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

O.E.C.D. No. 646



Agricultural Tractor EICHER 3024 A
trade name: EICHER 3133 A

Manufacturer
Gebr. Eicher, Traktoren- und Landmaschinenwerke GmbH
D-8380 Landau a. d. Isar

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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.

Perfomance of tests: January till July 1979

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.N.E.E.M.A., France) as being in accordance with the O.E.C.D. STANDARD CODE.

Date of Approval: 7th December 1979 O.E.C.D. No. 646

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 = 750,1 mm Hg			

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PRÜFUNGS-ABTEILUNG
EICHER 3024 A

Test No. 78-322

Tractor manufacturer:	GEBR. EICHER GMBH D-8380 Landau
Submitted for test by:	Manufacturer
Selected by:	Manufacturer with agreement by DLG
Place of running-in:	Landau
Duration of running-in:	Engine and tractor appr. 200 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	EICHER
Model:	3024 A, trade name 3133 A
Type:	Wheel tractor, unit construction, all-wheel driven
Serial No:	142041

Engine

Make:	EICHER
Model:	EDK 6-5
Type:	4-stroke Diesel-engine, direct injection, air-cooled, turbo supercharged
Serial No:	124951
Cylinders:	6, in line, bore 100 mm, stroke 125 mm, displacement 5890 cm^3, compression ratio 18; replaceable ribbed cylinder liners
Valves:	Overhead, self-adjusting hydraulic tappets
Fuel system:	BOSCH fuel feed pump FP/KS 22 AD 6/4; BOSCH in line injection pump: PES 6A 80D 320 RS 1280 manufacturer's production setting 69,5 mm^3/stroke at rated engine speed; injection timing 34° before TDC; BOSCH pintle-type nozzles DNO SD 137, injection pressure 145 bar; CAV two-stage fuel filter with replaceable cartridges; capacity of fuel tank 248 l
Governor:	BOSCH centrifugal variable speed governor: RSV 300-1150 AOB 2005 R, governed range of speed 600 to 2540 rev/min, rated engine speed 2300 rev/min

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Charger:	KÜHNLE, KOPP UND KAUSCH exhaust driven supercharger 3 LEP 289 A 9.1, supercharge pressure max. 900 mbar, without air intercooler
Air cleaner:	MANN PICLON dry paper element filter with precleaner, with replaceable cartridge and electrically operating maintenance-indicator
Exhaust silencer:	LANGE single chamber reflexion-absorption-type silencer, 108 mm dia, 650 mm long, on the left hand side of engine cowling, mouth showing upward, mouth 2700 mm above ground
Lubrication system:	Forced feed from gear pump; strainer in sump; MANN oil filter in full flow with replaceable cartridge and by-pass valve; cartridge change at all oil changes; oil capacity 19 l; recommended oil quality MIL-L-2104 C; recommended oil viscosities: winter SAE 10W summer SAE 20W/20 tropics SAE 30 or multigrade oil SAE 15W/40 oil change interval 200 hours, with oil cooler
Cooling system:	Air cooling 1 radial blower per cylinder and oil cooler with common driving shaft, V-belt driven
Starting system:	Electrical BOSCH screw-push starter motor ID 12V 3kW; additional fuel injection in all intake pipes with hand pump
Electrical equipment:	12 Volt negative earth; BOSCH 3-phase alternator G1 14V 28A; 1 lead acid battery 143 Ah at 20 hours rating

Transmission

Clutch:	FICHTEL UND SACHS dry single disc type clutch GFM 350 K, disc diameter 350 mm, pedal operated, for travel drive only
Gear box:	ZAHNRADFABRIK PASSAU GMBH T 3450; speed change gear with 6 speeds, 1st and 2nd gear collar shifted, 3rd to 6th gear synchronized; synchromesh group gear with 2 forward groups and 1 reverse group; the 6th gear of speed change gear is locked if the reverse group is shifted; creep group for the 1st and 2nd gear of speed change gear; optional a super creep group may be fitted instead of the creep group; creep speeds and super creep speeds shall not be used for drawbar work; totally 16 forward and 7 reverse speeds at tractor tested; transmission oil cooler
Rear axle and final drives:	Bevel gear drive with crown wheel and pinion; bevel gear type differential with lock, pedal operated, self disengaging; planetary final drives
Driven front axle:	ZAHNRADFABRIK FRIEDRICHSHAFEN AG APL-3052, driven by universal joint shaft, situated on the left hand side of gear box; under load engageable and disengageable by a wet multi disc type clutch, handlever operated; bevel gear drive with crown wheel and pinion; bevel gear type self locking differential LOC-O-MATIC; planetary final drives

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Oil capacity:	Transmission in common with rear axle drive and hydraulic		42 l
	rear axle final drives	each	8 l
	front axle differential		8 l
	front axle final drives	each	1,2 l

Oil changing interval: 1000 hours

Recommended oil qualities:
Final drives:
Transmission oil SAE 90
MIL-L-2105 B

front axle differential:
Hypoid oil SAE 90
FORD specif. M2C-104 A

other gears:
Engine oil SAE 20W/20
MIL-L-2104 B or C

Total ratios and speeds see page 8

Power-take-off

Independent p.t.o.,
at rear of tractor;
driven by a dry multi disc clutch,
operated by hand lever on the left side
below the steering wheel,
height above ground 720 mm in tractor's median plane; 330 mm behind rear axle centre line;
35 mm dia, 6 splines DIN 9611 and
ISO 500 type 1;
2 speeds are preselectable by hand lever:

540 rev/min p.t.o.
586 rev/min at rated engine speed,
standard p.t.o. speed 540 rev/min at
2118 rev/min engine speed

1000 rev/min p.t.o.
1022 rev/min at rated engine speed,
standard p.t.o. speed 1000 rev/min at
2250 rev/min engine speed

p.t.o. speeds may be set by aid of tractormeter;
direction of rotation clockwise, viewed
from tractor rear

