Report on test in accordance
with O.E.C.D. STANDARD CODE

O.E.C.D. No. 948



Agricultural Tractor
LANDINI DT 6830 (4WD)
Type denomination TL 21 DT/M

submitted for test by
Landini Trattori S.P.A.
7 Fabbrico (R.E.), Italy

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

Duration of Tests: October till December 1984
DLG-Testing-Station for Agricultural Machinery, Max-Eyth-Weg 1.
D-6114 Groß-Umstadt

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

Date of Approval: 2nd August 1985 O.E.C.D. No. 948

The tractor LANDINI 6830, serial-no. 221 MO 0001, had been tested in 2 variants
— as model DT 6830 (4WD)
— as model R 6830 (2WD)
Complete front axle and front axle drive had been changed.
In the rest the 2 variants are identical.
This report refers to the model DT 6830

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 daN = 10 N	≈	1,02 kp	or 1 kp	= 0,981 daN
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	=	750,10 mm Hg		

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PRÜFUNGS-ABTEILUNG
LANDINI DT 6830

Test No. 84-206

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*) All stated dimensions refer to tyre sizes 11.2 - 24 at front and 16.9 R 30 at rear, as well as to track widths 1500 mm at front and 1500 mm at rear

PRÜFUNGS-ABTEILUNG
LANDINI DT 6830

Test No. 84-206

Tractor manufacturer:	MASSEY-FERGUSON S.P.A. LANDINI DIVISION, WORKS OF FABBRICO (R.E.), Italy
Submitted for test by:	LANDINI TRATTORI S.P.A., 7 FABBRICO (R.E.), Italy
Selected by:	Manufacturer with agreement by DLG
Place of running-in:	Fabbrico and Groß-Umstadt
Duration of running-in:	Engine and tractor appr. 38 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	LANDINI
Trade name:	DT 6830
Type denomination:	TL 21 DT/M
Type:	Wheel tractor, unit construction, four wheel driven
Serial No.:	221MO 0001 (start of series)

Engine

Make:	PERKINS
Model:	A4.236
Type:	Watercooled 4-stroke Diesel-engine, direct injection
Serial No.:	LD 22573 U 861 080 J
Cylinders:	4, in line, bore 98,4 mm, stroke 127 mm, displacement 3863 cm^3, compression ratio 16/1; replaceable wet cylinder liners
Valves:	Overhead
Fuel system:	AC-DELCO fuel supply pump; CAV distributor injection pump DPA 3241 F490; manufacturer's production setting 55,3±1,5 mm^3/stroke at rated engine speed and full load, injection timing 23°±2° before TDC; CAV 4 hole-injection nozzles BKBL 67 S 5151, injection pressure 177±5 bar, CAV fuel filter 296 with replaceable paper element; capacity of fuel tank 60,5 l
Serial No. of injection pump:	R 16802 TZ

Governor:	CAV centrifugal variable speed governor, governed range of engine speed 600 to 2290 1/min, rated engine speed 2100 1/min
Air cleaner:	FISPA oil bath air filter, cyclone pre-cleaner; oil capacity 0,7 l, oil change every 100 operating hours, no maintenance indicator; air intake in front of engine, below bonnet
Exhaust silencer:	MASSEY FERGUSON expansion type silencer, 100 mm dia, 660 mm long; on the right, beside of engine bonnet, mouth showing upwards, 2280 mm above ground
Lubrication system:	Forced feed with gear pump; strainer in sump, PERKINS oil filter in full flow, replaceable filter, filter change every 250 operating hours; oil capacity 7 l; recommended oil quality API-CC, MIL-L-2104 B, oil change every 250 operating hours, specified oil viscosities: winter SAE 10W, 20W or 10W/30 summer SAE 20W or 20W/30 tropics SAE 30, 20W/40 or 20W/50 or for all conditions SAE 15W/40
Cooling system:	Water cooling with impeller pump, overpressure relief valve set to 0,7 bar, thermostat with by-pass; fan with 4 blades with 412 mm dia, water capacity 15 l
Starting system:	Electrical, LUCAS solenoid pre engaged-drive starter motor 2,5 kW; depressed pedal of clutch as safety device; CAV flame plug in intake manifold

Electrical equipment: 12 Volt, negative earth;
LUCAS 3-phase alternator 12 V 500 W;
1 lead acid battery, 100 Ah at 20 hours rating

Transmission

Clutch: OMG
dry dual-disc clutch;
pedal operated travel drive, disc 279 mm dia;
hand lever operated p.t.o. drive,
disc 279 mm dia

Gear box: MASSEY FERGUSON
synchronized speed change gear with 4 gears, range gear with 3 forward ranges (L-range sliding gear, M- and H-ranges collar shifted) and 1 sliding gear shifted reverse range; total 12 forward and 4 reverse speeds, 2 gear shift levers;
optionally available creeper group

Rear axle and final drives: MASSEY FERGUSON
bevel gear drive,
bevel gear differential with pedal operated lock, self disengaging;
spur gear final drives

Front axle and final drives: MASSEY FERGUSON
driven by jointless central propeller shaft, hand lever operated, sliding gear shifted;
bevel gear drive, No-spin differential,
planetary final drives

Lubrication:

	oil quality API - MIL-L-	oil viscosity SAE	oil capacity l	oil change interval operating hours
gear box including rear axle	CC 2104 B	15W/40	33	1500
final drives at rear	GL 4 2105 (A)	80W or 80W/90	2,1 each	
front axle with differential			4,5	
final drives at front			1,5 each	

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Total ratios and speeds

Range	Gear	Total ratio engine : driving wheel	Nominal travelling speed *) at rated engine speed km/h
L	1	315,19	1,75
	2	201,80	2,73
	3	156,39	3,52
	4	106,21	5,18
M	1	128,94	4,27
	2	82,55	6,66
	3	63,98	8,60
	4	43,45	12,66
H	1	52,35	10,51
	2	33,52	16,42
	3	25,97	21,18
	4	17,64	31,19
R	1	120,88	4,55
	2	77,39	7,11
	3	59,98	9,17
	4	40,73	13,51

