| | | |
|---|---|---|
| DLG | Report on test in accordance with O.E.C.D. STANDARD CODE | O.E.C.D. Nr. 579 |



# Agricultural Tractor Eicher 3253

**Manufacturer**

Gebr. Eicher GmbH, D-8330 Landau/Isar

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.

Performance of tests: August till October 1977
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: 27th January 1978 O.E.C.D. No. 579

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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 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
EICHER 3253

Test No. 77-47

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**PRÜFUNGS-ABTEILUNG**
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Test No. 77-47

| | |
|---|---|
| Tractor manufacturer: | GEBR. EICHER GMBH<br>D-8330 Landau/Isar |
| 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. 30 hours |

## SPECIFICATION OF TRACTOR

### Tractor

| | |
|---|---|
| Make: | GEBR. EICHER GMBH |
| Model: | 3253 |
| Type: | Wheeled tractor, unit construction, rear wheel driven |
| Serial no: | 140 636 |

### Engine

| | |
|---|---|
| Make: | PERKINS Engines Company |
| Model: | AD 3.152 |
| Type: | 4-stroke DIESEL engine, with direct injection; water cooled |
| Serial no: | 41809 DSL |
| Cylinders: | 3, in-line; bore 91,4 mm, stroke 127 mm; displacement 2501 $cm^3$; compression ratio 18,5:1; replaceable dry cylinder liners |
| Valves: | Overhead |
| Fuel system: | AC fuel feed pump<br>CAV-distributor injection pump DPA 3432 F 421; manufacturer's production setting 48 $mm^3$/stroke at rated engine speed;<br>injection timing 26° before TDC;<br>CAV-multihole injection nozzles BDLL 150 S 6372: injection pressure 175 bar;<br>2 CAV-fuel filters with replaceable cartridges;<br>capacity of fuel tank 48 l |
| Governor: | Mechanically acting centrifugal variable speed governor, incorporated in injection pump;<br>governed range of engine speed 900 to 2390 rev/min;<br>rated engine speed 2250 rev/min |

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| | |
|---|---|
| Air cleaner: | MASSEY-FERGUSON S.A.<br>dry paper element filter with precleaner;<br>replaceable cartridge;<br>service indicator |
| Exhaust silencer: | EBERSPÄCHER<br>multi-chamber-reflection type silencer;<br>213 x 118 mm oval, 500 mm long;<br>at tractor's right hand side;<br>mouth showing rearward under 45°<br>mouth 430 mm above ground |
| Lubrication system: | Forced feed from gear type pump;<br>strainer in sump;<br>PERKINS oil filter in full flow with by-pass valve;<br>replaceable cartridge;<br>filter cartridge changing interval at all oil changes;<br>oil capacity 6;5 l;<br>oil changing interval 150 hours;<br>recommended oil quality: MIL-L-2104 B<br>recommended oil viscosities:<br>winter HD SAE 10W<br>summer HD SAE 20W/20<br>tropics HD SAE 30 |
| Cooling system: | Pressurized water cooling system with pump;<br>overpressure set at 0,5 bar;<br>thermostat without by-pass;<br>fan with 4 blades, 394 mm diameter;<br>cooling water capacity 10 l |
| Starting system: | Electrical<br>LUCAS-screw-push starter motor:<br>M 45 G - 12V, 1,85 kW<br>CAV flame glow plug 4BN in intake pipe |
| Electrical equipment: | 12 V, negative earth;<br>LUCAS generator C 40 A - 12;<br>1 lead acid battery 90 Ah at 20 hours rating |

Transmission

| | |
|---|---|
| Clutch: | LAMELLEN UND KUPPLUNGSBAU<br>dry dual disc clutch DuT 250/250;<br>two independent pedals with pressure point each for travel drive and p.t.o. drive;<br>the first stage of the main pedal actuates the drive clutch and the first stage of the secondary pedal actuates the p.t.o. clutch |
| Gear box: | MASSEY-FERGUSON S.A.<br>speed change gear with 4 forward speeds and 1 reverse speed;<br>reverse, 1st and 2nd speed sliding gear shifted;<br>3rd and 4th gear synchronized;<br>group gear with 2 groups, sliding gear shifted;<br>totally 8 forward and 2 reverse speeds;<br>optionally a supplementary creep speed group is available, not fitted on tractor tested |
| Rear axle: | MASSEY-FERGUSON S.A.<br>bevel gear drive with crown wheel and pinion;<br>bevel gear differential with lock;<br>pedal operated, self disengaging |
| Oil capacity and recommended oil qualities: | Speed change gear and rear axle drive in common with hydraulic system:<br>30 l transmission oil SAE 80 MIL-L-2105 B |
| Oil changing interval: | 600 hours or once a year |
| Power take-off | Independent p.t.o.<br>at rear of tractor;<br>driven through the second disc of the dual disc clutch;<br>operation of clutch s. page 6;<br>510 mm above ground, in median plane of tractor;<br>29 x 34,9 x 8,9 mm = 1 3/8", 6 splines<br>DIN 9611 Form 1;<br>BS 1495; ASAE S 203.7 |

PRÜFUNGS-ABTEILUNG
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Total ratios and speeds

Forward speeds

| 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 |
|---|---|---|---|---|
| slow | 1 | 240,50 | 2,26 | 1,69 |
| | 2 | 163,98 | 3,31 | 2,48 |
| | 3 | 120,06 | 4,52 | 3,38 |
| | 4 | 89,44 | 6,07 | 4,54 |
| fast | 1 | 58,79 | 9,23 | 6,90 |
| | 2 | 40,08 | 13,54 | 10,13 |
| | 3 | 29,35 | 18,50 | 13,84 |
| | 4 | 21,86 | 24,83 | 18,57 |

Reverse speeds

| | | | | |
|---|---|---|---|---|
| slow | R | 176,59 | 3,07 | 2,30 |
| fast | R | 43,17 | 12,58 | 9,41 |

*) Calculated with the INDEX-RADIUS 640 mm as per WdK 154

Power take-off (Continuation)

722 rev/min at rated engine speed;
standard p.t.o.-speed 540 rev/min at 1684 rev/min engine speed;
p.t.o.-speeds may be set by aid of tractormeter;
direction of rotation clockwise, viewed from tractor rear

