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

O.E.C.D. No. **1040**



Agricultural Tractor
JOHN DEERE 3350 FWD (4WD)

Manufacturer
John Deere Werke Mannheim
D-6800 Mannheim

Deutsche Landwirtschafts-Gesellschaft e. V.
Zimmerweg 16 · D-6000 Frankfurt a. M. 1
Telefon: (069) 7168-0 · Telex: 0413185 dlg-d

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: August till November 1986
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: 14th January 1987 O.E.C.D. No. 1040

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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*) All stated dimensions refer to tyre sizes 13.6 R 28 at front and 20.8/70 R 38 at rear, as well as to track widths 1800 mm at front and 1700 mm at rear

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. 50 hours, tractor appr. 30 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	JOHN DEERE
Trade and type denomination:	3350
Type:	Wheel tractor, unit construction, 4WD
Serial No.:	600034
Start of series:	600001

Engine

Make:	JOHN DEERE
Model:	6359 DL 009
Type:	Watercooled 4-stroke Diesel-engine with direct injection
Serial No.:	CD 6359 D 69 4408
Cylinders:	6, vertical in line, bore 106,5 mm, stroke 110 mm, displacement 5879 cm^3; compression ratio 16,8 : 1; wet cylinder liners, replaceable
Valves:	Overhead
Fuel system:	SOFABEX fuel supply pump; CAV-ROTO DIESEL distributor pump DPA R 3469 F 020, serial no. 38 463 2 LCF, with injection timing device; manufacturer's production setting 51±2 mm^3 per stroke at rated engine speed and full load; injection timing 13+8° before TDC; STANADYNE multihole injection nozzles 27333, injection pressure 210+5 bar; STANADYNE fuel filter with replaceable two-stage paper element; 1 fuel tank with 121 l capacity (standard equipment), 1 additional tank with 52 l capacity (optional)

Governor:	CAV-ROTO DIESEL centrifugal variable speed governor, governed range of engine speed 800 to 2490 1/min, rated engine speed 2300 1/min
Air cleaner:	PUROLATOR model PM 1605/1, dry paper element filter with precleaner; replaceable main and safety cartridges; maintenance indicator lamp; air intake below bonnet
Exhaust silencer:	EBERSPÄCHER, AL 37167, multi-chamber absorption-expansion type, 160 x 224 mm oval, 540 mm long, below bonnet; mouth showing upwards, 2990 mm above ground
Lubrication system:	Forced-feed lubrication with gear pump, PUROLATOR oil filter T 19044 in full flow, replaceable; oil capacity 11,5 l, specified oil quality MIL-L-2104 C resp. API-CD, specified oil viscosities: winter SAE 10W/20 summer SAE 15W/40 tropics SAE 20W/40 oil and filter change every 200 operating hours; engine oil cooling water heat exchanger between oil filter and filter socket
Cooling system:	Water cooling with impeller pump, overpressure relief valve set to 0,6 bar, cooling circuit with thermostat and by-pass; EATON-viscous drive fan, model 240, 6 blades, 558 mm dia, fan rotation speed governed by thermostat in the fan by cooling air flow behind radiator; water capacity 19 l
Starting system:	Electrical; BOSCH solenoid pre-engaged-drive starting motor 3,1 kW; BERU heating spiral in intake pipe; range gear shift lever in neutral position as safety device
Electrical equipment:	12 Volt, negative earth, BOSCH 3-phase alternator K1-14V 85A, 1190 W; 2 lead acid batteries, 88 Ah each at 20 hours rating

Transmission

Clutch:	LUK dry single-plate clutch, model 330, for travel drive only, 328 mm dia, hydraulically actuated by pedal, separate fluid tank
Gear box:	JOHN DEERE, model Power Synchron; synchromesh speed change gear with 4 speeds; collar shifted range gear with 2 forward ranges (I and II) and 1 reverse range (R); power-shifted planetary range gear (L and S), hydraulically shifted by speed change gear lever; totally 16 forward and 8 reverse speeds; 2 shift levers
Rear axle with final drives:	JOHN DEERE bevel gear, bevel gear differential with pedal operated lock, self-disengaging; planetary final drives
Front axle with final drives:	ZF, model APL-350; driven by universal joint shaft to central bevel gear drive; oil-immersed multi-disc clutch, electrically-hydraulically shiftable by switch; bevel gear drive; multi-disc limited-slip differential; planetary final drives
Lubrication:	Transmission, rear axle, rear final drives and hydraulic system have oil in common; transmission with pressure lubrication: internal-gear pump within gear box, oil filter; oil radiator in front of water radiator; filter change every 500 hours

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Transmission oils:

	Oil quality API MIL-L-	Oil viscosity SAE	Oil volume l	Change interval h
Transmission, rear axle, rear final drives, hydraulic system	JOHN DEERE specif. J 20 A	75	54	1000
Front axle, front final drives	GL-5 2105 B or 2105 C	90	7 1,5 each	

Total ratios and speeds

Range		Gear	Total ratio engine : driving wheel	Nominal travelling speed *) at rated engine speed km/h
I	L	1	370,77	1,92
		2	247,18	2,88
		3	160,43	4,43
		4	111,04	6,40
	S	1	291,32	2,44
		2	194,21	3,66
		3	126,05	5,64
		4	87,24	8,15
II	L	1	101,52	7,00
		2	67,68	10,51
		3	43,93	16,19
		4	30,40	23,39
	S	1	79,77	8,91
		2	53,18	13,37
		3	34,51	20,60
		4	23,89	29,76
R	L	1	233,60	3,04
		2	155,73	4,57
		3	101,08	7,03
		4	69,96	10,16
	S	1	183,54	3,87
		2	122,36	5,81
		3	79,42	8,95
		4	54,97	12,94

*) calculated with the radius index 820 mm

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Main p.t.o.

