O.E.C.D. Report No. 375
Printed: December 1971

Report on test in accordance with
O.E.C.D. STANDARD-CODE for the Official Testing
of Agricultural Tractors



DAIMLER-BENZ UNIMOG U 52/421
Model 421.124

Manufactured by: DAIMLER-BENZ A.G.
D-7560 Gaggenau/Baden

Date of Test: June till August 1970

DEUTSCHE LANDWIRTSCHAFTS-GESELLSCHAFT e.V.
Prüfungsabteilung für Landmaschinen
D-6000 Frankfurt/Main 1, Zimmerweg 16

This Bulletin is based on engineering test in accordance with the O.E.C.D. Tractor Test Code. It does not contain an evaluation of the performance of the tractor on practical farm work.

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

Date of approval: 22th November,1971

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PRÜFUNGS-ABTEILUNG
D.-B. Unimog 421.124

Test No. 70-104

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Tractor manufacturer:	Daimler-Benz AG., D-7560 Gaggenau/Baden
Submitted for test by:	Manufacturer
Selected by:	Manufacturer by agreement with DLG
Place of running-in:	Gaggenau and Groß-Umstadt
Duration of running-in:	Engine appr. 100 hours, tractor appr. 100 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	Daimler-Benz AG., D-7560 Gaggenau/Baden
Model:	Unimog 421.124
Type:	Frame type with all-wheel drive and sprung chassis
Serial No.:	421.124-10-900 009

Engine

Make:	Daimler-Benz AG., D-7000 Stuttgart-Untertürkheim
Model:	OM 616, model 616.915
Type:	Water cooled 4-stroke Diesel engine with precombustion chamber
Serial:	616.915-10-900 018
Cylinders:	4 vertical in line; 92 mm bore, 92,4 mm stroke piston displacement 2456 cm^3; compression ratio 20,7 : 1 overhead valves
Fuel system:	Bosch type FP/KE 22 AD 223/2 feed pump Bosch type PES 4 M 55 C 120 injection pump manufacturer's production setting 40,5 mm^3/stroke at 3000 rev/min injection timing 24° before TDC Bosch type DNO SD 1510 injection nozzles injection pressure 120 kp/cm^2 filter: fuel pre-filter Bosch type two stage felt-tube filter, optional: strainer in tank capacity of fuel tank appr. 90 l
Governor:	Bosch type EP/RSV 350/1000 MoB 126 D; mechanical centrifugal variable speed governor governed range of engine speed 700 rev/min to 3250 rev/min rated engine speed for p.t.o.-work 3000 rev/min for field-work 3000 rev/min for transportation-work 3000 rev/min for belt-work 3000 rev/min
Air cleaner:	Mann & Hummel, D-7140 Ludwigsburg or Knecht, D-7000 Stuttgart oil bath air cleaner with air intake duct, oil capacity appr. 1 l optional: cyclonic precleaner

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Lubrication system:	Forced feed from gear type pump; screen in sump; main filter make Knecht, combined main current/by-pass filter with strainer screen EHS 305/1 in main current and filter cartridge ENC 305 in by-pass; oil capacity maximal 6 l; oil change period using branded HD oil 200 hours; recommended oil in winter HD SAE 10, in summer HD SAE 30, in tropics HD SAE 40
Cooling system:	Pressurized water cooling; impeller type pump and fan with 11 blades 430 mm diameter; transmission engine: fan normal 1 : 0,9 by-pass thermostat for temperature control; temperature gauge; cooling water capacity appr. 17 l
Electrical equipment	Voltage 12 Volt, negative earth; starting aid by coil heater plug; Bosch type K1 14V 35A three phase current generator; lead acid battery 12V 88 Ah
Transmission	
Clutch:	Make: Fichtel & Sachs AG., D-8720 Schweinfurt dry single disc type clutch, type G 259 KR or optional make: Lamellen & Kupplungsbau GmbH, D-7580 Bühl/Baden dry single disc type dual clutch type DT 16, operated by foot pedal and assisted by hydraulic cylinder
Gearbox:	Make: Daimler-Benz AG., D-7560 Gaggenau/Baden fully synchromesh selecting gear; 6 forward speeds, 2 reverse; optional: reduction gearbox with 6 intermediate speeds 4 creeping speeds, 4 crawling speeds and 6 reverse; front wheel drive connectable and disconnectable during travelling
Front axle, rear axle, final drive:	Make: Daimler-Benz AG., D-7560 Gaggenau/Baden portal construction with spur gear final drive; bevel gear type differential; bevel gear 8 teeth, crown wheel 33 teeth: 4,12 : 1; differential locks fitted in front and rear axle, hydraulically operated by hand lever, connectable and disconnectable during travelling, optional pneumatically
Oil capacity:	Selecting gear with reduction gear: 7,5 l; axle drive: 2 l each, final drive: 0,3 l each; recommended oil change period: 400 hours; recommended oil: transmission oil SAE 80

