

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



O.E.C.D. No.

966



Agricultural Tractor MB trac 700 (4WD)
Type denomination 440167 S

Manufacturer

Daimler-Benz AG
D-7560 Gaggenau

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: March till July 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: 15th October 1985

O.E.C.D. No. 966

The tractor MB-trac 700 is offered in 4 transmission-variants:

- 1 max. 40 km/h: 4th speed locked in range II and 3rd speed limited in range II H,
- 2 max. 30 km/h: 3rd and 4th speed locked in range II.
- 3 max. 25 km/h: gear box without range II.

Variant 1 has been tested.

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/cm ²	or 1 kp/cm ²	= 0.981 bar
	1000 mbar	=	750,10 mm Hg		

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Tractor manufacturer: DAIMLER-BENZ AG
D-7560 Gaggenau

Submitted for test by: Manufacturer

Selected by: Manufacturer with agreement by DLG

Place of running in: Gaggenau and Groß-Umstadt

Duration of running in: Engine 80 hours and tractor
appr. 60 hours

SPECIFICATION OF TRACTORTractor

Make: MERCEDES-BENZ
Trade name: MB-trac 700
Type
denomination: 440167 S
Type: Four wheel drive agricultural tractor,
chassis construction with implement mounting
area above rear axle, 4 equal sized wheels,
spring suspended front axle

Serial No.: 440167 00 114214
1st Serial No.: 440167 00 090001

Engine

Make: MERCEDES-BENZ
Model: OM 314.LIII;
Type: 4-stroke Diesel-engine with direct injection,
watercooled

Serial No.: 314956 10 469518
Cylinders: 4, in-line, bore 97 mm, stroke 128 mm, no liners,
displacement 3784 cm³, compression ratio 17/1

Valves: Overhead

Fuel system: BOSCH fuel supply pump,
BOSCH in-line injection pump PES 4A 90D410 RS 2570
EP 3002, with timing device; Serial No.: 44774248;
manufacturer's production setting 48 ± 1 mm³/stroke
at rated engine speed and full load;
injection timing $15 + 8^{\circ}$ before TDC;
BOSCH multihole injection nozzles DLLA 142 S 791,
injection pressure $200 + 8$ bar;
KNECHT (optional BOSCH or H-FILTER) dual fuel
filter FB 733 CC with replaceable cartridges;
capacity of fuel tank 120 l



- Governor:** BOSCH centrifugal variable speed governor
RSV 350-1200 A2B 1139-1L-RS 3002,
governed range of engine speed 700 to
2640 1/min,
rated engine speed 2400 1/min
- Air cleaner:** KNECHT FP 9008, optional MANN
dry paper element filter with pre-cleaner,
replaceable cartridge with safety cartridge,
maintenance pilot lamp,
air intake above engine bonnet
- Exhaust silencer:** GILLET KG
multi chamber expansion type silencer,
118 x 228 mm oval, 425 mm long,
on the left hand side below bonnet,
mouth showing upwards,
mouth 2700 mm above ground
- Lubrication system:** Forced-feed lubrication with gear type pump,
MANN oil filter in full flow, replaceable
cartridge;
engine oil and filter change period 300
operating hours, oil capacity 9 l;
specified oil quality API-CC respectively
MIL-L-46152,
recommended oil viscosities
winter SAE 10W, 20W/20, 20W/30 or 15W/40
summer SAE 30 or 15W/40
tropics SAE 40
- Cooling system:** Water cooling with centrifugal pump and
thermostat, overpressure relief valve set
to 0,4 bar;
fan with 7 blades, 470 mm dia;
water capacity 16,5 l
- Starting system:** Electrical
BOSCH solenoid pre-engaged-drive starting
motor JD 12 V 3 kW; STARTPILOT start
assisting device
- Safety device:** Travel- and p.t.o. clutch disengaged,
p.t.o. selector in neutral position
- Electrical equipment:** 12 Volt, negative earth;
BOSCH 3-phase alternator K1-14 V 55 A 770 W,
1 lead acid battery 120 Ah at 20 hours rating,
154 Ah optional



Transmission

- Clutch:** LUK
dry dual disc clutch DT 295/280 G;
travel drive hydraulically operated by pedal,
disc 295 mm dia;
p.t.o. drive pneumatically operated by hand
valve,
disc 280 mm dia
- Gear box:** MERCEDES-BENZ
UG 2/30-7/13,43 GA;
synchromesh gear box with 4 speeds;
synchromesh range gear with 2 forward
ranges (I and II) and 1 reverse range (R);
close stepped range gear with pre-selecting of
ranges H and L, shifted automatically by
depressing clutch pedal; 2 levers and
1 preselector on speed change lever;
4th speed is locked in range II;
in 3rd speed of range II H the max. engine
speed is reduced electrically-mechanically;
total 14 forward and 8 reverse speeds;
optionally available additional creeper range
or super creeper range gear box
- Rear axle and
final drives:** MERCEDES-BENZ
portal axle, rigidly fitted to tractor's
chassis, driven by universally jointed
propeller shaft;
bevel gear drive, bevel gear differential;
spur gear final drives
- Front axle and
final drives:** MERCEDES-BENZ
portal axle, by coil springs, shock absorbers
and Panhard rod linked to chassis,
driven by universally jointed propeller shaft in
thrust tube, under load pneumatically engageable
and disengageable by rotary knob;
bevel gear drive, bevel gear differential;
spur gear final drives
- Both axles:** Differential locks in rear and front axle
may be pneumatically engaged and disengaged
in common under load by rotary knob



Total ratios and speeds (tyres 14.9 R 24)

Range	Close step range	Gear	Total ratio engine : driving wheels	Nominal travelling speed at rated engine speed *) km/h
I	L	1	121,90	4,38
		2	72,24	7,39
		3	44,58	11,97
		4	27,07	19,72
	H	1	95,62	5,58
		2	56,66	9,42
		3	34,97	15,27
		4	21,23	25,14
II ³⁾	L	1	40,88	13,06
		2	24,23	22,03
		3	14,95	35,70 2)
		4	-	-
	H	1	32,07	16,65
		2	19,01	28,09
		3	11,73	40,00 1) 2)
		4	-	-
R	L	1	94,05	5,68
		2	55,73	9,58
		3	34,39	15,52
		4	20,88	25,57
	H	1	73,77	7,24
		2	43,71	12,21
		3	26,98	19,79
		4	16,38	32,59
I	Creep range	1	896,35	0,60
		2	531,17	1,01
		3	327,80	1,63
II ³⁾	(not fitted)	1	300,35	1,78
		2	178,16	3,00
		3	109,95	4,86
R		1	576,22	0,93
		2	341,46	1,56
		3	210,73	2,53

*) calculated with the radius index 590 mm

1) tested variant with engine speed reducing device (40 km/h)

2) locked at 30 km/h-variant

3) not fitted at 25 km/h-variant



Gear oils:

	oil quality API MIL-L	oil viscosity SAE	oil capacity l	oil change interval operating hours
gear box	GL - 4 2105	80, 80W 80W/85	7,5	1200
rear axle	GL - 5 2105 B	90 or 80W/90	2,0	
rear final drives			0,3 each	
front axle			2,0	
front final drives			0,3 each	

Power-take-off

Main p.t.o.: Independent p.t.o., driven by the second disc of dual disc clutch;
 1 p.t.o. shaft at rear of tractor, 558 mm above ground, 25 mm to the left of tractor's median plane, 395 mm behind rear axle centre line; direction of rotation clockwise, viewed to tractor's rear;
 35 mm dia, 6 splines ISO 500/DIN 9611, type 1; optionally available
 35 mm dia, 21 splines ISO 500/DIN 9611, type 2 or 45 mm dia, 6 splines
 2 speeds preselectable by hand lever:

p.t.o.	p.t.o. speed 1/min	engine speed 1/min	ratio engine : p.t.o.
540	540	2165	4,0093
	599	2400	
1000	1000	2196	2,192
	1093	2400	