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Total ratios and speeds (tyres 20,8 R 38)

Group		Gear	Total ratio engine : driving wheels	Nominal travelling speed *) at rated engine speed km/h
Forward speeds				
Creep group	slow L	1	635,57	1,17
		2	403,35	1,84
	fast S	1	512,40	1,45
		2	325,18	2,28
slow L		1	258,89	2,86
		2	164,29	4,51
		3	105,15	7,05
		4	69,08	10,73
		5	44,46	16,67
		6	29,24	25,36
fast S		1	208,71	3,55
		2	132,45	5,60
		3	84,77	8,75
		4	55,69	13,31
		5	35,84	20,68
		6	23,57	31,45
Reverse speeds				
Creep group	R	1	406,47	1,82
		2	257,95	2,87
reverse R		1	165,57	4,46
		2	105,07	7,06
		3	67,25	11,02
		4	44,18	16,78
		5	28,43	26,07

*) calculated with INDEX RADIUS 855 mm as per WdK 154

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Power lift

Hydraulic system:	ZAHNRADFABRIK PASSAU GMBH KR 25 hydraulic power lift in unit construction; BOSCH gear pump HY/ZFS 11/10 with 45 l/min delivery at rated engine speed; driven by the forward end of the p.t.o. shaft, in front of the p.t.o. clutch; BOSCH control valve for lifting, lowering, draft control, position control and floating position; lower link sensing; maximum oil pressure 175 bar; 1 single acting main cylinder with 120 mm bore and 126 mm stroke, overpressure relief valve in main cylinder adjusted to 210 bar; 2 external additional cylinders of own make with 50 mm bore and 150 mm stroke; up to 3 single or double acting additional control valves with oil tappings available; oil capacity 42 l in common with gear box; max. 10 l may be taken off through oil tappings when tractor is travelling, 12 l when tractor is working stationary
Implement linkage:	Three point linkage category II DIN 9674, category III optionally; WALTERSCHEID quick coupler; 2 holes in the lower links for fitting the lift rods: hole 1 in 580 mm hole 2 in 625 mm distance of pivot point of lower links; lift rods adjustable from 670 to 770 mm; lifting range above ground when using hole no. 1: with short lift rods from 310 to 920 mm with long lift rods from 105 to 770 mm hole no. 2: with short lift rods from 365 to 940 mm with long lift rods from 180 to 800 mm

Holed bar:	Short bar, fitted on clevis of lower links; length between the joint balls 820 mm, width 80 mm, thickness 30 mm; centre hole and 4 holes in 80 mm distance each on either side; all holes 33 mm diameter; height above ground adjustable by power lift in the range from 120 to 955 mm, depending on lift rods length, measured at the surface of the bar; in any height above ground hydraulically lockable; distance of holes centre line with lower links in horizontal position: from rear axle centre 1170 mm from p.t.o. shaft end 840 mm

Pull attachment

Swinging drawbar:	Height above ground 450 or 600 mm, adjustable by turning drawbar; hitch hole 33 mm diameter; distance of hitch hole centre: from rear axle centre 735, 785 or 835 mm from p.t.o. shaft end 405, 455 or 505 mm adjustable by shifting drawbar in longitudinal direction; pivot points 120, 170 and 220 mm behind rear axle centre; drawbar lateral swingable about 140 mm to either side
Trailer hitch:	Own make height above ground adjustable by shifting and turning in 7 steps from 685 to 1025 mm; hitch hole 33 mm diameter; distance of hitch hole centre to rear axle centre 592 mm; permissible vertical load 1500 kg
Towing hitch:	770 mm above ground

Steering

ZAHNRADFABRIK FRIEDRICHSHAFEN AG
hydrostatic steering, model 8440
with own oil circuit;
BOSCH gear pump with 11 cm^3/rev delivery,
driven by the forward end of the p.t.o. shaft,
in front of the p.t.o. clutch;
ATF-transmission oil type A, capacity 5 l,
oil changing interval 2000 hours;
1 double acting ram with 45 mm bore
and 200 mm stroke,
directly acting on the front axle

Brakes

Parking brake: Mechanically acting shoe type brake
with 2 brake drums 250 mm diameter
on the differential half shafts;
operated by hand lever with ratchet

Service brake: Own make in cooperation with
KNOTT and GIRLING;
hydraulically acting shoe type brake with
2 brake drums with 270 mm diameter
on the differential half shafts;
additional disc brake with 274 mm diameter
on the joint shaft of the front axle drive;
pedal operated

Steering brake: 2 additional hand levers on the left hand
side of driver's seat, acting on the
brake drums of the service brake

Wheels

Steered wheels: 2 pneumatics in front 14,9-26 6 ply,
diagonal type tyre casing;
maximum permissible load per tyre 1560 kg
at 1,4 bar inflation pressure and 30 km/h;
track widths 1720 and 1820 mm,
adjustable by turning wheels;

rims W 15L x 26

Driving wheels:	At front and at rear; specification of driving front wheels see at steered wheels; driving rear wheels: 2 pneumatics 20,8 R 38 8 ply, radial type tyre casing; maximum permissible load per tyre 3090 kg at 1,3 bar inflation pressure and 30 km/h; track widths 1720 and 1830 mm, adjustable by turning wheels; rims W 18L x 38
Wheel base:	2730 mm
Cab	Own make safety cab O.E.C.D.-tested approval no. CS 1219; antivibration mounts; all windows tiltable; inside of cab covered with noise damping materials; doors on both sides of the cab; each entry with 2 steps; heating by radial blower of oil cooler; optionally additional Diesel-fuel heating available
Seat	BOSTROM upholstered seat with back rest; adjustable spring with shock absorber; height of driver's platform above ground 1180 mm; height of unloaded seat above platform adjustable in 6 steps from 420 to 480 mm; for and aft adjustable about 150 mm