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Total ratios and speeds

Gear No.	Number of engine revolutions for one revolution of the driving wheel	Theoretical travelling speed for rated speed of engine and tyres 12,5-18 without slip km/h	m/s
	Selecting gear forward		
1.	127,876 : 1	4,02	1,12
2.	70,636 : 1	7,29	2,03
3.	39,632 : 1	13,00	3,61
4.	21,892 : 1	23,53	6,54
5.	14,494 : 1	35,53	9,87
6.	8,800 : 1	58,53	16,26
	reverse		
1.	102,300 : 1	5,03	1,40
2.	56,509 : 1	9,12	2,53
	Intermediate speeds forward		
1.	161,234 : 1	3,20	0,89
2.	89,063 : 1	5,78	1,61
3.	49,971 : 1	10,31	2,86
4.	27,603 : 1	18,66	5,18
5.	18,275 : 1	28,18	7,83
6.	11,096 : 1	46,42	12,89
	reverse		
1.	128,988 : 1	3,99	1,11
2.	71,250 : 1	7,23	2,01
	Creeping speeds forward		
1.	595,753 : 1	0,863	0,240
2.	329,635 : 1	1,562	0,434
3.	184,951 : 1	2,784	0,773
4.	102,163 : 1	5,042	1,401
	reverse		
1.	477,402 : 1	1,079	0,300
2.	263,708 : 1	1,953	0,543
	Crawling speeds forward		
1.	5482,943 : 1	0,094	0,026
2.	3028,674 : 1	0,170	0,047
3.	1699,324 : 1	0,304	0,084
4.	938,674 : 1	0,549	0,153
	reverse		
1.	4386,354 : 1	0,117	0,033
2.	2422,939 : 1	0,213	0,059

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Power take-off

a) Main p.t.o.: Transmission power take-off, optional live power take-off

Location: At rear of tractor, 845 mm above ground, 170 mm left of center line of tractor, optional: p.t.o. centralizer gear with location of p.t.o., 660 mm above ground and 10 mm to the left of median plane

Dimensions: 29 x 34,9 x 8,7 mm = 1 3/8" ; 6 splines (acc.to DIN 9611 Form A; B.S. 1495; ASAE S 203.5)

Speed: 581 rev/min at rated engine speed (acc.to DIN 9611); 1061 rev/min at rated engine speed (acc.to B.S. 1495; ASAE S 204.4)

Direction of rotation: Clockwise, viewed from tractor rear

b) Front p.t.o.: Drive, dimensions and speeds same as stated for main p.t.o. see a)

Location: At front of tractor, 840 mm above ground, 182 mm to the left of center line of tractor

Direction of rotation: Anticlockwise, viewed from tractor front

Power lift

Make Westinghouse GmbH., D-3000 Hannover
Live hydraulic system; directly from engine by vee-belt driven gear type pump; two dual control valves for lifting, neutral, pressing and floating position; hydraulic connections at the front as well as at the rear of tractor. A third additional hydraulic connection at the rear may serve for the control of the lifting cylinder of the three-way tipping platform or to the remote control of free cylinders of implements.
Maximum oil pressure 150 kp/cm², oil capacity appr. 14 l; maximum oil flow 28 l/min (manufacturer's specification)

Pull attachment

Implement: At rear: Three-point linkage category II (acc. to DIN 9674; ASAE 217.5), controlled by power lift. Lifting height above ground from 270 mm to 1015 mm, length of rods changeable; fittings are available for mounting implements of the UNIMOG-implement line on the frame of the tractor, on the chassis as well as on the platform, in front, in the middle as well as at the rear of tractor.

Drawbar:	Inserted into the lower links of the three-point linkage, controlled by power lift; height above ground adjustable from 270 mm to 1015 mm; distance to rear axle 1021 mm when lower links are horizontal; central hole and 4 holes with 80 mm distance each apart either side of center line (acc.to DIN 9676), distance of center hole to the end of p.t.o. shaft 590 mm Riged fixed drawbar (acc.to DIN 9670) available
Trailer hitch:	Make: Rockinger, type 227/G 110 D or Ringfeder, type UNIMOG C at rear of tractor; height above ground 865 mm (platform not loaded), distance from rear axle 435 mm
Towing hitch:	At front of tractor; height above ground 745 mm, 200 mm to the right of center line of the tractor

Steering device — Make: Zahnradfabrik Friedrichshafen AG., D-7990 Friedrichshafen

a) Mechanical steering Gemmer model 40 type 73, optional

b) Ballnut hydrostatic steering model 00 type 80

Brakes

Parking brake:	Mechanical acting on rear wheels, operated by hand lever
Foot brake:	Hydraulically acting on all wheels as simplex internal shoe type brake, pneumatically assisted, operated by foot pedal
Trailer Braking:	Acting either as one-cycle type and/or as two-cycle type as wanted; special types for different trailer braking systems available

