DLG	Report on test in accordance with O.E.C.D. STANDARD CODE	O.E.C.D. No. 540



Agricultural Tractor MB trac 1300

Manufacturer

Daimler-Benz AG, Postfach 128, D-7560 Gaggenau

Editor

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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 Tractors. It does not contain an evaluation of the performance of the tractor on practical work.

Carry out of tests:
DLG-Testing-Station for Agricultural Machinery, D-6114 Groß Umstadt
August till September 1976

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

Date of Approval: 26th November 1976; O.E.C.D. No. 540

In this report all performance characteristics are given according to the International System of Units.

The relation with the former used Technical System of Units is given by the following formulas:

Forces:	1 N = 0,102 kp	or 1 kp	= 9,81 N
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 = 750,1 mm Hg		

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PRÜFUNGS-ABTEILUNG
MB trac 1300

Test No. 76-133

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Test No. 76-133

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 and tractor appr. 30 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	DAIMLER-BENZ AG
Model:	MB trac 1300
Type:	All wheel drive tractor, chassis construction, spring suspended front axle, rotatable driver's seat for driving in two directions
Serial No.:	443 161 900 011

Engine

Make:	Own make
Model:	OM 352 A VII model 353.957
Type:	Supercharged 4-stroke DIESEL engine with direct injection, watercooled
Serial No.:	353.957-10-423836
Cylinders:	6 in-line, bore 97 mm; stroke 128 mm; displacement 5675 cm³; compression ratio 17:1
Valves:	Overhead
Fuel system:	BOSCH fuel-feed pump FP/KE 22 AD 112/2; BOSCH in-line injection pump: PES 6 A 90 D 410 RS 2293; manufacturer's production setting 58 mm³/stroke at rated engine speed and full load; injection timing 18° before TDC; BOSCH multihole injection nozzles DLLA 150 S 187; injection pressure 200 bar; BOSCH dual fuel filter with replaceable cartridges; capacity of fuel tank 170 l
Governor:	BOSCH centrifugal variable speed governor: EP/RSV 350-1300 AOB 1105 DL; governed range of engine speed: 700 to 2800 rev/min; rated engine speed 2600 rev/min

Supercharger:	Exhaust type turbo-supercharger; KÜHNLE, KOPP UND KAUSCH (optional GARRET) model 3 LKS/352; supercharge pressure appr. 580 mbar without air intercooler
Air cleaner:	MANN UND HUMMEL (optional KNECHT); dry paper element filter with pre-cleaner; service indicator
Exhaust silencer:	ROTH KG (optional EBERSPÄCHER); multi-chamber expansion type muffler; 210 x 115 mm oval, 1085 mm long; on the left hand side of engine mouth showing upward; mouth 3005 mm above ground
Lubrication system:	Forced feed from gear pump; strainer in sump MANN dual oil filter with by-pass in full flow, overpressure relief valve; (optional KNECHT); replaceable cartridges; oil capacity 13 l; oil changing interval 200 hours recommended oil qualities and viscosities: winter HD SAE 10W summer HD SAE 30 tropics HD SAE 40
Cooling system:	Pressurized water cooling, impeller assisted; by-pass thermostat; overpressure relief valve set at 0,4 bar; fan with 6 blades, 515 mm diameter; water capacity 19 l with cab heating 21 l
Starting system:	Electrical; BOSCH screw-push starter motor ID 3 kW; startpilot PRO-COMBUR: VISO F 27
Electrical equipment:	12 V, negative earth; BOSCH three phase alternator K1 14 V 35 A; 1 lead acid battery 110 Ah at 20 hours rating

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Transmission

Clutch:	LAMELLEN UND KUPPLUNGSBAU dry dual disc clutch DT 330/310 G; tractor drive disc hydr. operated by pedal; p.t.o. drive disc operation see page 7
Gear box:	Own make; synchromesh speed change gear with pneumatically operated planetary group for duplication; 2 x 4 = 8 speeds; 7th and 8th speed locked; optional additional planetary group gear for field and creep speeds available; at tractor tested fitted with field speeds only; with additional planetary group shifted the 7th and 8th speed of the speed change gear are unlocked; reversing gear with locking synchronization for all gears; totally 14 forward and 14 reverse speeds at tractor tested
Rear axle and final drive:	Rigidly fitted to tractor chassis; driven by universal joint shaft; bevel gear drive with crown wheel and pinion; bevel gear type differential fitted with lock; planetary final drives in the wheel hubs
Front axle and final drive:	Coil-spring suspended with shock absorber and travers stabilizer; driven by universal joint shaft in the thrust tube and double joints in the steering knuckles; pneumatically engageable under load; bevel gear drive with crown wheel and pinion; bevel gear type differential fitted with lock; planetary final drives in the wheel hubs Differential locks of front and rear axle pneumatically engageable in common under load
Oil capacity:	Speed change gear and field group gear 12 l differentials 2 l each final drives 1,5 l each

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Oil qualities:	Speed change gear and field group gear	transmission oil SAE 80
	differentials	transmission oil SAE 90
	final drives	transmission oil SAE 90
Oil changing interval:	400 hours	

Power take-off

Main p.t.o.:

Live p.t.o. in the rear of tractor;
616 mm above ground, 20 mm to the right hand side of tractor's median plane
driven through the second part of the dry dual disc clutch;
independent from the tractor drive the p.t.o. clutch may be engaged or disengaged pneumatically by a hand valve on the instrument panel

1 3/4 in involute profile, 20 splines;
DIN 9611 Form 3; ASAE S 204.6

The following 3 p.t.o.-shafts are optionally available:

a) 29 x 34,9 x 8,7 mm = 1 3/8 in; 6 splines;
DIN 9611 Form 1; BS 1495; ASAE S 203.7

b) 1 3/8 in involute profile, 21 splines;
DIN 9611 Form 2; ASAE S 204.4

c) 36 x 44,3 x 11 mm = 1 3/4 in, 6 splines

2 speeds are preselectable by hand lever:

540 rev/min p.t.o.
601 rev/min at rated engine speed;
standard p.t.o.-speed 540 rev/min at 2336 rev/min engine speed

1000 rev/min p.t.o.
1058 rev/min at rated engine speed;
standard p.t.o.-speed 1000 rev/min at 2456 rev/min engine speed

Direction of rotation clockwise, viewed from tractor rear

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Total ratios and speeds

Forward speeds (tyres 18,4-30 AS)

Group	Gear	Total ratio engine : driving wheel	Nominal travelling speed *) at rated engine speed km/h	Nominal travelling speed *) at standard p.t.o. speed 540 rev/min km/h
Speed combinations as tested				
Road group	1	142,38	4,82	4,32
	2	102,52	6,69	6,01
	3	75,12	9,13	8,19
	4	55,13	12,44	11,16
	5	39,32	17,45	15,64
	6	28,32	24,22	21,71
Field group	1	819,66	0,84	0,76
	2	590,21	1,16	1,04
	3	432,46	1,59	1,42
	4	317,35	2,16	1,94
	5	226,38	3,03	2,71
	6	163,01	4,21	3,78
	7	119,44	5,74	5,16
	8	87,65	7,83	7,02
Optional creep speeds, not tested				
Creep group	1	7955,49	0,086	0,078
	2	5728,50	0,120	0,107
	3	4197,45	0,163	0,146
	4	3080,19	0,223	0,200
	5	2197,23	0,313	0,280
	6	1582,16	0,434	0,390
	7	1159,30	0,592	0,531
	8	850,72	0,806	0,723

*) calculated with the rolling radius 700 mm as per manufacturer's specification

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Reverse speeds (tyres 18,4-30 AS)