Power lift

| | |
|---|---|
| Hydraulic system: | MASSEY-FERGUSON S.A.<br>hydraulic power lift, unit construction,<br>open system;<br>power control, position control,<br>floating position;<br>single acting ram:<br>bore 79 mm, stroke 120 mm;<br>MF-axial-type pump with 30 cm³/rev delivery;<br>in gear box, driven by the second disc of the dual disc clutch;<br>MF control valve;<br>maximum oil pressure 210 bar;<br>no overpressure relief valve for ram;<br>up to 3 oil tappings for double acting or single acting additional control valves available;<br>hydraulic oil tank in common with gear box,<br>s. page 6, max. 8 l may be taken off through oil tappings when tractor is travelling,<br>10 l when tractor is stationary |
| Implement linkage: | Three-point linkage, category II (DIN 9674);<br>optional category I;<br>lift rods adjustable from 560 to 620 mm<br>lifting range above ground with<br>short lift rods from 318 to 885 mm<br>long lift rods from 130 to 761 mm |
| Holed drawbar: | Long bar, fitted on the clevis of lower links;<br>total length 1500 mm;<br>length between the ball joints 825 mm;<br>thickness of the bar 30 mm, width 80 mm;<br>4 holes between the clevis with 160 mm distance each;<br>no centre hole;<br>with 320 mm distance right and left from this hole range further 2 holes with 160 mm distance each;<br>totally 8 holes;<br>all holes 33 mm diameter;<br>height above ground adjustable by power lift from 210 to 965 mm, depending on lifting rods length, measured at the surface of the bar |

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Holed bar
(Continuation)

Height above ground mechanically lockable
from 210 to 730 mm;
with lower links in horizontal position
distance of holes centre line:
to rear axle 825 mm
to p.t.o. shaft end 525 mm

Pull attachment

Trailer hitch:

CRAMER
model KU 806 S-C;
not automatically acting;
height above ground adjustable
to 715 or 825 mm;
diameter of clevis hole 33 mm;
distance of clevis hole to rear axle centre
488 mm;
permissible vertical load 1000 kg

Towing hitch:

At front of tractor;
height above ground 710 mm

Steering

CAM GEARS LTD
mechanically acting central steering;
optional hydrostatic assisted,
not fitted on tractor tested

Brakes

Parking brake:

Mechanically acting internal shoe type brake;
acting on 2 brake drums with 355 mm diameter
at the rear wheels;
operated by hand lever with ratchet

Service brake:

GIRLING LTD
mechanically operated shoe type brake;
acting on 2 brake drums with 355 mm
diameter on the rear wheels;
pedal operated

Parking brakes and service brakes have
the drums in common

Steering brakes:

Two additional hand levers situated
at the left hand side of driver's seat;
acting on service brakes

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## Wheels

| | |
|---|---|
| Steered wheels: | Two pneumatics at front 6,00-19 AS 6 ply; maximum permissible load per tyre 738 kg at 3,0 bar inflation pressure and 25 km/h; track width from 1211 to 1711 mm, adjustable by extending telescopic half axles in steps of 100 mm: rims 4,50 E x 19 |
| Driving wheels: | Two pneumatics at rear 14,9-28 AS 6 ply; diagonal type tyre casing; maximum permissible load per tyre 1720 kg at 1,4 bar inflation pressure and 25 km/h; track width adjustable from 1330 to 1930 mm in steps of 100 mm; by turning wheels and offset lug type rims; rims W 12 x 28 |
| Wheel base: | 2320 mm |

## Seat

BRENDEL
SV/H-160
upholstered seat with back rest;
adjustable spring with shock absorber;
parallel guidance;
height of seat platform above ground 700 mm;
height of unloaded seat above platform adjustable from 510 to 585 mm in 4 steps;
for and aft adjustable about 140 mm

## Dimensions

| | | |
|---|---|---|
| Total length: | 3272 mm | with 3-point linkage without ballast |
| | 3293 mm | with 3-point linkage with ballast |
| Total width: | 1738 mm | without ballast at smallest track width |
| | 2018 mm | with ballast at largest track width on public roads |
| Total height: | 2291 mm | to top of frame |
| Ground clearance: | 380 mm | in tractor's median plane below gear box |

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Safety frame: Own make in cooperation with PEKO
OECD-tested
approval no. CS 227a
from 22nd August 1972

Number of grease points: 20

Weights: Ready for use, as tested

| | | Without driver | With driver |
|---|---|---|---|
| Without ballast: | front | 755 kg | 765 kg |
| | rear | 1305 kg | 1370 kg |
| | total | 2060 kg | 2135 kg |
| Front ballast: | 2 front weights | 57 kg each | 114 kg |
| Rear ballast: | 1 weight per wheel | 175 kg each | 350 kg |
| | water in the tyres | | 396 kg |
| With ballast: | front | 895 kg | 910 kg |
| | rear | 2025 kg | 2085 kg |
| | total | 2920 kg | 2995 kg |

Permissible total weights and axle loads
for all available wheel equipment

| Tyres front | Tyres rear | Permissible total weight kg | Permissible front axle load kg | Permissible rear axle load kg |
|---|---|---|---|---|
| 6,00-19<br>7,50-16 | 14,9-28<br>12,4-32<br>9,5-36 | 3500 | 1410 | 2900 |

All tyres 6 ply
All front wheels can be put together with all rear wheels
All rear tyres are available as diagonal or radial type

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

| | Dimensions mm | Height above ground of centre mm | Distance from outside edge of tractor to centre mm |
|---|---|---|---|
| Head lights | 130 Ø | 1050 | 540 |
| Side lights *) | 160 x 65 | 1350 | 215 |
| Rear lights **) | 160 x 65 | 1335 | 215 |
| Reflectors | | | |
| 1st pair | 125 x 35 | 1120 | 230 |
| 2nd pair | 60 Ø | 610 | 600 |

*) in combination with direction indicator
**) in combination with direction indicator and stop light