Number of grease points 23

Track setting during tests

front axle	1820 mm
rear axle	1830 mm

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Dimensions

Total length:	4630 mm	without ballast
	4890 mm	with ballast
Total width:	2370 mm	with and without ballast
Total height:	2750 mm	to top of cab
Ground clearance:	430 mm	below swinging drawbar

Weights

Ready for use as tested, with cab

		without driver	with driver
Without ballast:	front	2070 kg	2080 kg
	rear	3610 kg	3670 kg
	total	5680 kg	5750 kg
Front ballast:	1 front weight		40 kg
	6 front weights	28 kg each	168 kg
	1 weight per wheel	64 kg each	128 kg
	water in the tyres		324 kg
Rear ballast:	1 weight per wheel	180 kg each	360 kg
	water in the tyres		725 kg
With ballast:	front	2790 kg	2800 kg
	rear	4635 kg	4695 kg
	total	7425 kg	7495 kg

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Lighting equipment — Electrical 12 Volt
as per German legislation

	Dimensions mm	Height above ground of centre mm	Distance from outside edge of tractor to centre mm
Head lights	145 x 90	1102	1033
Side lights	70 x 20	1825	175
Rear lights	30 x 65	1492	235
Reflectors			
1st pair	130 x 40	1385	235
2nd pair	60 ø	745	690

Permissible total weights and axle loads

for all available wheel equipment

Wheel equipment front	Wheel equipment rear	Permissible total weights kg	Permissible axle load front kg	Permissible axle load rear kg
11,2-28	16,9-38	7500	2600	5040
14,9-24 12,4-28	18,4-34	7500	2800	5430
14,9-26 13,6-28	20,8-38	7500	2800	6000

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FUELS AND LUBRICANTS USED IN TESTS

Fuel:	ARAL Diesel-fuel DIN 51 601
	specific gravity at 15°C
	at engine tests 0,836 kg/l
	at p.t.o. tests 0,829 kg/l
	at drawbar tests 0,830 kg/l
Engine:	ESSO engine oil ESSOLUBE XD-3 SAE 15W/40
Transmission, rear axle and hydraulic:	ESSO engine oil ESSOLUBE HDX SAE 20W/20
Front axle differential:	ESSO hypoid transmission oil LSA 90
Final drives:	ESSO hypoid transmission oil SAE 90

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COMPULSORY TESTS

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

Date of tests: 27th February 1979
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						
94.0	2300	1022	28.83	23.89	254	3.26
At standard p.t.o. speed						
93.4	2250	1000	28.42	23.55	252	3.29
At the speed recommended for drawbar work						
94.0	2300	1022	28.83	23.89	254	3.26
Part loads, the governor hand lever in the position corresponding to the maximum power at full load						
(i) 85% of the torque at maximum power at 2-hour test						
82.5	2373	1055	26.09	21.61	262	3.16
(ii) unloaded						
-	2537	1128	8.05	6.67	-	-
(iii) 50% of the load defined in (i)						
42.9	2472	1099	17.27	14.31	333	2.48
(iv) maximum power						
94.0	2300	1022	28.83	23.89	254	3.26
(v) 25% of the load defined in (i)						
21.8	2504	1113	12.59	10.43	479	1.73
(vi) 75% of the load defined in (i)						
63.3	2431	1081	21.76	18.03	285	2.91

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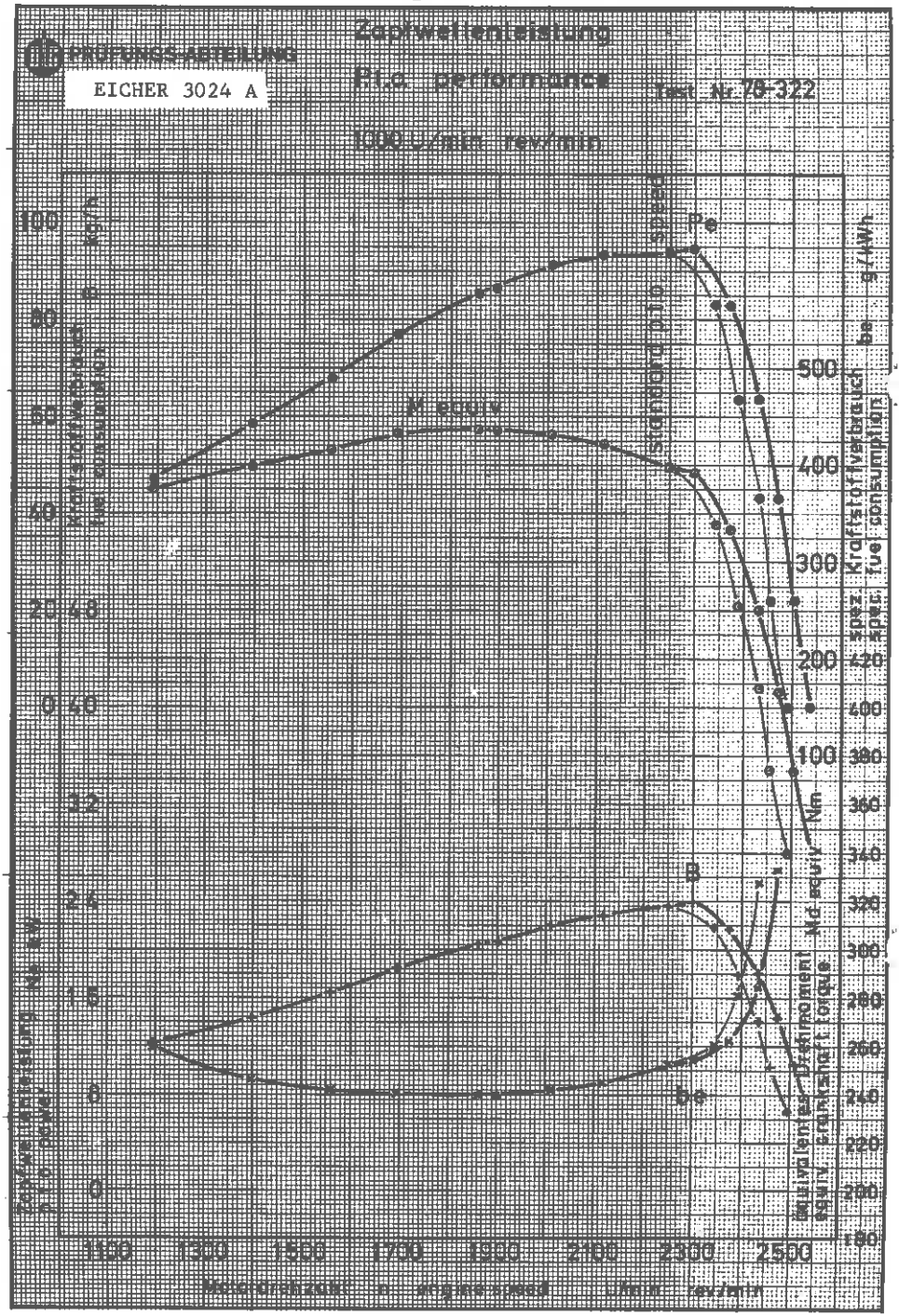
Test No. 78-322

