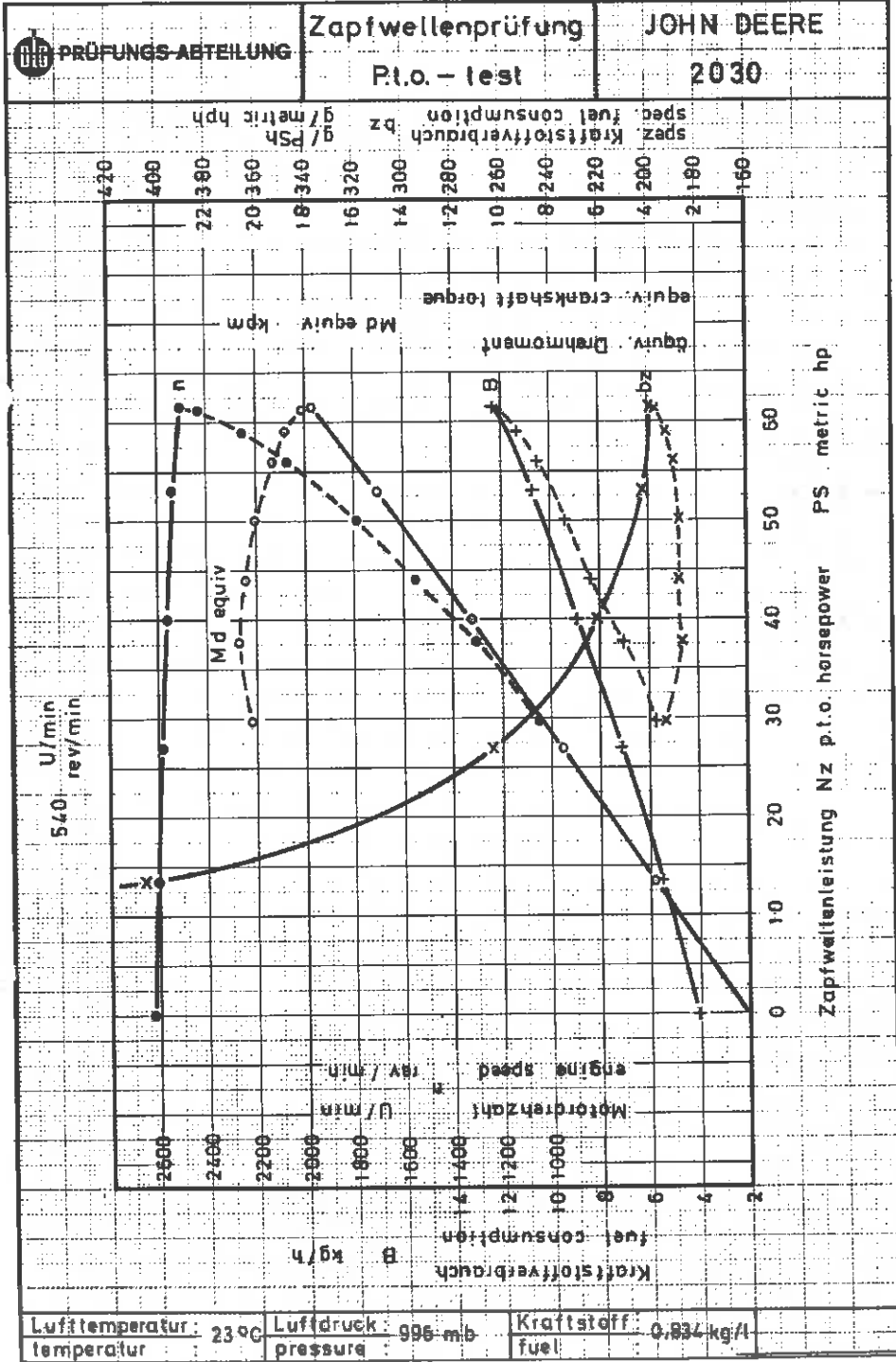
540 U/min
rev/min



Lufttemperatur: 23°C
temperature

Lufldruck: 996 mb
pressure

Kraftstoff: 0,834 kg/l
fuel



Lufttemperatur: 23°C temperature	Luftdruck: 996 mb pressure	Kraftstoff: 0,834 kg/l fuel
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(2) DRAWBAR PERFORMANCE