**Secondary
p.t.o.:**

Optionally available, installed to tested tractor, 1 p.t.o. shaft at front of tractor, 1000 mm above ground, 213 mm to the left of tractor's median plane, 725 mm before front axle centre; sense of rotation, drive, available profiles and speeds like main p.t.o.; front and rear p.t.o. shaft operation can be shifted simultaneously or separately

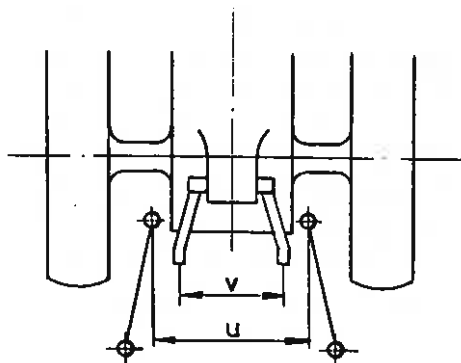
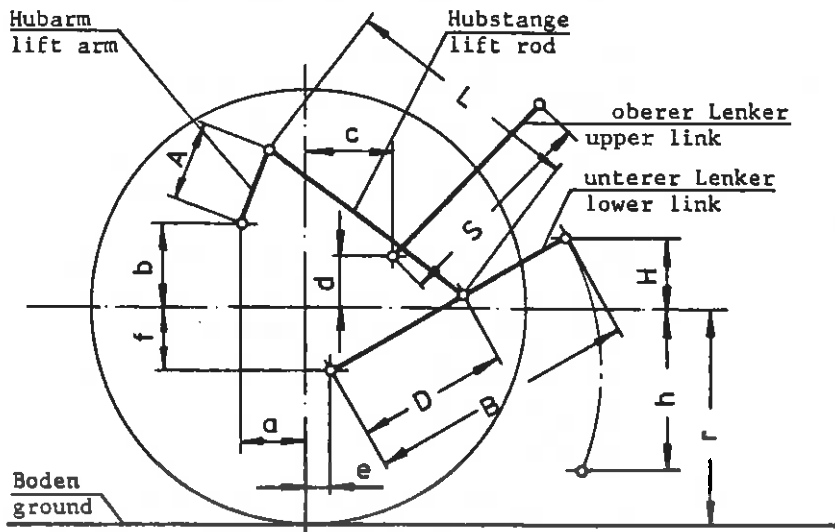


- Power lift **MERCEDES-BENZ**
hydraulic power lift, desintegrated
construction
- Hydraulic system:** Open centre system,
ECKERLE internal gear pump IPSF-3-13144,
directly driven by V-belt by engine,
delivery 40 l/min at rated engine speed,
relief valve pressure setting 180 + 10 bar;
hydraulic oil filter in return line,
filter change period 1800 operating hours
- Power lift**
at rear: **BOSCH control valve SR 60,**
draft control and position control,
infinitely mixable, floating position;
lower link sensing, lowering throttle;
2 single acting WEBER rams with 150 mm
stroke and 80 mm bore; no safety valve
- Power lift**
at front: **Optionally available, installed to tested**
tractor, only for power lift measurements;
connected by couplings to double acting
additional BOSCH control valve SRZ 60;
2 double acting WEBER rams with 140 mm stroke
and 63 mm bore, directly acting on laterally
stabilized lower links;
stop valve in pressure line for safety
during transport
- Remote circuit:** **Up to 3 double acting additional BOSCH control**
valves SRZ 60 available (installed to tested
tractor), with 4 couplings at front and
6 couplings at rear;
1 additional return line coupling each at
front and at rear; up to 15 l oil may be
taken off by tappings if tractor is working
stationary as well as tractor is travelling,
up to 20 l on horizontal ground
- Hydraulic oil:** **Separate oil tank with 30 l capacity; *)**
recommended engine oil SAE 10W API-CC
or MIL-L-46152, or hydraulic oil
HLP/HLP-D46 (ISO-VG);
oil change interval 1800 operating hours
- *) at front end of chassis



Implement linkage
at rear:

Three point linkage with (optional)
WALTERSCHEID quick-couplers; coupler
points categorie 2 acc. to ISO 730/I,
DIN 9674





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

Rear and front tyres	radius index	(r)	590
Length of lift arms		(A)	378
Length of lower links		(B)	890
Distance of lift arm pivot points from rear axle centre	horizontal	(a)	-204
	vertical	(b)	222
Horizontal distance between lower link pivot points		(u)	480
Horizontal distance between lift arm end points		(v)	760
Length of upper link		(S)	553 to 753, <u>707</u>
Distance of upper link pivot point from rear axle centre	horizontal	(c)	389
	vertical	(d)	<u>342</u> , 400
Distance of lower link pivot point from rear axle centre	horizontal	(e)	180
	vertical	(f)	94
Distance of lower link pivot points from lift rod pivot points on lower links		(D)	<u>605</u> , 701
Length of lift rods		(L)	455 to 630, <u>570</u>

Height of lower link hitch points relative to rear axle centre line (situated 590 mm above ground), these data are valid for unloaded power lift:

Length of lift rods	(L)	<u>570</u>	630 (max)	455 (min)	
Linkage distance of lift rods	(D)	<u>605</u>	605	701	605 701
Lowest position	(h)	390	510	402	178 75
Highest position	(H)	240	138	192	398 430
Transport position	(H')	240	138	192	398 430



Pull attachment

Swinging drawbar: Optionally available, not fitted
on tested tractor

Holed bar: Short bar,
length between joint balls 830 mm
thickness 25 mm, width 80 mm,
9 holes, 33 mm dia with 80 mm distance each
height above ground, minimum 80 mm
maximum 1020 mm
centre of holes behind p.t.o.
shaft end 675 mm

Trailer hitch: ROCKINGER, type 248 B, automatical;
coupling pin 30 mm dia;
hitch point
above ground 730, 788, 846 or 904 mm
behind rear axle centre 527 mm
above p.t.o. 172, 230, 288 or 346 mm
behind p.t.o. shaft end 132 mm
permissible vertical load 1500 kg
optional: trailer hitch ROCKINGER 278 B
or 279 B

Towing hitch: At front; 750 mm above ground

Steering

ZF
hydrostatic steering, SERVOSTAT 8493;
ZF vane type pump, V-belt driven by engine,
delivery 16 l/min; working pressure 100 bar;
own oil circuit with filter, oil capacity 3 l;
specified engine oil SAE 10W API-CC or
MIL-L-46152;
oil filter and oil change interval 2400
operating hours;
2 double acting BOSCH differential rams,
240 mm stroke, 45 mm dia,
acting on steering levers

Brakes

- Service brake: MERCEDES-BENZ
pedal operated single circuit power assisted
brake (compressed air assisted), with
hydraulic transmission;
internal-expanding-shoe brake at each wheel,
brake drums with 390 mm dia and 70 mm width
- Parking brake: Spring loaded brake operated by hand valve
with mechanical transmission, acting on drums
of service brake at rear wheels
- Steering brake: None
- Trailer brake: Optionally available; combined single/dual
line typ, compressed air controlled;
optional hydraulic brake for some countries,
oil pressure supplied by hydraulic system
- Source of energy: MERCEDES-BENZ
single-cylinder type compressor, directly
driven by engine, 2 air reservoirs with
26 and 9,5 l capacity, working pressure
8,1 bar;
optional additional compressor