Group	Gear	Total ratio engine : driving wheel	Nominal travelling speed *) at rated engine speed km/h	Nominal travelling speed *) at standard p.t.o. speed 540 rev/min km/h
Speed combinations as tested				
Road group	1	137,92	4,97	4,46
	2	99,31	6,89	6,18
	3	72,77	9,41	8,45
	4	53,40	12,82	11,50
	5	38,09	17,97	16,12
	6	27,43	24,95	22,31
Field group	1	793,96	0,86	0,78
	2	571,71	1,20	1,07
	3	418,91	1,64	1,47
	4	307,40	2,23	2,09
	5	219,28	3,12	2,79
	6	157,90	4,34	3,90
	7	115,70	5,91	5,30
	8	84,90	8,06	7,22
Optional creep speeds, not tested				
Creep group	1	7706,08	0,090	0,080
	2	5548,91	0,123	0,108
	3	4065,85	0,168	0,151
	4	2983,62	0,230	0,206
	5	2128,35	0,322	0,288
	6	1532,56	0,447	0,402
	7	1122,95	0,611	0,547
	8	824,05	0,833	0,747

*) calculated with the rolling radius 700 mm as per manufacturer's specification

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Power take-off (Continuation)

The following powers may be taken off from the different p.t.o.-shafts as per manufacturer's handbook:

Profile	p.t.o. 540 rev/min	p.t.o. 1000 rev/min
1 3/8 in 6 splines	33 kW	60 kW
1 3/8 in involute	50 kW	full power
1 3/4 in 6 splines	full power	full power
1 3/4 in involute	full power	full power

Secondary p.t.o.:

In front of tractor;
fitted but not tested;
213 mm to the left hand side of tractor's median plane, 955 mm above ground with front axle springs not compressed;
drive, profiles, speeds, direction of rotation and performance restrictions same as for main p.t.o.

Main p.t.o. and secondary p.t.o. may be driven in common or each one for itself

Power lift

In the rear:

Hydraulic power lift, disintegrated construction, open system;
WABCO gear type pump IPM 13645;
delivery nominal 16 cm^3/rev or 57 l/min at rated engine speed;
V-belt driven by engine;
2 double acting rams, bore 100 mm, stroke 200 mm, rod 40 mm diameter;
BOSCH control valve, double acting with automatic hydr. release and lock for not intended operation, for lifting, pushing down, locked position and floating position;
maximum pressure 200 bar;
mechanically acting load transfer system: SERVOTRAC;
(optionally control system BOSCH-DAIMLER-BENZ, draft control, position control, mixing control, floating position);
pressure accumulator LANGEN acting as shock absorber;
maximum accumulator pressure 130 bar

Power lift (continuation)	hydraulic oil tank with 50 l capacity; 35 l may be taken off through oil tappings when tractor is working stationary, 30 l when tractor is working driving; recommended oil: engine oil HD SAE 10W; oil changing intervals 1800 hours
In front:	Optional, fitted on tractor tested for power lift tests only; hydraulic power lift, disintegrated construction; oil supply from the front oil tappings; 2 double acting rams; bore 80 mm, rod 30 mm diameter, stroke 150 mm; BOSCH additional control valve, double-acting with automatic hydraulical release and lock for not intended operation
Implement linkage	
In the rear:	Three point linkage, category III, DIN 9674; (optional category II); lift rods adjustable from 665 to 810 mm; lifting range above ground with long lift rods from 90 to 915 mm short lift rods from 370 to 1125 mm; hydraulically acting linkage lock for transport with shutoff valve
In front:	Three point implement linkage of own construction; clevis as per DIN 9674 category II; the rams act directly on a lateral stabilized balancer; lifting range above ground from 331 to 1027 mm with front axle springs not compressed; maximum distance of clevis to front axle centre 1720 mm; hydraulically acting linkage lock for transport
Oil tappings	1 double acting BOSCH supplementary control valve with 2 oil tappings in front and 2 in the rear fitted on tractor tested; up to 3 double acting BOSCH supplementary control valves with 2 oil tappings each and 1 pressureless oil return in front as well as in the rear are available

Holed drawbar

Fitted on clevis of lower links of the 3-point implement linkage in the rear;
length between the ball joints 1010 mm;
thickness of the bar 25 mm, alloyed steel;
centre hole and 5 holes on either side;
80 mm distance each;
all holes 33 mm diameter;
height above ground infinitely adjustable by power lift in the range from 102 mm to 1137 mm depending on lift rods length, measured at the surface of the bar,
in any height above ground hydraulically lockable;
distance of centre hole:
from rear axle centre 1127 mm
from p.t.o.-shaft end 607 mm

Pull attachment

Swinging drawbar:

Height above ground 420 mm;
hitch hole 33 mm diameter;
distance of hitch hole from rear axle centre 920 mm
p.t.o.-shaft end 400 mm;
241 mm swingable to either side;
distance of pivot point 240 mm before rear axle centre

Trailer hitch:

ROCKINGER
model 279 D or 277 C, automatic;
height above ground adjustable to 820 and 890 mm;
hitch bolt diameter 30 mm;
distance from hitch bolt centre to rear axle centre 580 mm;
permissible vertical load 1800 kg
permissible drawing pull 88400 N

Towing hitch:

At front of tractor;
height above ground 745 mm with front axle springs not compressed

Steering	ZAHNRADFABRIK FRIEDRICHSHAFEN AG hydrostatic steering; hand pump and control valve: model 53, version 84; unit construction, steering wheel operated; ZF-rotary high pressure pump; delivery 16,5 cm³/rev or 16 l/min at rated engine speed; pressure 100 bar; V-belt driven by engine; 2 double acting rams; bore 40 mm, stroke 250 mm; propped to the front differential gear box, acting on the steering levers; own oil circuit; hydraulic oil tank with 3 l capacity; recommended oil: engine oil SAE 10
Brakes	
Compressed air equipment:	Air compressor of own design; directly driven by engine; air tank on the right hand side of chassis; air capacity 40 l, working pressure 7 bar
Parking brake:	Pneumatically acting spring loaded brake; acting on the rear wheels only; locked by pressure release; internal shoe type brake; 2 brake drums with 410 mm diameter, fitted to the final drive axles; operated by hand valve
Service brake:	Internal shoe type brake; 2 brake drums on both axles with 410 mm ∅, fitted to the final drive axles; pneumatically controlled, pedal operated, hydraulically acting on all wheels, 2 circuits Brake drums of parking brake and service brake are in common
Steering brake:	None
Trailer brake:	WABCO-BOSCH combined single-dual line type; pneumatically contolled

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Wheels

Steering wheels:	In front, same size as driving wheels
Driving wheels:	In front and in the rear; front wheel drive disengageable (see page 6); 4 pneumatics 18,4-30 AS 10 ply DIN 7807, diagonal type casing; maximum permissible load per tyre 3010 kg at 1,8 bar inflation pressure and 25 km/h; track width 1870 mm; (optional: track width adjustment wheels for 1800, 1870 and 2004 mm track width; adjustable by offset lug type rims); rims W 16 L x 30
Wheel base:	2650 mm

Cab

Own make;
All-steel construction consisting of moulded elements, welded and bolted together;
antivibration suspended on the chassis with 4 MEGI-supports;
entry by doors on the right and left hand side;
2 mounting steps on either side;
598 and 992 mm above ground;
height of the cab platform above ground 1360 mm;
all windows of single pane safety glass, (windscreen optionally of compound glass);
crank operated window panes in the doors;
doors can be removed;
for noise damping inside of cab is completely covered with PVC material;
driver's seat, steering hand wheel, pedals and instrument panel in unit construction, reversible about 180° for driving in foreward and reverse direction;
hot air heating and blower ventilation;
defroster jet at windshield and back window;
electric windshield and back window wiper;
2 rear-view mirrors
approved as safety cab under O.E.C.D. No.: CS 1201

