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

O.E.C.D. No. 985



Agricultural Tractor
FENDT FAVORIT 615 LSA
TURBOMATIK E

Type denomination FWA 385 (4WD)

Manufacturer
X. Fendt & Co., Maschinen- und Schlepperfabrik
D-8952 Marktoberdorf

Deutsche Landwirtschafts-Gesellschaft e. V.
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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: May till November 1985
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 1986 O.E.C.D. No. 985

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
FENDT FAVORIT 615 LSA

Test No. 85-88

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*) All stated dimensions refer to tyre sizes 16.9 R 30 at front and 20.8 R 38 at rear, as well as to track widths 1840 mm at front and 1850 mm at rear

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FENDT FAVORIT 615 LSA Test No. 85-88

Tractor manufacturer:	X. Fendt & Co. D-8952 Marktoberdorf
Submitted for test by:	Manufacturer with agreement by DLG
Place of running-in:	Marktoberdorf and Groß-Umstadt
Duration of running-in:	Engine and tractor appr. 170 h

SPECIFICATION OF TRACTOR

Tractor

Make:	FENDT
Trade name:	FAVORIT 615 LSA TURBOMATIK E
Model denomination:	FWA 385
Type:	Wheel tractor, unit construction, 4 wheel driven
Serial No.:	385/21/0028
Start of series:	385/21/0001

Engine

Make:	MWM
Model:	TD 226B-6;
Type:	Watercooled 4-stroke Diesel-engine with direct injection, supercharged
Serial No.:	TD 226.6.B 75 02 10
Cylinders:	6, vertical in line, bore 105 mm, stroke 120 mm, displacement 6234 cm^3; compression ratio 15,5$\pm$0,5 : 1; wet cylinder liners, replaceable
Valves:	Overhead
Fuel system:	BOSCH fuel supply pump; BOSCH in-line injection pump PES 6A 90 D 320/3 RS 2660 serial no. 44674066, manufacturer's production setting 83$\pm$1 mm^3/stroke at rated engine speed and full load; injection timing 23°$\pm$1° before TDC; BOSCH multihole injection nozzles DLLA 151 S 972, injection pressure 220$\pm$5 bar; BOSCH fuel filter 0450 133011 with replaceable cartridge, fuel tank with 220 l capacity, additional tank with 84 l capacity optional

Governor: BOSCH centrifugal variable speed governor with manifold-pressure compensator
RSV 325/1200 AOC 2182-1R;
governed range of engine speed 650 to 2600 1/min, rated engine speed 2400 1/min

Supercharger: KÜHNLE, KOPP UND KAUSCH
K27-3060013.21
exhaust driven turbo supercharger,
maximum supercharger pressure 1,24 bar

Air cleaner: MANN UND HUMMEL
dry paper element filter with precleaner, replaceable cartridge, maintenance indicator lamp; air intake above bonnet

Exhaust silencer: EBERSPÄCHER
multi chamber reflexion-absorption type, 181 mm dia, 410 mm long, on the left, beside the bonnet; mouth showing upwards, 2744 mm above ground

Lubrication system: Forced-feed lubrication with gear pump,
MANN oil filter in full flow with by-pass valve, replaceable;
oil capacity 17 l,
specified oil quality MIL-L-2104 C resp. API-CD;
oil change and filter change yearly resp. after every 250 operating hours
recommended oil viscosities:

for all conditions		SAE 15W/40 or SAE 15W/30 or
below	-10°C	SAE 10W
from	-10°C to +10°C	SAE 20W/20
up to	30°C	SAE 30
over	30°C	SAE 40

oil cooler installed in front of water cooler

Cooling system: Water cooling with centrifugal pump, governed by thermostat;
overpressure relief valve set to 0,3 bar,
BEHR viscous drive fan 63.508.05.600,
6 blades with 515 mm dia;
fan rotation speed governed by thermostat within cooling air flow behind radiator;
cooling water capacity 25 l

Starting system:	Electrical BOSCH solenoid pre-engaged-drive starting motor 2,7 kW; BERU flame plug in intake pipe; electrically controlled excess fuel for starting; safety device: p.t.o. control lever to 0-position, pedal of clutch depressed to stop
Electrical equipment:	12 Volt, negative earth; BOSCH 3 phase alternator K1-14V 55A20 770W, 1 lead acid battery, 143 Ah at 20 hours rating

Transmission

Torque converter:	FICHTEL & SACHS hydrodynamic torque converter W 370 with bridging clutch and kick-down-switching, maximum amplification of torque about factor 2
Clutch:	FICHTEL & SACHS dry single-plate clutch GMFZ 360 for travel drive, self adjusting, disc 360 mm dia; hydraulically actuated by pedal; clutch and service brake have fluid tank in common
Gear box:	ZAHNRADFABRIK PASSAU, T 3550; speed change gear with 6 speeds, 1st and 2nd speed collar shifted, 3rd to 6th speed synchronized; synchromesh range gear with 2 forward ranges (L and S) and 1 reverse range (R), the 6th speed is locked when using the reverse range; gear shifted creeper group for 1st to 4th speed; on request gear shifted super creeper group for 1st to 4th speed (not installed); creeper and super creeper group shall not be used for heavy drawbar work; tested variant had altogether 20 forward speeds, 9 reverse speeds and 3 gear shift levers

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Rear axle and final drives: ZAHNRADFABRIK PASSAU
bevel gear, bevel gear differential with under load shiftable differential lock, by rotary switch pneumatically engageable and disengageable;
planetary final drives

Front axle and final drives: FENDT
004 FSD;
driven by universally jointed propeller shaft situated laterally on the left;
wet multi-plate clutch, under load pneumatically engageable and disengageable by rotary switch;
bevel gear, multi-plate self locking differential, planetary final drives