*) calculated with the radius index 695 mm

Power-take-off

Main p.t.o.: Shiftable by hand lever (collar shifting) to independent or ground speed p.t.o. and by second hand lever to 540 or 1000 1/min;

1 p.t.o. shaft at rear of tractor, in tractor's median plane;
height above ground 680 mm,
horizontal distance to rear axle centre line 265 mm;
35 mm ∅, 6 splines, ISO 500/DIN 9611, type 1

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Independent p.t.o.: Driven by second plate of dry dual-disc clutch; sense of rotation clockwise, viewed to tractor's rear

p.t.o	p.t.o. speed 1/min	engine speed 1/min	transmission ratio engine : p.t.o.
540	540	1944	3,6000
	583	2100	
1000	1000	1917	1,9167
	1096	2100	

Ground speed p.t.o.: Driven by rear axle drive, sense of rotation clockwise, at forward movement

p.t.o.	travel distance per p.t.o. revolution m	number of p.t.o. revolutions per rear wheel revolution
540	0,4886	8,938
1000	0,2601	16,787

Power lift

MASSEY FERGUSON
hydraulic power lift, unit construction;
draft and position control, floating position;
adjustable raise control,
top link sensing

Hydraulic system:

Open centre system
TUROLLA (PLESSEY) gear type pump TFP 200/11 D directly driven by engine, delivery 36 l/min at rated engine speed;
hydraulic oil circuit in common with gear box with 33 l capacity,
6 l can be taken off when tractor is working stationary or moving,
hydraulic oil filter within suction line, filter change every 250 operating hours

MASSEY FERGUSON control valve 3306 467, relief valve pressure setting 170±5 bar; single acting cylinder with 100 mm bore and 130 mm stroke, overpressure relief valve in cylinder set to 200 bar;
with a change-over valve 1 oil coupling may be controlled by the a.m. MF control valve;

2 OMC additional control valves 2-1180 (adjustable to single or double acting), with 2 oil couplings each at rear of tractor

Implement linkage: See pages 10 and 11

Pull attachment

Trailer hitch: MASSEY FERGUSON, non automatical;
hitch point

above ground	480, 575, 705 or 800 mm
behind rear axle centre line	395 mm
above p.t.o. shaft end	25 or 120 mm
below p.t.o. shaft end	105 or 200 mm
permissible vertical load	1500 kg

Swinging drawbar: Optionally available (not fitted on tested tractor)

Holed drawbar: Length 1500 mm, thickness 30 mm, width 80 mm, length between joint balls 770 mm;
7 holes between joint balls with 80 mm distance each, 2 holes outside of joint balls on either side with 120 mm distance each, holes' diameter 22 mm and 24 mm alternately; at each end of the bar 1 hole with 32 mm dia;
height above ground (measured without load)

minimum	110 mm
maximum	1090 mm
holes' centre line behind p.t.o. shaft end	710 mm

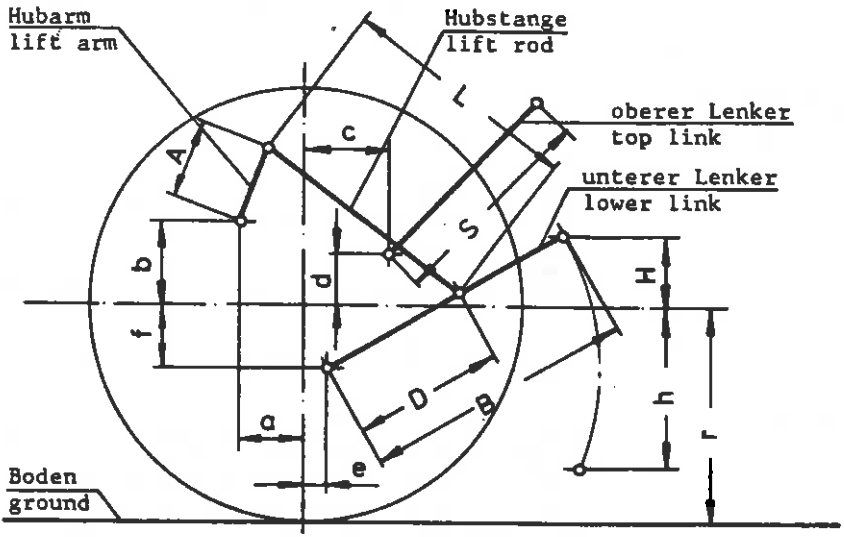
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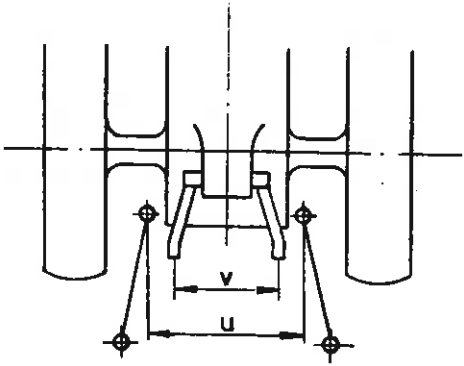
Towing hitch: At front, height above ground 683 mm

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Implement linkage: Three point linkage,
joint balls category 2 acc. to
ISO 730/I, DIN 9674





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dimensions of rear implement linkage (projected lengths, in mm)
underlined dimensions are valid for power lift test page 25

Rear tyres (size 16.9 - 30)	radius index	(r)	695
Front tyres (size 11.2 - 24)	radius index	(r')	515
Length of lift arms		(A)	272
Length of lower links		(B)	865
Distance of lift arm pivot point from rear wheel centre line	horizontally	(a)	12
	vertically	(b)	310
Horizontal distance between the 2 lower link points		(u)	390
Horizontal distance between the 2 lift arm end points		(v)	525
Length of upper link		(S)	590 to 790, <u>693</u>
Distance of upper link pivot point from rear wheel centre line	horizontally	(c)	224
	vertically	(d)	<u>256</u> or 301
Distance of lower link pivot point from rear wheel centre line	horizontally	(e)	70
	vertically	(f)	138
Distance of lower link pivot points to lift rod pivot points on lower links		(D)	455
Length of lift rods		(L)	545 to 665, <u>606</u>