FUELS AND LUBRICANTS USED IN TESTS

Fuel: ARAL-DIESEL fuel (DIN 51601)

specific gravity at 15°C

during engine tests 0,833 kg/l
during p.t.o. tests 0,833 kg/l
during drawbar tests 0,836 kg/l

Engine oil: ESSO SAE 20W/20 MIL-L-2104 B

Transmission oil: ESSO transmission oil MIL-L-2105 B

speed change gear, group gear, rear axle and hydraulic system SAE 80

**PRÜFUNGS-ABTEILUNG**

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## COMPULSORY TESTS

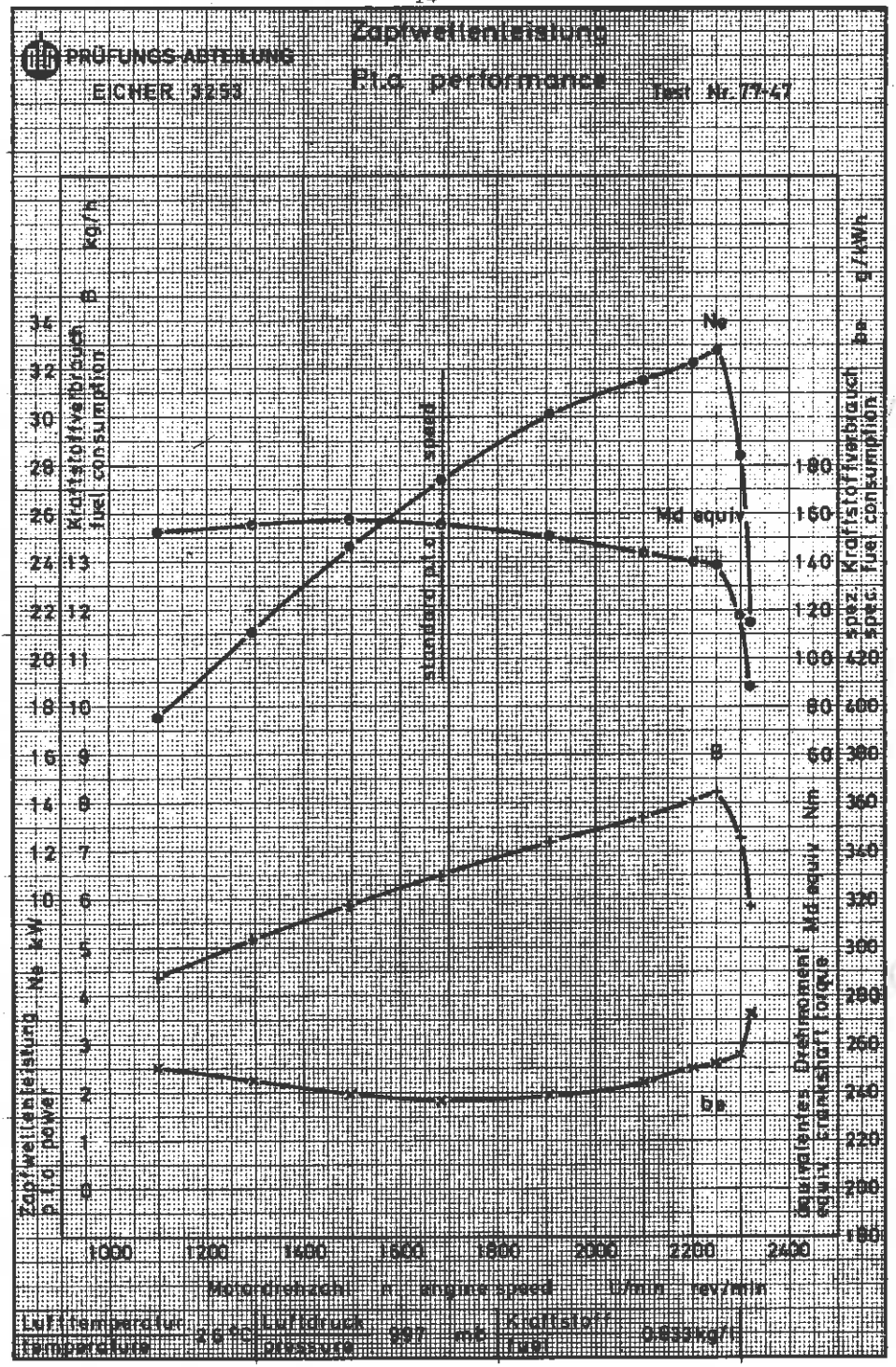
### (1) MAIN POWER TAKE-OFF PERFORMANCE

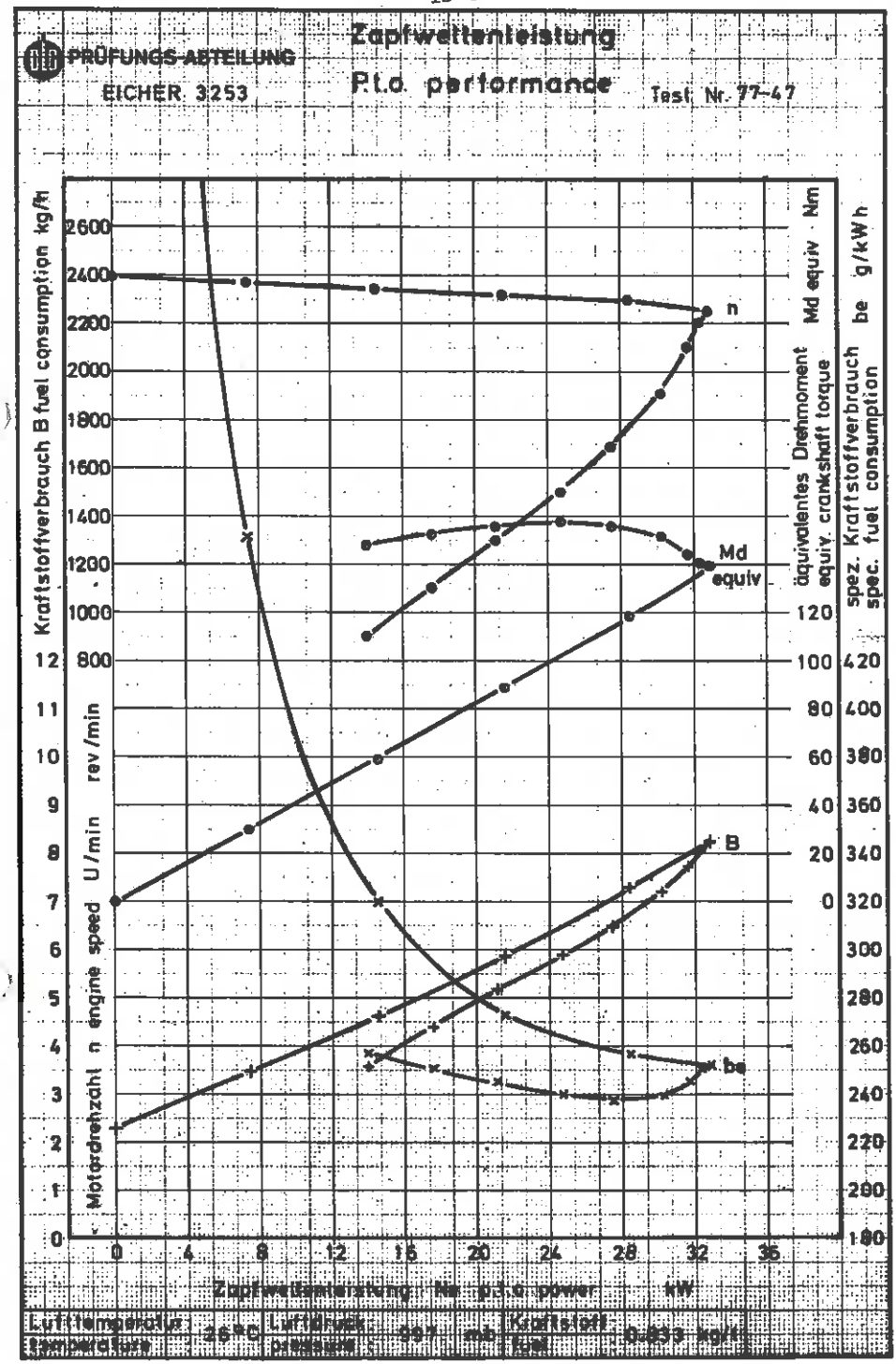
Date of tests: 31th August 1977
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

| 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 | | | | | | |
| 32.7 | 2250 | 722 | 9.88 | 8.23 | 251 | 3.31 |
| At standard p.t.o. speed ( 540 rev/min) | | | | | | |
| 27.4 | 1684 | 540 | 7.80 | 6.49 | 237 | 3.52 |
| At the speed recommended for drawbar work | | | | | | |
| 32.7 | 2250 | 722 | 9.88 | 8.23 | 251 | 3.31 |
| **Part loads** | | | | | | |
| (i) 85% of the torque at maximum power at 2-hour test | | | | | | |
| 28.4 | 2297 | 737 | 8.73 | 7.27 | 256 | 3.25 |
| (ii) unloaded | | | | | | |
| - | 2394 | 768 | 2.72 | 2.27 | - | - |
| (iii) 50% of the load defined in (i) | | | | | | |
| 14.5 | 2344 | 752 | 5.55 | 4.63 | 320 | 2.61 |
| (iv) maximum power | | | | | | |
| 32.7 | 2250 | 722 | 9.88 | 8.23 | 251 | 3.31 |
| (v) 25% of the load defined in (i) | | | | | | |