Wheels

- Steered wheels: At front
- Driving wheels: At front and at rear
4 pneumatics 14.9 R 24 126 A8 PIRELLI,
radial-ply tyres;
maximum permissible load per tyre 1700 kg
at 1,6 bar inflation pressure and 40 km/h;
track width 1606 mm or 1730 mm at front
and at rear
rims W 12 x 24
- Wheel base: 2400 mm

Cab

MERCEDES-BENZ, model 441.82;
OECD-tested, approval no. CSD 0568/4;
welded sheet steel structure, antivibration
mounted by 3 silent blocks on chassis,
tiltable for maintenance;
1 door and 2 steps on each side,
steps 530 and 880 mm above ground,
optional 3 steps;
driver's platform 1200 mm above ground;
roof hatch tiltable, rear sliding,
optional tilting window;
drop windows in the doors, windscreen fixed,
optionally tiltable;
combined heating/ventilating system with
cooling water heat exchanger and 2 step-blower,
incorporated below instrument panel, air outlet
jets at cab floor, instrument panel and wind
screen;
additional ventilating system with 3 step-
blower, incorporated in roof (optionally
available), air intake at both sides of the
roof, 6 air outlet jets at the roof;
cab optionally available with air conditioner

noise reduction materials:

floor	rubber mat	4 mm
	with foiled foam	10 mm
doors, side walls and rear wall	foil-coated hard- board	2,5 mm
	flame resistant foam on cardboard with fabric coating	30 mm
instrument panel	ABS-coating	2,5 mm
hydraulic control valves' cover	heavy layer foil	2,5 mm
floor-bottom side and front wall	PVC damping material (sprayed on outside)	4 mm

optional: cab with reduced height, total
height reduced by 170 mm (see
OECD report No. CSD 0862/4,
DAIMLER-BENZ cab 441.825)



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 end and rear end of
seat above platform adjustable in
6 steps each from 430 to 480 mm,
longitudinal adjustment 185 mm

basic model:
ISRINGHAUSEN model 6000/516 with steel
spring suspension

Implement
mounting area

Behind cab, above rear axle;
width between mudguards 970 mm,
length of bottom plate 900 mm

Number of
grease points

21



Overall Dimensions

- Total length: 4550 mm without front power lift, without ballast
5045 mm with front power lift, with and
without ballast
- Total width: 2010 mm with and without ballast
- Total height: 2760 mm to top of cab roof
2700 mm to mouth of exhaust silencer
- Ground clearance: 440 mm below lower links pivotal points

Available tyres

Tyre sizes at front and at rear	
9.5 - 32	10 ply *)
12.4 - 28	8 ply *)
13.6 - 28	6 ply or 8 ply *)
14.9 - 24	8 ply or 10 ply *)
14.9/80 - 24	10 ply or 12 ply
13.6 R 28	123 A8
14.9 R 24	126 A8
12.5 - 20	MPT 10 ply **)
12.5 - 20	MPT 12 ply *) **)
14.5 - 20	MPT 10 ply, 12 ply or 14 ply *) **)
14.5 R 20	BIB X

*) available as cross-ply or radial-ply tyres

***) not for agricultural purposes



Lighting equipment Electrical 12 V, in accordance
with German legislation

	Dimensions mm	Height above ground to centre mm	Distance from outside edge to centre mm
Head lamps	135 x 120	860	460
Auxiliary lamps	135 x 120	2630	480
Side lamps	30 x 58	1435	95
Rear lamps	60 x 65	1260	240
Reflectors	75 dia	890	240

Running-time meter Electronic, controlled by 3-phase
alternator;
reference engine speed for one really
counted hour 1600 rev/min



TEST CONDITIONS

Track setting 1606 mm at front and at rear

Weights

		without driver	with driver
Without ballast:	front	2110 kg	2150 kg
	rear	1520 kg	1565 kg
	total	3630 kg	3715 kg
Front ballast:	front power lift and 1 weight		610 kg
Rear ballast:	weights on the implement mounting area, total		1695 kg
With ballast:	front	3340 kg	3380 kg
	rear	2595 kg	2640 kg
	total	5935 kg	6020 kg

Fuels and lubricants used in tests

Fuel: ARAL Diesel-Fuel DIN 51601
density at 15°C
at engine test 0,834 kg/l
at p.t.o. test 0,836 kg/l
at drawbar test 0,846 kg/l

Engine oil: SCHLEIFENBAUM PENAXOLINE SAE 15W/40

Transmission oil: ESSO GP-D 80 SAE 80
in gear box and range gear
ESSO HYPOID GX-D 90 SAE 90
in differentials and final drives
at front and at rear

Hydraulic oil: SCHLEIFENBAUM PENAXOLINE DBU SAE 10W

Grease: Multi-purpose grease

Repairs None



COMPULSORY TESTS

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

Date of tests: 27th March 1985
 Location of tests: DLG-Testing-Station Groß-Umstadt
 Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed		Fuel consumption			Specific energy kWh/l
	engine 1/min	p.t.o. 1/min	hourly l/h	specific kg/h	g/kWh	
<u>MAXIMUM POWER</u>						
At 2-hour test						
44.3	2400	599	13.88	11.69	264	3.19
At rated engine speed						
44.3	2400	599	13.88	11.69	264	3.19
At standard p.t.o. speed						
42.4	2165	540	12.85	10.82	255	3.30
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						
44.3	2400	599	13.88	11.69	264	3.19
(ii) 85% of the torque obtained in (i)						
38.3	2439	608	12.39	10.43	272	3.09
(iii) 75% of the torque defined in (ii)						
29.3	2487	620	10.53	8.86	303	2.78
(iv) 50% of the torque defined in (ii)						
19.9	2536	633	8.55	7.20	362	2.33
(v) 25% of the torque defined in (ii)						
10.1	2571	641	6.62	5.58	552	1.53
(vi) unloaded						
-	2605	650	4.79	4.04	-	-



Power kW	Speed		Fuel consumption			Specific energy kWh/l
	engine 1/min	p.t.o. 1/min	hourly l/h	kg/h	specific g/kWh	
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						
42.4	2165	540	12.85	10.82	255	3.30
(ii) 85% of the torque obtained in (i)						
37.1	2226	555	11.46	9.65	260	3.24
(iii) 75% of the torque defined in (ii)						
28.5	2282	569	9.68	8.15	286	2.95
(iv) 50% of the torque defined in (ii)						
19.5	2339	584	7.83	6.59	338	2.49
(v) 25% of the torque defined in (ii)						
9.9	2379	593	5.95	5.01	505	1.67
(vi) unloaded						
-	2414	602	4.11	3.46	-	-