Height of lower link hitch points relative to rear axle centre line (situated 695 mm above ground) in mm

These data are valid for unloaded power lift

		lift rod length L		
		545 mm	606 mm	665 mm
Lowest position	(h)	355 mm	495 mm	660 mm
Highest position	(H)	320 mm	197 mm	105 mm
Transport position	(H')	320 mm	197 mm	105 mm

Steering	MASSEY FERGUSON hydrostatic steering; separate oil circuit with 2,3 l·capacity, specified oil ATF, oil change every 1000 operating hours, oil filter cleaning every 500 operating hours, TUROLLA gear type pump at front of engine, driven by crankshaft, delivery 23,5 l/min at rated speed, working pressure 100 bar; 1 double acting differential ram, 57 mm bore, 150 mm stroke, piston rod 25 mm dia; acting on steering levers of front axle
Wheels	
Steering wheels:	At front, 2 pneumatics 11.2 - 24 6 ply GOODYEAR, cross-ply tyres; maximum permissible load per tyre 1045 kg at 1.8 bar inflation pressure and 30 km/h; track width 1500 mm (unchangeable) rims W9 x 24
Driving wheels:	At front and at rear rear driving wheels: 2 pneumatics 16.9 R 30 6 ply PIRELLI radial-ply tyres; maximum permissible load per tyre 1900 kg at 1.3 bar and 30 km/h; track width variable by adjustable-gauge wheels in steps of 100 mm each from 1200 to 1500 mm, or after turning the wheels from 1600 to 1900 mm rims W13 x 30
Wheel base:	2180 mm

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Brakes

Parking brake:	Mechanically actuated by hand lever with ratchet, acting on service brake
Service brake: *)	Pedal operated muscle power brake with mechanical transmission, acting on rear axle of tractor; wet disc brakes on the differential half shafts with 4 lining discs each, with 178 mm dia
Steering brake:	Divided pedals of service brake, for normal use locked together

Number of grease points: 14

Overall dimensions

Total length:	3750 mm without ballast 3940 mm with ballast
Total width:	1915 mm without ballast 1960 mm with ballast
Total height:	2330 mm to top of safety frame
Ground clearance:	395 mm below front axle differential

Available wheel equipment

Tyre sizes	
front	rear
11.2 - 24 6 ply	14.9 - 30 6 ply 12.4 - 36 6 ply 16.9 - 30 6 ply
12.4 - 20 6 ply	14.9 - 28 6 ply
12.4 - 24 6 ply	12.4 - 36 6 ply 16.9 - 30 6 ply

*) Trailer braking take-off: None

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Safety frame	LANDINI TS9 OECD tested safety frame OECD approval no. CSD 0700/10
Seat	GRAMMER DS 20/4 H upholstered seat with back rest, adjustable suspension and shock absorber; height of driver's platform above ground 805 mm, height of unloaded seat above platform from 530 to 590 mm infinitely adjustable; longitudinal seat adjustment 200 mm
Lighting equipment	Electrical 12 Volt, in accordance with Italian legislation

	Dimensions mm	Height above ground of centre mm	Distance from outside edge of tractor to centre mm
Head lights	130 ⌀	1100	782
Side lights	70 x 60	1490	245
Rear lights	70 x 60	1465	295
Reflectors 1st pair	80 ⌀	1370	175

Running-time meter	Mechanical, combined with tachometer, driven by camshaft of engine; reference engine speed for one real counted hour 1600 1/min

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TEST CONDITIONS

Track setting

1500 mm at front
1500 mm at rear

Weights

		without driver	with driver
Without ballast:	front	1105 kg	1120 kg
	rear	1475 kg	1550 kg
	total	2580 kg	2670 kg
Front ballast:	8 weights, total		240 kg
	water in the tyres		175 kg
Rear ballast:	3 weights per wheel, total		360 kg
	water in the tyres		560 kg
With ballast:	front	1565 kg	1580 kg
	rear	2350 kg	2425 kg
	total	3915 kg	4005 kg

Fuels and lubricants used in tests

Fuel: ARAL Diesel-fuel DIN 51 601
density at 15°C
at engine test and
at p.t.o. test 0,841 kg/l
at drawbar test
with ballast and
without ballast 0,842 kg/l

Engine oil and Transmission oil: MF SUPER UNIVERSALOIL 20W/30

Steering oil: MOBIL ATF 200

Remarks and repairs None

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R 6830

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COMPULSORY TESTS

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

Date of tests: 11th October 1984
Location of tests: DLG-Testing-Station Groß-Umstadt
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed engine 1/min	Speed p.t.o. 1/min	Fuel consumption hourly 1/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
MAXIMUM POWER						
At 2-hour test						
46.0	2100	583	13.88	11.68	254	3.31
At rated engine speed						
46.0	2100	583	13.88	11.68	254	3.31
At standard p.t.o. speed						
44.7	1944	540	13.11	11.03	247	3.41
Part loads, the governor hand lever in the position corresponding to the maximum power at full load (curve a)						
(i) the torque corresponding to maximum power at rated speed						
46.0	2100	583	13.88	11.68	254	3.31
(ii) 85% of the torque obtained in (i)						
40.2	2163	601	12.39	10.42	259	3.25
(iii) 75% of the torque defined in (ii)						
30.7	2197	610	10.22	8.60	280	3.00
(iv) 50% of the torque defined in (ii)						
20.5	2203	612	8.12	6.83	333	2.52
(v) 25% of the torque defined in (ii)						
10.4	2247	624	6.18	5.19	497	1.69
(vi) unloaded						
-	2283	634	4.38	3.68	-	-