Date of tests: 29th October till 4th November 1975
Type 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) <u>MAXIMUM POWER</u> with ballast height of drawbar above ground 547 mm						
1 low	1,50	20,6	3710	2584	15,0	2,59
1 high	1,91	26,2	3700	2575	15,0	2,90
2 low	2,13	29,3	3710	2568	14,9	2,98
2 high	2,71	37,2	3710	2555	15,0	3,27
3 low	3,13	42,9	3700	2539	14,9	3,29
3 high	4,05	51,2	3410	2500	12,3	3,47
4 low	4,50	53,2	3190	2501	11,3	3,60
4 high	5,94	52,6	2390	2500	7,7	3,56
5 low	6,17	54,8	2400	2499	8,0	3,70
5 high	8,06	54,3	1820	2500	5,9	3,70
6 low	9,06	56,4	1680	2500	5,5	3,82
6 high	11,71	55,1	1270	2498	4,0	3,72
7 low	13,71	54,3	1070	2500	3,5	3,68
(ii) <u>FIVE-HOUR-TEST</u> at 75% of pull at maximum power in 5th gear of low group						
5 low	6,44	42,9	1800	2547	5,8	3,50
(iii) <u>FIVE-HOUR-TEST</u> at pull corresponding to 15% wheel slip in test (i)						
3 low	-	-	3710	2538	-	-
(v) <u>MAXIMUM POWER</u> without ballast height of drawbar above ground 547 mm						
3 high	4,00	42,1	2840	2544	14,9	3,36
4 low	4,39	46,3	2850	2536	15,0	3,49
4 high	5,81	51,6	2400	2499	10,4	3,49
5 low	6,05	54,0	2410	2500	10,5	3,66
5 high	7,95	53,9	1830	2501	7,4	3,66
6 low	8,99	56,3	1690	2500	7,0	3,81
6 high	11,64	55,6	1290	2500	5,3	3,76
7 low	13,66	55,1	1090	2499	4,7	3,73

Total oil consumption during ten hours duration of tests (ii) and (III): 22 g/h



Specific fuel consumpt. g/PSh	Temperatures			Atmospheric conditions		
	Fuel °C	Coolant °C	Engine oil °C	Tempe- rature °C	Relative humidity %	Pressure mm Hg
321	14	85	105	12	90	758
286	15	85	107	13	90	758
279	15	85	104	13	85	758
255	14	85	106	12	86	757
252	14	85	105	12	85	756
240	14	85	106	12	80	756
231	15	85	107	13	70	756
233	15	85	108	13	65	756
224	15	85	105	14	83	757
227	13	85	105	10	80	757
218	13	85	106	11	78	759
223	14	85	104	11	80	759
226	14	85	102	13	82	758
237	15	85	105	14	75	760
-	15	85	104	13	82	760
248	14	85	103	12	82	760
239	14	85	104	12	80	760
238	13	85	105	11	86	759
228	13	85	105	11	84	758
228	13	85	105	11	84	758
218	15	85	104	13	78	760
221	15	85	104	13	74	760
223	15	85	103	13	70	762

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: 15,5-38 AS, 6 ply

Track of wheels front: 1462 mm

rear: 1550 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	3,36	3,57	3,78	3,98
Radius of turning circle	3,24	3,42	3,61	3,82

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	831 mm
Distance forward from the vertical plane containing the axis of the rear wheels	715 mm
Distance of the median plane of the tractor	0 mm



(5) BRAKING PERFORMANCE

A) FOOT BRAKE

Date of tests: 31st October 1975
 Type of track: Concrete
 Type of decelerometer: MOTO METER-Bremsverzögerungs- und Pedalkraftschreiber

Weight of ballasted tractor: 4050 kp with driver

Cold brakes

		with ballast	without ballast
Travelling speed	km/h	25,0	25,0
Deceleration	m/s ²	4,8	4,6
Stopping distance	m	6,0	6,6
Force on pedal	kp	50	28
Force on pedal to achieve a deceleration of 2,5 m/s ²	kp	26	17

Brake fade characteristics (hot tests)

Deceleration	hot/cold %	103	102
Stopping distance	cold/hot %	106	100
Force on pedal	cold/hot %	98	100

B) PARK BRAKE

Tractor facing up slope:
 Pull on hand brake 5 kp, tractor does not roll

Tractor facing down slope:
 Pull on hand brake 7 kp, tractor does not roll



John Deere 2030

Test No. 75-109

(6) AMBIENT NOISE EMITTED BY THE TRACTOR

Dat of test: 29th July 1975
 Type of track: Concrete
 Type of sound level meter: BRÜEL AND KJAER type 2203

Results of test

Gear: 8th high speed
 Travelling speed before:
 acceleration: 20,3 km/h
 Sound level: 87 dB(A)

(7) NOISE AT THE DRIVER'S EAR LEVEL

Date of tests: 29th July 1975
 Typ 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 frame