Standard specific fuel consumption (g/kWh): 272/362/260/330

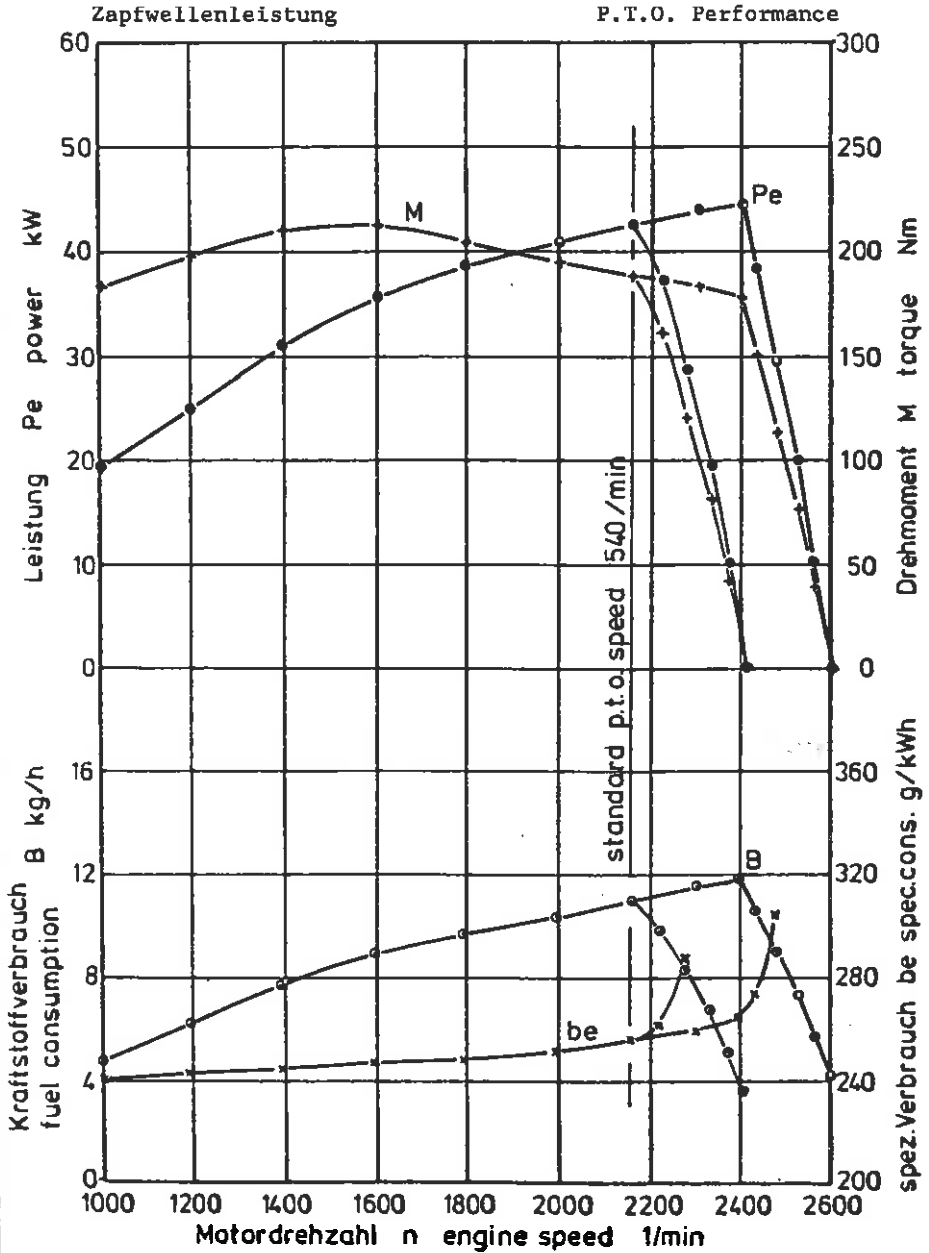
No load maximum engine speed: 2605 1/min

Equivalent flywheel torque at maximum power (2 hours): 176 Nm

Maximum equivalent flywheel torque: 211 Nm at 1602 1/min
of the engine

Mean atmospheric conditions: temperature 20 °C
pressure 980 mbar
relative humidity 65 %

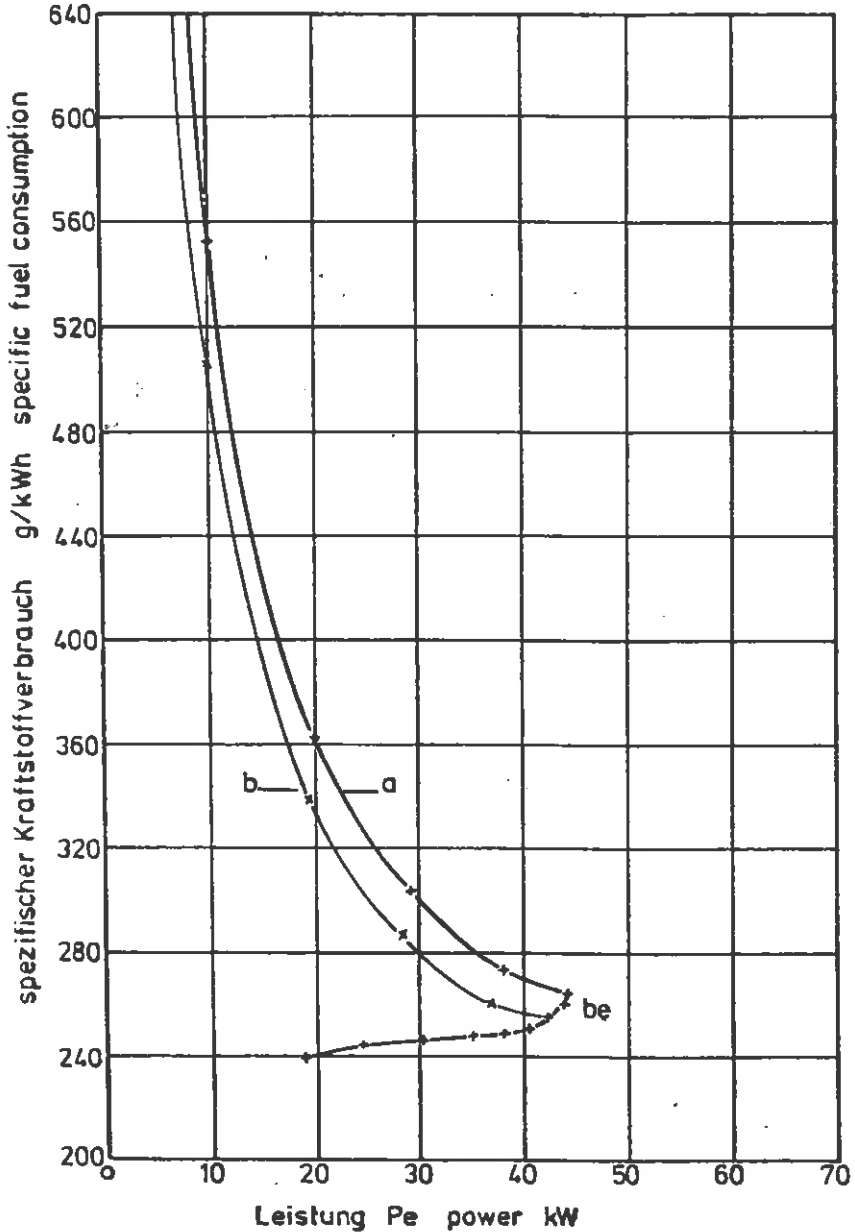
Maximum temperatures: coolant 85 °C
engine oil 109 °C
fuel 19 °C
engine air intake 22 °C





Zapfwellenleistung

P.T.O. Performance





(2) DRAWBAR PERFORMANCE

Date of tests: 8th till 23rd July 1985
Type of track: Concrete

Gear	Driving speed km/h	Power kW	Drawbar pull daN	Engine speed 1/min	Slip of wheels %
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(i) MAXIMUM POWER (unballasted)
height of drawbar above ground 475 mm

1 I L	3,87	35,3	3287	2398	9,9
1 I H	5,15	37,3	2604	2400	5,7
2 I L	6,97	36,8	1903	2397	3,8
2 I H	8,92	37,6	1517	2393	3,0
3 I L	11,44	36,3	1143	2399	2,3

(ii) MAXIMUM POWER (ballasted)
height of drawbar above ground 460 mm

1 I L	4,10	36,7	3221	2399	4,5
1 I H	5,30	36,8	2499	2399	3,3
2 I L	7,07	36,4	1851	2399	2,4
2 I H	9,05	36,4	1447	2402	1,7
3 I L	11,54	36,0	1122	2400	1,3
1 II L	12,59	35,9	1026	2398	1,2