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Power kW	Speed engine 1/min	Speed p.t.o. 1/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Part loads, the governor hand lever in the position corresponding to the standard p.t.o. speed at full load (curve b)						
(i) the torque corresponding to maximum power						
44.7	1944	540	13.11	11.03	247	3.41
(ii) 85% of the torque obtained in (i)						
39.2	2009	558	11.73	9.87	251	3.34
(iii) 75% of the torque defined in (ii)						
29.7	2030	564	9.49	7.98	268	3.13
(iv) 50% of the torque defined in (ii)						
20.2	2065	574	7.55	6.35	315	2.67
(v) 25% of the torque defined in (ii)						
10.3	2106	585	5.67	4.77	464	1.81
(vi) unloaded						
-	2160	600	3.92	3.29	-	-

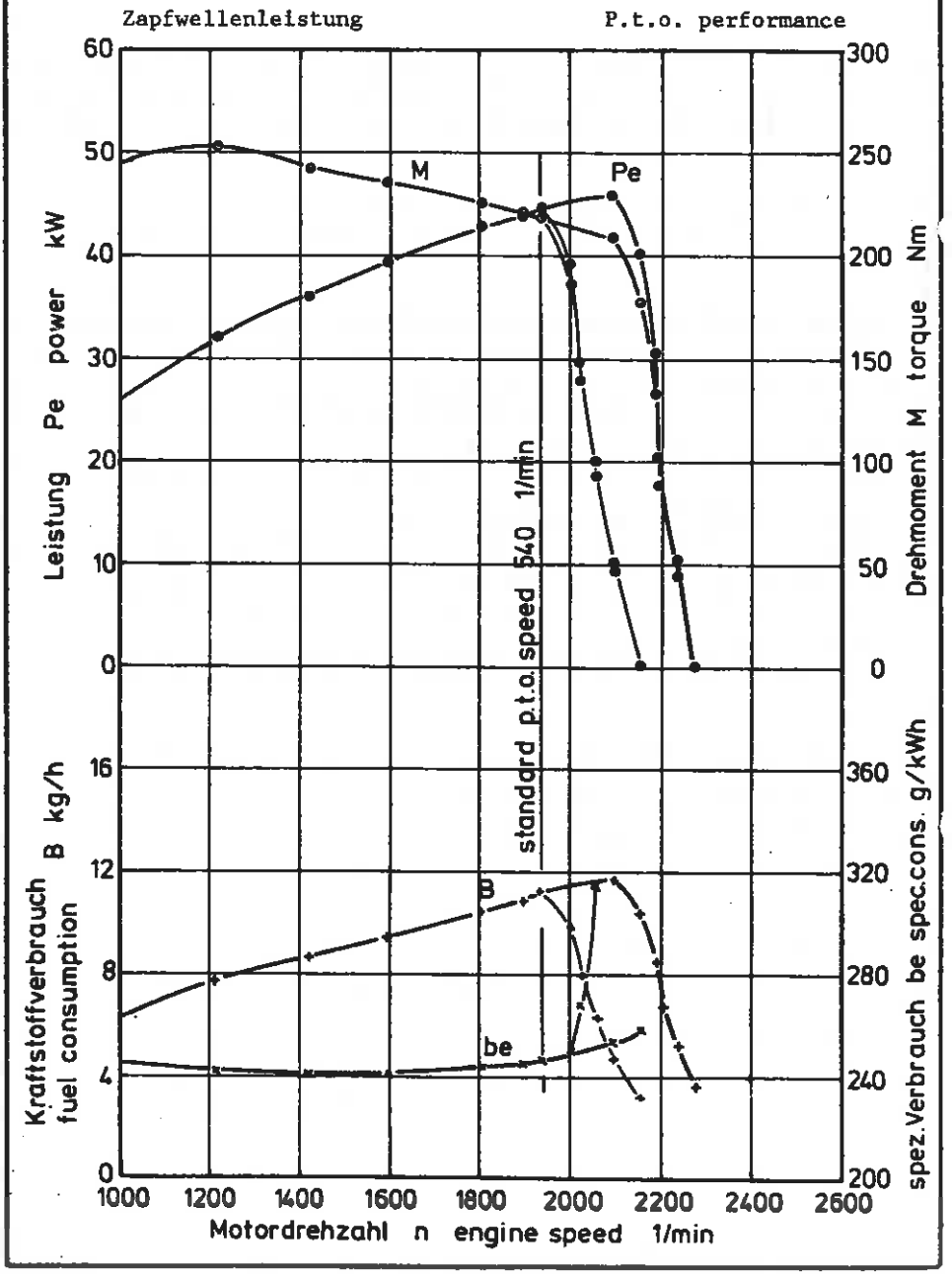
Standard specific fuel consumption (g/kWh): 259/333/251/315

No load maximum engine speed: 2283 1/min
Equivalent flywheel torque at maximum power (2 hours): 209 Nm
Maximum equivalent flywheel torque: 254 Nm at 1209 1/min of the engine

Mean atmospheric conditions:	temperature	19 °C
	pressure	1003 mbar
	relative humidity	93 %
Maximum temperatures:	coolant	85 °C
	engine oil	105 °C
	fuel	20 °C
	engine air intake	20 °C