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
Part loads, the governor hand lever in the position corresponding to the standard p.t.o. speed at full load						
(i) 85% of the torque at maximum power at 2-hour test						
82.7	2344	1042	26.00	21.53	260	3.18
(ii) unloaded						
-	2492	1107	8.05	6.67	-	-
(iii) 50% of the load defined in (i)						
42.9	2433	1081	16.97	14.06	327	2.53
(iv) maximum power						
93.4	2250	1000	28.42	23.55	252	3.29
(v) 25% of the load defined in (i)						
21.7	2455	1091	12.39	10.26	474	1.75
(vi) 75% of the load defined in (i)						
63.3	2390	1062	21.46	17.78	281	2.95

Standard specific fuel consumption (g/kWh): 262/333/263/327

No load maximum engine speed: 2537 rev/min
Equivalent crankshaft torque at maximum power (2 hours): 390 Nm
Maximum equivalent crankshaft torque: 435 Nm at 1860 rev/min of the engine

Mean atmospheric conditions:	temperature	22 °C
	pressure	1008 mbar
	relative humidity	38%
Maximum temperatures:	coolant	-
	engine oil	106 °C
	fuel	33 °C
	engine air intake	24 °C


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Zapfwellenleistung
P.t.o. performance
1000 U/min rev/min
Test Nr. 78-322
Zapfwellenleistung P.t.o. power
Motordrehzahl n engine speed U/min rev/min
Drehmoment Md
Kraftstoffverbrauch ba
spez. Kraftstoffverbrauch spec. fuel consumption
Standard curve
Äquivalente Kurbelwellendrehzahl
Equiv. crankshaft speed
1150
1300
1500
1700
1920
2100
2300
2500

PRÜFUNGS-ABTEILUNG

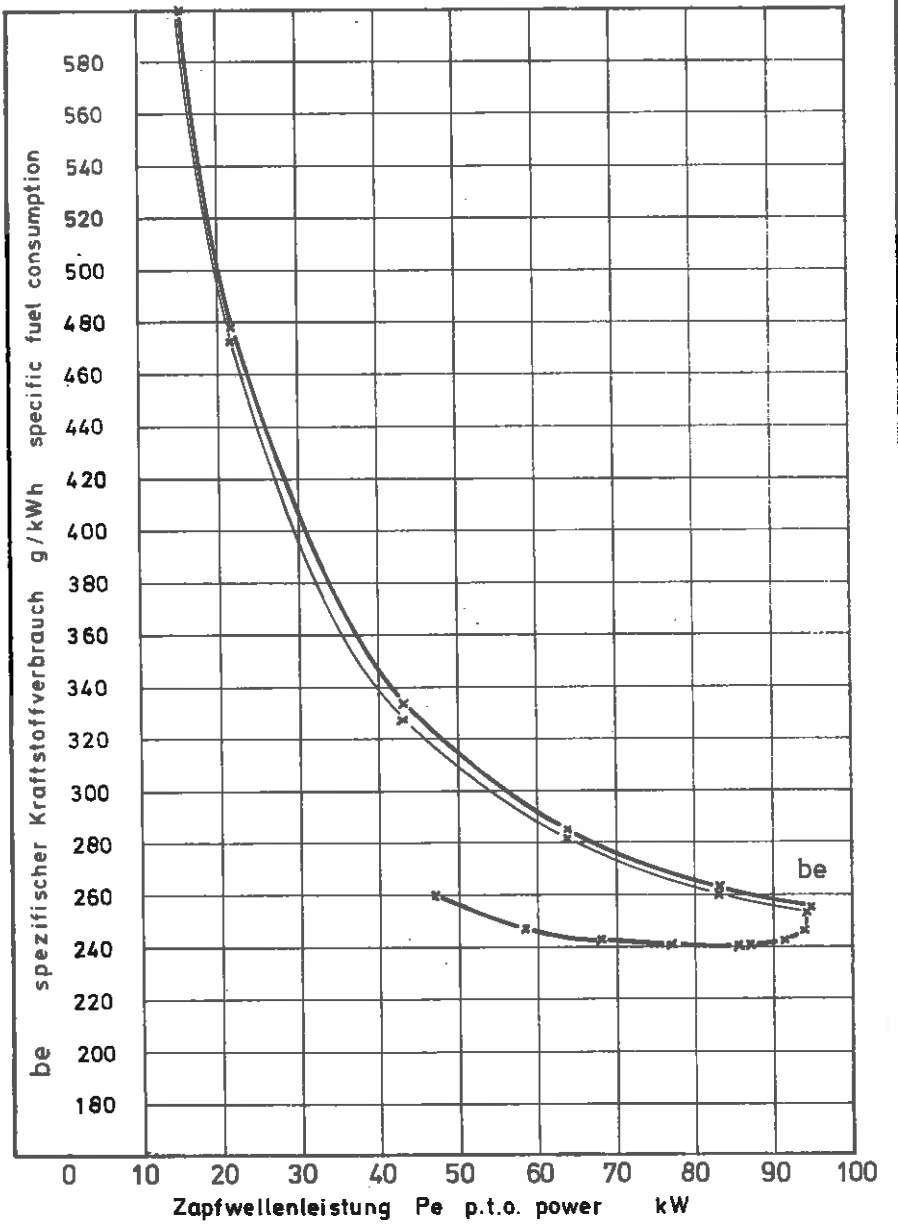
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Zapfwellenleistung