Lubrication: Gear box: combined oil-sump and forced-feed lubrication; oil in common with torque converter and hydraulic system; oil cooler installed in front of water cooler; oil filter incorporated in gear box, filter change after every 2 years resp. every 1000 operating hours

	oil quality MIL-L-	oil viscosity SAE	oil capacity l	oil change interval operating hours
gear box torque converter hydraulic system	2104 C	20W/20	55	1000 resp. every 2 years
final drives at rear	2105 B	85W/90 or	8,5 each	
front axle differential		80W/90 or	8,5	
final drives at front		90	1,1 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
Creeper group	L slow	1	516,16	1,50
		2	327,57	2,36
		3	209,64	3,69
		4	137,73	5,62
	S fast	1	405,56	1,91
		2	257,37	3,01
		3	164,72	4,70
		4	108,21	7,15
	R reverse	1	318,08	2,43
		2	201,86	3,83
		3	129,19	5,99
		4	84,87	9,11
Normal group	L slow	1	261,07	2,96
		2	165,68	4,67
		3	106,03	7,30
		4	69,66	11,11
		5	44,83	17,25
		6	25,82	29,96
	S fast	1	205,13	3,77
		2	130,18	5,94
		3	83,31	9,29
		4	54,73	14,13
		5	35,23	21,96
		6	20,29	38,13
	R reverse	1	160,88	4,81
		2	120,10	7,58
		3	65,34	11,84
		4	42,93	18,02
		5	27,63	28,00

*) calculated with the radius index 855 mm

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Power take off

Main p.t.o.: Independent;
driven by dry multi-plate clutch,
plates 140 mm dia, pneumatically operated by hand lever;
1 p.t.o. shaft at rear of tractor in tractor's median plane, 720 mm above ground, distance to rear axle centre line 373 mm;
35 mm dia, 6 splines, ISO 500/DIN 9611 type 1,
sense of rotation clockwise (viewed to tractor's rear);

2 speeds are shiftable by hand lever (engagement indicator lamp, digital speed display)

p.t.o.	p.t.o. speed 1/min	engine speed 1/min	transmission ratio engine : p.t.o.
540 *)	540	2118	3,923
	612	2400	
750 *)	540	1764	3,267
	735	2400	
1000	1000	2250	2,250
	1067	2400	

*) p.t.o. 540 on request (not fitted)
p.t.o. 750 standard equipment

power transmission limited to 55 kW if use p.t.o. 540 or 750

Secondary p.t.o.: Optionally available front p.t.o. 1000 1/min (not fitted)

Power lift

FENDT/BOSCH
electronic-hydraulic power lift
FENDT-TRONIC,
draft and position control, both infinitely mixable, floating position, continuous stroke limiter, lowering throttle
lower link sensing

Hydraulic system: Open centre system, 2 oil circuits;
BOSCH tandem gear pump HY/ZFFS 11/19+11 L 244 driven by gear box (independent of clutch);
oil tank in common with gear box

hydraulic oil circuit 1:
pump with 46 l/min delivery at rated engine speed, supplies power lift control valve and up to 3 additional control valves
(2 additional valves fitted)

hydraulic circuit 2:
pump with 26 l/min delivery at rated engine speed, supplies up to 2 additional control valves (no additional valves fitted);
automatic flow valve steers delivery of circuit 2 into circuit 1 (if there is high hydraulic power consumption), then max. oil flow in circuit 1 : 46+26 = 72 l/min

BOSCH control valve,
relief valve pressure setting 180+10 bar;
2 double acting rams with 250 mm stroke, bore 90 mm dia, piston rod 36 mm dia,
safety valve set to 210 bar;
remote control of power lift at tractor's rear at right and left hand mudguards

1 single and 1 double acting additional BOSCH control valve, single-lever operation;
3 oil couplings and 1 separate return pipe at rear of tractor and in tractor's middle (right hand side);

up to 20 l oil may be taken off by tappings if tractor is working stationary, up to 5 l if tractor is travelling; with increased oil volume may be taken off 30 l resp. 15 l

Hydraulic oil: See on page 7 - lubrication -

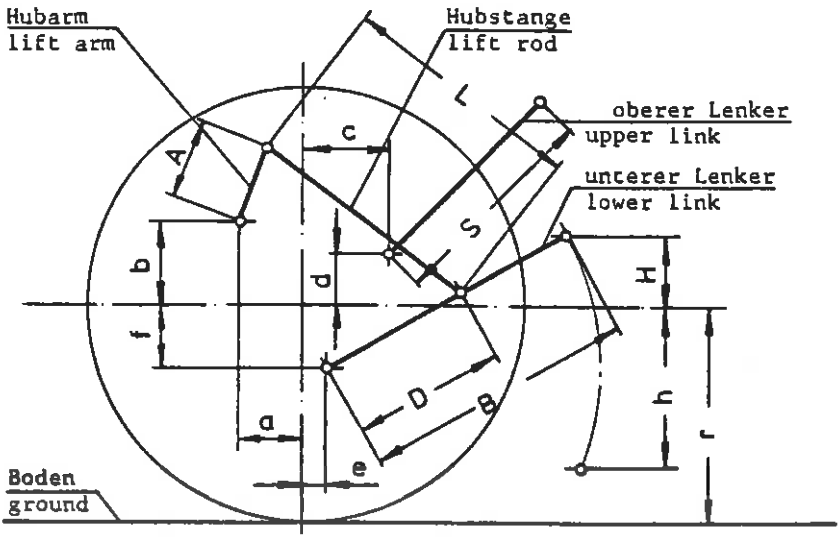
Implement linkage: Three point linkage with WALTERSCHEID quick couplers, category 2 or 3 according to ISO 730/I resp. DIN 9674,
dimensions see on pages 12 and 13;
lower link hitch points in the height above ground steplessly hydraulically lockable,
lower link side stabilization by quick clamping devices with middle centering