Results of tests

Gear	Drawbar pull at which the tractor develops the maximum sound level kp	Travelling speed		Sound level dB(A)
		nominal km/h	effective km/h	
1 low	2450	1,68	1,51	96,5
1 high	2400	2,13	1,95	96,5
2 low	2430	2,39	2,17	98
2 high	2450	3,05	2,72	98
3 low	2440	3,55	3,13	98
3 high	2410	4,52	3,87	98,5
4 low	2420	4,97	4,29	98,5
4 high	2080	6,32	5,96	98,5
5 low	1790	6,58	6,37	98,5
5 high *)	1720	8,37	8,07	98,5
6 low	1050	9,40	9,41	99
6 high	760	11,96	12,10	99
7 low	950	13,94	13,82	98,5
7 high	450	17,75	18,23	99
8 low	470	19,49	19,93	99,5
8 high	light load	24,81	27,00	97

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

(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date of tests: 10th November 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

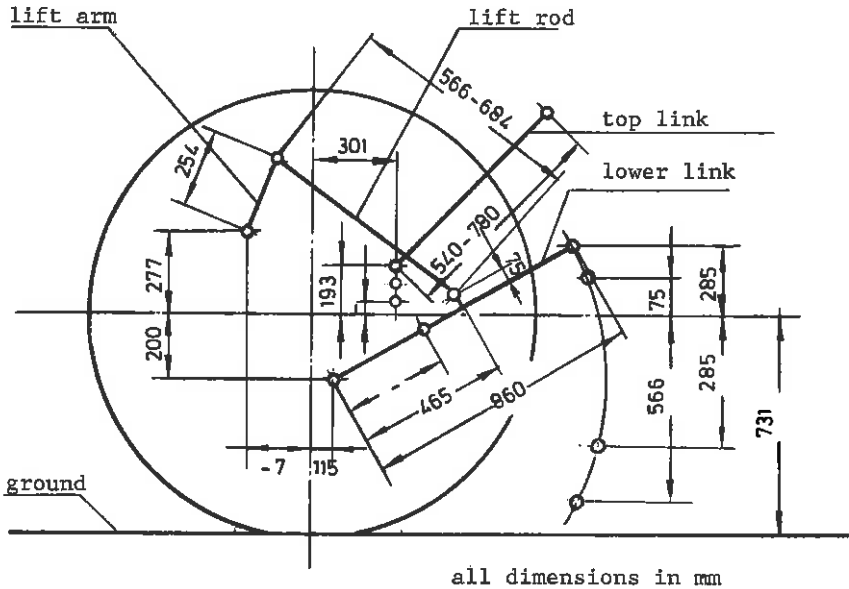
(1) Sustained pressure with pump stalled	159	kp/cm ²
(2) Delivery rate at minimum pressure and maximum engine speed	20,2	l/min
(3) Delivery rate	23,7	l/min
Delivery pressure	132	kp/cm ²
Hydraulic power, power lift circuit only	7,0	PS

Main circuit through oil tapping

(1) Sustained pressure with pump stalled	159	kp/cm ²
(2) Delivery rate at minimum pressure and maximum engine speed	50,6	l/min
(3) Delivery rate	48,1	l/min
Delivery pressure	143	kp/cm ²
Total hydraulic power		
power lift circuit included	15,3	PS



Dimensions of implement linkage for the table on page 23





<p><u>LINKAGE GEOMETRY</u> when connected to the standard frame</p>	<p>Maximum mechanical advantage</p>	<p>Minimum mechanical advantage</p>
<p>Projected length in side view: Lower links Lift arms Lift rods Top link Distance of lift rod connection point from pivot point of lower link</p>	<p>860 mm 254 mm 684 mm 675 mm 465 mm</p>	<p>860 mm 254 mm 566 mm 675 mm 465 mm</p>
<p>The following dimensions are given relative to rear axle centre line 731 mm above ground</p>		
<p>Lower link pivot point Top link pivot point Lift arm pivot point Maximum and minimum height of lower link hitch points Height of lower link hitch points above ground when locked in highest transport position</p>	<p>115 mm behind, 200 mm below 301 mm behind, 193 mm above 7 mm behind, 277 mm above 75 mm above, 566 mm below 806 mm</p>	<p>115 mm behind, 200 mm below 301 mm behind, 193 mm above 7 mm behind, 277 mm above 290 mm above, 285 mm below 1021 mm</p>



LIFTING FORCES

Lifting heights relative to horizontal lower links

mm	-366	-350	-300	-200	-100	-88	-85	0	+100
----	------	------	------	------	------	-----	-----	---	------

at hitch points maximum mechanical advantage

kp							1380	1570	1715
----	--	--	--	--	--	--	------	------	------

minimum mechanical advantage

kp	1215		1335	1500	1630			1740	1795
----	------	--	------	------	------	--	--	------	------