P.t.o. performance

Test Nr. 78-322

1000 U/min rev/min



PRÜFUNGS-ABTEILUNG
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(2) DRAWBAR PERFORMANCE

Date of tests: 25th June till 2nd July 1979
Type of track: Concrete

Gear	Driving speed km/h	Power kW	Drawbar pull daN	Engine speed rev/min	Slip of wheels %
(i) MAXIMUM POWER with ballast height of drawbar above ground 440 mm					
1 L	2,58	53,9	7526	2412	15,0
1 S	3,15	66,0	7547	2379	15,1
2 L	4,07	79,0	6985	2299	10,6
2 S	5,26	81,6	5586	2301	6,7
3 L	6,75	81,8	4364	2300	4,7
3 S	8,48	82,1	3487	2300	3,4
4 L	10,49	80,9	2776	2301	2,7
4 S	13,10	79,0	2172	2302	2,0
(ii) FIVE-HOUR-TEST at 75% of pull at maximum power in 3rd L gear					
3 L	7,10	64,6	3273	2382	3,2
(iii) FIVE-HOUR-TEST at pull corresponding to 15% wheel slip in test (i)					
1 S	3,16	66,3	7547	2358	
(iv) MAXIMUM POWER without ballast height of drawbar above ground 450 mm					
1 S	3,21	53,0	5947	2413	15,0
2 L	4,00	65,6	5899	2374	14,9
2 S	5,02	77,2	5538	2297	11,1
3 L	6,62	80,6	4382	2299	7,0
3 S	8,37	81,9	3521	2302	5,2
4 L	10,38	82,0	2843	2298	4,1
4 S	13,02	80,1	2216	2300	3,1

Total oil consumption during ten hours duration of tests (ii) and (iii) 74 g/h

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Tyres size front: 14,9-26 6 ply
rear: 20,8 R 38 8 ply

Tread bar height at the beginning of drawbar tests 80% at front 84% at rear of the value when new

Specific energy kWh/l	Specific fuel consumpt. g/kWh	Temperatures Fuel °C	Coolant °C	Engine-oil °C	Atmospheric conditions Temperature °C	Relative humidity %	Pressure mbar
tyre inflation pressure 1,2 bar at front, 1,0 bar at rear							
2,35	351	25	-	88	22	87	1003
2,46	335	25	-	92	22	87	1003
2,70	305	25	-	86	22	82	1003
2,79	296	25	-	88	23	80	1003
2,81	294	25	-	92	23	79	1003
2,81	293	25	-	86	24	75	1003
2,76	298	26	-	87	25	73	1003
2,71	304	26	-	85	25	72	1003
2,66	310	25	-	98	23	78	1002
-	-	26	-	115	26	64	1000
tyre inflation pressure 0,8 bar at front, 1,0 bar at rear							
2,32	355	24	-	89	23	70	1000
2,44	339	24	-	88	22	72	1000
2,65	311	26	-	96	26	66	998
2,77	298	25	-	95	24	71	998
2,79	296	25	-	95	24	70	999
2,79	295	26	-	91	25	67	999
2,75	300	26	-	92	25	66	999

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

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(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 14,9-26 6 ply
rear: 20,8 R 38 8 ply

Track of wheels front: 1820 mm
rear: 1830 mm

Front axle drive disengaged

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	5,40	5,24	6,26	6,08
Radius of turning circle	5,10	4,96	5,96	5,80

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	964 mm
Distance forward from rear axle centre	993 mm
Distance from tractor's median plane to the left	22 mm

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(5) BRAKING PERFORMANCE

A) SERVICE BRAKE

Date of tests: 26th and 27th June 1979
Type of track: Concrete
Type of decelerometer: MOTO-METER-Bremsverzögerungs- und Pedalkraftschreiber

Weight of ballasted tractor with driver 7495 kg

Front axle drive disengaged

Cold brakes

		With ballast	Without ballast
Travelling speed	km/h	25,0	25,0
Deceleration	m/s^2	5,8	5,5
Stopping distance	m	5,2	5,6
Force on pedal	daN	60	60
Force on pedal to achieve a deceleration of 2,5 m/s^2	daN	19	17

Brake fade characteristics (hot tests)

Deceleration	hot/cold	%	93	109
Stopping distance	cold/hot	%	98	108
Force on pedal	cold/hot	%	100	100

B) PARKING BRAKE

Tractor facing up 16% slope
Pull on hand brake 31 daN, tractor does not roll

Tractor facing down 16% slope
Pull on hand brake 30 daN, tractor does not roll

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(6) AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 26th June 1979
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2209

Results of test

Gear: 6th S
Travelling speed before acceleration: 25,3 km/h
Sound level: 86,5 dB(A)

(7) NOISE AT THE DRIVER'S EAR LEVEL

Date of tests: 26th June 1979
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2209

The tractor was fitted with EICHER safety cab

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	5783	2,86	2,61	88,5
1 S	5694	3,55	3,19	89,0
2 L	4609	4,51	4,40	89,0
2 S	3613	5,60	5,61	89,0
3 L *)	2901	7,05	7,15	89,5
3 S	2568	8,75	8,85	89,5
4 L	1715	10,73	11,12	89,0
4 S	1347	13,31	13,75	89,5
5 L	1013	16,67	17,32	89,0
6 S	light load	31,45	33,75	88,5