(iii) FIVE-HOUR-TEST at 75% of pull at maximum power
in 2 I L gear

2 I L	7,31	28,2	1387	2464	1,7
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(iv) FIVE-HOUR-TEST
at maximum pull in test (ii)

1 I L	4,10	36,7	3220	2397	4,5
-------	------	------	------	------	-----

Total oil consumption during ten hours duration of tests
(iii) and (iv) 22 g/h



Tyre size front and rear: 14.9 R 24 126 A8

Tread bar height at the beginning of drawbar tests:
82% at front, 80% at rear of the value when new

Specific fuel consumpt. g/kWh	Specific energy kWh/l	Temperatures			Atmospheric conditions		
		Fuel °C	Coolant °C	Engine-oil °C	Temperature °C	Relative humidity %	Pressure mbar

tyre inflation pressure 0,8 bar at front and at rear

331	2,56	26	83	100	18	78	1006
314	2,70	32	84	102	22	85	1006
317	2,67	32	84	100	23	80	1006
310	2,73	32	82	100	23	70	1005
320	2,65	32	82	100	23	68	1005

tyre inflation pressure 1,6 bar at front and at rear

317	2,67	32	83	102	23	90	995
315	2,69	35	83	104	23	81	995
323	2,62	25	81	100	18	97	993
321	2,63	29	81	101	19	96	992
324	2,61	30	84	103	19	95	992
325	2,60	29	83	102	19	94	992

354	2,39	34	85	105	23	84	1005
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317	2,67	33	86	109	20	74	995
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**(3) TURNING SPACE AND TURNING CIRCLE**

Wheel equipment front: 14.9 R 24 126 A8

rear: 14.9 R 24 126 A8

Track of wheels front: 1606 mm

rear: 1606 mm

	With 4 wheel drive		With 2 wheel drive	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	5,99	6,03	5,52	5,63
Radius of turning circle	5,57	5,59	5,19	5,19

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	1008 mm
Distance forward from rear axle centre	1389 mm
Distance from tractor's median plane, to the right	14 mm



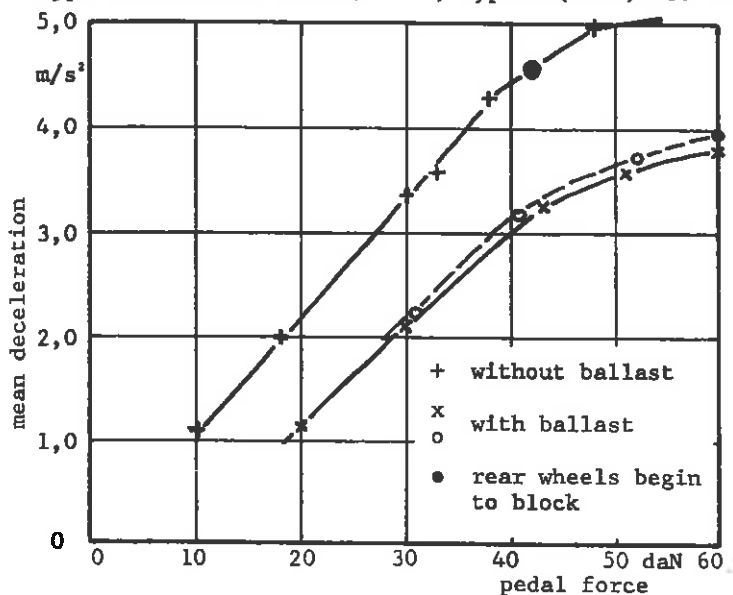
(5) BRAKING (Front wheel drive disengaged)

Date of tests: 15th and 16th July 1985

	Tractor mass (with driver)			Speed before application of brakes km/h
	front kg	rear kg	total kg	
Without ballast	2150	1565	3715	39,9
With ballast	3380	2640	6020	39,4

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 $1 m/s^2$

B) Parking brake

	Ballasted tractor on 18%-slope		Unballasted tractor on 12%-slope with trailer of 3000 kg	
	up	down	up	down
Braking device control force daN	Parking brake pneumatically controlled by hand valve; tractor does not roll			

**(6) MEASUREMENT OF EXTERNAL NOISE LEVEL ***

Date of test: 15th July 1985
Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2209

Results of test

Gear: 3 II H
Travelling speed before
acceleration: 29,8 km/h
Sound level: 79,5 dB(A)

(7) NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of tests: 4th July 1985
Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2209
with MERCEDES-BENZ safety cab 441.82

Results of tests

Gear	Drawbar pull at which the tractor develops the maximum sound level daN	Travelling speed		Sound level dB(A)
		nominal km/h	effective km/h	
1 I L	3108	4,38	3,92	81,0
1 I H	2492	5,58	5,16	81,5
2 I L +)	1865	7,39	6,96	82,0
2 I L +)	light load	7,39	7,82	81,0
2 I H	1467	9,42	8,91	82,0
3 I L	1108	11,97	11,45	81,5
1 II L	1015	13,06	12,50	82,5
3 I H	867	15,27	14,65	82,5
1 II H	775	16,65	16,06	82,5
3 II H *)	light load	40,00	40,40	82,0

+) the 2 I L gear corresponds to the nominal travelling speed nearest to 7,5 km/h

*) front wheel drive disengaged



PRÜFUNGS-ABTEILUNG
MB-trac 700

Test No. 85-47

(8) LIFTING FORCES AND HYDRAULIC POWER

Date of tests: 15th May 1985

Lifting Forces (Linkage dimensions: see page - 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	606	2390	160	-	-
On the frame	200	673	2360	160	3965	8,5

Temperature of hydraulic fluid at start of test 65 °C

Lifting heights relative to horizontal lower links

mm	-323	-300	-296	-200	-100	+0	+100	+200	+300	+310	+350

Lifting forces at hitch points

daN			2390	2550	2710	2840	2990	3070	3100	3070	

Lifting forces at test frame

daN	2360	2370		2450	2500	2540	2570	2540	2440		2380

Hydraulic Power

Sustained pressure with relief valve open 183 bar
Pump delivery rate at minimum pressure 45,7 l/min

	Hydraulic power kW	Flow rate l/min	Pressure bar	Oil temperature °C
at 90% of the actual relief valve setting	10,9	39,5	165	65
maximum	11,1	41,6	160	65