| 7.3 | 2369 | 760 | 4.14 | 3.45 | 471 | 1.77 |
| (vi) 75% of the load defined in (i) | | | | | | |
| 21.5 | 2318 | 743 | 7.03 | 5.85 | 273 | 3.06 |

No load maximum engine speed: 2394 rev/min
Equivalent crankshaft torque at maximum power (2 hours): 139 Nm
Maximum equivalent crankshaft torque: 157 Nm at 1495 rev/min of the engine

| | | |
|---|---|---|
| Mean atmospheric conditions: | temperature | 26 °C |
| | pressure | 997 mbar |
| | relative humidity | 75 % |
| Maximum temperatures: | coolant | 66 °C |
| | engine oil | 88 °C |
| | fuel | 28 °C |
| | engine air intake | 27 °C |


Zapfwellenleistung
PRÜFUNGS-ABTEILUNG
EICHER 3253
P.t.o. performance
Test Nr. 77-47
Kraftstoffverbrauch kg/h
fuel consumption
Zapfwellenleistung P.t.o. power Ne kW
Ne
Md equiv
standard p.t.o. speed
Kraftstoffverbrauch be g/kWh
fuel consumption spez. spec.
Drehmoment Md equiv Nm
torque
be
Motordrehzahl n engine speed U/min rev/min
Lufttemperatur temperature
Luftdruck pressure
Kraftstoff fuel


PRÜFUNGS-ABTEILUNG
EICHER 3253
Zapfwellenleistung
P.t.o. performance
Test Nr. 77-47
Kraftstoffverbrauch B fuel consumption kg/h
Motordrehzahl n engine speed U/min rev/min
äquivalentes Drehmoment Md equiv Nm
equiv. crankshaft torque
spez. Kraftstoffverbrauch be g/kWh
spec. fuel consumption
n
Md equiv
B
be
Zapfwellenleistung P.t.o. power kW
Lufttemperatur 26°C Luftfeuchtigkeit 66% rel. Kraftstoff 0,833 kg/l
Raumwärme ambient fuel