Max. force exerted throughout the whole range 1380 kp

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

at test frame maximum mechanical advantage

kp		1310	1365	1480	1560			1600	1585
----	--	------	------	------	------	--	--	------	------

minimum mechanical advantage

kp						1290		1480	1560
----	--	--	--	--	--	------	--	------	------

Max. force exerted throughout the whole range 1310 kp

Force at which front of tractor lifts with maximum allowable front ballast 1745 kp



+200	+275	+300	+320	+400	+490	+500	+600	+610
------	------	------	------	------	------	------	------	------

lift rods 566 mm long

1835		1945		2025	2070			
------	--	------	--	------	------	--	--	--

lift rods 684 mm long

1825	1815							
------	------	--	--	--	--	--	--	--

lift rods 684 mm long

1550		1515	1505					
------	--	------	------	--	--	--	--	--

lift rods 566 mm long

1585		1565		1515		1450	1375	1370
------	--	------	--	------	--	------	------	------

All values of forces for pressure at max. hydraulic power 132 kp/cm², see page 21; calculated from measurements at max. oil pressure 159 kp/cm²



OPTIONAL TESTS

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

Date of tests: 15th July 1975
Type of dynamometer: SCHENCK hydraulic dynamometer UI-40

Maximum power

Power PS	Speed		Fuel consumption		Specific energy PSh/l	
	engine rev/min	p.t.o. rev/min	total l/h	specific kg/h		
<u>At maximum power 2-hour test</u>						
63,6	2500	1210	14,68	12,24	193	4,33
<u>At standard p.t.o. speed (1000 rev/min)</u>						
57,0	2067	1000	12,63	10,53	182	4,58
<u>At the speed recommended for drawbar work</u>						
63,5	2500	1210	14,68	12,24	193	4,33
<u>Part loads</u>						
(i) 85% of the torque at maximum power						
54,8	2540	1229	13,07	10,90	199	4,19
(ii) unloaded						
-	2621	1268	4,17	5,00	-	-
(iii) 50% of the load defined in (i)						
27,9	2582	1249	8,67	7,23	259	3,22
(iv) maximum power						
63,5	2500	1210	14,68	12,24	193	4,33
(v) 25% of the load defined in (i)						
14,0	2604	1260	6,63	5,53	395	2,11
(vi) 75% of the load defined in (i)						
41,5	2561	1239	10,82	9,02	217	3,84

No load maximum engine speed: 2621 rev/min
Equivalent crankshaft torque at maximum power: 18,2 kpm
Maximum equivalent crankshaft torque: 21,3 kpm at 1300 rev/min
of the engine

Mean atmospheric conditions: temperature 24°C
pressure 747 mm Hg
relative humidity 75%