Tapping point used for test: at rear of tractor



OPTIONAL TESTS

(9) ENGINE PERFORMANCE

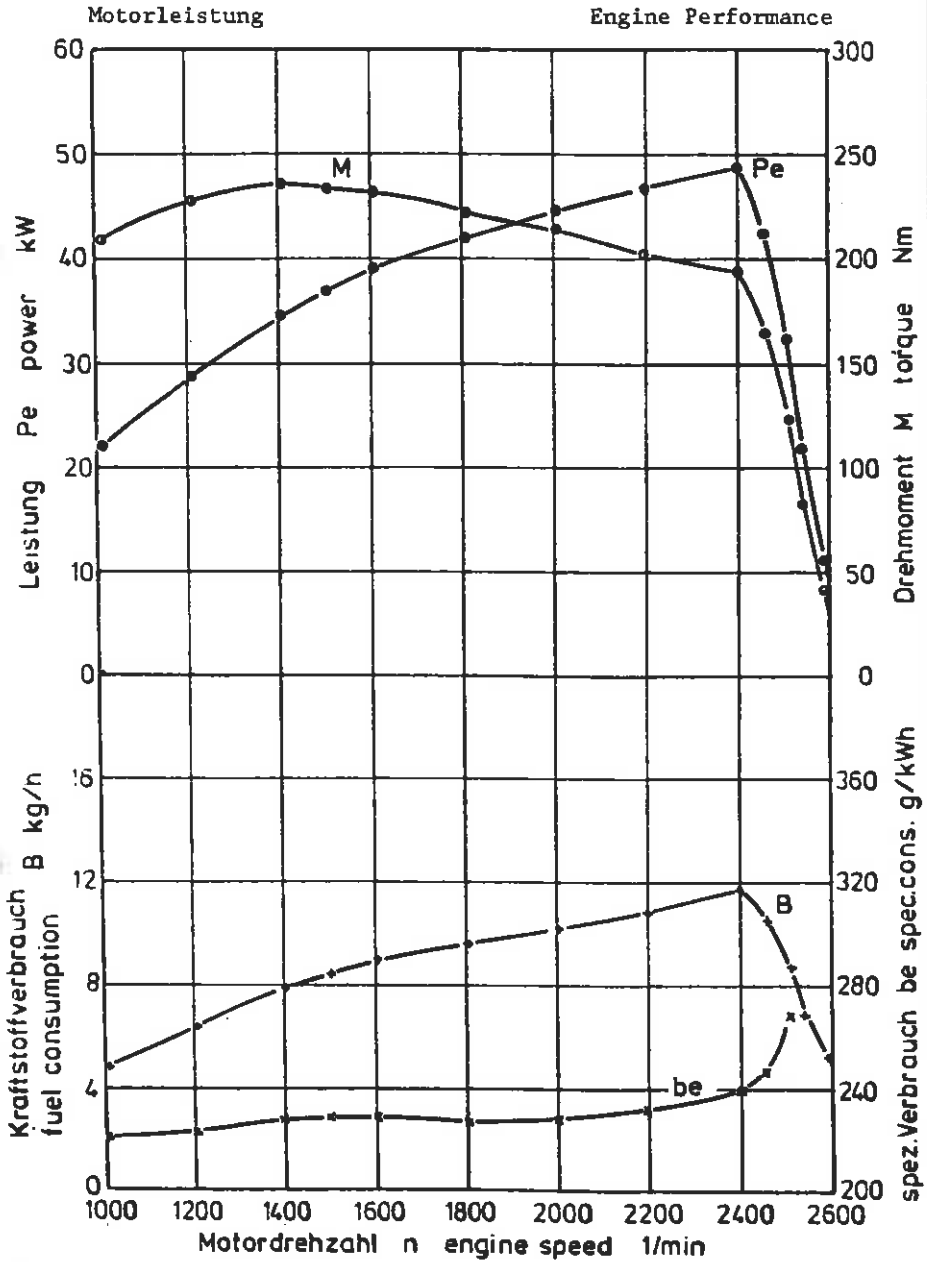
Date of tests: 7th March 1985
 Location of tests: DLG-Testing-Station Groß-Umstadt
 Type of dynamometer: SCHENCK eddy-current dynamometer W 150

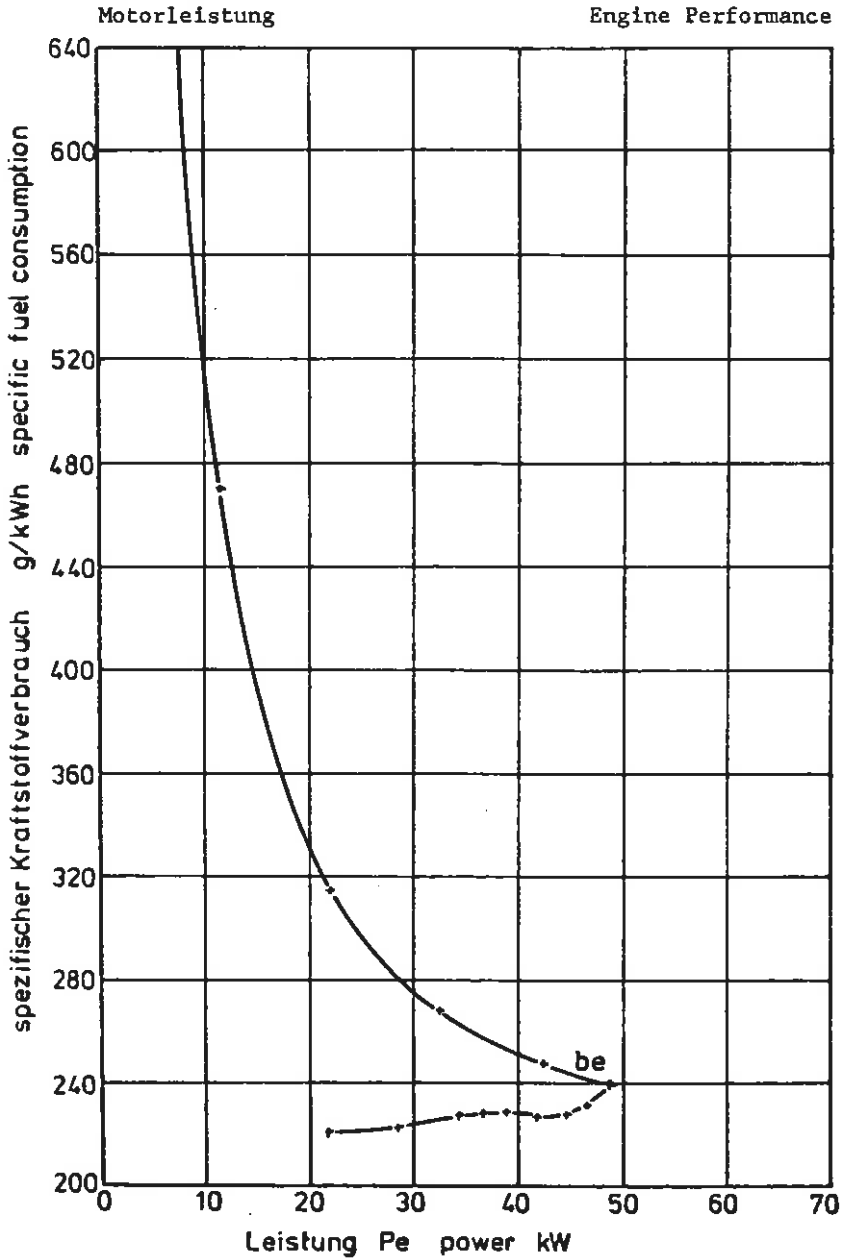
Power kW	Engine speed 1/min	Fuel consumption			Specific energy kWh/l
		hourly l/h	kg/h	specific g/kWh	
<u>Maximum power</u>					
At 2-hour test					
48.8	2400	14.05	11.72	240	3.47
At rated engine speed					
48.8	2400	14.05	11.72	240	3.47
At standard p.t.o. speed (540 1/min)					
46.7	2165	12.95	10.80	232	3.60
<u>Part loads</u>					
(i) the torque corresponding to maximum power at rated speed					
48.8	2400	14.05	11.72	240	3.47
(ii) 85% of the torque obtained in (i)					
42.5	2457	12.62	10.53	247	3.37
(iii) 75% of the torque defined in (ii)					
32.6	2511	10.49	8.75	268	3.11
(iv) 50% of the torque defined in (ii)					
22.0	2540	8.29	6.91	314	2.65
(v) 25% of the torque defined in (ii)					
11.2	2592	6.32	5.27	469	1.78
(vi) unloaded					
-	2640	4.39	3.66	-	-

Optimum fuel consumption: 220 g/kWh at 22.0 kW and 1080 1/min
 No load maximum engine speed: 2640 1/min
 Torque at rated engine speed: 194 Nm
 Maximum torque: 235 Nm at 1400 1/min of the engine

Mean atmospheric conditions: temperature 21 °C
 pressure 1008 mbar
 relative humidity 35 %