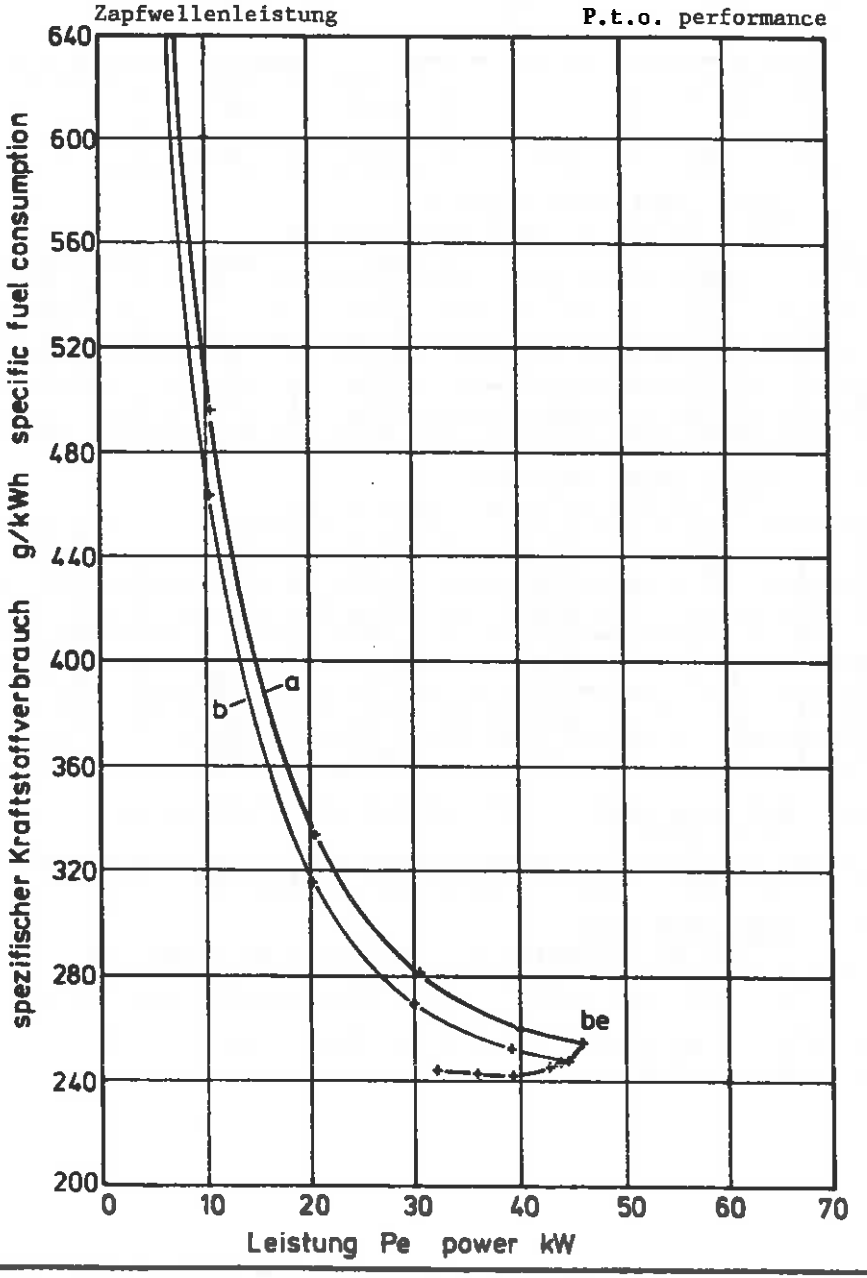
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(2) DRAWBAR PERFORMANCE

Date of tests: 30th November till 11th December 1984
Type of track: Concrete

Gear	Driving speed km/h	Power kW	Drawbar pull daN	Engine speed 1/min	Slip of wheels %
(i)	MAXIMUM POWER (unballasted) height of drawbar above ground 495 mm				
1 M	3,83	29,4	2764	2179	15,0
4 L	4,56	35,1	2771	2141	15,1
2 M	6,11	38,0	2238	2104	9,7
3 M	8,12	38,7	1717	2102	7,1
1 H	10,05	39,3	1406	2102	5,7
4 M	12,26	38,1	1118	2103	4,5
2 H	16,03	37,9	852	2104	3,3
(ii)	MAXIMUM POWER (ballasted) height of drawbar above ground 480 mm				
1 L	1,58	17,3	3943	2205	15,1
2 L	2,45	26,9	3947	2192	14,9
3 L	3,10	34,0	3954	2160	15,1
1 M	3,82	38,5	3625	2096	11,0
4 L	4,80	39,0	2928	2098	7,9
2 M	6,29	39,4	2256	2099	5,9
3 M	8,27	39,6	1723	2101	4,3
1 H	10,16	39,3	1394	2099	3,5
4 M	12,34	37,7	1099	2101	2,8
(iii)	FIVE -HOUR-TEST at 75 % of pull at maximum power in 2 M gear				
2 M	6,66	31,3	1692	2184	4,3
(iv)	FIVE -HOUR-TEST at pull corresponding to 15 % wheel slip in test (ii)				
3 L	3,11	34,2	3954	2160	-

Total oil consumption during ten hours duration of tests (iii) and (iv) 25 g/h

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Tyre size front: 11.2 - 24
rear: 16.9 R 30

Tread bar height at the beginning of drawbar tests:
95 % at front, 90 % at rear of the value, when new

Specific fuel consumpt. g/kWh	Specific energy kWh/l	Temperatures Fuel °C	Coolant °C	Engine-oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure mbar
tyre inflation pressure 0,8 bar at front and at rear							
337	2,50	36	84	100	14	70	1005
330	2,55	34	82	93	15	68	1005
309	2,72	36	83	103	14	71	1005
302	2,79	34	83	104	13	71	1005
300	2,80	34	83	103	12	72	1005
309	2,73	35	81	102	12	71	1005
308	2,73	33	82	104	12	73	1005
tyre inflation pressure 1,2 bar at front, 0,8 bar at rear							
410	2,05	30	74	101	8	81	1012
356	2,37	30	75	100	8	79	1012
329	2,56	28	72	98	8	84	1012
306	2,75	29	78	100	8	85	1012
302	2,79	30	78	102	8	84	1012
298	2,82	30	80	101	8	83	1012
298	2,83	31	81	103	8	85	1012
300	2,81	31	83	103	8	85	1012
313	2,69	29	84	104	8	90	1011
314	2,68	30	76	104	11	87	1005
-	-	29	77	103	11	93	1008