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Driver's seat	GRAMMER DS 85 H/ 3 A; (optional ISRINGHAUSEN); upholstered seat with back rest; adjustable spring with shock absorber; parallelogram guidance; height above cab platform appr. 425 mm in downmost position; 80 mm up and down adjustable; 150 mm fore and aft adjustable; inclination of back rest variable by 20°; 20 mm right of tractor's median plane
Passenger's seat	Left from driver's seat; folding seat, upholstered with back rest; not spring suspended, damped or otherwise adjustable
Central implement-mounting area	Behind the cab; between the rear mudguards; length 1170 mm, width 1030 mm; covered with checkered steel plate

Number of grease points 22

Weights — Ready for use, as tested

		without driver	with driver
Without ballast:	front	3235 kg	3270 kg
	rear	2420 kg	2460 kg
	total	5655 kg	5730 kg
Front ballast:	frame		85 kg
	11 front weights on the frame 45 kg each		495 kg
Rear ballast:	in the implement-mounting area		1440 kg
	water in the tyres		1250 kg
With ballast:	front	4960 kg	4985 kg
	rear	3965 kg	4015 kg
	total	8925 kg	9000 kg

Dimensions

Total length:	5750 mm	with implement linkage in front and in the rear
	5345 mm	with implement linkage only in the rear
	4680 mm	without implement linkage
Total width:	2470 mm	at smallest track width 1800 mm
	2470 mm	at largest track width 2004 mm
Total height:	2925 mm	to top of cab-roof
Ground clearance:	515 mm	in tractor's median plane below the differentials

Lighting equipment — Electrical, 12 V
in accordance with German legislation

	Dimensions mm	Height above ground of centre mm	Distance from outside edge of tractor to centre mm
Head lights	140 x 125	1037	710
Additional head lights	140 x 125	2812	665
Side lights	30 x 58	1814	105
Rear lights	165 x 82	1466	322
Reflectors			
1st pair	75 ø	1042	152
2nd pair	75 ø	702	792

Permissible total weights and axle loads
for all available wheel equipment

Tyres	Permissible total weights kg	Permissible axle load front kg	Permissible axle load rear kg
16,9-30 AS 12 ply	10000	5840	5840
16,9R30 AS 12 ply	10000	5840	5840
14,9-30 AS 10 ply	9360	4680	4680
9,5-36 AS 12 ply	7240	3620	3620
18,4-30 AS 10 ply	10000	6020	6020
18,4R30 AS 10 ply	10000	6020	6020
17,5-25 EM 12 ply	10000	6020	7000
17,5R25 EM 12 ply	10000	6020	7000

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FUELS AND LUBRICANTS USED IN TESTS

Fuel:	ARAL DIESEL fuel DIN 51 601	
	specific gravity at 15°C	
	during engine tests	0,828 kg/l
	during p.t.o. tests	0,828 kg/l
	during drawbar tests	0,825 kg/l
Engine oil:	ARAL KOWAL HD 30	
Transmission oil:	ARAL transmission oil	
	Speed change gear and group gear	SAE 80
	Differential and final drives	SAE 90
Hydraulic oil:	ARAL engine oil HD 10	