Independent,
driven by oil-immersed multi-plate clutch with 133 mm dia, hydraulically operated with lever by control valve;
1 p.t.o. shaft at rear of tractor 749 mm above ground, 25 mm to the left of tractor's median plane, interchangeable for 540 or 1000 1/min; direction of rotation clockwise, viewed facing tractor's rear;

540 1/min p.t.o.: 531 mm behind rear wheel centre line, 35 mm dia, 6 splines, DIN 9611/ISO 500 type 1

1000 1/min p.t.o.: 521 mm behind rear wheel centre line, 35 mm dia, 21 splines, DIN 9611/ISO 500 type 2

P.t.o. type	P.t.o. speed 1/min	Engine speed 1/min	Ratio engine : P.t.o.	Power restriction kW
540	540 600	2071 2300	3,8350	-
1000	1000 1059	2172 2300	2,1724	-

Switchable p.t.o. optionally available

Power lift

JOHN DEERE
hydraulic power lift in unit construction;
draft-and position-control, both steplessly mixable, floating position;
lowering throttle; lower link sensing

Hydraulic system:

Closed centre system;
F & S, model JOHN DEERE RP 2023 COE 0100, variable-capacity radial-piston pump, directly driven by engine, feeds power lift and steering system, max. delivery 52 l/min at rated engine speed;
the transmission oil pump (see page 6) offers hydraulic pressure for actuating of p.t.o. clutch, power-shift, front axle drive and feeds the radial-piston pump;
JOHN DEERE control valve,
relief valve pressure setting 197 + 3 bar;
single acting cylinder with 162 mm stroke and 96 mm bore;
safety valve set to 230 bar

2 single acting WEBER assister rams with 191 mm stroke and 45 mm bore; 1 double acting JOHN DEERE additional control valve with 2 couplings at tractor's rear, 1 return coupling at gear oil filter (optional); oil capacity available for external use: Up to 10 l when tractor moves, 25 l stationary; with increased oil volume may be taken off 16 l respectively 31 l

Hydraulic oil: In common with transmission, see page 7

Implement linkage: See pages 10 and 11

Pull attachments

Trailer hitch: ROCKINGER, model 248 P, automatical, with remote control;
hitch point
above ground 845 or 910 mm
behind rear wheel centre 666 or 661 mm
distance from p.t.o. shaft (1000)
horizontal 145 or 140 mm
vertical 96 or 161 mm
hitch pin diameter 30 mm
permissible vertical load 1800 kg

Swinging drawbar: Shiftable and turnable
height above ground 460 or 559 mm
pivot point before rear wheel centre line 51 mm
hitch point
behind rear wheel centre 763,804,893 or 934 mm
behind p.t.o. shaft 242,283,372 or 413 mm
below p.t.o. shaft 289 or 190 mm
swingable to both sides about max. 155 mm
hitch hole diameter 33 mm
max. permissible vertical load 1000 kg

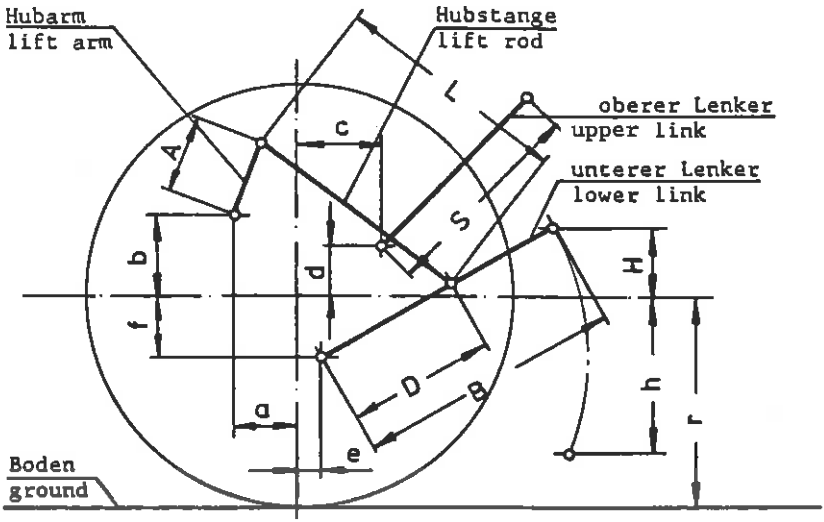
Holed drawbar: Short bar, thickness 25 mm, width 80 mm, length between joint balls 825 mm, 9 holes 33 mm dia with 80 mm distance each, holes centres behind p.t.o. (1000)
with horizontal lower links 667 mm
height above ground min. 98 mm
max. 1065 mm

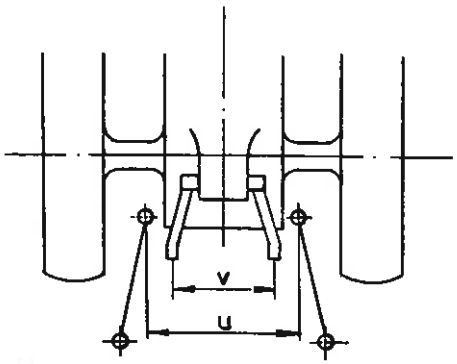
Towing hitch: At front, 840 mm above ground

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Implement linkage: Three point linkage with JOHN DEERE/WALTERSCHEID quick couplers, 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 measurements p. 27)

Rear tyres	radius index	(r)	820
Front tyres	radius index	(r')	610
Length of lift arms		(A)	315
Length of lower links		(B)	1073
Distance of lift arm pivot points from rear wheels' centre line	horiz.	(a)	7
	vertical	(b)	336
Horizontal distance between lower link pivot points		(u)	455
Horizontal distance between lift arm end points		(v)	494
Length of upper link		(S)	626 to 806, 712
Distance of upper link pivot point from rear wheels' centre line	horiz.	(c)	456, 461 or 466
	vertical	(d)	162, 227 or 292
Distance of lower link pivot point from rear wheels' centre line	horiz.	(e)	115
	vertical	(f)	251
Distance of lower link pivot points from lift rod pivot points on lower links		(D)	630
Length of lift rods		(L)	704 to 860, 820

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

Length of lift rods	(L)	820	704	860
Linkage distance of lift rods	(D)	630		
Lowest position	(h)	620	400	722
Highest position	(H)	85	245	8
Transport position	(H')	85	245	8