Maximum temperatures: coolant 85°C
engine oil 127°C
fuel 26°C



PRÜFUNGS-ABTEILUNG

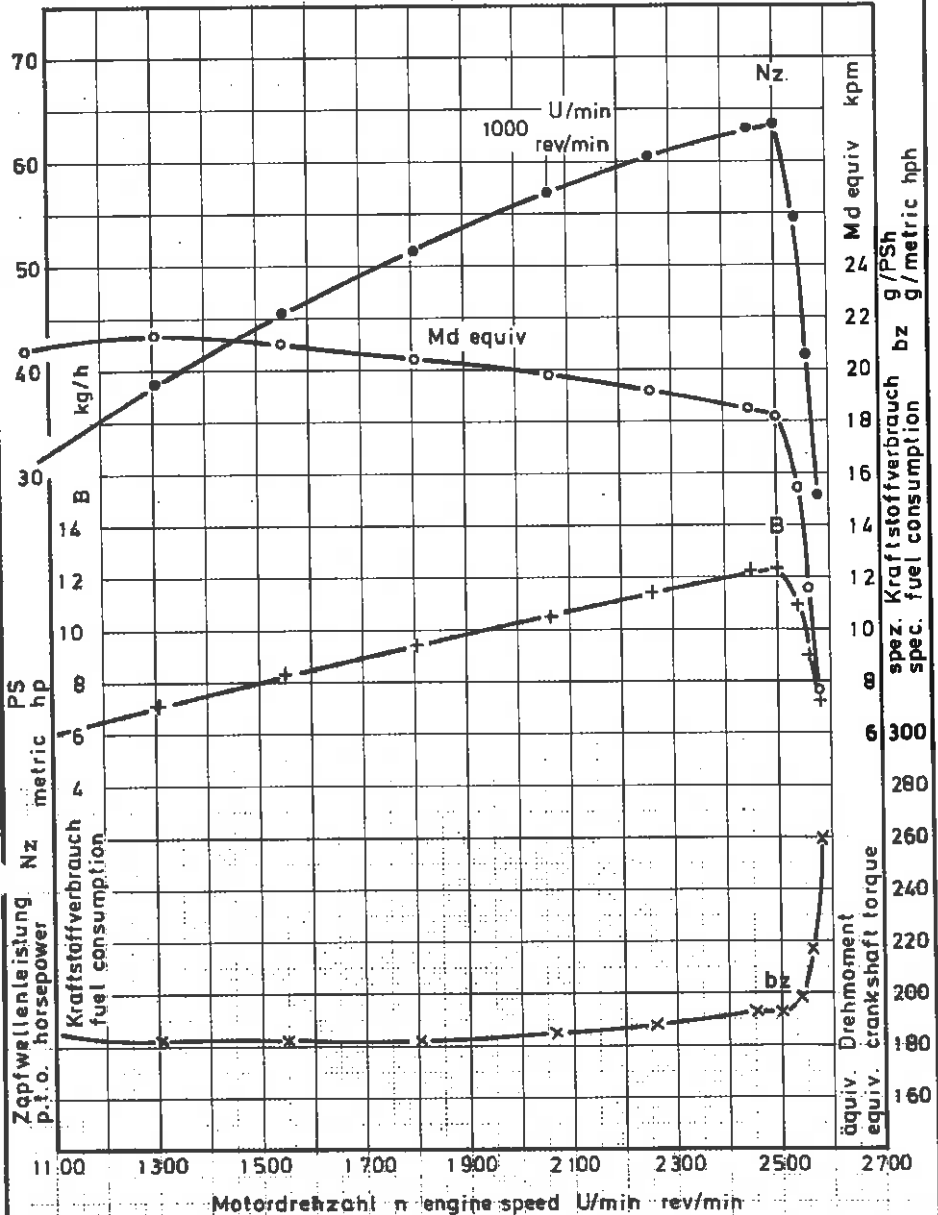
Zapfwellenprüfung

P.t.o. - test

JOHN DEERE

2030

1000 U/min
rev/min



Lufttemperatur: 24 °C Luftdruck: 996 mb Kraftstoff: 0.834 kg/l
 temperature pressure fuel