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COMPULSORY TESTS

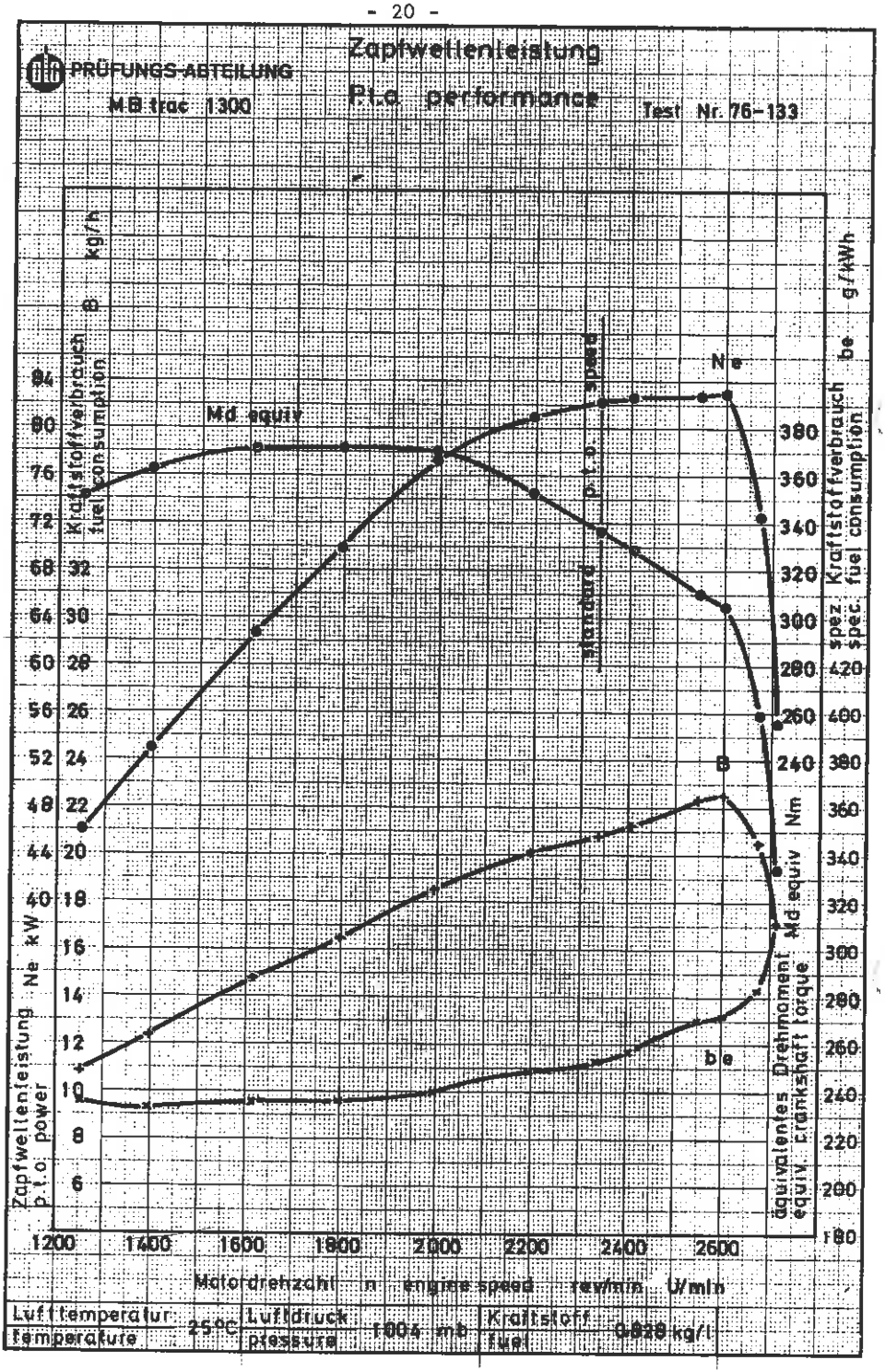
(1) MAIN POWER TAKE-OFF PERFORMANCE

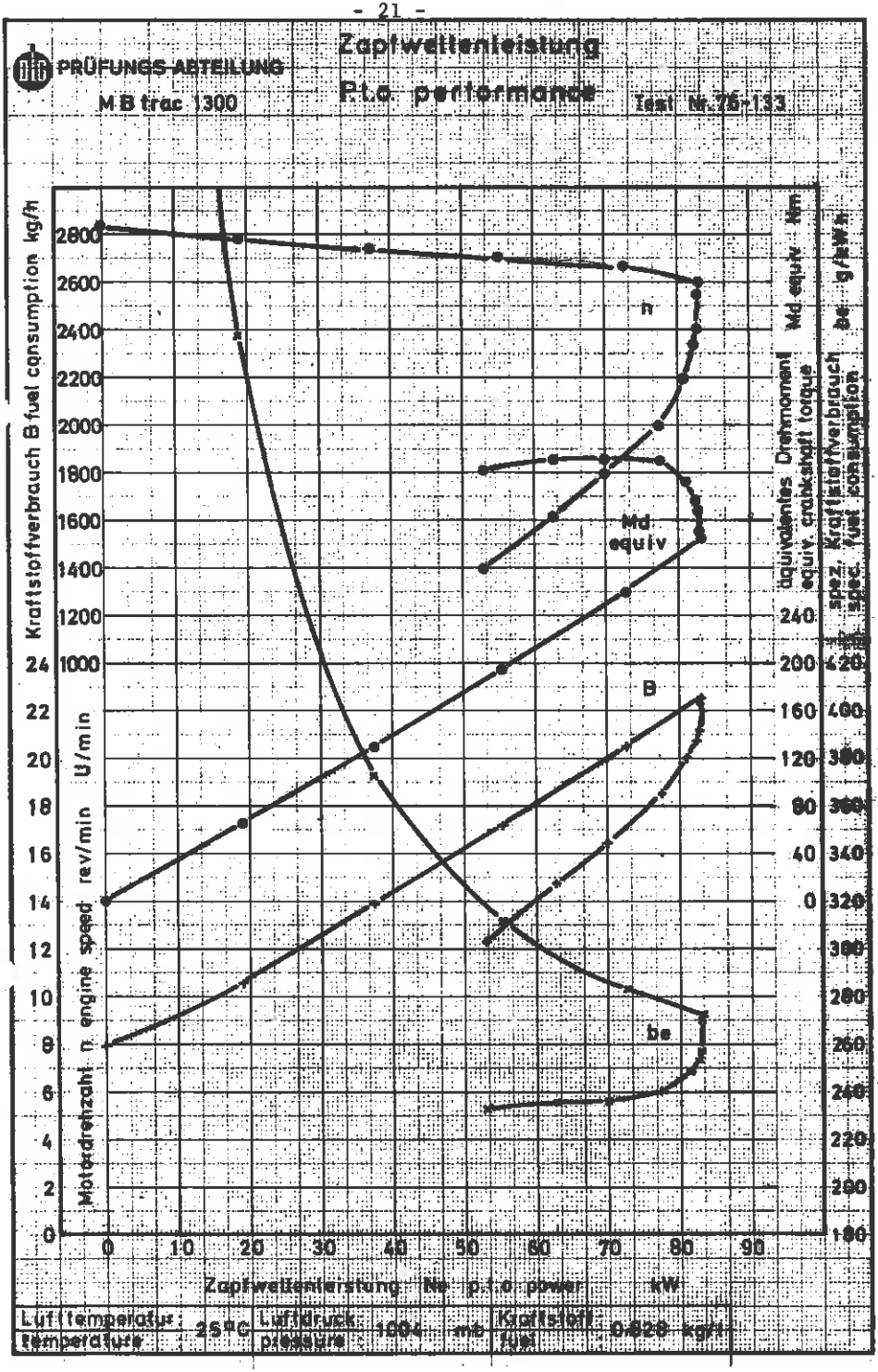
Date of tests: 20th August 1976
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power						
At 2-hour test						
82.9	2600	601	27.21	22.53	272	3.05
At standard p.t.o. speed (540 rev/min)						
82.2	2336	540	25.07	20.76	253	3.28
At the speed recommended for drawbar work						
82.9	2600	601	27.21	22.53	272	3.05
Part loads						
(i) 85% of the torque at maximum power at 2-hour test						
72.4	2672	618	24.73	20.48	283	2.93
(ii) unloaded						
-	2841	657	9.53	7.89	-	-
(iii) 50% of the load defined in (i)						
37.2	2746	635	16.75	13.87	373	2.22
(iv) maximum power						
82.9	2600	601	27.21	22.53	272	3.05
(v) 25% of the load defined in (i)						
18.9	2787	644	12.70	10.52	558	1.48
(vi) 75% of the load defined in (i)						
55.1	2711	627	20.70	17.14	311	2.66

No load maximum engine speed: 2841 rev/min
Equivalent crankshaft torque at maximum power (2 hours): 304 Nm
Maximum equivalent crankshaft torque: 371 Nm at 1796 rev/min of the engine

Mean atmospheric conditions:	temperature	25 °C
	pressure	1004 mbar
	relative humidity	97 %
Maximum temperatures:	coolant	90 °C
	engine oil	100 °C
	fuel	33 °C


Zapfwellenleistung
P.t.o. performance
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Kraftstoffverbrauch B kg/h
fuel consumption
Md equiv
Ne
standard p.t.o. speed
Kraftstoffverbrauch be g/kWh
spez. fuel consumption
Zapfwellenleistung Ne kW
p.t.o. power
äquivalentes Drehmoment Md equiv Nm
equiv. crankshaft torque
B
be
Motordrehzahl n engine speed rev/min U/min
Lufttemperatur 25 °C
temperature
Luftdruck 1004 mb
pressure
Kraftstoff 0,828 kg/l
fuel


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Zapfwellenleistung
P.t.o. performance
Test Nr. 75-133
Kraftstoffverbrauch B fuel consumption kg/h
Motordrehzahl n engine speed rev/min U/min
äquivalentes Drehmoment Md equiv. Nm
equiv. crankshaft torque
spez. Kraftstoffverbrauch be g/kWh
spec. fuel consumption
n
Md equiv
B
be
Zapfwellenleistung Ne p.t.o. power kW
Lufttemperatur: 25°C Luftdruck: 1000 mb Kraftstoff: 0,820 kg/l
temperature pressure fuel

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(2) DRAWBAR PERFORMANCE

Date of tests: 1st till 22nd September 1976
Type of track: Concrete

Gear No. and Group	Speed km/h	Power kW	Drawbar pull N	Engine speed rev/min	Slip of wheels %	Specific energy kWh/l
(i) MAXIMUM POWER with ballast height of drawbar above ground 550 mm						
1 field	0,80	19,6	88400	2761	15,0	1,44
2 field	1,11	27,2	88310	2740	14,9	1,75
3 field	1,49	36,7	88470	2720	15,0	1,99
4 field	1,98	48,3	87760	2650	15,0	2,19
5 field	2,74	65,9	86520	2600	14,7	2,42
6 field	4,05	70,0	62250	2600	8,8	2,57
1 road	4,71	71,9	54990	2600	7,3	2,64
7 field	5,71	72,1	45470	2600	5,7	2,64
2 road	6,72	73,6	39420	2600	4,6	2,69
8 field	7,92	71,4	32450	2600	3,8	2,62
3 road	9,31	72,5	28040	2600	3,0	2,66
4 road	12,80	70,7	19890	2600	2,0	2,59
(ii) FIVE-HOUR-TEST at 75% of pull at maximum power in 8th gear of field group						
8 field	8,20	55,4	24330	2663	2,7	2,47
(iii) FIVE-HOUR-TEST at pull corresponding to 15% wheel slip in test (i)						
4 field	-	-	88470	-	-	-
(v) MAXIMUM POWER without ballast height of drawbar above ground 550 mm						
5 field	2,81	47,3	60640	2667	15,0	2,20
6 field	3,82	64,3	60590	2612	14,9	2,43
1 road	4,50	68,6	54840	2600	11,9	2,50
7 field	5,55	70,3	45650	2600	8,7	2,58
2 road	6,60	71,9	39240	2600	6,8	2,64
8 field	7,84	71,7	32910	2600	5,2	2,62
3 road	9,22	73,2	28590	2600	4,3	2,69
4 road	12,74	71,9	20310	2600	2,9	2,65