*) the 3rd L gear corresponds to the travelling speed nearest to 7,5 km/h

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(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

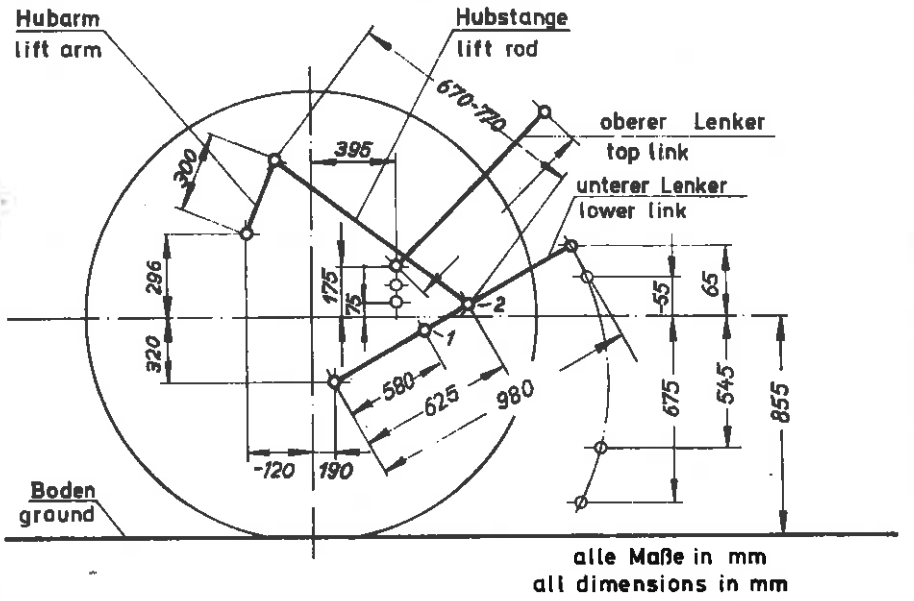
Date of tests: 23rd February and 4th April 1979

HYDRAULIC PUMP

(1)	Opening pressure of relief valve in remote circuit	147 bar
	Sustained pressure by open relief valve	175 bar
(2)	Pump delivery rate at minimum pressure and rated engine speed	45,4 l/min
(3)	Pump delivery rate at max. hydraulic power	42,0 l/min
	corresponding delivery pressure	161 bar
	power	11,3 kW

POWER LIFT

Dimensions of linkage geometry for the table on page 28



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LIFTING FORCES

Lifting heights relative to horizontal lower links

mm	-430	-400	-310	-300	-245	-200	-170	-100
at hitch points	maximum mechanical advantage							
daN							5230	5210
	minimum mechanical advantage							
daN	4160	4220		4300		4320		4320

Max. force exerted throughout the whole range 4630 daN

Front of tractor does not lift if front axle is ballasted to its max. permissible load (2800 kg)

at test frame	maximum mechanical advantage							
daN			5700	5680		5390		5090
	minimum mechanical advantage							
daN					4410	4390		4250

Max. force exerted throughout the whole range 4100 daN

Force at which front of tractor lifts if front axle is ballasted to its max. permissible load (2800 kg): 4213 daN

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0	+100	+200	+235	+250	+300	+400	+405	+470

lift rods 670 mm long, hole no. 2

5120	5030	4880			4720	4630	4630	

lift rods 770 mm long, hole no. 1

4250	4180	4140	4100					

lift rods 770 mm long, hole no. 2, high top link pivot point

4770	4490	4200		4100				

lift rods 670 mm long, hole no. 1, lower top link pivot point

4090	3900	3670			3470	3270		3130

All values of forces for pressure 161 bar at max. hydraulic power, see page 25; calculated from measurements at max. oil pressure 175 bar

LINKAGE GEOMETRY when connected to the standard frame	Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view:		
Lower links	980 mm	980 mm
Lift arms	300 mm	300 mm
Lift rods	770 mm	670 mm
Top link	774 mm	776 mm
Distance of lift rod connection point from pivot point of lower link	625 mm	580 mm
The following dimensions are given relative to rear axle centre line 855 mm above ground		
Lower link pivot point	190 mm behind, 320 mm below	190 mm behind, 320 mm below
Top link pivot point	395 mm behind, 175 mm above	395 mm behind, 75 mm above
Lift arm pivot point	120 mm behind, 296 mm above	120 mm behind, 296 mm above
Maximum and minimum height of lower link hitch points	55 mm below, 675 mm below	65 mm above, 545 mm below
Height of lower link hitch points above ground when locked in highest transport position	800 mm	920 mm