Type of transport lock: Lowering throttle and latching of control valve lever

Steering	JOHN DEERE and DANFOSS model OSPC 160, hydrostatic, connected by sequence valve and pressure-reducing valve to the hydraulic system of the tractor; max. pressure 150 bar; oil filter in return line, filter change every 1000 hours; 1 integrated ZP cylinder (symmetrical design) with 114 mm stroke, 80 mm bore and 40 mm piston rod diameter, directly acting on steering levers; steering column adjustable in length and inclination
Brakes	
Service brake:	JOHN DEERE pedal operated muscle power brake with hydraulic transmission, using oil from gear box; acting on both axles; oil-immersed disc brake with 1 ring-piston on each differential half shaft of rear axle, self readjusting, disc diameter 304 mm; 1 GIRLING caliper disc brake, at front axle drive shaft, disc 235 mm dia
Parking brake:	Mechanical wet V-band brake, acting on rear wheels, drum diameter 238 mm, width 20 mm, within gear box, operated by lever with ratchet
Steering brake:	Divided pedal of service brake, for normal use locked together
Trailer brake:	Optionally available: compressed-air brake or hydraulic brake system

Wheels

Steered wheels:	At front, 2 radial-ply tyres 13.6 R 28 123 A8, PIRELLI TM 200; max. permissible load per tyre 1659 kg at 1,6 bar inflation pressure and 30 km/h; track width 1800 mm, adjustable from 1600 to 2100 mm in steps of 100 mm each, adjustable gauge bowl wheels, rims W12x28
Driving wheels:	At front and at rear, 2 radial-ply tyres at rear 20.8/70 R 38, 150 A8, PIRELLI TM 700; max. permissible load per tyre 3585 kg at 1,6 bar inflation pressure and 30 km/h; track width 1700 mm, adjustable from 1700 to 2000 mm in steps of 100 mm each; adjustable gauge bowl wheels, rims W18Lx38
Wheel base:	2582 mm

Cab

JOHN DEERE
SG2 (ALY 46 089) tube thickness 4,5 mm
OECD-tested, approval-no. CSS 012/8
antivibration mounted by 4 silent blocks on tractor;
1 door at front left side and 3 steps;
steps 510, 790 and 1095 mm, driver's platform 1185 mm above ground;
opened door lockable, side and rear window tiltable (roof hatch optional);
combined heating-ventilation system with 3-stage blower and cooling water heat exchanger incorporated in roof;
air intake at both sides of the roof;
1 air filter;
8 air outlet jets in the cab roof;
tinted glass;
optionally available: hot water platform heating,
air conditioner

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Noise reduction materials:

floor	molded, napped rubber mat	40 mm
seat support, mudguards and rear wall	foam with vinyl coating	25 mm
instruments- and steering-support		
- outside	foam with vinyl coating	6 mm
- inside	foam with lead-vinyl intermediate layer	30 mm
bulk head		
- engine side	foam (polyether) with rubber coating, molded	25 mm
control box, right hand, inside		
- mudguard	foam	25 mm
- bottom	rubber, molded	3 mm
uprights	foam with vinyl coating	19 mm
roof, front part	foam on cardboard with perforated vinyl coating	25 mm
air filter cover	foam with perforated vinyl-coating	32 mm
all other parts of the roof	foam with perforated vinyl-coating on self-supporting web plate of plastics	15 mm

Seat

GRAMMER, model DS 85H/90A;
upholstered seat with adjustable back rest and arm rests, adjustable spring suspension, hydraulic shock absorber;
height of unloaded seat above platform adjustable in 2 steps from 520 to 580 mm;
longitudinal adjustment range 150 mm

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Overall dimensions

Total length:	4465 mm without ballast 4770 mm with ballast
Total width:	2240 mm with and without ballast
Total height:	2830 mm to cab roof 2990 mm to mouth of exhaust silencer
Ground clearance:	395 mm below stabilizers of lower links

Lighting equipment: Electrical, 12 Volt, as per German legislation

	Dimensions mm	Height above ground of centre mm	Distance from outside edge of tractor to centre mm
Head lights	130 Ø	1240	847
Side lights	70 x 20	1755	165
Rear lights	60 x 30	1695	215
Reflectors			
1st pair	145 x 35	1635	215
2nd pair	75 Ø	690	620

Running-time meter: Electronic, counts real operating hours if engine is running

Permissible combinations of tyres

Tyre size	
at front	at rear
9.5 - 28	9.5 - 44
9.5 - 32	9.5 - 48 11.2 - 48
9.5 - 36	11.2 - 48
11.2 - 28	14.9 - 38 16.9 - 38
12.4 - 28	16.9 - 38 18.4/70 - 38
13.6 - 24	16.9 - 34 18.4 - 34 20.8/70 - 34
13.6 - 28	18.4 - 34 20.8/70 - 38
14.9 - 24 *	16.9 - 38 18.4 - 38 20.8/70 - 38 23.1 - 30
14.9 - 26	20.8/70 - 38

TEST CONDITIONS

Track setting: 1800 mm at front
1700 mm at rear

Weights

		Without driver	With driver
Without ballast:	front	1775 kg	1780 kg
	rear	3170 kg	3245 kg
	total	4945 kg	5025 kg
Front ballast:	15 weights, total		790 kg
	water in the tyres		295 kg
Rear ballast:	4 weights per wheel, total		440 kg
	water in the tyres		950 kg
With ballast	front	2995 kg	3000 kg
	rear	4425 kg	4500 kg
	total	7420 kg	7500 kg

Technically permissible axle loads: at front 3000 kg
at rear 5200 kg

Technically permissible total weight: 7500 kg

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Fuels and lubricants used in tests

Fuel:	ARAL Diesel-fuel DIN 51601	
	density at 15°C	
	at engine tests	0,845 kg/l
	at p.t.o. tests	0,843 kg/l
	at drawbar tests	
	without ballast	0,845 kg/l
	with ballast	0,843 kg/l
Engine:	FUCHS TITAN-UNIVERSAL SAE 15W/40	
Transmission, rear axle and hydraulic system:	RENOGEAR HYDRO J 20 A	
Front axle:	FUCHS RENOGEAR HYPOID SAE 90	
Grease:	Multi-purpose grease	
Number of grease points:	24	
Operation of drive-clutch:	Brake-fluid DOT 4	

Repairs: None

Remarks: The tractor engine is fitted with a viscous-drive fan. The fan speed is depending on the ambient air temperature.