Total oil consumption during ten hours duration of tests (ii) and (iii): 37 g/h

PRÜFUNGS-ABTEILUNG

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Tyres make and size — front: CONTINENTAL 18,4-30 AS 10 ply
rear: CONTINENTAL 18,4-30 AS 10 ply

Tread bar height at the beginning of drawbar tests:
89% of the value when new

Specific fuel consumpt. g/kWh	Temperatures: Fuel °C	Coolant °C	Engine-oil °C	Atmospheric conditions: Tempe-rature °C	Relative humidity %	Pressure mbar
tyre inflation pressure 1,8 bar rolling radius of tyres under static load 746 mm						
583	21	90	90	20	78	1004
480	21	90	96	20	77	1006
423	21	90	97	20	80	1006
375	27	90	90	24	56	1011
342	24	90	94	24	59	1011
321	24	90	94	23	64	1011
314	22	90	92	18	80	1011
312	23	90	93	23	66	1011
308	20	90	92	17	85	1011
315	23	90	98	20	60	1011
310	24	90	92	22	59	1011
319	25	90	92	24	60	1011
341	21	90	96	20	79	1006
-	21	90	97	20	75	1006
tyre inflation pressure 1,4 bar rolling radius of tyres under static load 748 mm						
375	23	90	92	24	78	991
340	23	90	93	24	72	991
329	27	90	88	25	70	989
320	25	90	93	24	78	991
312	27	90	92	25	72	989
314	27	90	92	25	70	991
308	22	90	92	18	87	987
313	22	90	87	18	91	987

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

(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 18,4-30 AS 10 ply
rear: 18,4-30 AS 10 ply

Track of wheels front: 1870 mm
rear: 1870 mm

	With all wheel-drive		With rear wheel-drive	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	6,73	6,89	6,35	6,52
Radius of turning circle	6,46	6,66	6,09	6,28

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	1073 mm
Distance forward from rear axle centre	1512 mm
Distance right or left from tractor's median plane	0 mm

(5) BRAKING PERFORMANCE

A) SERVICE BRAKE

Date of tests: 16th September
Type of track: Concrete
Type of decelerometer: MOTO-METER-Bremsverzögerungs- und Pedalkraftschreiber

Weight of ballasted tractor: 9000 kg with driver

Cold brakes

		with ballast	without ballast
Travelling speed	km/h	25,0	25,0
Deceleration	m/s^2	6,2	7,8
Stopping distance	m	6,4	5,2
Force on pedal	N	200	200
Force on pedal to achieve a deceleration of 2,5 m/s^2	N	80	30

Brake fade characteristics (hot tests)

Deceleration	hot/cold	%	100	106
Stopping distance	cold/hot	%	100	100
Force on pedal	cold/hot	%	100	95

B) PARKING BRAKE

Pneumatically controlled spring loaded brake locked by air pressure release, operated by hand valve

Tractor facing up slope: tractor does not roll
Tractor facing down slope: tractor does not roll

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(6) AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 15th September 1976
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2203

Results of test

Gear: 6th road gear
Travelling speed before acceleration: 21 km/h
Sound level: 87 dB(A)

(7) NOISE AT THE DRIVER'S EAR LEVEL

Date of tests: 14th September 1976
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2607
Type of frequency analyzer: BRÜEL AND KJAER model 1614
(fitted with octave filter)

A safety cab was fitted on tractor
O.E.C.D. tested, approval no. CS 1201

Results of tests

Gear	Drawbar pull at which the tractor develops the maximum sound level N	Travelling speed nominal km/h	Travelling speed effective km/h	Sound level dB(A)
1 field	60640	0,84	0,79	78,5
2 field	60460	1,16	1,11	78
3 field	60630	1,59	1,56	79,5
4 field	60450	2,16	2,11	84,5
5 fiel	60200	3,03	2,96	81
6 field	58500	4,21	3,99	82,5
1 road	52040	4,82	4,97	81,5
7 field	44650	5,74	5,67	81
2 road	36350	6,69	6,36	83
8 field*)	35300	7,83	7,18	84
3 road	29380	9,13	8,59	82
4 road	21100	12,44	12,41	85
5 road	14220	17,45	17,47	81
6 road	light load	24,22	28,42	78

*) The 8th field gear corresponds to the travelling speed nearest to 7,5 km/h

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(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

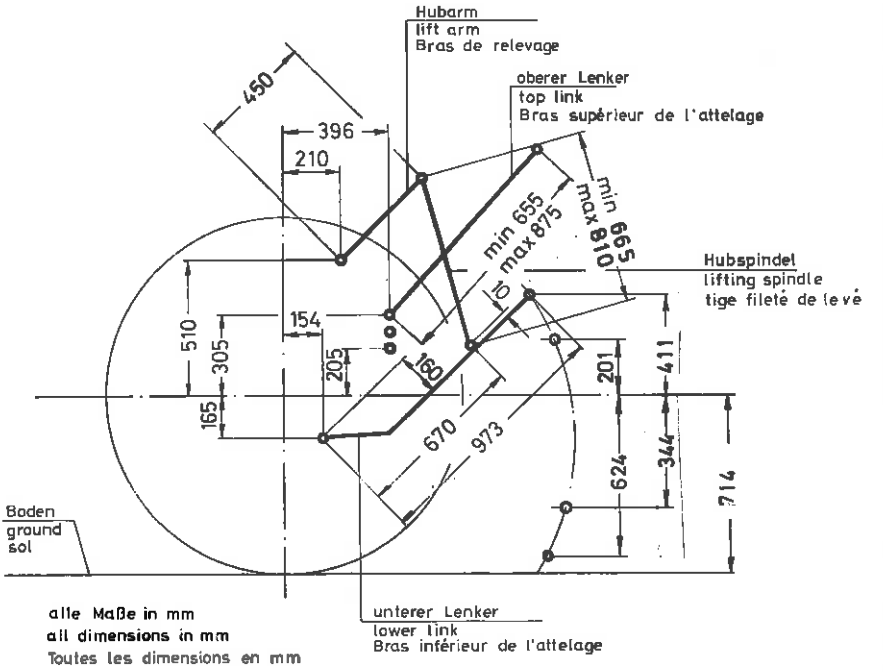
Date of tests: 20th September 1976

HYDRAULIC PUMP

(1) Opening pressure of relief valve in remote circuit	200 bar
Sustained pressure by open relief valve	196 bar
(2) Pump delivery rate at minimum pressure and maximum engine speed	61,7 l/min
(3) Pump delivery rate	54,0 l/min
Delivery pressure	173 bar
Hydraulic Power	15,6 kW

POWER LIFT

Dimensions of linkage geometry (category III)



alle Maße in mm
all dimensions in mm
Toutes les dimensions en mm

LIFTING FORCES at hitch points

(no mesurements carried out at the test frame, because category III fitted)

Lifting heights relative to horizontal lower links

mm	-459	-400	-300	-200	-179	-100	0	+100	+200	+300	+366	+400	+500	+576
maximum mechanical advantage, lift rods 665 mm long														
N					68900	67900	67550	65400	64000	62700		61100	59500	57900
minimum mechanical advantage, lift rods 810 mm long														
N	63500	62800	61900	60850		60000	59550	59300	58200	56250	54900			