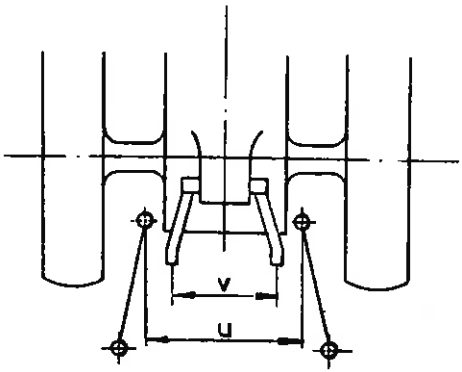
Pull attachment

Trailer hitch:	ROCKINGER, 248 U 150 B, automatical;	
	hitch point	
	above ground	880, 935 or 980 mm
	behind rear axle centre line	623 mm
	above p.t.o. shaft end	160, 215 or 260 mm
	behind p.t.o. shaft end	250 mm
	permissible vertical load	1800 kg
	diameter of coupling pin	30 mm
Swinging drawbar:	Reversible and shiftable;	
	height above ground	460 or 550 mm
	hitch point	
	behind rear axle centre line	743, 788 or 873 mm
	behind p.t.o. shaft end	370, 415 or 500 mm
	below p.t.o. shaft end	170 or 260 mm
	to both sides swingable about max.	275 mm each
	holes' diameter	33 mm
	pivot point behind rear axle centre line	308 mm
Holed drawbar:	Long bar, total length 1700 mm; length between joint balls 825 mm, thickness 25 mm, width 100 mm; 9 holes between joint balls with 80 mm distance each, outside of joint balls 4 holes on either side with 80 mm distance each, total 17 holes; all holes 33 mm dia;	
	height above ground minimum	158 mm
	maximum	1118 mm
	holes' centre line behind p.t.o. shaft end (lower links in horizontal position)	1193 mm
Towing hitch:	860 mm above ground	

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Dimensions of rear implement linkage (projected lengths in mm, underlined dimensions are valid for power lift measurements p. 29)

Rear tyres (20.8 - 38)	radius index	(r)	855
Front tyres (16.9 - 30)	radius index	(r')	695
Length of lift arms		(A)	350
Length of lower links		(B)	968
Distance of lift arm pivot points from rear axle centre	horizontal	(a)	-120
	vertical	(b)	308
Horizontal distance between lower link pivot points		(u)	490
Horizontal distance between lift arm end points		(v)	720
Length of upper link		(S)	675 to 915, <u>762</u>
Distance of upper link pivot point from rear axle centre	horizontal	(c)	380
	vertical	(d)	136 or 178
Distance of lower link pivot point from rear axle centre	horizontal	(e)	175
	vertical	(f)	282
Distance of lower link pivot points from lift rod pivot points on lower links		(D)	614
Length of lift rods		(L)	644 to 780, <u>733</u>

Height of lower link hitch points relative to rear axle centre line (situated 855 mm above ground), these data are valid for unloaded power lift:

Length of lift rods	(L)	<u>733</u>	644	780
Linkage distance of lift rods	(D)	614	614	614
Lowest position	(h)	655	500	750
Highest position	(H)	95	210	23
Highest Transport position	(H')	95	210	23

Steering

FENDT/ZF
8493 hydrostatic steering with own oil circuit, working pressure 130 bar;
steering wheel in the height adjustable;
BOSCH gear pump, delivery 19 cm³/revolution, on the left beside engine, directly driven by engine;
oil volume 4,5 l, engine oil SAE 20W/20, MIL-L-2104 C;
replaceable oil filter, filter change in common with oil change every 2 years resp. after every 100 h operating hours;
1 cylinder, stroke 245 mm, bore 75 mm dia, piston rod 45 mm dia, directly acting on steering levers

Brakes

Service brake: FENDT/GIRLING/KNOTT,
pedal operated muscle power brake with hydraulic transmission;
2 brake drums with 270 mm dia on differential half shafts of rear axle (internal-expanding-shoe brake, self readjusting);
1 caliper disc brake, disc 274 mm dia, on cardan shaft of front axle drive;
service brake and travel drive clutch have fluid tank in common

Parking brake: Lever operated muscle power brake with mechanical transmission, locking ratchet;
2 brake drums with 250 mm dia on differential half shafts of rear axle;
brake indicator lamp

Steering brake: Divided pedal of service brake, for normal use locked together;
during use of steering brake front wheel brake is automatically put out of action

Trailer brake: Combined single-dual line compressed air brake;
WESTINGHOUSE air compressor, 160 cm³/revolution;
air tank with 15 l capacity, air pressure 16 bar

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Wheels

Steering wheels:	At front, 2 pneumatics 16.9 R 30 137 A8 TM 300 S PIRELLI, radial-ply tyres; maximum permissible load per tyre 2300 kg at 1,6 bar and 40 km/h; track width 1840 mm, adjustable to 1960 mm by reversing the wheels; rims DW 14x30
Driving wheels:	At front and at rear, rear wheels: 2 pneumatics 20.8 R 38 8 ply CONTINENTAL, radial-ply tyres; maximum permissible load per tyre 3090 kg at 1,3 bar and 40 km/h; track width 1850 mm, adjustable to 1994 mm by reversing the wheels; rims W 18 L x 38
Wheel base:	2690 mm

Cab

FENDT, model 281.50;
OECD-tested, approval no. CSS 009/1;
antivibration mounted by 4 silent blocks on tractor;
1 door and 3 steps each on the left and right, steps 545, 810 and 1065 mm, driver's platform 1315 mm above ground;
doors lockable in ventilation position, front-, rear- and side-windows as well as roof hatch tiltable;
combined heating-ventilation system with 2-stage blower, heating connected to cooling water circuit, air intake below cab floor, dry filter;
air outlet jets at instrument panel, (for cab floor and head area), 2 defroster nozzles;
additional ventilation system with 3-stage blower, incorporated in the roof, 6 air outlet jets for head room, air intake above windscreen, dry filter;
air conditioner on request available;
tinted glass

Noise reduction materials:

floor	napped PUR-mat with soft foam	30 mm
roof	phenolic resin bonded cotton fleece with Ft-covering fabric, molded	6 mm
	polyether-foam	30 mm
	bitumen card-board	2 mm
roof hatch	phenolic resin bonded cotton fleece with Ft-covering fabric, molded	6 mm
mudguards	PU-foam coated with imitation leather	15 mm
seat support	napped PUR-mat	20 mm
front wall	sound muffling mat	6 mm
	foam with imitation leather	20 mm
instrument and steering support	foam with imitation leather	10 mm
cab floor (bottom side)	foam with foil	40 mm

Seat: ISRINGHAUSEN, model 6500/516
upholstered seat with back rest and arm rests, pneumatic suspension with shock absorber, additional horizontal suspension, lockable; height of front and rear end of seat above platform adjustable in 6 steps each from 475 to 535 mm, longitudinal adjustment 150 mm; seat rotating to the left and right about 25° each

Number of grease points: 23

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Overall dimensions

Total length:	4715 mm	without ballast
	4733 mm	with ballast
Total width:	2400 mm	with and without ballast
Total height:	2875 mm	to top of cab roof
	2744 mm	to mouth of exhaust silencer
Ground clearance:	510 mm	below swinging drawbar's mounting pad