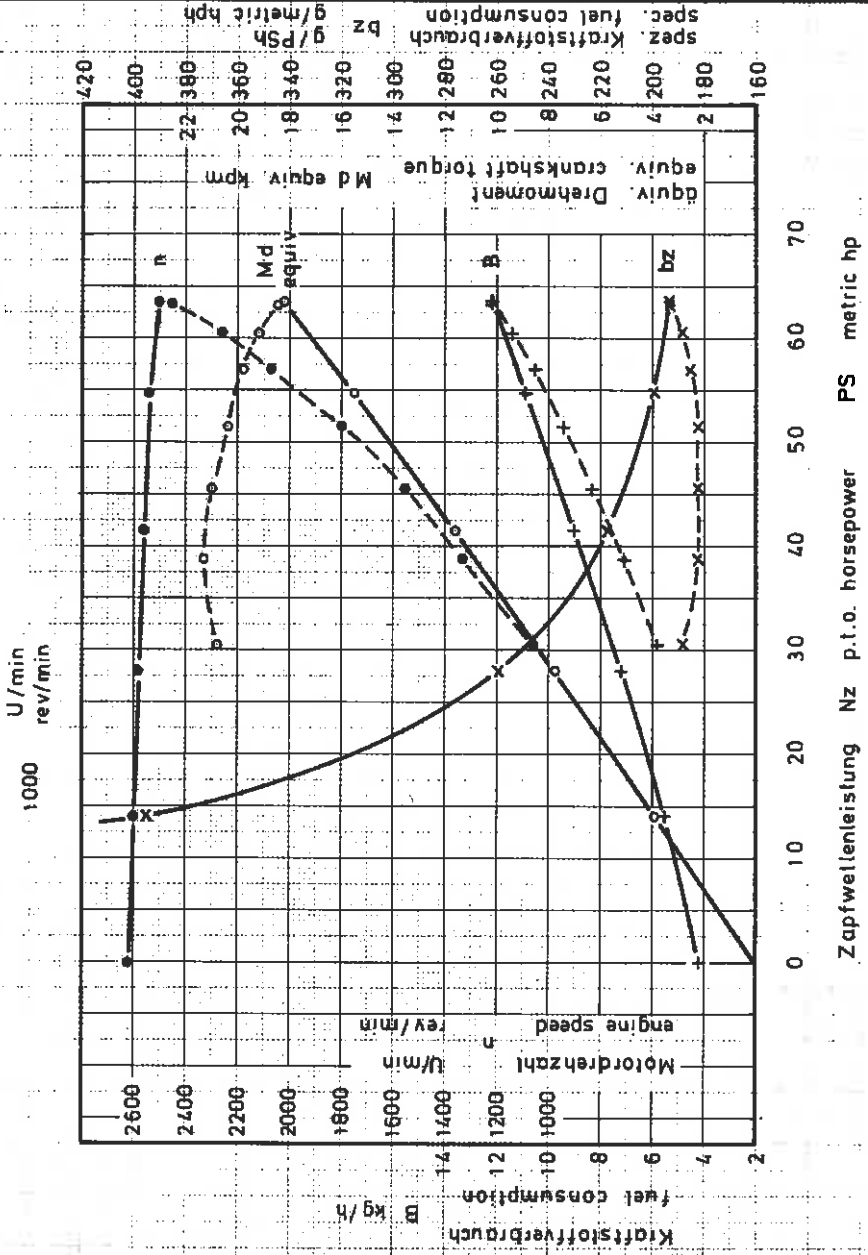
PRÜFUNGS-ABTEILUNG

Zapfwellenprüfung

JOHN DEERE

P.t.o. - test

2030



Lufttemperatur: 27.0°C
 temperature

Luftdruck: 996 mb
 pressure

Kraftstoff: 0.834 kg/l
 fuel



(9) ENGINE PERFORMANCE

Date of tests: 25th and 26th June 1975
 Type of dynamometer: SCHENCK eddy current dynamometer W 150

Maximum power

Power PS	Engine speed rev/min	Fuel consumption		Specific energy PS/h/1	
		total 1/h	specific kg/h		
<u>At maximum power 2-hour test</u>					
69,3	2500	14,77	12,27	177	4,69
<u>At standard p.t.o. speed (540 rev/min)</u>					
62,1	2070	12,75	10,60	171	4,87
<u>At the speed recommended for drawbar work</u>					
69,3	2500	14,77	12,27	177	4,69
<u>Part loads</u>					
<u>(i) 85% of torque at maximum power</u>					
59,7	2541	12,85	10,68	179	4,65
<u>(ii) unloaded</u>					
-	2619	4,00	3,32	-	-
<u>(iii) 50% of the load defined in (i)</u>					
30,5	2582	8,22	6,83	224	3,71
<u>(iv) maximum power</u>					
69,3	2500	14,77	12,27	177	4,69
<u>(v) 25% of the load defined in (i)</u>					
15,3	2601	6,02	5,00	327	2,54
<u>(vi) 75% of the load defined in (i)</u>					
45,4	2563	10,41	8,65	191	4,36

Optimum fuel consumption: 165 g/PSH at 42,9 PS and 1600 rev/min
 Standard fuel consumption 1/2 (DIN 9606): 6,12/12,30 1/h
 No load maximum engine speed: 2619 rev/min
 Torque at maximum power: 19,8 kpm
 Maximum torque: 23,1 kpm at 1300 rev/min of the engine

Mean atmospheric conditions: temperature 26°C
 pressure 750 mm Hg
 relative humidity 73%