Max. force exerted throughout the whole range 57900 N

Front of tractor does not lift with max. allowable front ballast

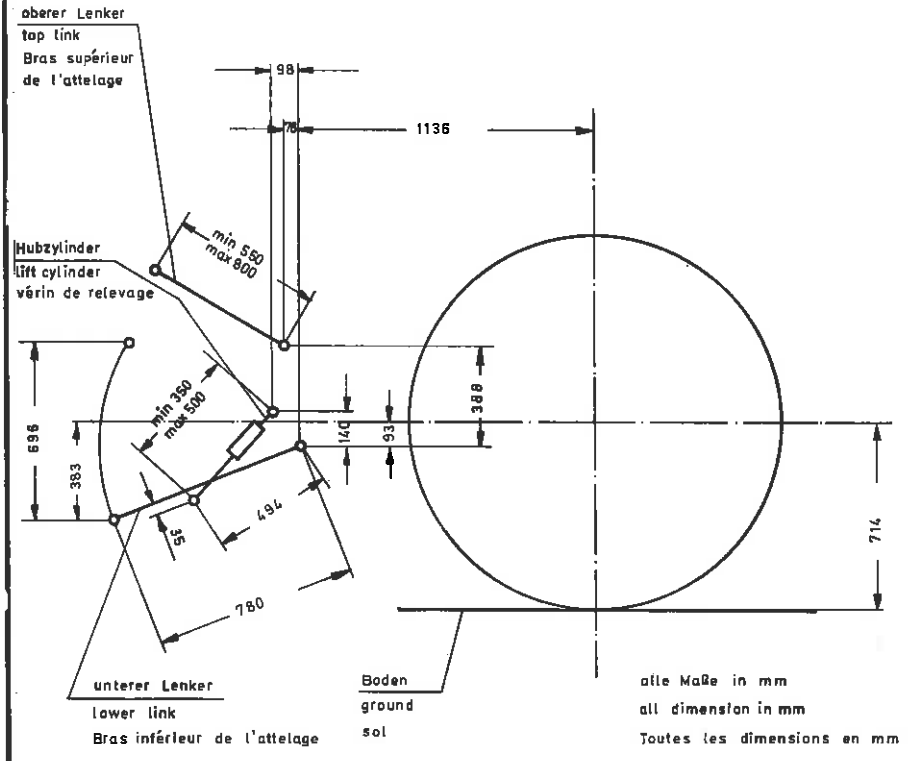
All values of forces for pressure at max. hydraulic power 173 bar, see page 27, calculated from measurements at max. oil pressure 196 bar

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POWER LIFT (at front)

Dimension of linkage geometry for the table on page 30



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LINKAGE GEOMETRY

when connected to the standard frame

Projected length in side view:	
Lower links	780 mm
Lift ram	350 to 500 mm
Top link	708 mm
Distance of lift ram connection point from pivot point of lower link	494 mm

The following dimensions are given relative to front axle centre line 714 mm above ground

Lower link pivot point	1136 mm forward, 93 mm below
Top link pivot point	1212 mm forward, 295 mm above
Lift ram pivot point	1234 mm forward, 47 mm above
Maximum and minimum height of lower link hitch points	313 mm above, 383 mm below
Height of lower link hitch points above ground when locked in highest transport position	1027 mm

LIFTING FORCES (in the front)

Lifting heights relative to horizontal lower links

mm	-329	-300	-290	-200	-100	0	+100	+200	+300	+400	+406	+459
at hitch points												
N			31750	30700	30000	29400	28600	27450	25700	23700	23250	

Maximum force exerted throughout the whole range 23250 N

With or without ballast the rear of tractor does not lift

at test frame												
N	29850	29600		28400	27700	26850	25700	24250	22450	20350		18600

Maximum force exerted throughout the whole range 18600 N

Rear axle does not lift with all allowable ballast

All values of forces for pressure at max. hydraulic power 173 bar, see page 27
calculated from measurements at max. oil pressure 196 bar