Lighting equipment: Electrical, 12 Volt, in accordance with German legislation

	Dimensions mm	Height above ground mm	Distance from outside edge of tractor to centre mm
Head lights *)	135 x 120	1045	960
Side lights	70 x 20	1823	421
Rear lights	40 x 60	1635	321
Reflectors			
1st pair	115 x 25	1578	321
2nd pair	80 dia	578	765

*) halogen bulbs standard equipment

Running-time meter: Electronic, counts real operating hours if alternator is working

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Available tyres

Tyre size	
at front	at rear
16.9 R 30 8 ply	20.8 R 38 8 ply
16.9 R 28 8 ply	18.4 R 38 8 ply
16.9 - 26 10 ply	11.2 - 48 8 ply
9.5 R 36 10 ply	9.5 - 48 8 ply
14.9 R 28 8 ply	
18.4/70 R 28 6 ply	

tyre combinations according to operating instructions

TEST CONDITIONS

Track setting: 1840 mm at front
1850 mm at rear

Weights

		Without driver	With driver
Without ballast:	front	2900 kg	2915 kg
	rear	3710 kg	3780 kg
	total	6610 kg	6695 kg
Front ballast:	13 weights, total		555 kg
	water in the tyres		595 kg
Rear ballast:	1 weight per wheel, total		128 kg
	water in the tyres		527 kg
With ballast:	front	3985 kg	4000 kg
	rear	4430 kg	4500 kg
	total	8415 kg	8500 kg

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Fuels and lubricants used in tests

Fuel:	ARAL Diesel-fuel DIN 51601	
	density at 15°C	
	at engine test	0,841 kg/l
	at p.t.o. test	0,844 kg/l
	at drawbar test	0,836 kg/l
Engine oil:	MOBIL DELVAC 1320 SAE 20W/20 in engine, gearbox with torque converter, hydraulic system, steering	
Gear oil:	MOBIL MOBILUBE HD 85W-90-A SAE 85W/90 in final drives at front and at rear, front axle differential	
Grease:	Multi-purpose grease	
Repairs	None	
Remarks	Tractor engine is fitted with viscous-drive fan. Fan speed is depending on ambient air temperature. As engine power is influenced by fan speed, all power tests had been made at fairly exact the same ambient air temperatures	

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COMPULSORY TESTS

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

Date of tests: 7th June 1985
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						
121.7	2400	1067	35.60	30.05	247	3.42
At rated engine speed						
121.7	2400	1067	35.60	30.05	247	3.42
At standard p.t.o. speed						
119.9	2250	1000	33.85	28.57	238	3.54
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						
121.7	2400	1067	35.60	30.05	247	3.42
(ii) 85% of the torque obtained in (i)						
105.6	2451	1089	31.74	26.79	254	3.33
(iii) 75% of the torque defined in (ii)						
80.1	2478	1101	25.70	21.69	271	3.12
(iv) 50% of the torque defined in (ii)						
53.9	2503	1113	20.01	16.89	313	2.69
(v) 25% of the torque defined in (ii)						
27.4	2538	1128	14.43	12.18	445	1.90
(vi) unloaded						
-	2592	1152	9.35	7.89	-	-

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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
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						
119.9	2250	1000	33.85	28.57	238	3.54
(ii) 85% of the torque obtained in (i)						
103.2	2278	1013	29.66	25.03	243	3.48
(iii) 75% of the torque defined in (ii)						
78.2	2301	1023	23.86	20.13	258	3.28
(iv) 50% of the torque defined in (ii)						
52.7	2328	1035	18.28	15.42	292	2.89
(v) 25% of the torque defined in (ii)						
26.7	2365	1051	12.71	10.72	401	2.10
(vi) unloaded						
-	2411	1071	7.69	6.49	-	-

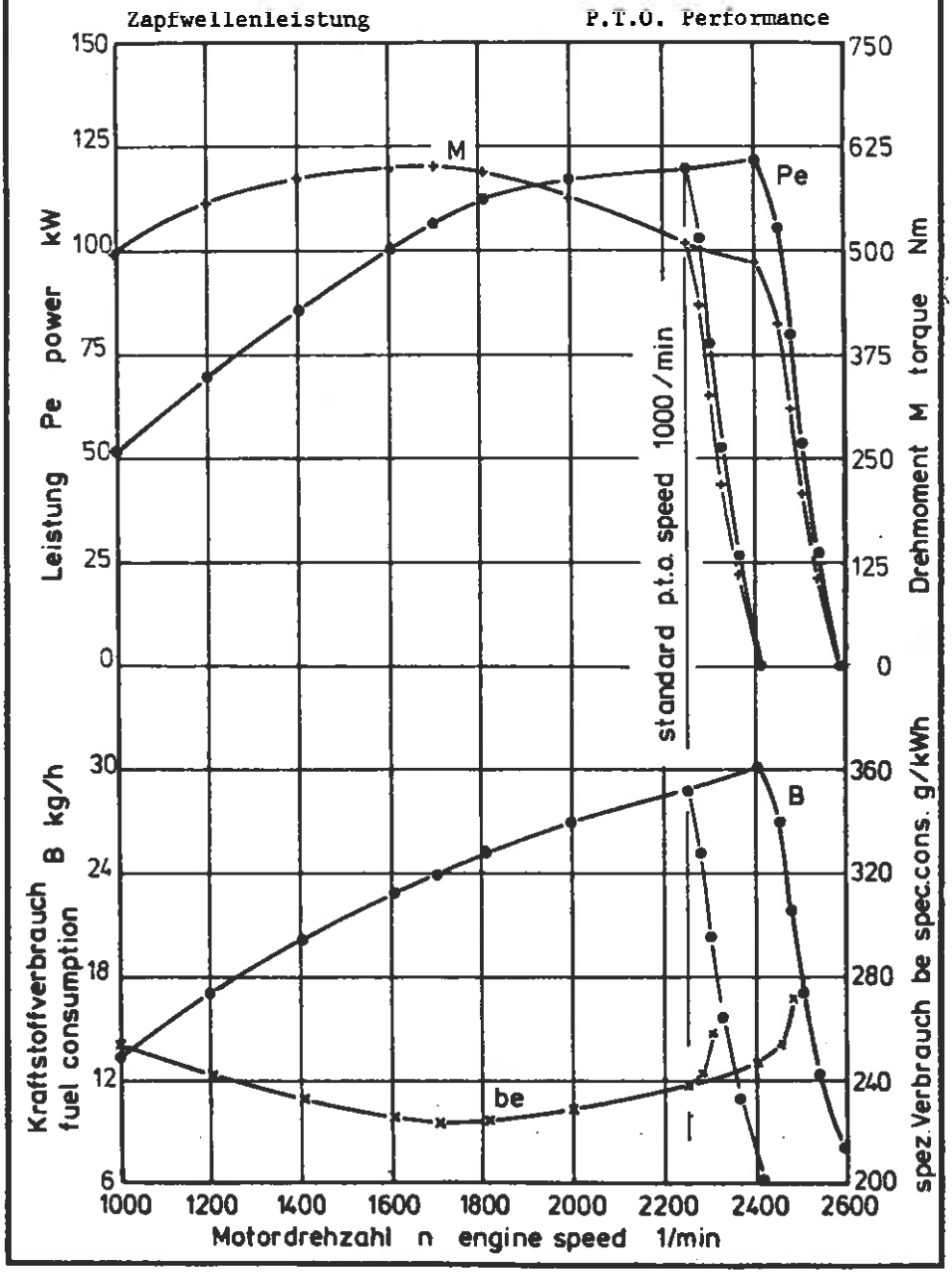
Standard specific fuel consumption (g/kWh): 254/313/243/292