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

(3) TURNING SPACE AND TURNING CIRCLE (front wheel drive disengaged)

Wheel equipment front: 11.2 - 24
rear: 16.9 R 30

Track of wheels front: 1500 mm
rear: 1500 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	4,24	4,22	4,99	4,96
Radius of turning circle	4,05	4,02	4,80	4,76

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	814 mm
Distance forward from rear axle centre	917 mm
Distance from tractor's median plane, to the right	3 mm

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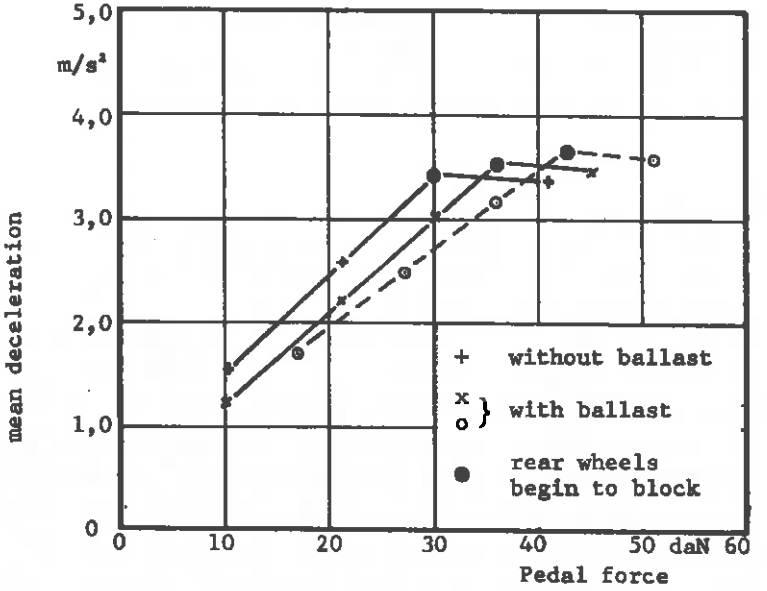
(5) Braking (front wheel drive disconnected)

Date of tests: 30th November 1984

Tractor masses during tests with driver:	front kg	rear kg	total kg
without ballast	1120	1550	2670
with ballast	1580	2425	4005

A) Service brake

Type-0-test (cold brakes) ——, Type-I-(fade)test – – –



Speed before application of brakes, without ballast 32,9 km/h
with ballast 32,4 km/h

The brakes were heated by towing of the tractor for 1 km
Comments on deviation and vibration: None

B) Parking brake

	Ballasted tractor on 18%-slope		Unballasted tractor on 12%-slope with trailer of 2670 kg	
	up	down	up	down
Braking device control force daN	17	17	16	17

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(6) MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of test: 19th December 1984
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2203

Results of test

Gear: 4 H *)
Travelling speed before acceleration: 24,7 km/h
Sound level: 87,0 dB(A)

(7) NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of tests: 28th November 1984
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2209

tractor fitted out with LANDINI safety frame model TS9

Results of tests

Gear	Drawbar pull at which the tractor develops the maximum sound level daN	Travelling speed nominal km/h	Travelling speed effective km/h	Sound level dB(A)
1 L	2729	1,75	1,63	95,5
2 L	2748	2,73	2,50	96,0
3 L	2764	3,52	3,20	96,5
1 M	2720	4,27	3,83	97,0
4 L	2731	5,18	4,59	98,0
2 M **)	2156	6,66	6,18	98,5
2 M **)	light load	6,66	7,31	94,0
3 M	1666	8,60	8,16	98,0
1 H	1377	10,51	10,05	97,5
4 M	1086	12,66	12,32	98,0
2 H	817	16,42	16,06	98,0
4 H *)	light load	31,19	32,89	97,0

*) front wheel drive disengaged
**) the 2 M gear corresponds to the nominal travelling speed nearest to 7,5 km/h

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(8) POWER LIFT TEST AND HYDRAULIC POWER TEST

Date of tests: 14th October 1984

Power Lift

	Height of lower hitch point above ground in down pos. mm	Vertical movement mm	Max. force exerted through full range daN	Corresp. pressure of hydraul. fluid bar	Moment about rear axle daNm	Max. tilt angle of mast over range of lift degrees
At hitch points	200	657	1440	156	-	-
On the frame	200	775	1420	156	2194	13

Temperature of hydraulic fluid at start of test 30 °C *)
Main linkage dimensions see on pages 10 and 11

Lifting heights relative to horizontal lower links

mm	-412	-400	-357	-300	-200	-100	0	+100	+200	+300	+363
Lifting forces at hitch points											
daN			1440	1600	1790	1910	1970	2060	2100	2200	
Lifting forces at test frame											
daN	1420	1440		1600	1670	1690	1690	1690	1670	1630	1620

Hydraulic power test

Sustained pressure with relief valve open 173 bar

Pump delivery rate at minimum pressure and maximum engine speed. 37,1 l/min

hydraulic power	kW	flow rate l/min	pressure bar	oil temperature °C
at 90% of the actual relief valve setting	8,63	33,2	156	32 *)
maximum	9,00	32,9	164	32 *)

tapping point used for test: at rear of tractor

*) oil temperature in suction line of hydraulic pump more than 60°C

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OPTIONAL TESTS

(9) ENGINE PERFORMANCE

Date of tests: 4th October 1984
Location of tests: DLG-Testing-Station Groß-Umstadt
Type of dynamometer: SCHENCK eddy-current dynamometer W 150