PRÜFUNGS-ABTEILUNG

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OPTIONAL TESTS

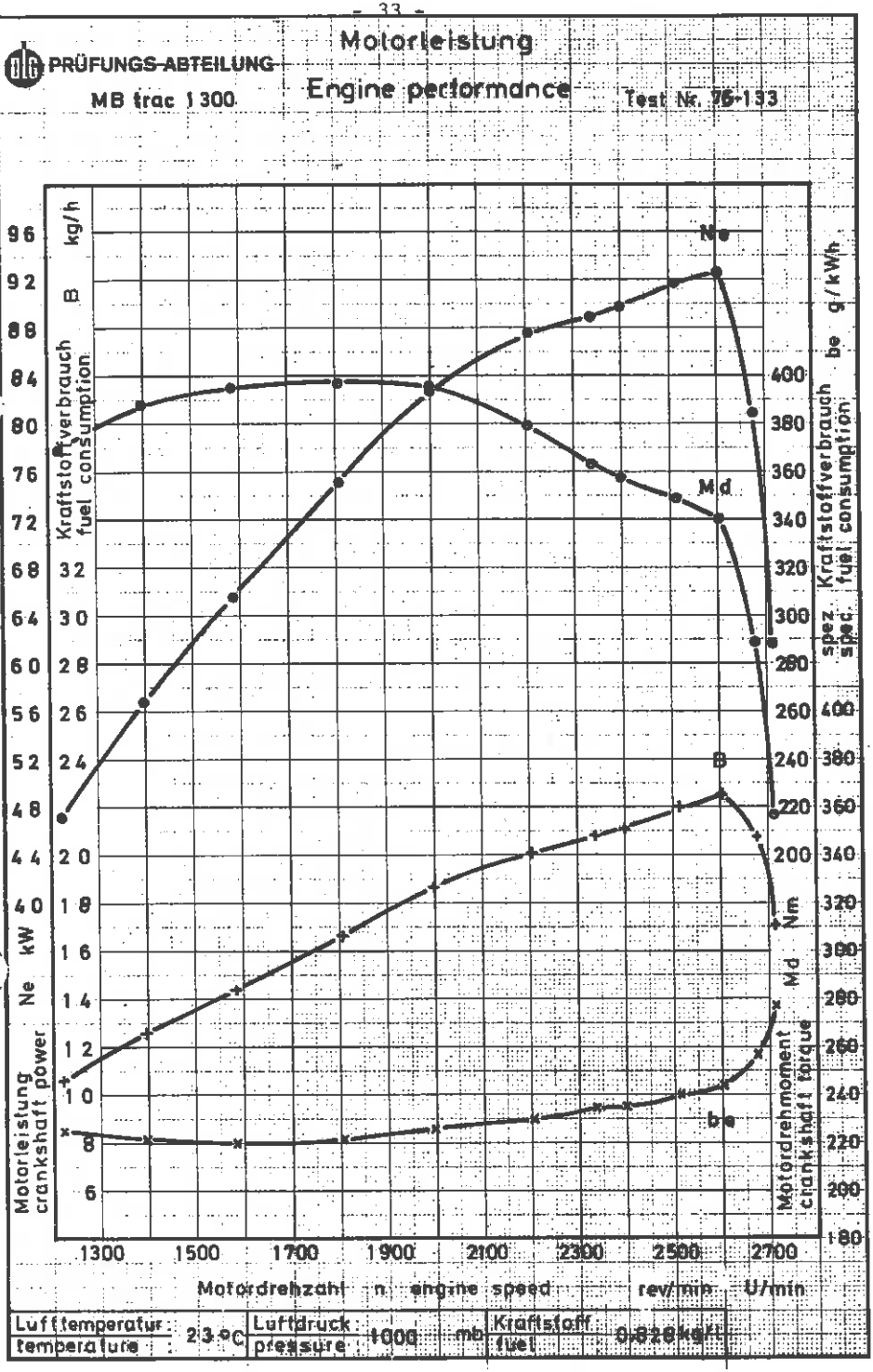
(1) ENGINE PERFORMANCE

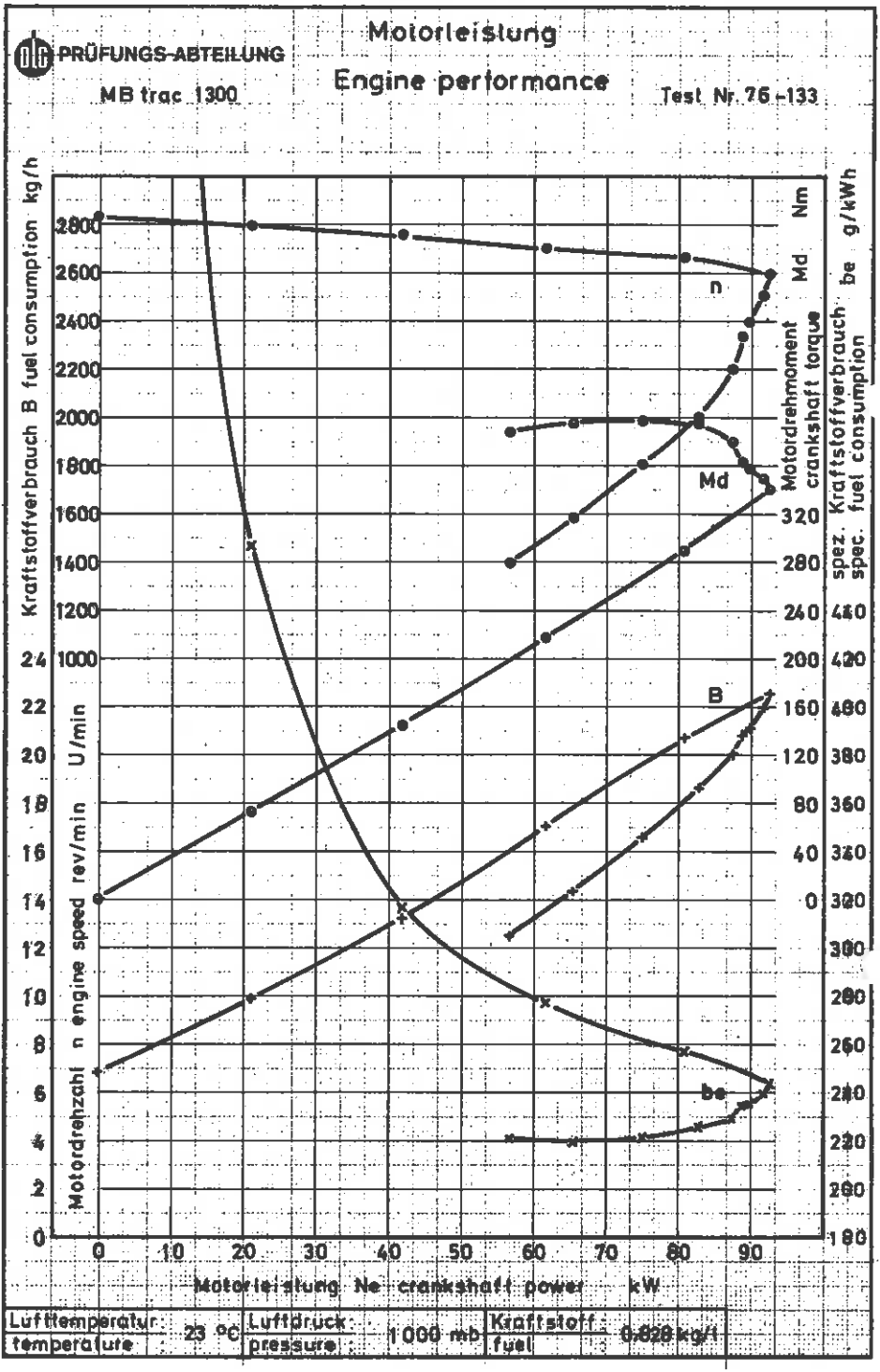
Date of tests: 13th August 1976
Type of dynamometer: SCHENCK hydraulic dynamometer U1-30

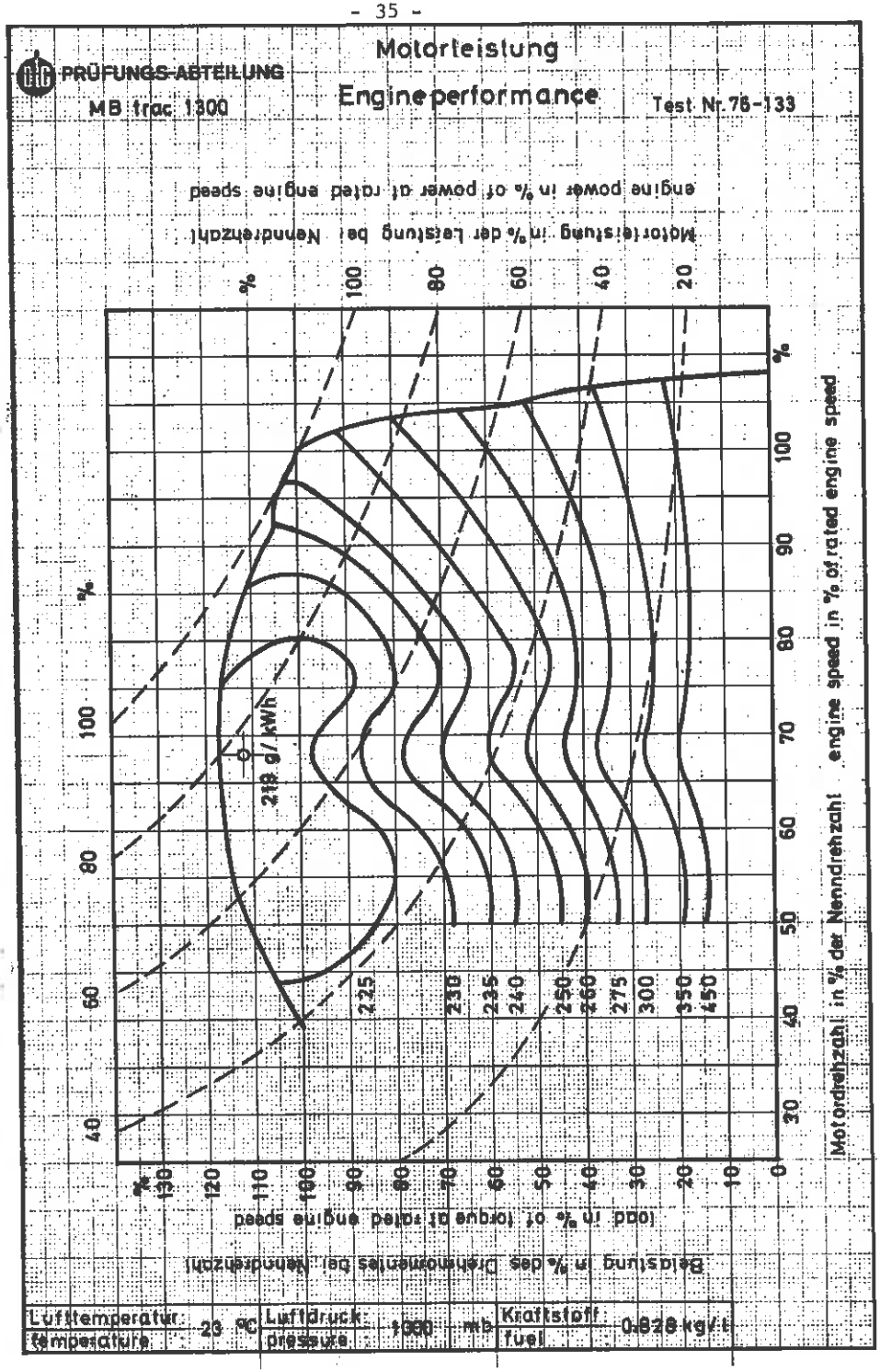
Power kW	Engine speed rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power					
At 2-hour test					
92.6	2600	27.24	22.56	244	3.40
At standard p.t.o. speed (540 rev/min)					
88.9	2336	25.19	20.86	235	3.53
At the speed recommended for drawbar work					
92.6	2600	27.24	22.56	244	3.40
Part loads					
(i) 85% of the torque at maximum power at 2-hour test					
80.8	2674	25.07	20.76	257	3.22
(ii) unloaded					
-	2837	8.25	6.83	-	-
(iii) 50% of the load defined in (i)					
41.9	2764	16.03	13.27	317	2.61
(iv) maximum power					
92.6	2600	27.24	22.56	244	3.40
(v) 25% of the load defined in (i)					
21.2	2799	11.96	9.90	467	1.77
(vi) 75% of the load defined in (i)					
61.6	2711	20.64	17.09	277	2.98