No load maximum engine speed: 2592 1/min
Equivalent flywheel torque at maximum power (2 hours): 484 Nm
Maximum equivalent flywheel torque: 599 Nm at 1701 1/min of the engine

Mean atmospheric conditions:	temperature	20 °C
	pressure	990 mbar
	relative humidity	70 %
Maximum temperatures:	coolant	92 °C
	engine oil	106 °C
	fuel	24 °C
	engine air intake	26 °C

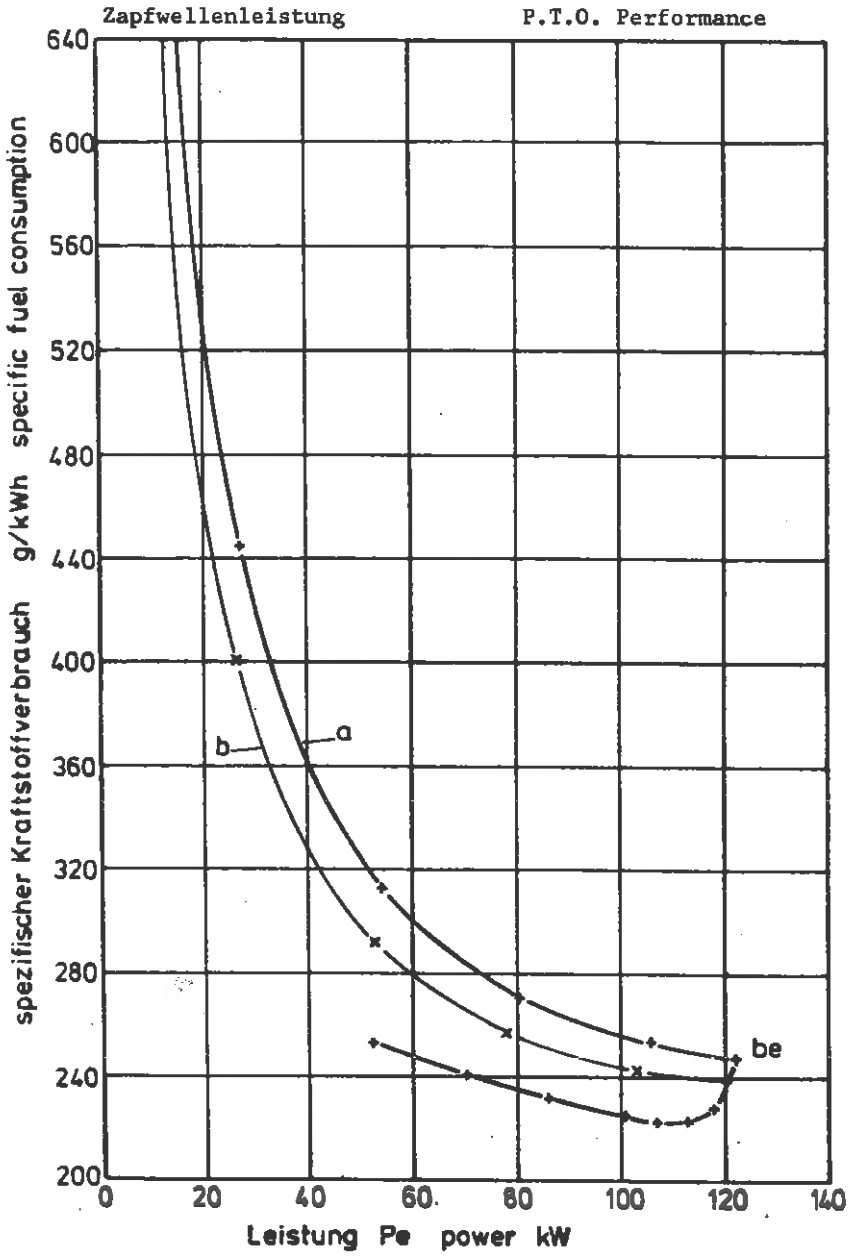
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(2) DRAWBAR PERFORMANCE

Date of tests: 2nd till 12th August 1985
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 470 mm					
1 S	3,43	65,7	6896	2470	15,0
2 L	4,21	80,7	6900	2446	15,0
2 S	5,37	98,7	6619	2401	13,1
3 L	6,92	102,3	5321	2402	8,9
3 S	9,04	103,2	4108	2400	6,2
4 L	10,94	103,6	3408	2403	4,9
4 S	14,12	101,7	2594	2402	3,6
(ii) MAXIMUM POWER (ballasted) height of drawbar above ground 460 mm					
1 L	2,72	63,0	8335	2477	15,1
1 S	3,43	79,4	8333	2462	15,1
2 L	4,20	97,0	8312	2436	15,0
2 S	5,67	102,3	6496	2400	8,4
3 L	7,12	104,1	5265	2402	6,2
3 S	9,20	103,0	4031	2400	4,5
4 L	11,13	102,7	3321	2401	3,6
(iii) FIVE-HOUR-TEST at 75% of pull at maximum power in 3 L gear					
3 L	7,44	81,6	3949	2462	4,4
(iv) FIVE-HOUR-TEST at pull corresponding to 15% wheel slip in test (ii)					
2 L	4,04	93,5	8335	2412	-