Maximum temperatures: coolant 82°C
 engine oil 123°C
 fuel 24°C



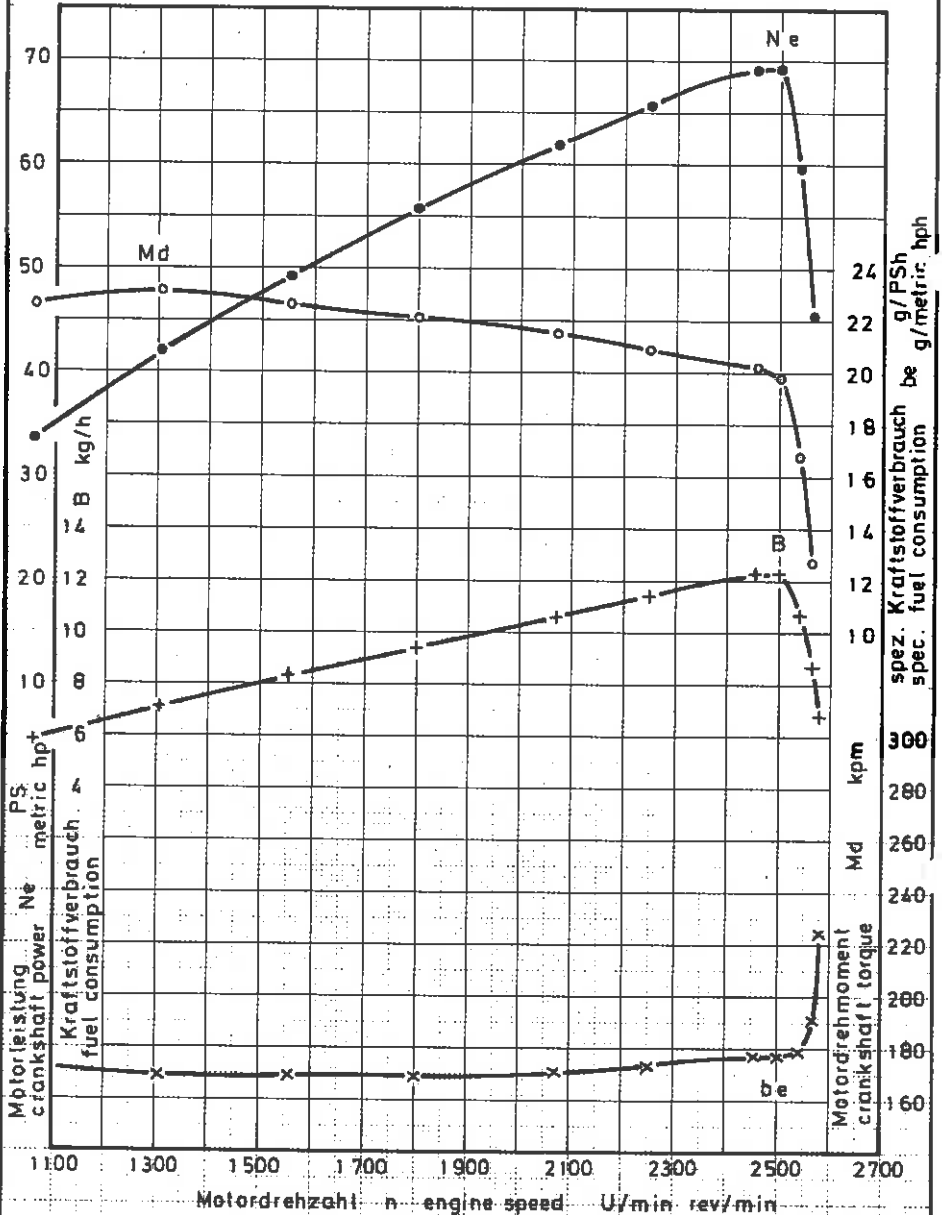
PRÜFUNGS-ABTEILUNG

Motorprüfung

Engine - test

JOHN DEERE

2030



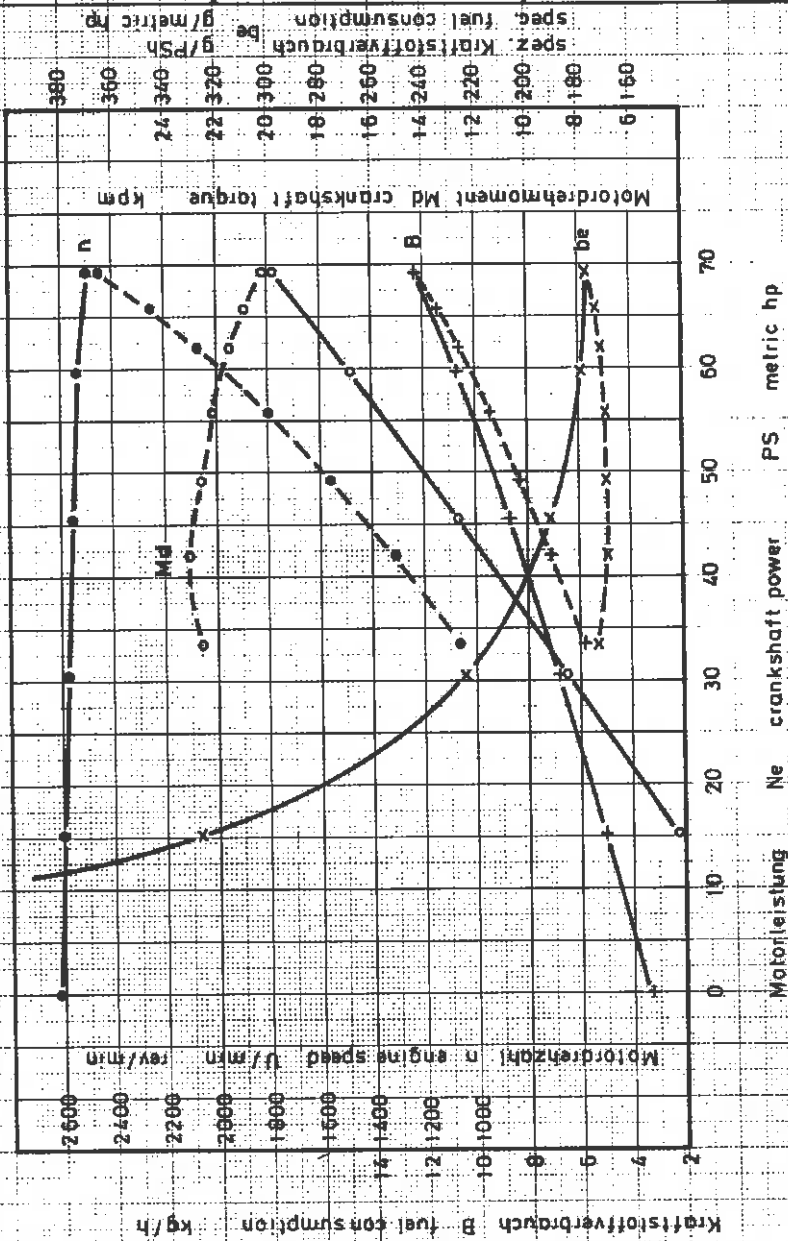
Lufttemperatur: 26°C	Luftdruck: 1000 mb	Kraftstoff: 0,831 kg/l
temperature	pressure	fuel