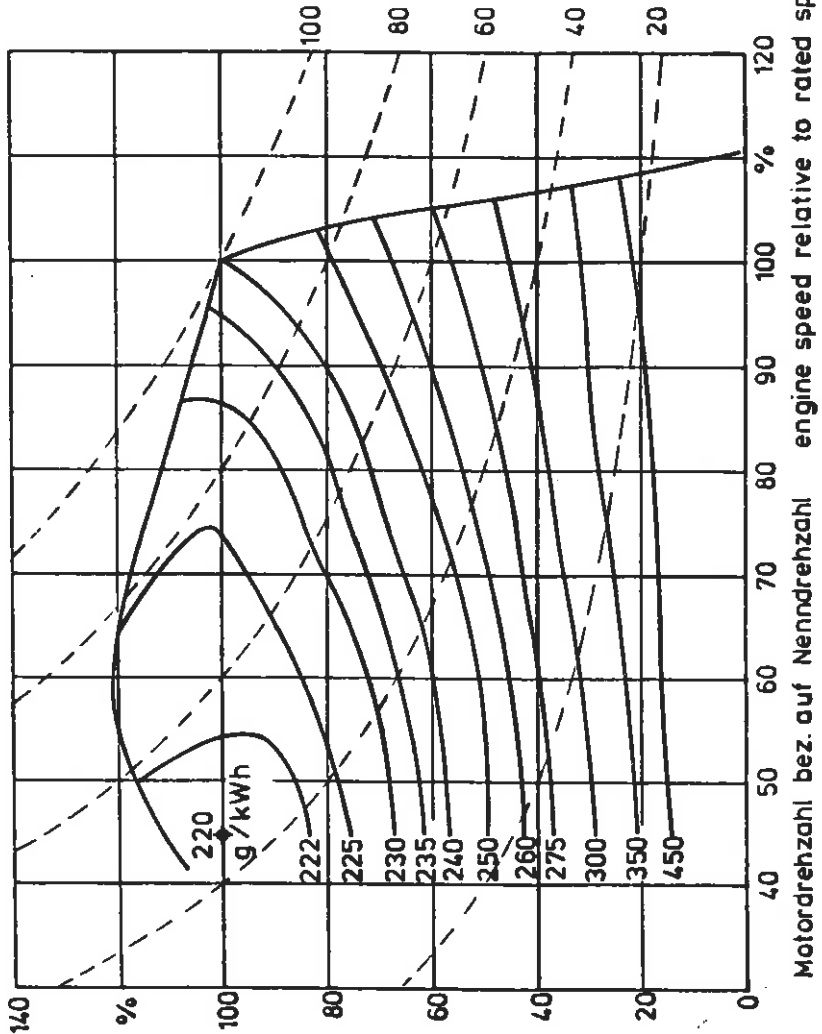
Maximum temperatures: coolant 84 °C
 engine oil 88 °C
 fuel 21 °C
 engine air intake 23 °C







Motorleistung in % der Leistung bei Nenndrehzahl
engine power in % of power at rated engine speed



Drehmoment bez. auf Drehmoment bei Nenndrehzahl
torque relative to torque at rated speed



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

Date of tests: 27th March 1985
 Location of tests: DLG-Testing-Station Groß-Umstadt
 Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed		Fuel consumption			Specific energy kWh/l
	engine 1/min	p.t.o. 1/min	hourly l/h	kg/h	specific g/kWh	
<u>MAXIMUM POWER</u>						
At 2-hour test						
44.3	2400	1093	13.93	11.64	263	3.18
At rated engine speed						
44.3	2400	1093	13.93	11.64	263	3.18
At standard p.t.o. speed						
43.0	2196	1000	12.95	10.83	252	3.32
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						
44.3	2400	1093	13.93	11.64	263	3.18
(ii) 85% of the torque obtained in (i)						
38.4	2447	1114	12.55	10.49	273	3.06
(iii) 75% of the torque defined in (ii)						
29.4	2494	1136	10.59	8.85	301	2.77
(iv) 50% of the torque defined in (ii)						
19.9	2539	1156	8.62	7.20	361	2.31
(v) 25% of the torque defined in (ii)						
10.1	2571	1171	6.76	5.66	560	1.49
(vi) unloaded						
-	2607	1187	4.90	4.10	-	-



Power kW	Speed		Fuel consumption hourly		specific g/kWh	Specific energy kWh/l
	engine 1/min	p.t.o. 1/min	1/h	kg/h		
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						
43.0	2196	1000	12.95	10.83	252	3.32
(ii) 85% of the torque obtained in (i)						
37.3	2243	1021	11.36	9.49	255	3.28
(iii) 75% of the torque defined in (ii)						
28.8	2311	1052	9.91	8.29	288	2.90
(iv) 50% of the torque defined in (ii)						
19.6	2359	1074	7.92	6.62	338	2.47
(v) 25% of the torque defined in (ii)						
9.9	2386	1086	6.08	5.08	513	1.63
(vi) unloaded						
-	2415	1099	4.25	3.55	-	-

Standard specific fuel consumption (g/kWh): 273/361/255/338

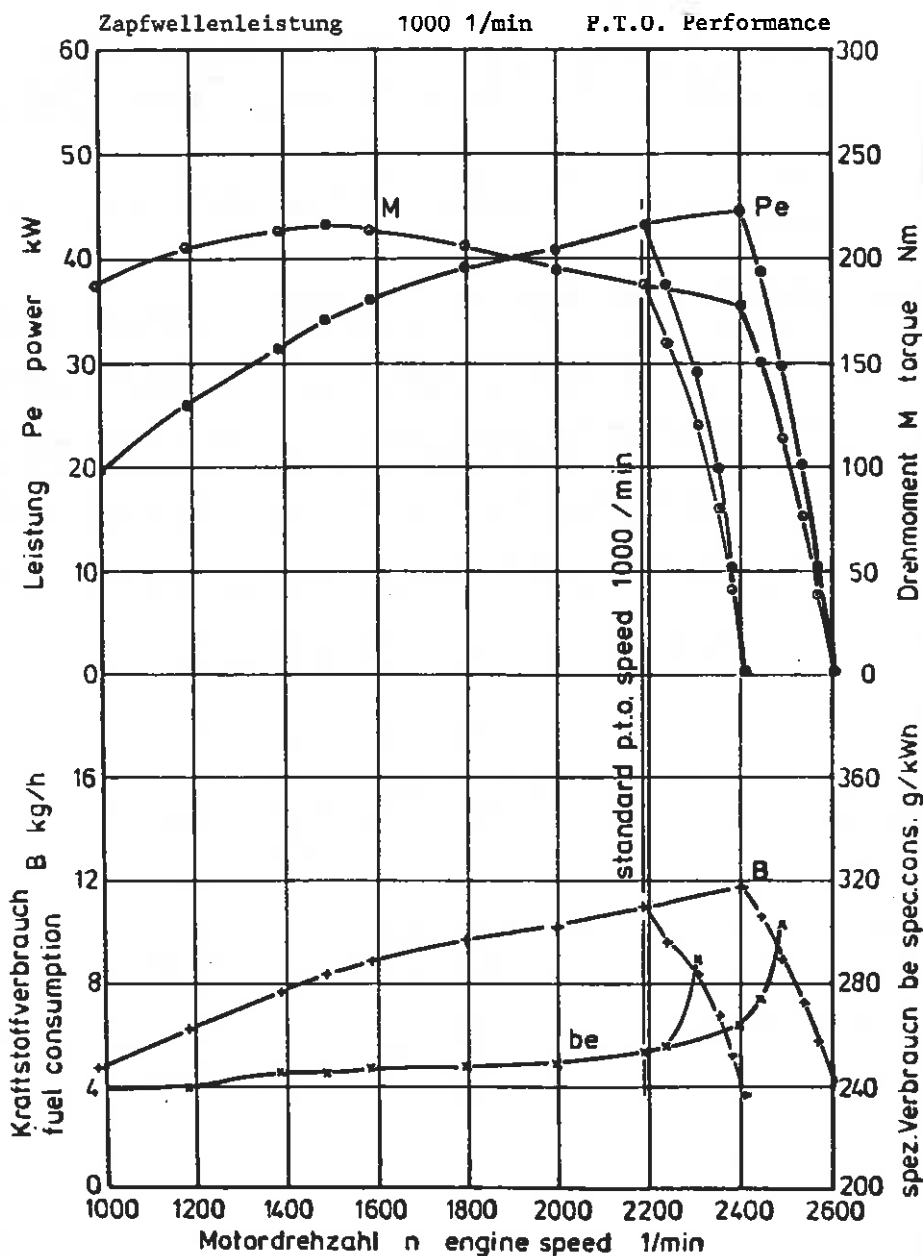
No load maximum engine speed: 2607 1/min