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## (2) DRAWBAR PERFORMANCE

Date of tests: 21st till 29th September 1977
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 580 mm | | | | | | |
| 1 slow | 2,03 | 14,4 | 25540 | 2336 | 15,0 | 2,28 |
| 2 slow | 2,94 | 20,9 | 25530 | 2312 | 14,9 | 2,55 |
| 3 slow | 3,94 | 26,9 | 24540 | 2250 | 14,1 | 2,72 |
| 4 slow | 5,58 | 28,0 | 18080 | 2250 | 9,2 | 2,84 |
| 1 fast | 8,79 | 28,9 | 11820 | 2250 | 6,1 | 2,90 |
| 2 fast | 13,12 | 28,6 | 7840 | 2250 | 4,2 | 2,89 |
| (ii) FIVE-HOUR-TEST at 75% of pull at maximum power in 4th gear of slow group | | | | | | |
| 4 slow | 5,89 | 22,2 | 13540 | 2313 | 6,8 | 2,68 |
| (iii) FIVE-HOUR-TEST at pull corresponding to 15% wheel slip in test (i) | | | | | | |
| 2 slow | - | - | 25540 | - | - | - |
| (iv) MAXIMUM POWER without ballast height of drawbar above ground 630 mm | | | | | | |
| 2 slow | 2,98 | 15,5 | 18780 | 2331 | 15,0 | 2,32 |
| 3 slow | 4,04 | 20,9 | 18610 | 2315 | 15,0 | 2,54 |
| 4 slow | 5,32 | 26,5 | 17940 | 2250 | 14,0 | 2,69 |
| 1 fast | 8,55 | 28,5 | 12010 | 2250 | 8,8 | 2,88 |
| 2 fast | 12,94 | 28,4 | 7900 | 2250 | 5,9 | 2,88 |

Total oil consumption during ten hours duration of tests (ii) and (iii): 32 g/h

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Tyres make and size front: METZELER 6,00-19 AS 6 ply
rear: METZELER 14,9-28 AS 6 ply

Tread bar height at the beginning of drawbar tests: 94% 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 1,4 bar rolling radius of tyres under static load 648 mm | | | | | | |
| 368 | 18 | 80 | 76 | 16 | 88 | 1009 |
| 328 | 18 | 80 | 80 | 15 | 92 | 1009 |
| 308 | 16 | 80 | 78 | 12 | 96 | 1009 |
| 295 | 16 | 80 | 74 | 11 | 98 | 1009 |
| 288 | 16 | 80 | 76 | 20 | 84 | 1010 |
| 290 | 16 | 80 | 78 | 20 | 85 | 1010 |
| 313 | 17 | 80 | 78 | 12 | 90 | 1005 |
| - | 18 | 80 | 80 | 15 | 77 | 1005 |
| tyre inflation pressure 1,4 bar rolling radius of tyres under static load 656 mm | | | | | | |
| 361 | 17 | 80 | 80 | 15 | 97 | 1000 |
| 330 | 15 | 80 | 80 | 12 | 98 | 1000 |
| 311 | 17 | 80 | 78 | 15 | 96 | 1000 |
| 290 | 15 | 80 | 75 | 11 | 98 | 1000 |
| 291 | 18 | 80 | 86 | 16 | 94 | 1000 |

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

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## (3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 6,00-19 AS Front 6 ply
rear: 14,9-28 AS 6 ply

Track of wheels front: 1311 mm
rear: 1430 mm

| | With brakes | | Without brakes | |
|---|---|---|---|---|
| | left-hand m | right-hand m | left-hand m | right-hand m |
| Radius of turning space | 3,07 | 3,18 | 3,32 | 3,39 |
| Radius of turning circle | 2,95 | 3,06 | 3,20 | 3,27 |

## (4) LOCATION OF CENTRE OF GRAVITY

| | |
|---|---|
| Height above ground | 773 mm |
| Distance forward from rear axle centre | 740 mm |
| Distance from tractor's median plane | 0 mm |

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## (5) BRAKING PERFORMANCE

### A) SERVICE BRAKE

Date of tests: 26th and 27th September 1977
Type of track: Concrete
Type of decelerometer: MOTO METER-Bremsverzögerungs- und Pedalkraftschreiber

Weight of ballasted tractor: 2995 kg with driver

Cold brakes

| | | With ballast | Without ballast |
|---|---|---|---|
| Travelling speed | km/h | 25,0 | 25,0 |
| Deceleration | $m/s^2$ | 4,6 | 4,3 |
| Stopping distance | m | 6,0 | 6,8 |
| Force on pedal | N | 690 | 530 |
| Force on pedal to achieve a deceleration of 2,5 $m/s^2$ | N | 430 | 420 |

Brake fade characteristics (hot tests)

| | | | | |
|---|---|---|---|---|
| Deceleration | hot/cold | % | 94 | 98 |
| Stopping distance | cold/hot | % | 94 | 81 |
| Force on pedal | cold/hot | % | 99 | 100 |

### B) PARKING BRAKE

Tractor facing up 16% slope:
Pull on hand brake 160 N, tractor does not roll

Tractor facing down 16% slope:
Pull on hand brake 140 N, tractor does not roll

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## (6) AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 23rd September 1977
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2203

Results of test

Gear: 4th fast
Travelling speed before acceleration: 19,75 km/h
Sound level: 87 dB(A)

## (7) NOISE AT THE DRIVER'S EAR LEVEL

Date of tests: 23rd September 1977
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2607
Type of frequency analyzer (fitted with octave filter): BRÜEL AND KJAER model 1614

A safety frame was fitted on tractor
OECD tested, approval no. CS 227a

Results of tests

| Gear | Drawbar pull at which the tractor develops the maximum sound level | Travelling speed nominal | Travelling speed effective | Sound level |
|---|---|---|---|---|
| | N | km/h | km/h | dB(A) |
| 1 slow | 18710 | 2,26 | 2,03 | 91,5 |
| 2 slow | 18660 | 3,31 | 2,93 | 91,5 |
| 3 slow | 18700 | 4,52 | 3,94 | 92 |
| 4 slow*) | 17930 | 6,07 | 5,28 | 92,5 |
| 1 fast | 11900 | 9,23 | 8,63 | 92,5 |
| 2 fast | 7910 | 13,54 | 12,89 | 92,5 |
| 3 fast | 5510 | 18,50 | 18,14 | 92,5 |
| 4 fast | light load | 24,83 | 26,34 | 92 |

*) The 4th slow gear corresponds to the travelling speed nearest to 7,5 km/h

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## (8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