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OPTIONAL TESTS

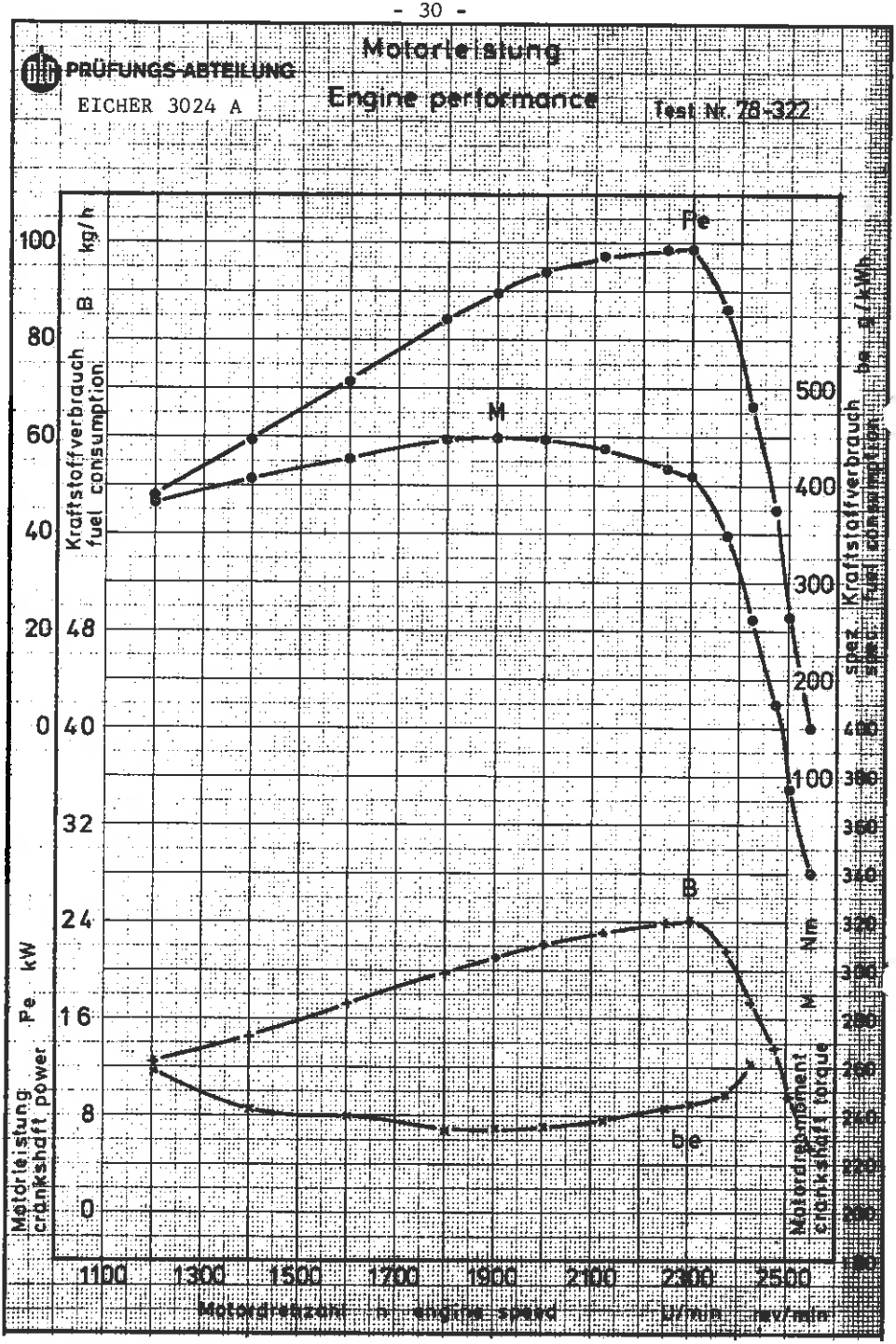
(9) ENGINE PERFORMANCE

Date of tests: 24th and 25th January 1979
Type of dynamometer: SCHENCK eddy-current dynamometer W 400

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					
98.7	2300	28.84	24.11	244	3.42
At standard p.t.o. speed (1000 rev/min)					
98.6	2250	28.62	23.92	243	3.44
At the speed recommended for drawbar work					
98.7	2300	28.84	24.11	244	3.42
Part loads					
(i) 85% of the torque at maximum power at 2-hour test					
86.6	2372	25.74	21.52	249	3.36
(ii) unloaded					
-	2543	6.42	5.37	-	-
(iii) 50% of the load defined in (i)					
45.1	2471	16.24	13.57	301	2.78
(iv) maximum power					
98.7	2300	28.84	24.11	244	3.42
(v) 25% of the load defined in (i)					
22.7	2499	11.37	9.51	418	2.00
(vi) 75% of the load defined in (i)					
66.4	2424	20.77	17.36	261	3.20

Optimum fuel consumption: 229 g/kWh at 69,0 kW and 1726 rev/min
No load maximum engine speed: 2543 rev/min
Torque at maximum power (2 hours): 410 Nm
Maximum torque: 450 Nm at 1902 rev/min of the engine

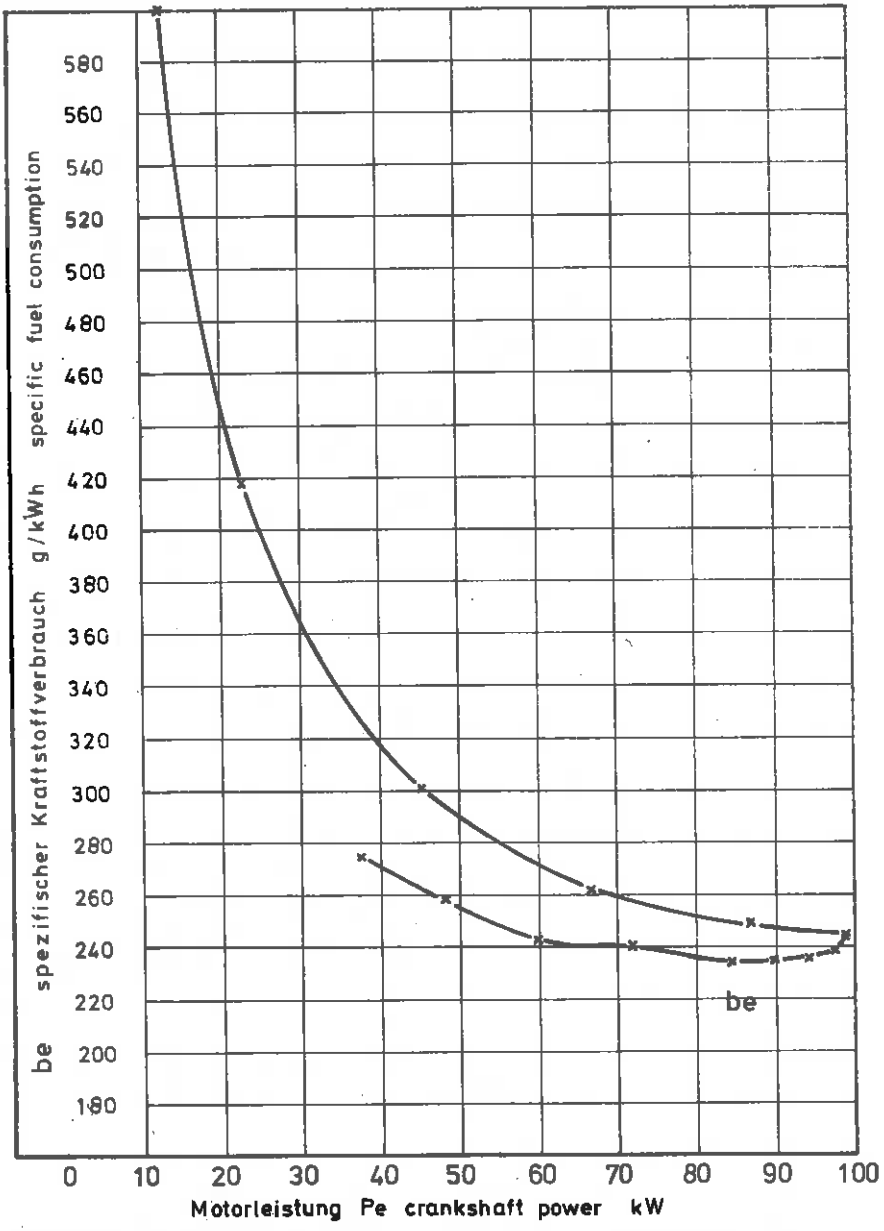
Mean atmospheric conditions:	temperature	20 °C
	pressure	986 mbar
	relative humidity	40 %
Maximum temperatures:	coolant	-
	engine oil	107 °C
	fuel	32 °C
	engine air intake	21 °C