Total oil consumption during ten hours duration of tests (iii) and (iv) 137 g/h

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Tyre size front: 16.9 R 30 137 A8
rear: 20.8 R 38 8 ply

Tread bar height at the beginning of drawbar tests:
90% at front, 93% at rear of the value when new

Specific fuel consumpt. g/kWh	Specific energy kWh/l	Temperature Fuel °C	Coolant °C	Engine-oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure mbar
tyre inflation pressure 0,9 bar at front; 1,0 at rear							
356	2,35	32	86	89	19	80	1001
337	2,48	32	89	94	18	80	1001
304	2,76	31	88	93	20	83	1001
291	2,87	33	89	95	19	81	1001
290	2,88	34	89	94	19	80	1001
289	2,89	33	87	92	20	75	1002
292	2,86	35	89	94	20	69	1002
tyre inflation pressure 1,5 bar at front; 1,0 bar at rear							
344	2,43	34	89	94	20	74	998
328	2,55	35	87	91	20	76	998
310	2,70	30	89	95	20	84	1000
291	2,87	37	89	95	21	79	1000
288	2,91	38	89	95	22	74	1000
289	2,89	35	89	95	22	77	1000
291	2,87	34	89	96	22	75	1000
303	2,76	47	89	98	32	66	1002
-	-	44	90	102	26	75	1003

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: 16.9 R 30
rear: 20.8 R 38

Track of wheels front: 1840 mm
rear: 1850 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	5,48	5,42	6,66	6,59
Radius of turning circle	5,10	5,06	6,28	6,23

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	1058 mm
Distance forward from rear axle centre	1173 mm
Distance from tractor's median plane, to the left	5 mm

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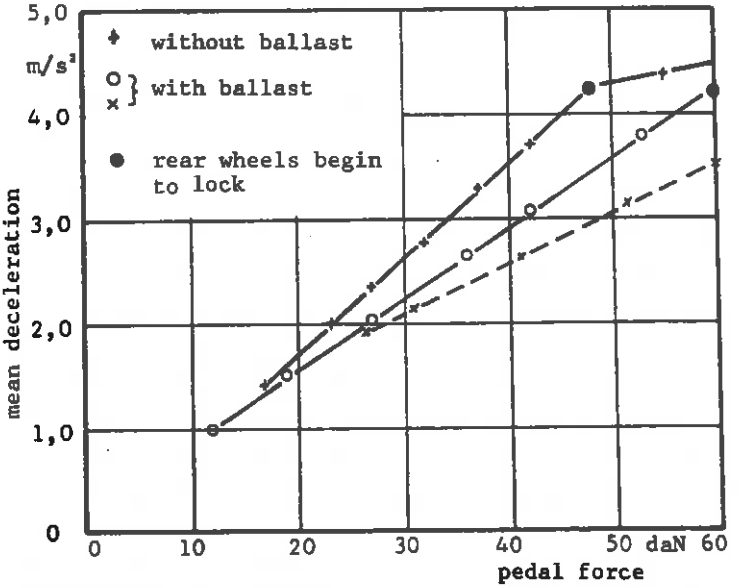
(5) Braking (front wheel drive disengaged)

Date of tests: 7th and 8th August 1985

	Tractor mass (with driver) front kg	rear kg	total kg	Speed before application of brakes km/h
Without ballast	2915	3780	6695	41,0
With ballast	4000	4500	8500	40,5

A) Service brake

Type-0-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	19	22	18	21

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(6) MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of test: 16th August 1985
Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2209

Results of test

Gear: 6 S *)
Travelling speed before acceleration: 30,8 km/h
Sound level: 87,0 dB(A)

(7) NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of tests: 16th August 1985
Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2209

tractor fitted out with FENDT safety cab model 281.500

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	6561	2,96	2,55	82,5
1 S	6550	3,77	3,29	83,0
2 L	6480	4,67	4,11	83,0
2 S	6538	5,94	5,10	83,0
3 L **)	5222	7,30	6,93	84,0
3 L **)	light load	7,30	8,13	80,0
3 S	4032	9,29	9,06	84,0
4 L	3307	11,11	11,00	84,5
4 S	2536	14,13	14,13	84,5
5 L	2035	17,25	17,38	84,5
6 S *)	light load	38,13	41,18	82,0

*) front wheel drive disengaged
**) the 3 L gear corresponds to the nominal travelling speed nearest to 7,5 km/h

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(8) LIFTING FORCES AND HYDRAULIC POWER

Date of tests: 18th July and 14th November 1985

Lifting Forces (Linkage dimensions: see page 12 and 13)

	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	700	4100	165	-	-
On the frame	200	815	4010	165	7030	12

Temperature of hydraulic fluid at start of test 65 °C

Lifting heights relative to horizontal lower links

mm	-408	-400	-373	-300	-200	-100	0	+100	+200	+300	+327	+400	+407
Lifting forces at hitch points													
daN			4100	4270	4540	4890	5280	5630	5980	6240	6330		
Lifting forces at test frame													
daN	4010	4010		4050	4180	4400	4530	4660	4790	4790		4750	4710

Hydraulic Power

Sustained pressure with relief valve open 190 bar
Pump delivery rate at minimum pressure 76,6 l/min

	Hydraulic power kW	Flow rate l/min	Pressure bar	Oil temperature °C
at 90% of the actual relief valve setting	17,6	61,6	171	65
maximum	19,3	70,1	165	65

Tapping point used for test: at rear of tractor (single acting)

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OPTIONAL TESTS

(9) ENGINE PERFORMANCE

Date of tests: 21st May 1985
Location of tests: DLG-Testing-Station Groß-Umstadt
Type of dynamometer: SCHENCK eddy-current dynamometer W 400