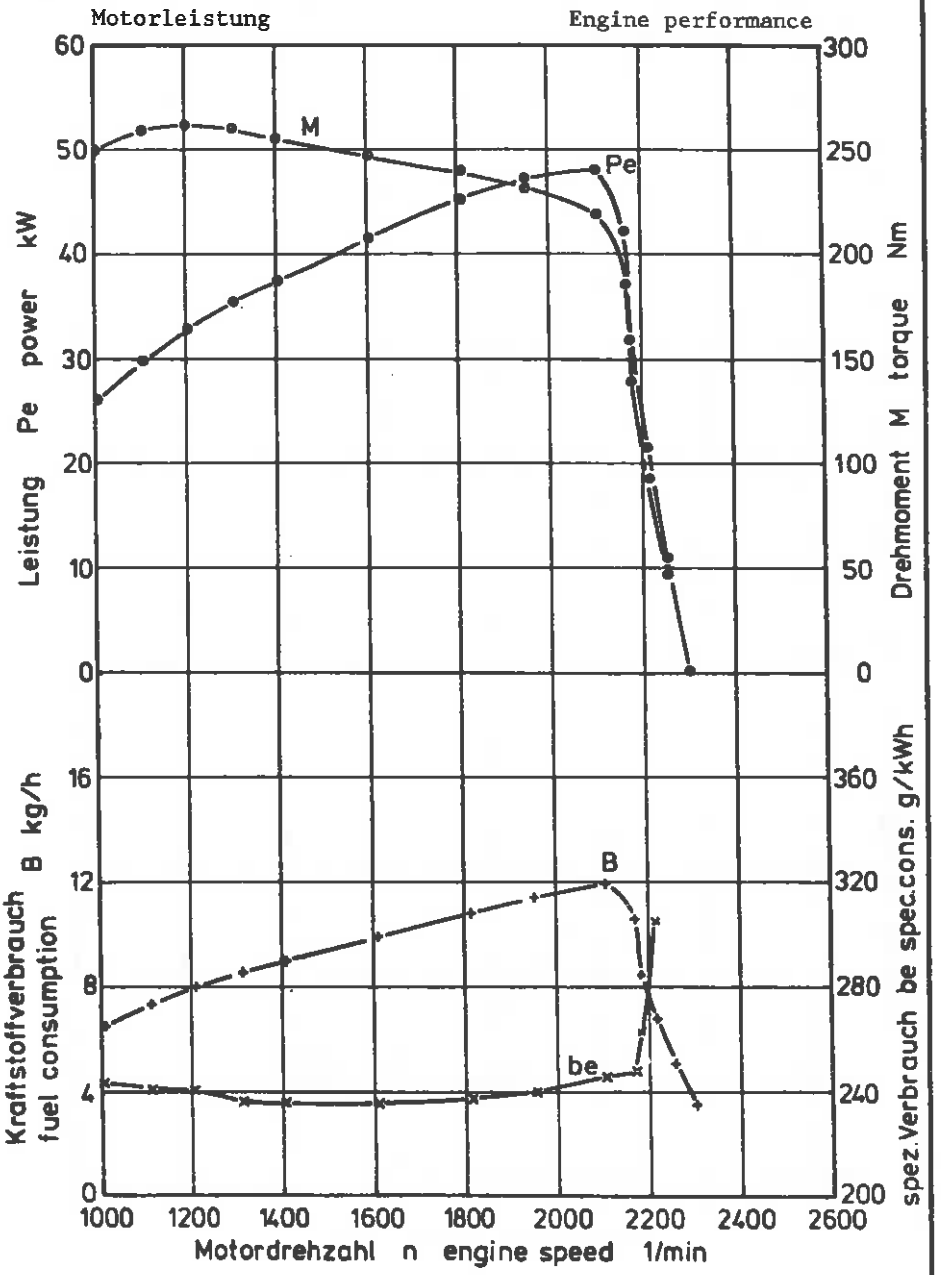
Power kW	Engine speed 1/min	Fuel consumption hourly 1/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power					
At 2-hour test					
48.5	2100	14.05	11.81	244	3.45
At rated engine speed					
48.5	2100	14.05	11.81	244	3.45
At standard p.t.o. speed (540 1/min)					
47.5	1944	13.41	11.28	237	3.54
Part loads					
(i) the torque corresponding to maximum power at rated speed					
48.5	2100	14.05	11.81	244	3.45
(ii) 85% of the torque obtained in (i)					
42.4	2163	12.40	10.43	246	3.42
(iii) 75% of the torque defined in (ii)					
32.0	2175	9.94	8.36	261	3.22
(iv) 50% of the torque defined in (ii)					
21.7	2209	7.82	6.58	304	2.77
(v) 25% of the torque defined in (ii)					
11.0	2248	5.81	4.88	442	1.90
(vi) unloaded					
-	2292	3.94	3.31	-	-

Optimum fuel consumption: 224 g/kWh at 28.4 kW and 1365 1/min
No load maximum engine speed: 2292 1/min
Torque at rated engine speed: 220 Nm
Maximum torque: 264 Nm at 1201 1/min of the engine

Mean atmospheric conditions:	temperature	20 °C
	pressure	984 mbar
	relative humidity	55 %
Maximum temperatures:	coolant	86 °C
	engine oil	105 °C
	fuel	20 °C
	engine air intake	20 °C