PRÜFUNGS-ABTEILUNG

Motorprüfung
Engine - test

JOHN DEERE
2030



Lufttemperatur: 29.2
temperature

Luftdruck: 1000 mb
pressure

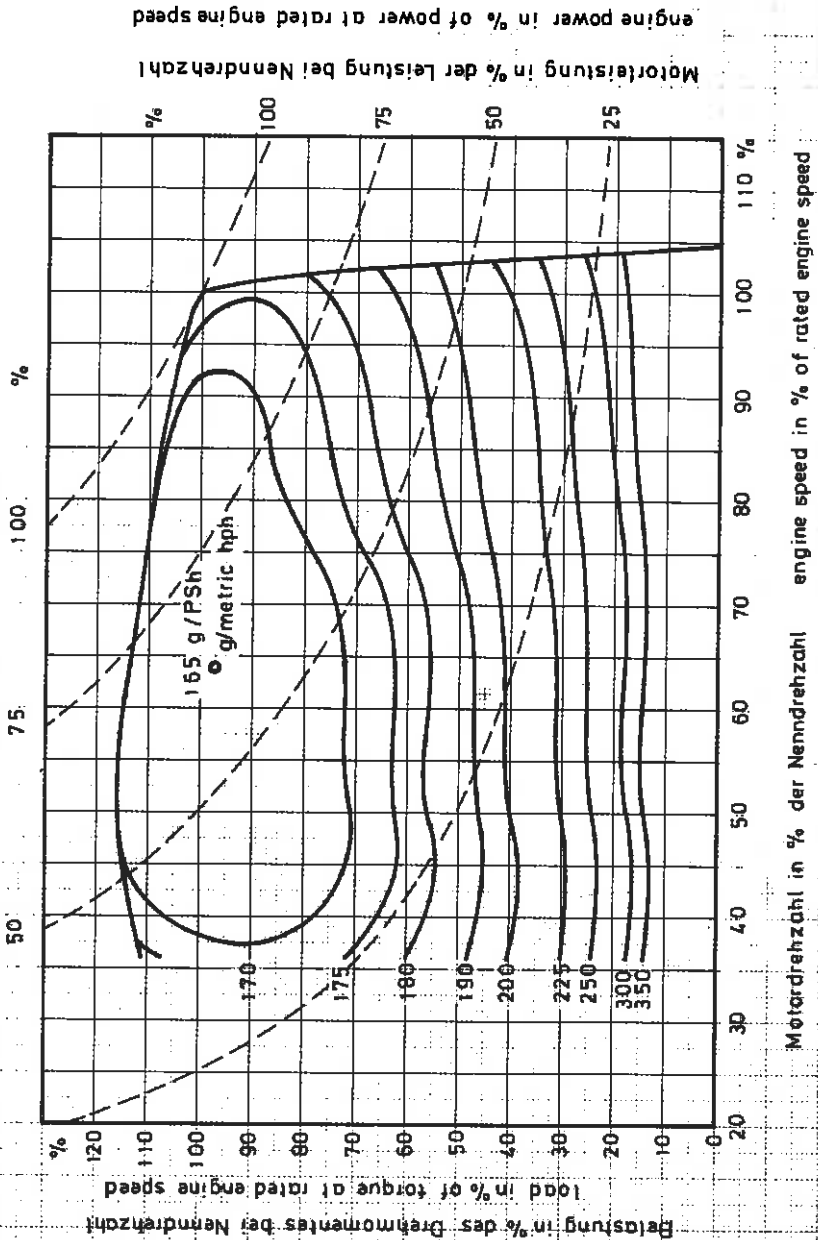
Kraftstoff: 0.820 l/h
fuel



PRÜFUNGS-ABTEILUNG

Motorprüfung
Engine - test

JOHN DEERE
2030



Lufttemperatur: 29 °C
temperature

Luftdruck: 1000 mb
pressure

Kraftstoff: 0,931 kg/l
fuel