Optimum fuel consumption: 219 g/kWh at 68.0 kW and 1702 rev/min
No load maximum engine speed: 2837 rev/min
Torque at maximum power (2 hours): 340 Nm
Maximum torque: 397 Nm at 1807 rev/min of the engine

Mean atmospheric conditions:	temperature	23 °C
	pressure	1000 mbar
	relative humidity	80 %
Maximum temperatures:	coolant	90 °C
	engine oil	96 °C
	fuel	33 °C


Motorleistung
Engine performance
PRÜFUNGS-ABTEILUNG
MB trac 1300
Test Nr. 76-133
Ne
Md
B
be
Motorleistung crankshaft power Ne kW
Kraftstoffverbrauch fuel consumption B kg/h
Motordrehmoment crankshaft torque Md Nm
spez. Kraftstoffverbrauch spec. fuel consumption be g/kWh
Motordrehzahl n engine speed rev/min U/min
1300 1500 1700 1900 2100 2300 2500 2700
Lufttemperatur temperature : 23 °C
Luftdruck pressure 1000 mb
Kraftstoff fuel 0,826 kg/l


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Motorleistung
Engine performance
Test Nr. 76-133
Kraftstoffverbrauch B fuel consumption kg/h
Motordrehzahl n engine speed rev/min U/min
Motordrehmoment Md crankshaft torque Nm
spez. Kraftstoffverbrauch be spec. fuel consumption g/kWh
n
Md
B
be
Motorleistung Ne crankshaft power kW
Lufttemperatur temperature 23 °C
Luftdruck pressure 1000 mb
Kraftstoff fuel 0,828 kg/l


Motorleistung
Engine performance
PRÜFUNGS-ABTEILUNG
MB trac 1300
Test Nr. 76-133
Motorleistung in % der Nenndrehzahl
engine power in % of power at rated engine speed
Motordrehzahl in % der Nenndrehzahl engine speed in % of rated engine speed
Belastung in % des Drehmomentes bei Nenndrehzahl
load in % of torque at rated engine speed
218 g/kWh
225
230
235
240
250
260
275
300
350
450
Lufttemperatur temperature 20 °C
Luftdruck pressure 1000 mb
Kraftstoff fuel 0.828 kg/l

PRÜFUNGS-ABTEILUNG
MB-trac 1300

Test No. 76-133

(2) MAIN POWER TAKE-OFF PERFORMANCE

Date of tests: 23rd August 1976
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power						
At 2-hour test						
82.5	2600	1058	27.24	22.56	273	3.03
At standard p.t.o. speed (1000 rev/min)						
81.6	2457	1000	25.76	21.33	261	3.17
At the speed recommended for drawbar work						
82.5	2600	1058	27.24	22.56	273	3.03
Part loads						
(i) 85% of the torque at maximum power at 2-hour test						
71.6	2656	1081	24.40	20.20	282	2.94
(ii) unloaded						
-	2809	1143	9.34	7.74	-	-
(iii) 50% of the load defined in (i)						
36.8	2729	1111	16.87	13.97	380	2.18
(iv) maximum power						
82.5	2600	1058	27.24	22.56	273	3.03
(v) 25% of the load defined in (i)						
18.6	2768	1127	12.84	10.63	570	1.45
(vi) 75% of the load defined in (i)						
54.4	2690	1095	20.63	17.08	314	2.64

No load maximum engine speed: 2809 rev/min
Equivalent crankshaft torque at maximum power (2 hours): 303 Nm
Maximum equivalent crankshaft torque: 370 Nm at 1709 rev/min of the engine

Mean atmospheric conditions:	temperature	25 °C
	pressure	1001 mbar
	relative humidity	60 %
Maximum temperatures:	coolant	90 °C
	engine oil	100 °C
	fuel	34 °C

PRÜFUNGS-ABTEILUNG
MB-trac 1300 Test No. 76-133

ADDITIONAL TEST

out of the O.E.C.D. CODE under the responsibility of the DLG Testing Station

(1) MAIN POWER TAKE-OFF PERFORMANCE

at engine speed corresponding to standard p.t.o. speed (540 rev/min)

Date of tests: 20th August 1976
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power at standard p.t.o. speed						
82.1	2334	540	25.28	20.93	255	3.25
Part loads at standard p.t.o. speed						
(i) 85% of the torque at maximum power						
72.2	2412	558	24.05	19.91	276	3.00
(ii) unloaded						
-	2571	594	7.56	6.26	-	-
(iii) 50% of the load defined in (i)						
36.9	2469	571	14.88	12.32	333	2.48
(iv) maximum power						
82.1	2334	540	25.28	20.93	255	3.25
(v) 25% of the load defined in (i)						
18.8	2511	580	11.22	9.29	494	1.67
(vi) 75% of the load defined in (i)						
54.6	2432	562	18.60	15.40	282	2.93

Equivalent crankshaft torque at standard p.t.o. speed 336 Nm

Mean atmospheric conditions:
- temperature 25 °C
- pressure 1004 mbar
- relative humidity 97 %

Maximum temperatures:
- coolant 90 °C
- engine oil 100 °C
- fuel 33 °C

PRÜFUNGS-ABTEILUNG
MB trac 1300

Test No. 76-133

ADDITIONAL TEST

out of the O.E.C.D. CODE under the responsibility of the DLG-Testing Station

(2) NOISE AT THE DRIVER'S EAR LEVEL

Octave analysis in the 8th field gear of which the nominal travelling speed is nearest to 7,5 km/h and the 4th road gear reported in the diagram of the NOISE RATING curves

Date of test: 14th September 1976
Test track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2607
Type of frequency analyser: BRÜEL AND KJAER model 1614
(fitted with octave filter)

The tractor was fitted with a safety cab
O.E.C.D. tested, approval no. CS 1201

Results of test

Gear	Drawbar pull at which the tractor develops the maximum sound level N	Travelling speed effective km/h	Sound level dB(A)	Sound level noise rating
8 field	35300	7,18	84	80
4 road	21100	12,41	85	85

There is no gear combination with a NOISE RATING NUMBER higher than 85

PRÜFUNGS-ABTEILUNG	Noise at the driver's ear level	MB trac 1300