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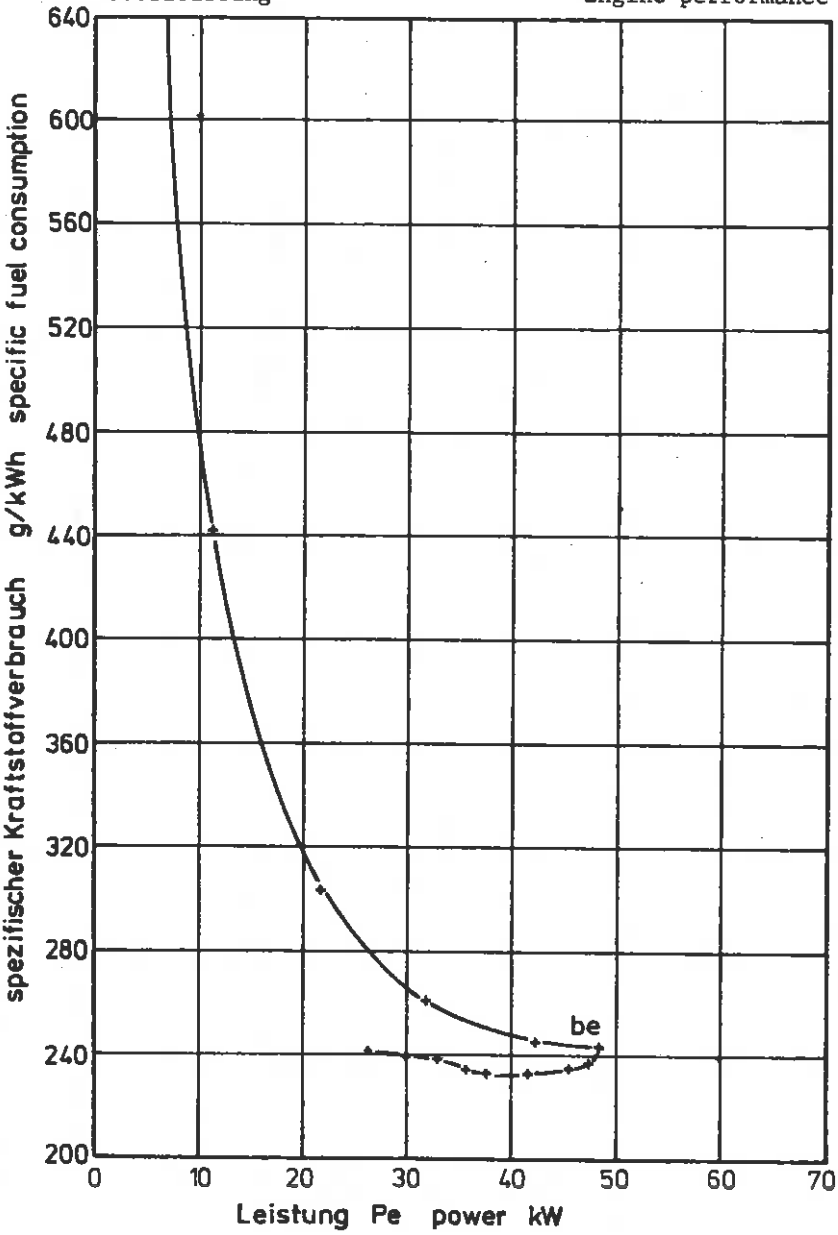
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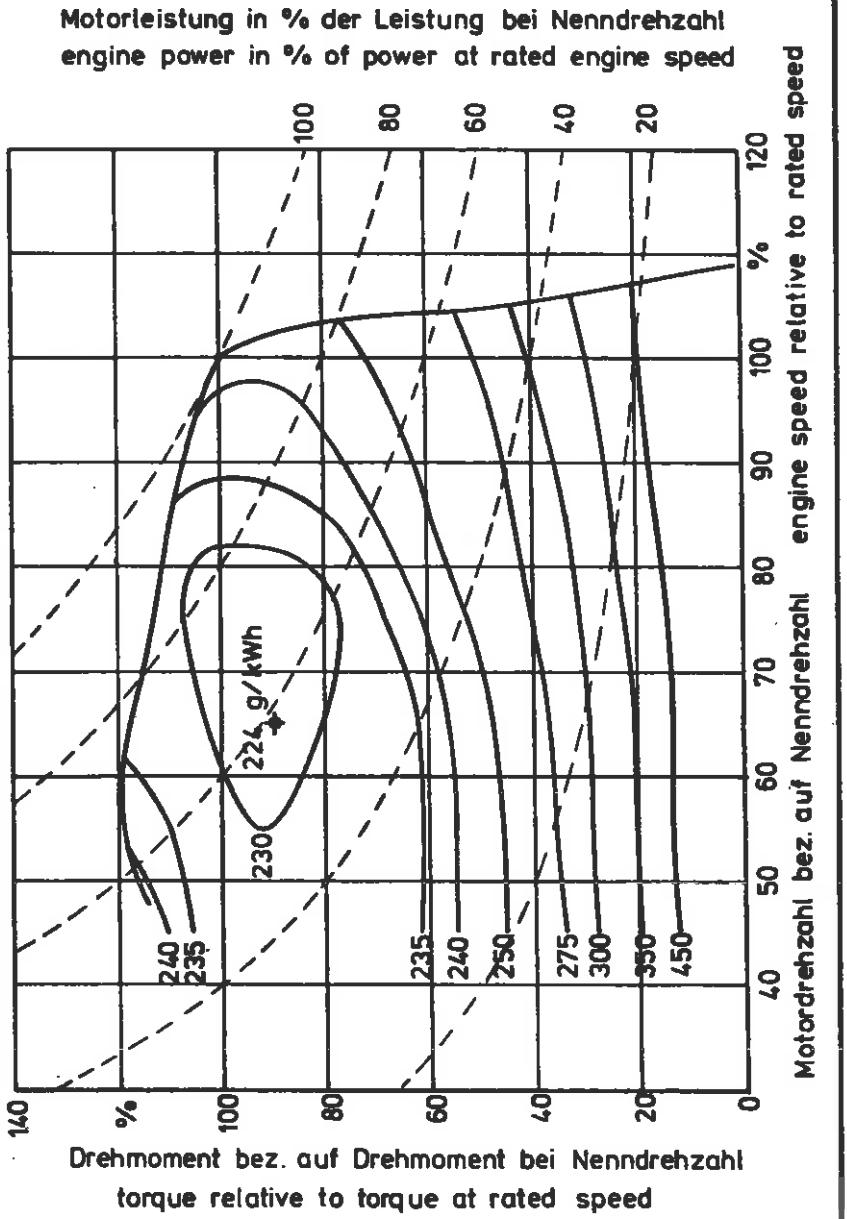
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Motorleistung — Engine performance



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