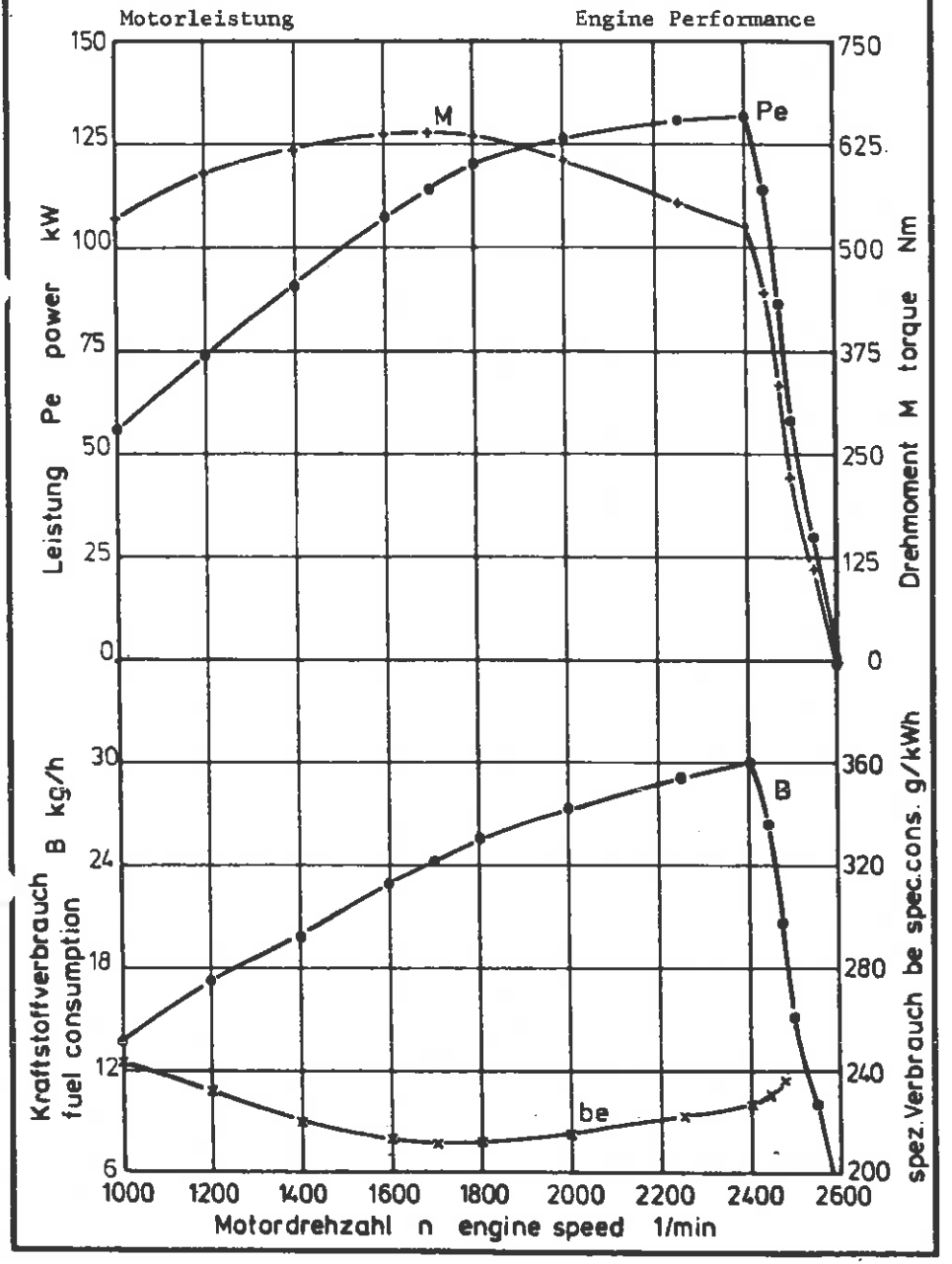
Power kW	Engine speed 1/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power					
At 2-hour test					
132.7	2400	35.68	30.01	226	3.72
At rated engine speed					
132.7	2400	35.68	30.01	226	3.72
At standard p.t.o. speed (1000 1/min)					
131.5	2250	34.58	29.08	221	3.80
Part loads					
(i) the torque corresponding to maximum power at rated speed					
132.7	2400	35.68	30.01	226	3.72
(ii) 85% of the torque obtained in (i)					
114.6	2439	31.34	26.35	230	3.66
(iii) 75% of the torque defined in (ii)					
87.1	2471	24.49	20.59	236	3.56
(iv) 50% of the torque defined in (ii)					
58.6	2496	17.97	15.11	258	3.26
(v) 25% of the torque defined in (ii)					
29.9	2546	11.85	9.97	333	2.52
(vi) unloaded					
-	2599	6.02	5.07	-	-

Optimum fuel consumption: 210 g/kWh at 104.4 kW and 1800 1/min
No load maximum engine speed: 2599 1/min
Torque at rated engine speed: 528 Nm
Maximum torque: 643 Nm at 1702 1/min of the engine

Mean atmospheric conditions:	temperature	22 °C
	pressure	985 mbar
	relative humidity	65 %
Maximum temperatures:	coolant	90 °C
	engine oil	107 °C
	fuel	24 °C
	engine air intake	24 °C