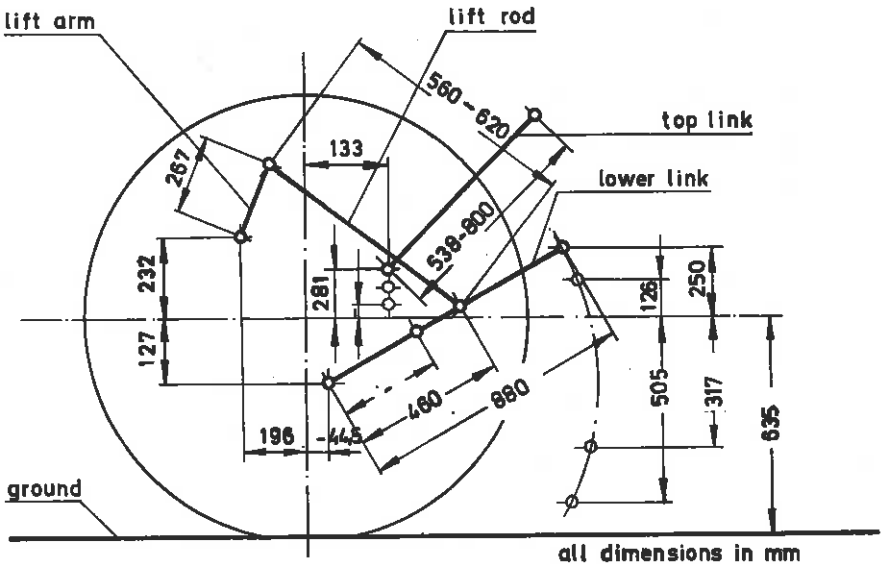
Date of tests: 12th and 21st October 1977

### HYDRAULIC PUMP

| | |
|---|---|
| (1) Opening pressure of relief valve in remote circuit | 180 bar |
| Sustained pressure by open relief valve | 226 bar |
| (2) Pump delivery rate at minimum pressure and maximum engine speed | 21,2 l/min |
| (3) Pump delivery rate | 19,1 l/min |
| Delivery pressure | 182 bar |
| Hydraulic power | 5,78 kW |

### POWER LIFT

Dimensions of linkage geometry for the table on page 24



PRÜFUNGS-ABTEILUNG
EICHER 3253

LIFTING FORCES

Lifting heights relative to horizontal lower links

| mm | -412 | -400 | -378 | -300 | -200 | -195 | -190 | -100 |
|---|---|---|---|---|---|---|---|---|
| at hitch points maximum mechanical advantage | | | | | | | | |
| N | | | | | | | 12000 | 12760 |
| minimum mechanical advantage | | | | | | | | |
| N | | | 11620 | 11980 | 12420 | | | 12620 |

Max. force exerted throughout the whole range 12000 N

Front of tractor does not lift with maximum allowable front ballast

| at test frame maximum mechanical advantage | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| N | | | | | | 10930 | | 11510 |
| minimum mechanical advantage | | | | | | | | |
| N | 11550 | 11530 | | 11250 | 11270 | | | 11270 |

Max. force exerted throughout the whole range 10070 N

Front of tractor does not lift with maximum allowable front ballast

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| 0 | +100 | +200 | +253 | +279 | +300 | +377 | +400 | +470 |
|---|---|---|---|---|---|---|---|---|
| lift rods 560 mm long | | | | | | | | |
| 13370 | 13750 | 14080 | | | 14220 | 14230 | | |
| lift rods 620 mm long | | | | | | | | |
| 13050 | 13200 | 13400 | 13400 | | | | | |

| lift rods 560 mm long | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 11660 | 11720 | 11450 | | | 11050 | | 10460 | 10070 |
| lift rods 620 mm long | | | | | | | | |
| 11220 | 10830 | 10280 | | 9680 | | | | |

All values of forces for pressure at max. hydraulic power 182 bar, see page 21; calculated from measurements at max. oil pressure 226 bar

| LINKAGE GEOMETRY<br>when connected to the standard frame | Maximum mechanical advantage | Minimum mechanical advantage |
|---|---|---|
| Projected length in side view: | | |
| Lower links | 869 mm | 869 mm |
| Lift arms | 267 mm | 267 mm |
| Lift rods | 560 mm | 620 mm |
| Top link | 698 mm | 705 mm |
| Distance of lift rod connection point from pivot point of lower link | 504 mm | 504 mm |
| The following dimensions are given relative to rear axle centre line 635 mm above ground | | |
| Lower link pivot point | 44,5 mm forward, 127 mm below | 44,5 mm forward, 127 mm below |
| Top link pivot point | 133 mm behind, 281 mm above | 133 mm behind, 281 mm above |
| Lift arm pivot point | 196 mm forward, 232 mm above | 196 mm forwar, 232 mm above |
| Maximum and minimum height of lower link hitch points | 250 mm above, 317 mm below | 126 mm above, 505 mm below |
| Height of lower link hitch points above ground when locked in highest transport position | 885 mm | 761 mm |