As the engine power is influenced by the fan speed, all power tests had been made at fairly exact the same ambient air temperatures

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John Deere 3350 Test No.86-154

Compulsory Tests

(1) MAIN POWER TAKE OFF PERFORMANCE (1000 r/min)

Date of tests: 10th September 1986
Location of tests: DLG-Testing Station Groß-Umstadt
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	speed engine r/min	speed p.t.o. r/min	fuel consumption hourly l/h	fuel consumption hourly kg/h	fuel consumption specific g/kWh	specific energy kWh/l
Maximum power						
At 2-hour test						
70,1	2300	1059	19,94	16,81	240	3,52
At rated speed						
70,1	2300	1059	19,94	16,81	240	3,52
At standard p.t.o. speed						
69,1	2172	1000	19,39	16,35	236	3,56
Part loads, the governor hand lever in the position corresponding to maximum power at full load (curve a)						
(i) the torque corresponding to maximum power at rated speed						
70,1	2300	1059	19,94	16,81	240	3,52
(ii) 85% of the torque obtained in (i)						
61,7	2383	1097	18,18	15,33	248	3,40
(iii) 75% of the torque defined in (ii)						
46,9	2412	1110	15,10	12,73	272	3,10
(iv) 50% of the torque defined in (ii)						
31,5	2429	1118	12,02	10,14	322	2,62
(v) 25% of the torque defined in (ii)						
15,8	2449	1127	8,96	7,56	477	1,77
(vi) unloaded						
-	2474	1139	6,49	5,47	-	-

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Power kW	speed engine r/min	speed p.t.o. r/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						
69,1	2172	1000	19,39	16,35	236	3,56
(ii) 85% of the torque obtained in (i)						
60,7	2244	1033	17,44	14,71	242	3,48
(iii) 75% of the torque defined in (ii)						
46,1	2271	1045	14,34	12,08	262	3,21
(iv) 50% of the torque defined in (ii)						
31,1	2297	1058	11,38	9,59	308	2,73
(v) 25% of the torque defined in (ii)						
15,7	2322	1069	8,37	7,06	449	1,88
(vi) unloaded						
-	2350	1082	5,90	4,98	-	-

Standard specific fuel consumption (g/kWh): 248/322/242/308

No load maximum engine speed: 2474 r/min
Equivalent flywheel torque at rated engine speed: 291 Nm
Maximum equivalent flywheel torque: 373 Nm at 1101 r/min of the engine

Mean atmospheric conditions

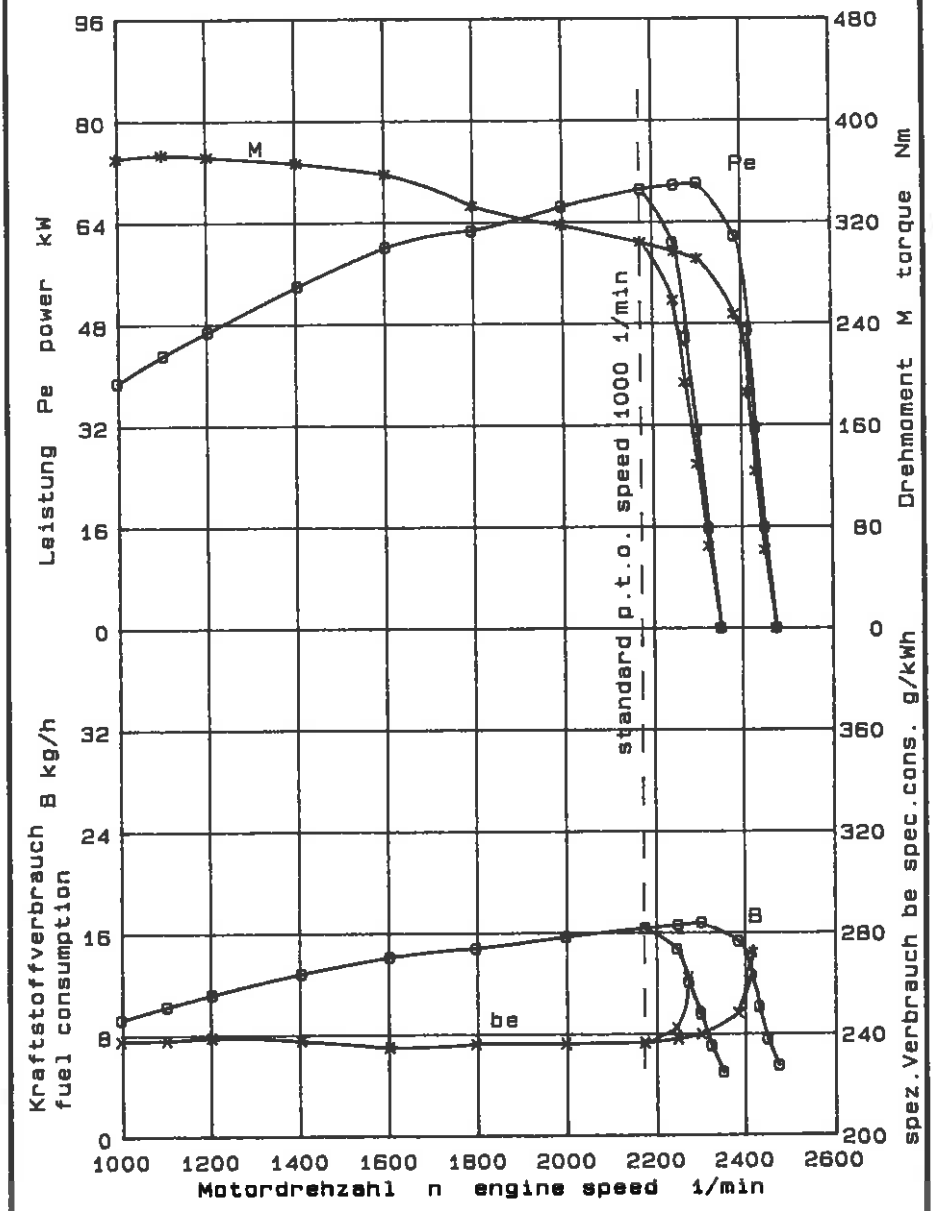
temperature	23 °C
pressure	998 mbar
rel. humidity	40 %