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Motorleistung
Engine performance
Test Nr. 78-322
Pe
M
B
be
Kraftstoffverbrauch B kg/h
fuel consumption
Motorleistung Pe kW
crankshaft power
Motordrehmoment M Nm
crankshaft torque
spez. Kraftstoffverbrauch be g/kWh
spec. fuel consumption
Motordrehzahl n engine speed U/min rev/min
100
80
60
40
20
0
48
40
32
24
16
8
0
500
400
300
200
100
1100
1300
1500
1700
1900
2100
2300
2500

PRÜFUNGS-ABTEILUNG
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Motorleistung
Engine performance

Test Nr. 78-322



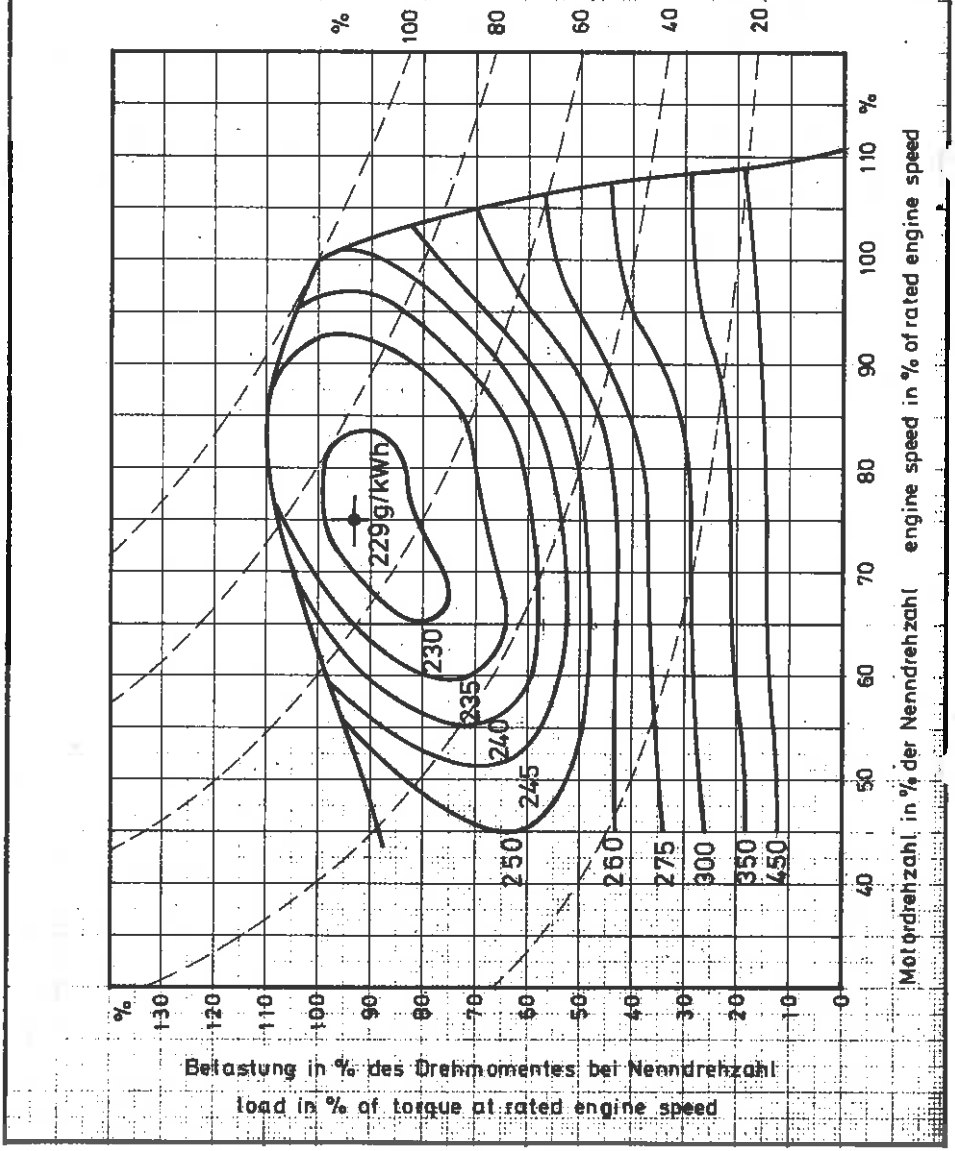
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Motorleistung

Engine performance

Test Nr. 78-322



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