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## OPTIONAL TESTS

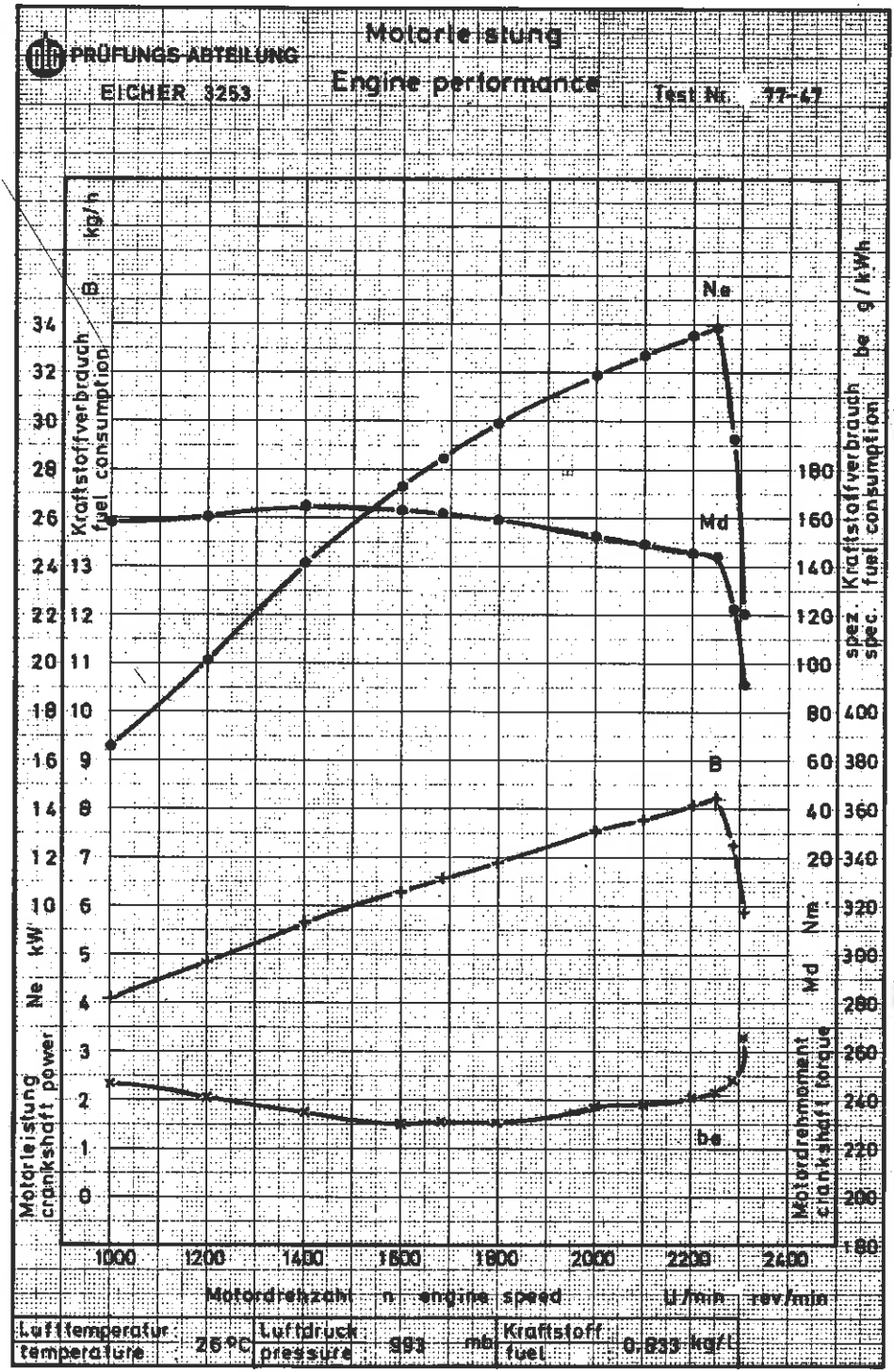
### (1) ENGINE PERFORMANCE

Date of tests: 25th August 1977
Type of dynamometer: SCHENCK eddy-current dynamometer W 150

| 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 | | | | | |
| 33.8 | 2250 | 9.87 | 8.22 | 243 | 3.43 |
| At standard p.t.o. speed ( 540 rev/min) | | | | | |
| 28.4 | 1684 | 7.88 | 6.56 | 231 | 3.61 |
| At the speed recommended for drawbar work | | | | | |
| 33.8 | 2250 | 9.87 | 8.22 | 243 | 3.43 |
| **Part loads** | | | | | |
| (i) 85% of the torque at maximum power at 2-hour test | | | | | |
| 29.2 | 2285 | 8.70 | 7.25 | 248 | 3.36 |
| (ii) unloaded | | | | | |
| - | 2379 | 2.68 | 2.23 | - | - |
| (iii) 50% of the load defined in (i) | | | | | |
| 14.9 | 2334 | 5.54 | 4.61 | 309 | 2.70 |
| (iv) maximum power | | | | | |
| 33.8 | 2250 | 9.87 | 8.22 | 243 | 3.43 |
| (v) 25% of the load defined in (i) | | | | | |
| 7.5 | 2359 | 4.04 | 3.37 | 451 | 1.85 |
| (vi) 75% of the load defined in (i) | | | | | |
| 22.1 | 2306 | 7.03 | 5.85 | 265 | 3.14 |

Optimum fuel consumption: 223 g/kWh at 20,6 kW and 1400 rev/min
No load maximum engine speed: 2379 rev/min
Torque at maximum power (2 hours): 144 Nm
Maximum torque: 164 Nm at 1402 rev/min of the engine

| | | |
|---|---|---|
| Mean atmospheric conditions: | temperature | 26 °C |
| | pressure | 993 mbar |
| | relative humidity | 60 % |
| Maximum temperatures: | coolant | 65 °C |
| | engine oil | 83 °C |
| | fuel | 29 °C |
| | engine air intake | 27 °C |


PRÜFUNGS-ABTEILUNG
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Motorleistung
Engine performance
Test Nr. 77-47
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 U/min rev/min
Lufttemperatur temperature 26°C
Luftdruck pressure 993 mb
Kraftstoff fuel 0,833 kg/l