Maximum temperatures

coolant	91 °C
oil	114 °C
fuel	21 °C
air intake	25 °C

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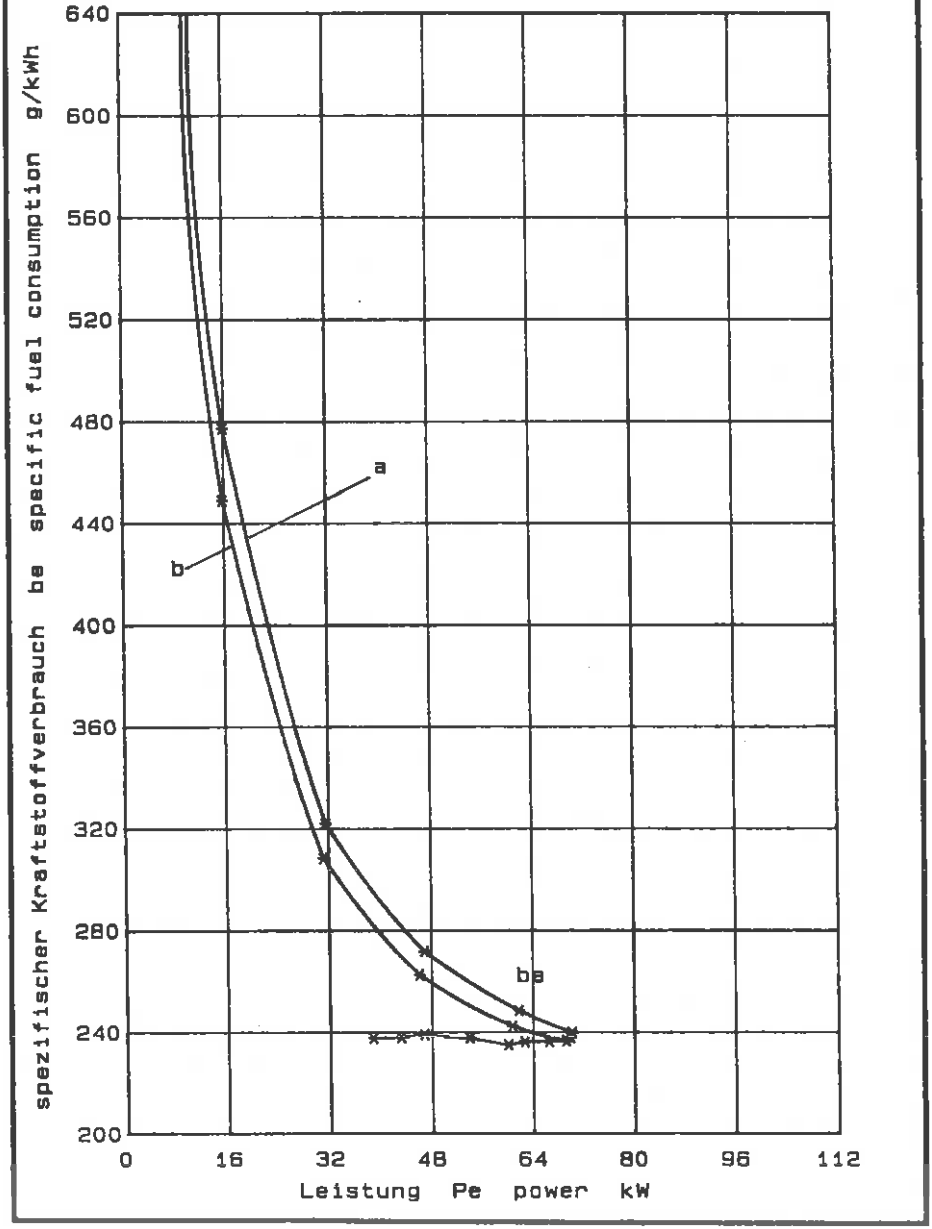
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Zapfwellenmessung

p.t.o. test



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(2) DRAWBAR PERFORMANCE

Date of tests: 6th till 14th October 1986
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 455 mm					
2 I L	2,59	37,2	5177	2394	14,9
2 I S	3,27	46,9	5159	2373	14,9
3 I L	3,88	54,7	5075	2304	13,9
3 I S	5,31	58,8	3987	2301	7,3
4 I L	6,10	59,6	3520	2302	5,9
1 II L	6,72	59,8	3206	2298	5,2
4 I S	7,89	59,7	2725	2299	4,3
1 II S	8,66	60,2	2501	2294	3,8
2 II L	10,30	59,2	2070	2299	3,0
2 II S	13,19	58,0	1583	2302	2,3
(ii) MAXIMUM POWER (ballasted) height of drawbar above ground 435 mm					
1 I L	1,73	35,2	7331	2403	14,9
1 I S	2,18	44,4	7338	2383	15,1
2 I L	2,52	51,6	7373	2336	15,0
2 I S	3,41	59,2	6253	2303	8,1
3 I L	4,24	59,4	5047	2301	5,5
3 I S	5,47	59,7	3926	2303	4,0
4 I L	6,24	59,3	3420	2301	3,4
1 II L	6,85	58,9	3093	2301	3,0
4 I S	8,00	58,2	2618	2298	2,5
1 II S	8,80	57,8	2365	2303	2,2
(iii) FIVE-HOUR-TEST at 75% of pull at maximum power in 1 II L gear					
1 II L	7,13	45,9	2320	2374	2,2
(iv) FIVE-HOUR-TEST at pull corresponding to 15% wheel slip in test (ii)					
2 I L	2,47	50,6	7373	2333	-

Total oil consumption during ten hours duration of tests (iii) and (iv) 50 g/h

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Tyre size front: 13.6 R 28
rear: 20.8/70 R 38