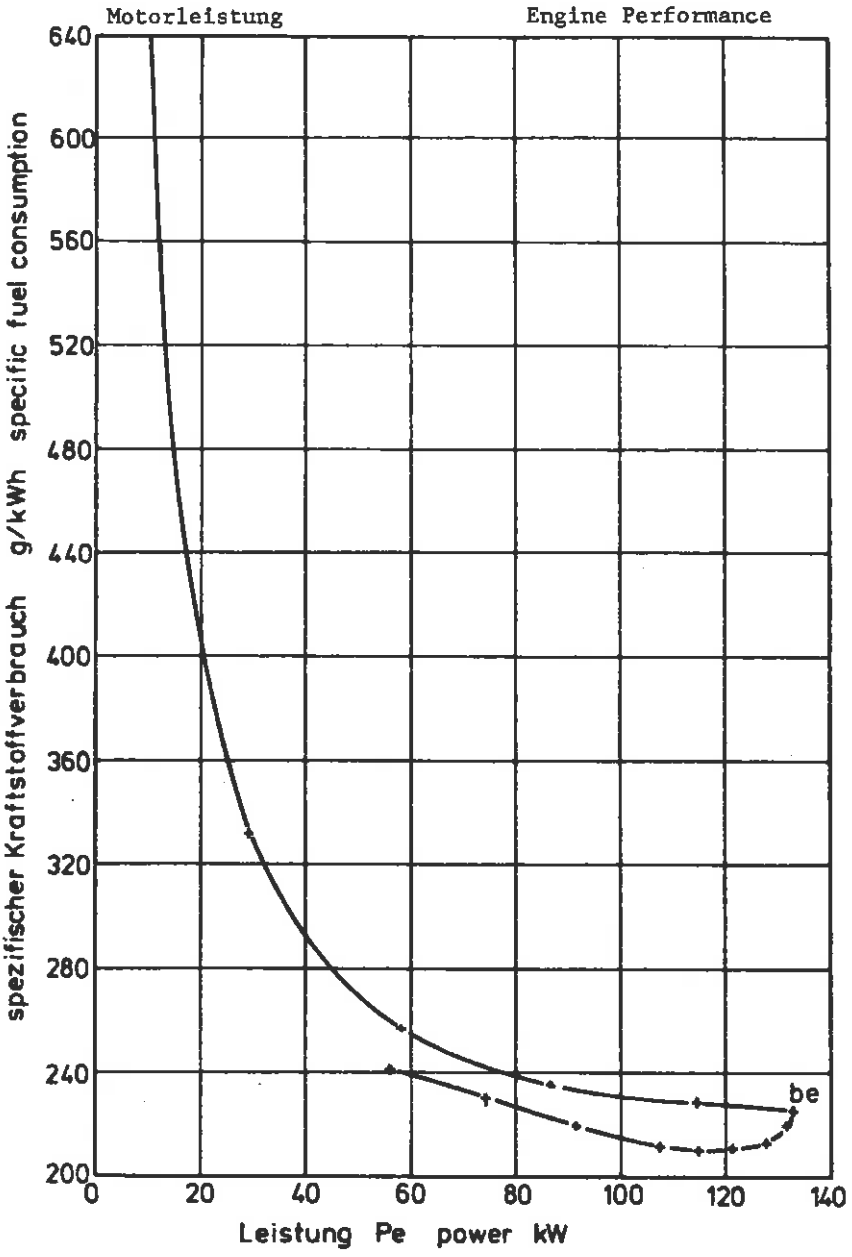
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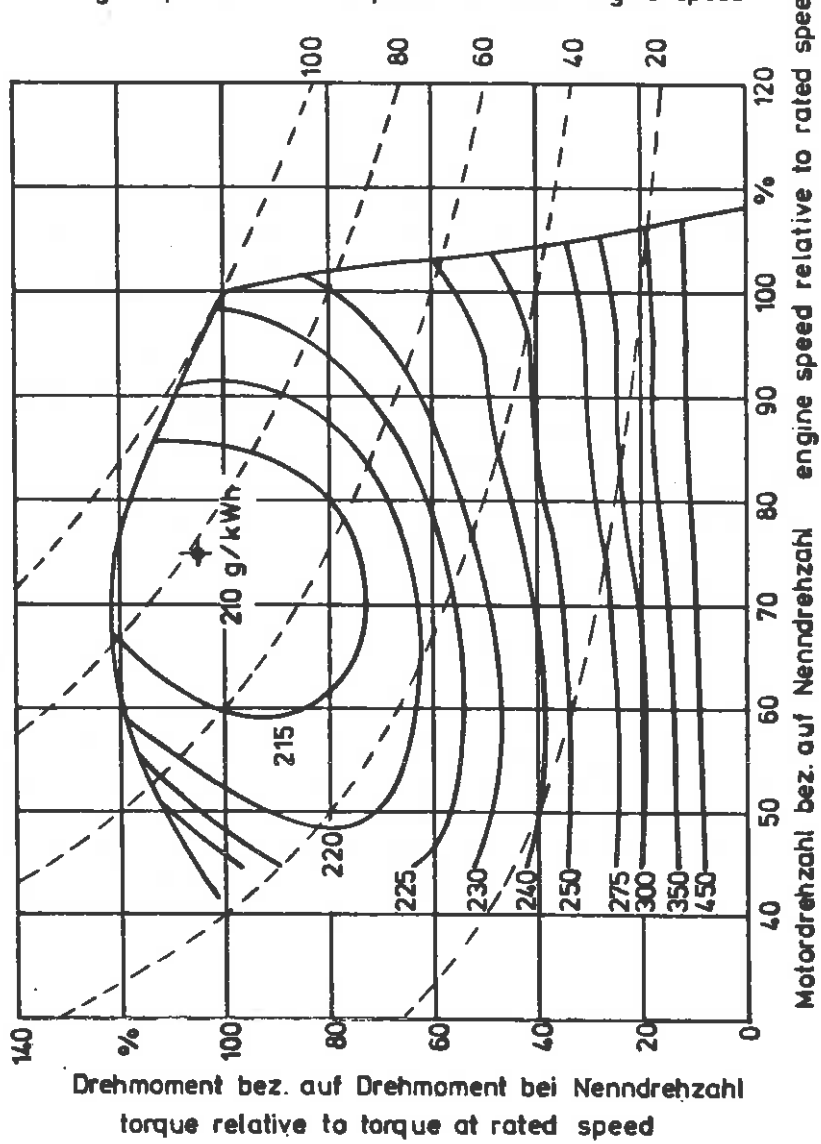
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ADDITIONAL TESTS

(10) POWER LIFT TEST

with modified linkage geometry

d = 178 mm
L = 644 mm
S = 760 mm

Date of test: 31st October and 14th November 1985

Lifting Forces (Linkage dimensions: see pages 12 and 13)

	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	355	685	4420	165	-	-
On the frame	355	805	4290	165	7520	11,5

Temperature of hydraulic fluid at start of test 65 °C

Lifting heights relative to horizontal lower links

mm	-233	-218	-200	-100	0	+100	+200	+300	+400	+467	+500	+572
Lifting forces at hitch points												
daN		4420	4460	4670	4930	5310	5650	6080	6460	6550		
Lifting forces at test frame												
daN	4290		4290	4330	4460	4580	4750	4800	4840		4750	4580

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