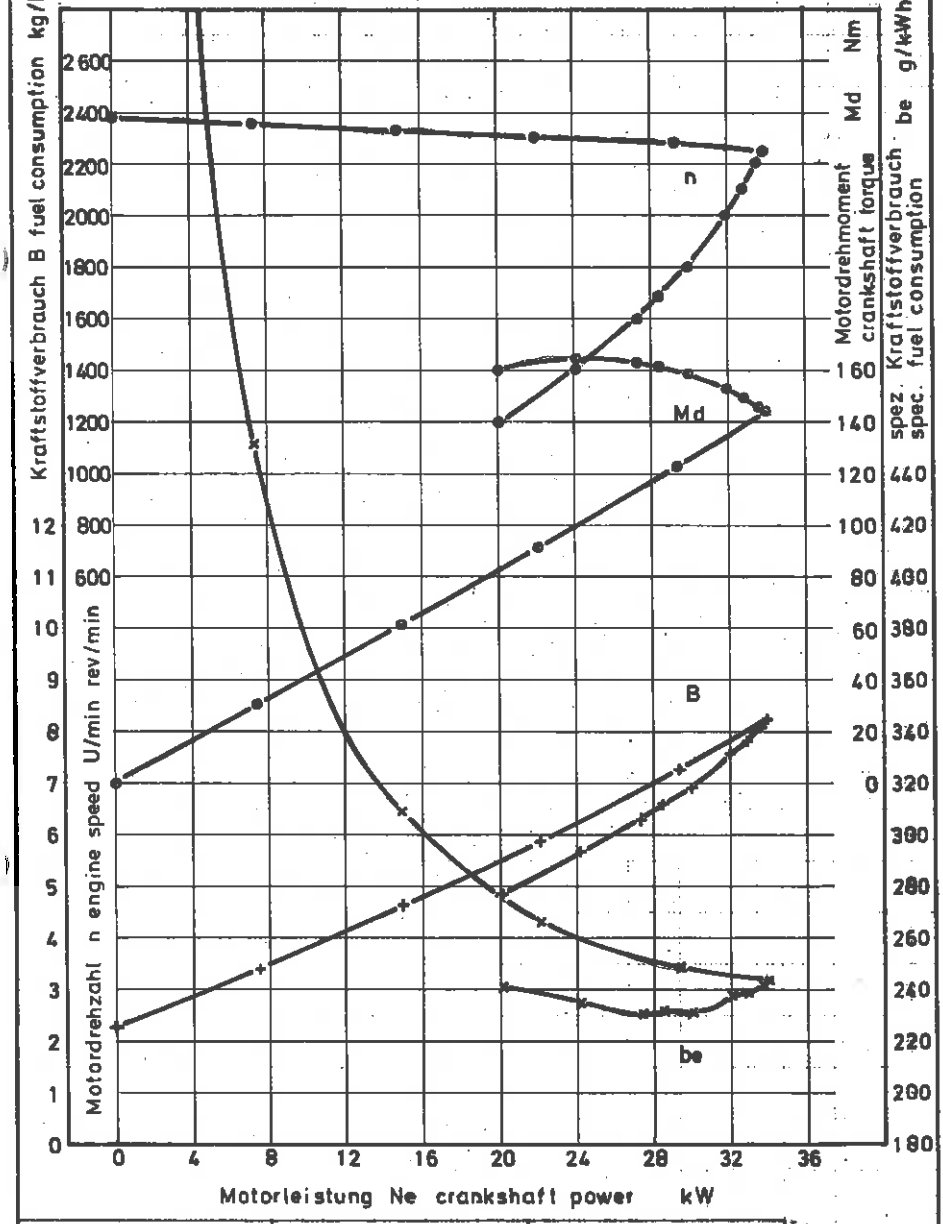
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# Motorleistung

## Engine performance

Test Nr. 77-47

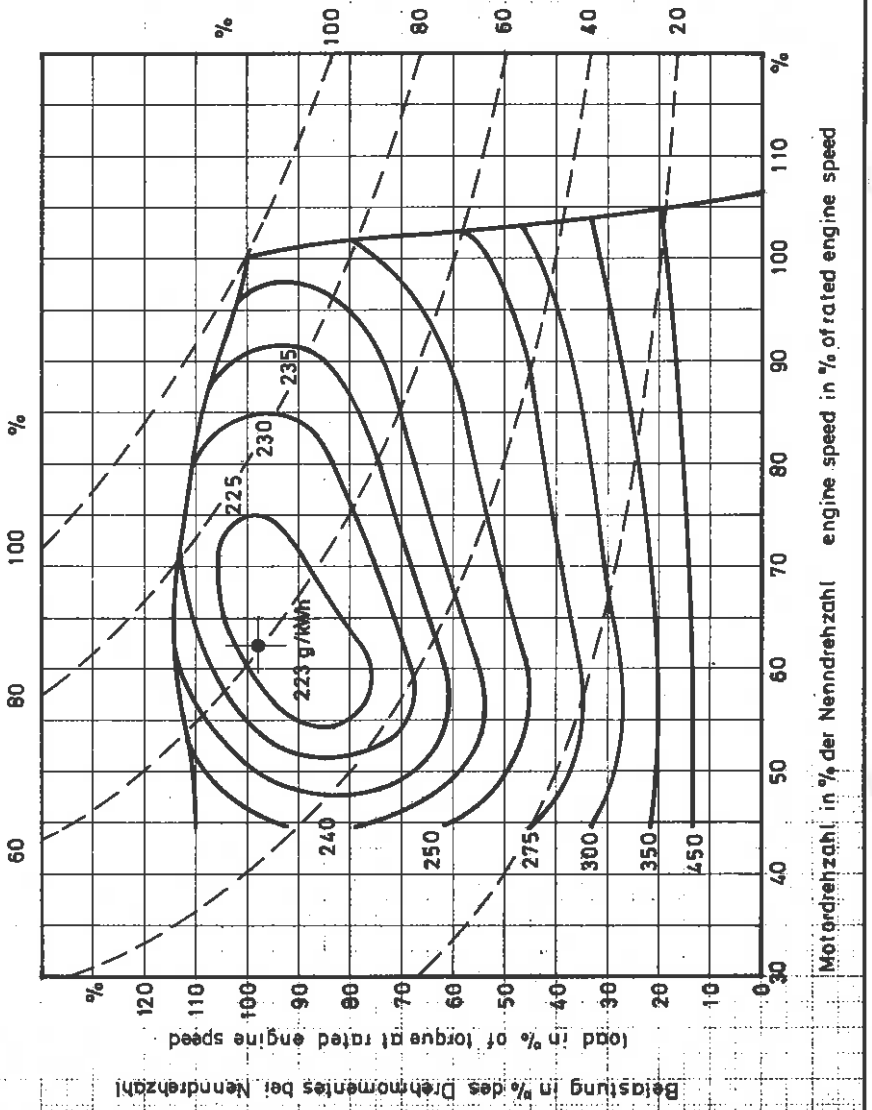



| | | | | | |
|---|---|---|---|---|---|
| Lufttemperatur: temperature : | 26 °C | Luftdruck: pressure : | 993 mb | Kraftstoff: fuel : | 0.833 kg/l |

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# Motorleistung
# Engine performance

Test Nr. 77-47




| | | | | | |
|---|---|---|---|---|---|
| Lufttemperatur: temperature : | 26 °C | Luftdruck: pressure : | 993 mb | Kraftstoff: fuel | 0,833 kg/l |

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