Equivalent flywheel torque at maximum power (2 hours): 176 Nm

Maximum equivalent flywheel torque: 215 Nm at 1503 1/min
of the engine

Mean atmospheric conditions: temperature 18 °C
pressure 980 mbar
relative humidity 53 %

Maximum temperatures: coolant 85 °C
engine oil 109 °C
fuel 19 °C
engine air intake 19 °C





ADDITIONAL TESTS

(11) REAR POWER LIFT with modified linkage geometry *

Date of test: 15th May 1985

	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	515	466	3290	160	-	-
On the frame	515	536	2530	160	4250	9

Temperature of hydraulic fluid at start of test 65 °C

Lifting heights relative to horizontal lower links

mm	+19	+100	+200	+300	+400	+485	+500	+555
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Lifting forces at hitch points

daN	3290	3390	3550	3690	3790	3680		
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Lifting forces at test frame

daN	3010	3020	3050	3020	2890		2680	2530
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- *) Length of lift rods (L) 455 mm
- Lift rod's linkage point (D) 701 mm
- Distance of upper link pivot point above rear axle (d) 400 mm
- Length of upper link (S) 692 mm

see pages - 10 - and - 11 -



(12) FRONT POWER LIFT

Date of test: 21st May 1985

Dimensions of implement linkage see page - 12 -

	Height of lower hitch points above ground in down pos. mm	Vertical movement mm	Max. force exerted through full range daN	Corresp. pressure of hydraulic fluid bar	Moment about front axle daNm	Max. tilt angle of mast over range of lift degrees
At hitch points	399	523	2100	160	-	-
On the frame	399	553	1660	160	3582	4

Temperature of hydraulic fluid at start of test 65 °C

Lifting heights relative to horizontal lower links

mm	-168	-153	-100	±0	+100	+200	+300	+370	+385
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Lifting forces at hitch points

daN		2100	2120	2140	2120	2140	2120	2100	
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Lifting forces at test frame

daN	2160		2070	2010	1970	1900	1790		1660
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(13) NOISE AT THE DRIVER'S EAR

Date of test: 4th July 1985
Test track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2209
Type of frequency analyser: BRÜEL & KJAER model 1613
(fitted with octave filter)

with MERCEDES-BENZ safety cab 441.82

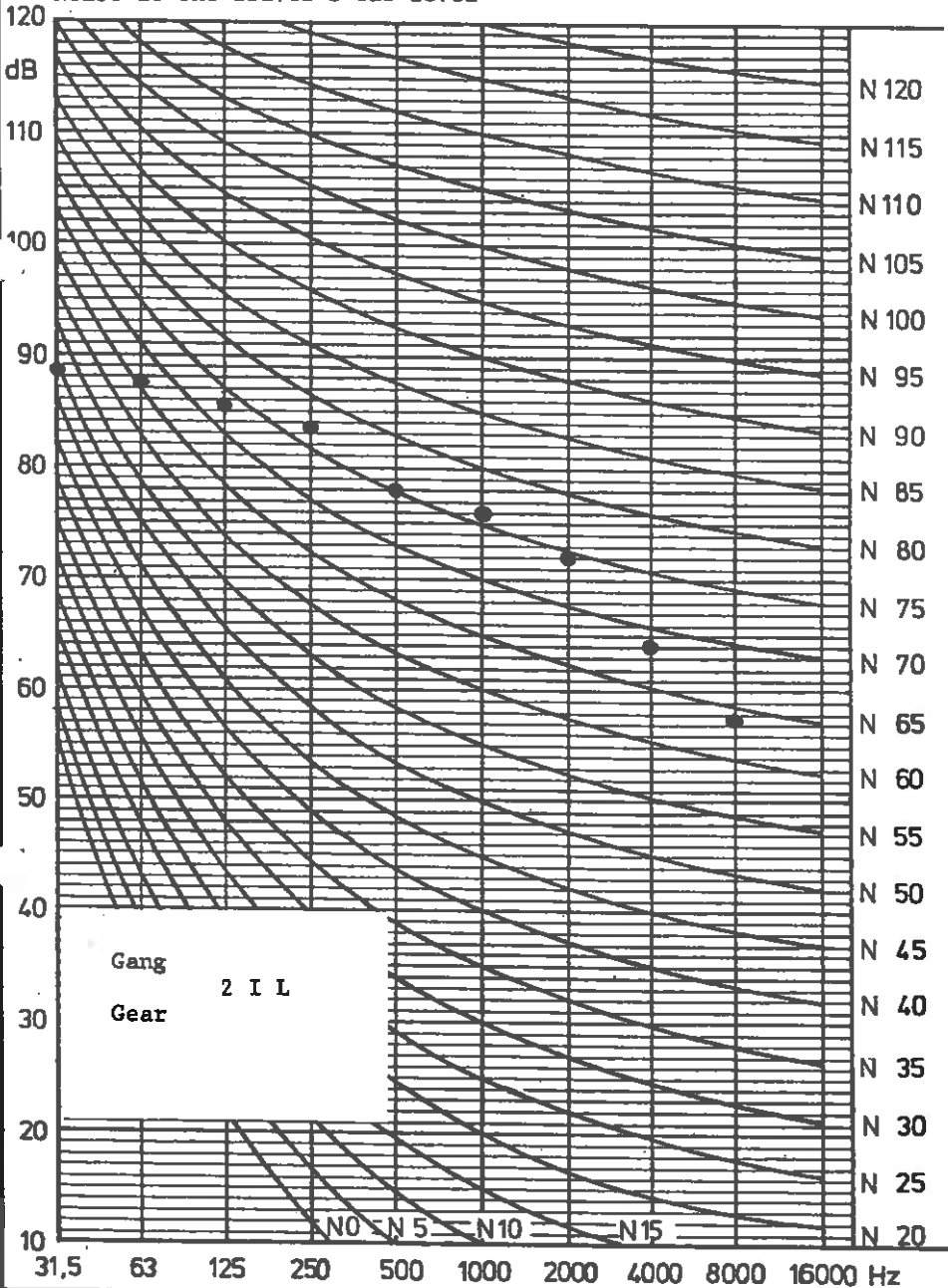
Results of test

Gear	Drawbar pull at which the tractor develops the maximum sound level daN	Travelling speed nominal effective		Sound level	
		km/h	km/h	dB(A)	noise rating
2 I L	1865	7,39	6,96	82,0	77

There is no gear combination in which the NOISE RATING number is higher than 77



Schleppergeräusch am Ohr des Fahrers
Noise at the driver's ear level



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