Tread bar height at the beginning of drawbar tests:
88% at front, 94% 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							
345	2,45	38	81	100	13	86	1009
322	2,63	39	81	100	13	91	1009
307	2,75	39	82	103	13	89	1009
286	2,95	38	81	100	13	82	1009
281	3,01	37	84	102	14	86	1010
282	3,00	37	84	103	14	82	1011
282	3,00	38	83	102	14	84	1010
279	3,03	38	84	102	14	82	1011
283	2,99	37	84	103	14	80	1011
287	2,94	37	84	105	15	80	1011
tyre inflation pressure 1,6 bar at front; 0,9 bar at rear							
358	2,36	36	80	100	14	94	1008
330	2,56	38	82	99	15	92	1008
320	2,64	36	82	101	15	98	1009
284	2,96	27	84	104	14	86	1007
282	2,99	29	82	106	14	87	1007
281	3,00	29	84	108	14	85	1007
285	2,96	29	82	102	14	92	1007
286	2,95	32	83	105	17	80	1007
289	2,92	30	83	104	18	82	1007
289	2,91	32	84	107	19	81	1007
304	2,78	35	84	110	19	79	1006
-	-	40	85	111	24	64	1005

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

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

Wheel equipment front: 13.6 R 28
rear: 20.8/70 R 38

Track of wheels front: 1800 mm
rear: 1700 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	4,45	4,41	5,23	5,17
Radius of turning circle	4,20	4,15	4,98	4,91

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	1008 mm
Distance forward from rear axle centre	916 mm
Distance from tractor's median plane, to the right	2 mm

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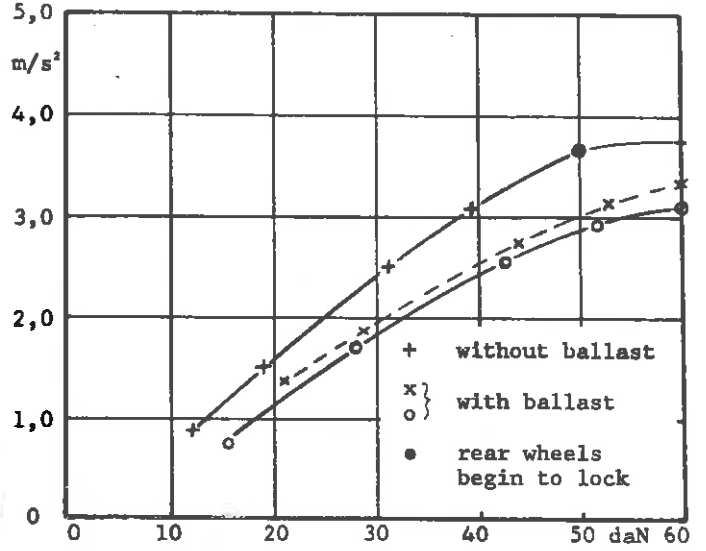
(5) BRAKING (Front wheel drive disengaged)

Date of tests: 19th and 29th September 1986

	Tractor mass (with driver) front kg	rear kg	total kg	Speed before application of brakes km/h
Without ballast	1780	3245	5025	31,5
With ballast	3000	4500	7500	31,2

A) Service brake

Type-O-test(cold brakes) ——— , Type-I-(fade)test — — —



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

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

B) Parking brake

	Ballasted tractor on 18%-slope up	down	Unballasted tractor on 12%-slope with trailer of 3000 kg up	down
Braking device control force daN	10	14	8	12

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(6) MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of test: 17th October 1986
Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2209

Results of test

Gear: 4 II S *)
Travelling speed before acceleration: 23,6 km/h
Sound level: 89,0 dB(A)

(7) NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of tests: 21st October 1986
Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2209

Tractor fitted with JOHN DEERE safety cab SG2 (ALY 46089) tube thickness 4,5 mm

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 I L	5015	1,92	1,75	76,5
1 I S	5003	2,44	2,20	76,5
2 I L	5001	2,88	2,53	76,5
2 I S	5000	3,66	3,31	77,0
3 I L	5008	4,43	3,96	77,5
3 I S	3957	5,64	5,31	77,0
4 I L	3522	6,40	6,07	77,0
1 II L **)	3206	7,00	6,72	77,5
1 II L **)	light load	7,00	7,54	75,0
4 I S	2705	8,15	7,91	77,5
1 II S	2494	8,91	8,66	77,5
2 II L	2074	10,51	10,28	77,0
2 II S	1573	13,37	13,17	77,0
3 II L	1263	16,19	16,02	77,5
4 II S *)	light load	29,76	31,50	76,0

*) Front wheel drive disengaged

**) The 1 II L gear corresponds to the nominal speed nearest to 7,5 km/h

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(8) LIFTING FORCES AND HYDRAULIC POWER

Date of tests: 21st and 22nd October 1986

Lifting Forces (Linkage dimensions: see page 10 and 11)

	Height of lower hitch points 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	669	3780	173	-	-
On the frame	200	770	3210	173	5773	10,5

Temperature of hydraulic fluid at start of test 65°C

Lifting heights relative to horizontal lower links

mm	-400	-369	-300	-200	-100	0	+100	+200	+300	+370
Lifting forces at hitch points										
daN		3780	4040	4250	4340	4420	4450	4470	4550	
Lifting forces at test frame										
daN	3900		3990	3950	3900	3730	3640	3510	3340	3210

Hydraulic Power

Sustained pressure with relief valve open 197 bar
Pump delivery rate at minimum pressure 52,3 l/min

	Hydraulic power kW	Flow rate l/min	Pressure bar	Oil temperature °C
at 90% of the actual relief valve setting	10,8	36,7	177	65
maximum	13,7	47,4	173	65

Tapping point used for test: At rear of tractor,
Return: At gear oil filter housing
(supply into pressure line of transmission oil pump)

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OPTIONAL TEST

(9) ENGINE PERFORMANCE

Date of tests: 1st September 1986
Location of tests: DLG-Testing-Station Groß-Umstadt
Type of dynamometer: SCHENCK eddy-current-dynamometer WM 400

Power kW	Engine speed r/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power					
At 2-hour test					
76,6	2300	20,14	17,02	222	3,80
At rated engine speed					
76,6	2300	20,14	17,02	222	3,80
At standard p.t.o. speed (1000 r/min)					
75,3	2172	19,72	16,67	221	3,82
Part loads					
(i) the torque corresponding to maximum power at rated speed					
76,6	2300	20,14	17,02	222	3,80
(ii) 85% of the torque obtained in (i)					
67,5	2385	18,28	15,44	229	3,70
(iii) 75% of the torque obtained in (ii)					
51,2	2410	14,85	12,55	245	3,45
(iv) 50% of the torque obtained in (ii)					
34,4	2432	11,56	9,76	283	2,98
(v) 25% of the torque obtained in (ii)					
17,4	2460	8,32	7,03	404	2,09
(vi) unloaded					
-	2488	5,25	4,44	-	-

Optimum fuel consumption: 213 g/kWh at 40 kW and 1265 r/min
No load maximum engine speed: 2487 r/min
Torque at rated engine speed: 318 Nm
Maximum torque: 396 Nm at 1199 r/min of the engine

Mean atmospheric conditions

temperature	23 °C
pressure	1004 mbar
relative humidity	45 %

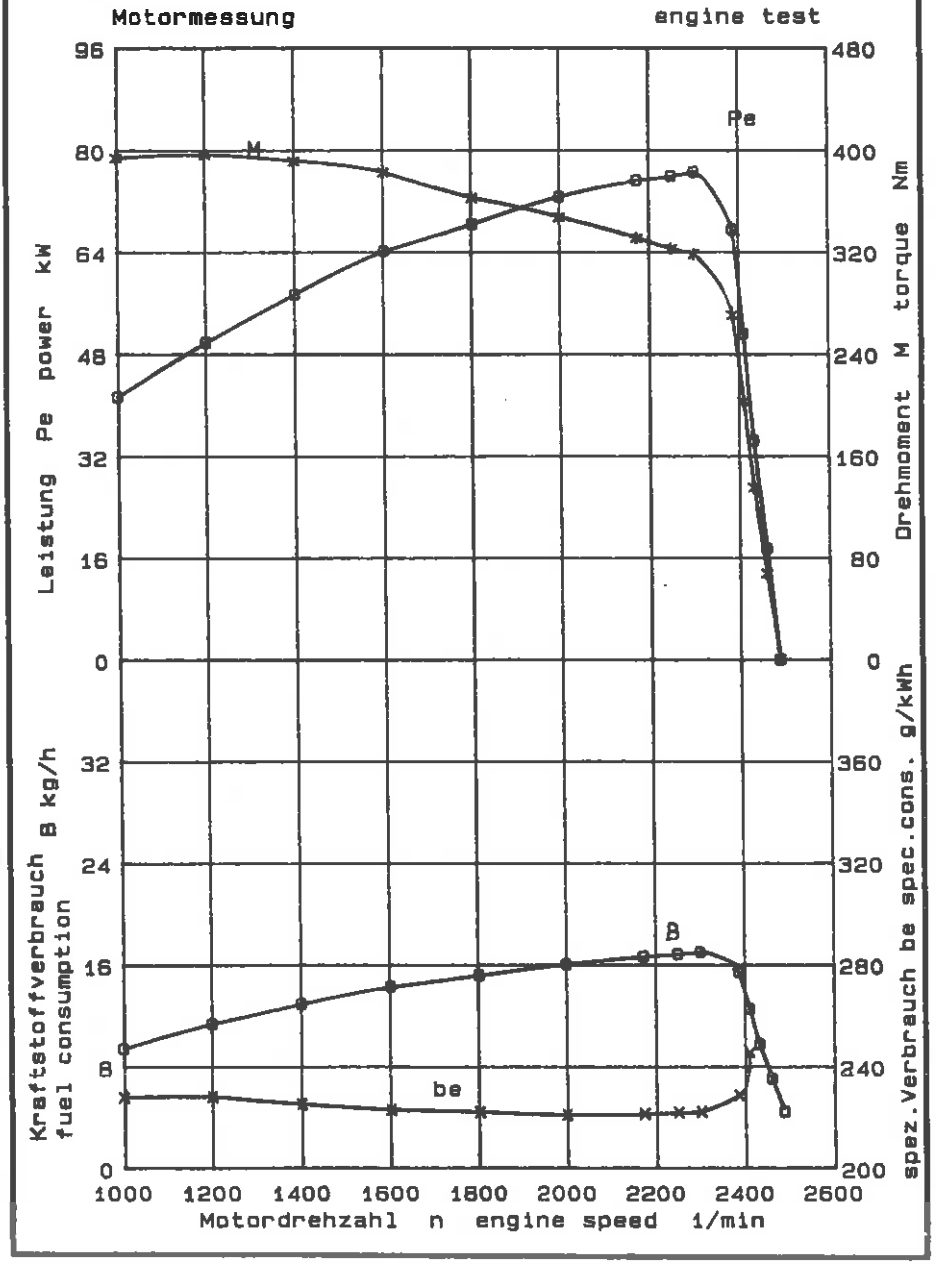
Maximum temperatures

coolant	84 °C
oil	108 °C
fuel	25 °C
engine air intake	25 °C

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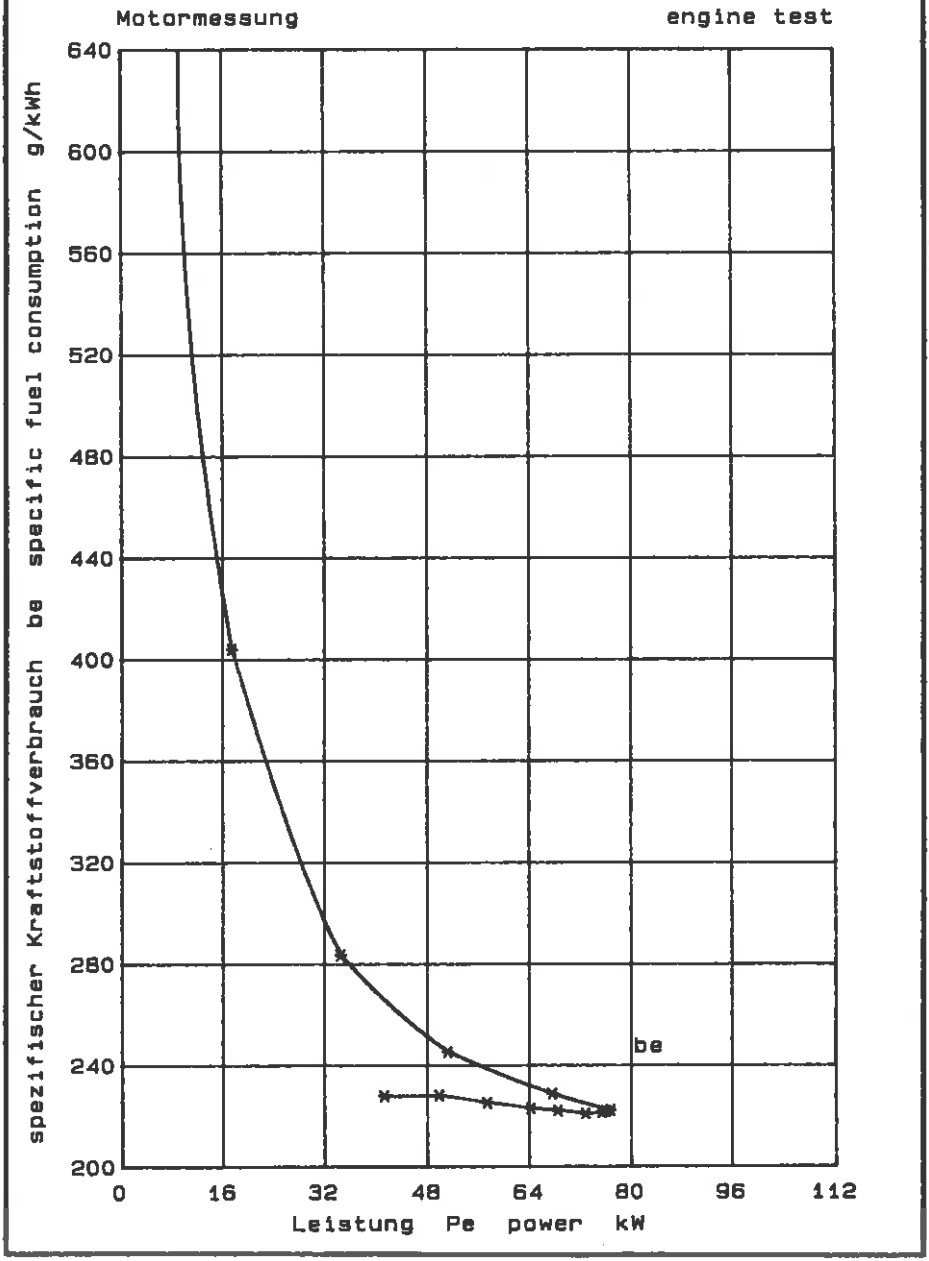
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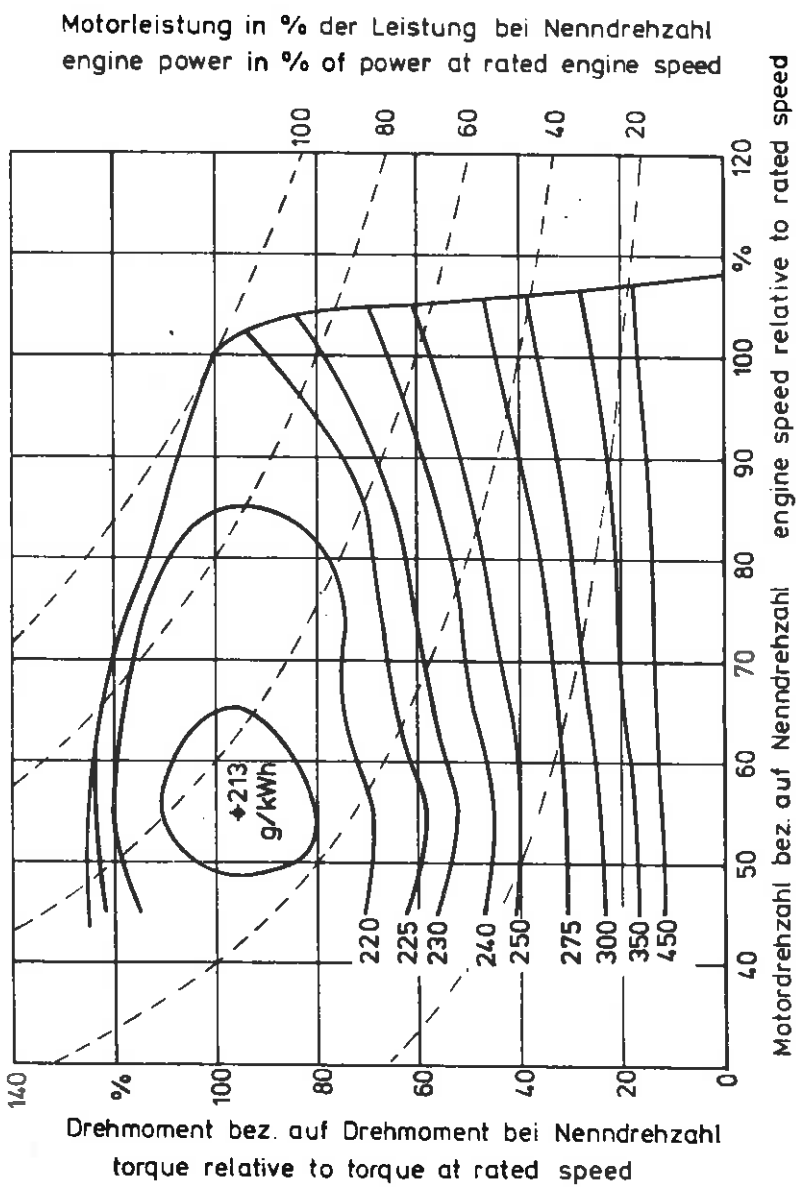
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D-6000 Frankfurt am Main 1