Wheels

Steering wheels:	Two at front (also acting as driving wheels); tyres 12,5-18 extra Special 8 ply; maximum permissible weight on each tyre 1785 kp at 2,5 kp/cm^2; track 1436 mm; rims 11 x 18
Driving wheels:	Four, two at front and two at rear; tyres 12,5-18 extra Special 8 ply; maximum permissible weight, track and rims as under steering wheels see above; optional: other tyre sizes see page 9 under permissible loads and weights
Wheel base:	2250 mm

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Weights With power lift, three-point linkage, full fuel tank, oil and water, folding top and safety frame fitted, as tested

		without driver	with driver
Weight of tractor without ballast:	Front axle load:	1600 kp	1650 kp
	Rear axle load:	1140 kp	1165 kp
	Total:	2740 kp	2815 kp
	Ballast on platform:		1300 kp
Weight of tractor with ballast:	Front axle load:	2072 kp	2125 kp
	Rear axle load:	1968 kp	1990 kp
	Total:	4040 kp	4115 kp

Permissible axle loads and permissible total weights

Tyres		7,5-18 6 ply	10,5-18 6 ply	12,5-18 8 ply	10,5-20 6 ply
Track	mm	1376	1396	1436	1480
Inflation pressure	kp/cm²	3,5	2,25	1,5	2,25
Permissible front axle load	kp	2200	2500	2500	2500
Permissible rear axle load	kp	2200	2500	2500	2500
Permissible total weight	kp	4100	4100	4100	4100

Permissible loads with heavy mounted implements and a travelling speed not faster than 20 km/h, using the all-wheel drive and hydrostatic steering device

Tyres		10,5-18 6 ply	10,5-20 6 ply
Track	mm	1396	1480
Inflation pressure	kp/cm²	2,25	2,25
Permissible front axle load	kp	3000	3000
Permissible rear axle load	kp	3000	3000
Permissible total weight	kp	4850	4850

For UNIMOG equipped with rotary snow plough there apply special permissible weights

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Seat — Two sprung upholstered seats with backrest for driver and attendant; height above ground 1260 mm, height and inclination of seats and backrests adjustable; seats in longitudinal direction adjustable.
Location to tractor's center line:
350 mm to the left for driver's seat
470 mm to the right for attendant's seat

Number of grease points (whole tractor) : 7

Overall dimensions

Overall length:	4035 mm without three-point linkage
Overall width:	1780 mm without ballast weights and without rear-view mirror at 1430 mm track
Overall height:	2250 mm with folding top 2225 mm with safety frame } platform with not loaded
Maximum ground clearance:	415 mm in tractor's center line

Lighting equipment — Electric 12 Volt, acc.to StVZO (German Govt.regulation) with main head lights

	Height above ground of center with tyres 12,5-18 e.Sp. mm	Dimensions of area mm	Distance from outside edge of tractor to center mm
Head lights	995	170 Ø	405
Side lights *)	1170	25 x 55	155 +)
Rear lights**)	1000	50 x 80	275
Reflectors	700	75 Ø	225

*) combined with direction indicator
**) combined with direction indicator and stop light
+) without rear-view mirror

FUELS AND LUBRICANTS USED IN TESTS

Laboratory and track tests

Fuel:	Aral Diesel fuel, specific gravity at 15°C: 0,872 kg/l (commercially available quality acc.to DIN 51 601)
Engine oil:	Aral Diesel engine oil HD 30
Transmission oil:	SAE 80
Power lift oil:	Aral Diesel engine oil HD 30

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COMPULSORY TESTS

(1) MAIN POWER TAKE-OFF PERFORMANCE

Date and location of tests: 21. July 1970

Type of dynamometer: Schenck hydraulic dynamometer U1-40

Maximum power

Horsepower metric hp	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption specific g/metric hp h	Specific energy metric hp h/l
At maximum power 2-hour test					
49,0	3000	581	14,5	244	3,38
At standard p.t.o. speed (540 rev/min)					
48,1	2781	540	13,9	238	3,47
At the speed recommended by the manufacturer for drawbar work					
49,0	3000	581	14,5	244	3,38
Fuel consumption at part loads					
(i) 85% of torque at maximum power					
42,6	3064	596	12,9	249	3,31
(ii) unloaded					
-	3260	634	5,5	-	-
(iii) 50% of the load defined in (i)					
22,1	3190	620	8,7	326	2,53
(iv) maximum power					
49,0	3000	581	14,5	244	3,38
(v) 25% of the load defined in (i)					
11,2	3240	629	7,0	514	1,95
(vi) 75% of the load defined in (i)					
32,8	3155	613	10,7	270	3,06

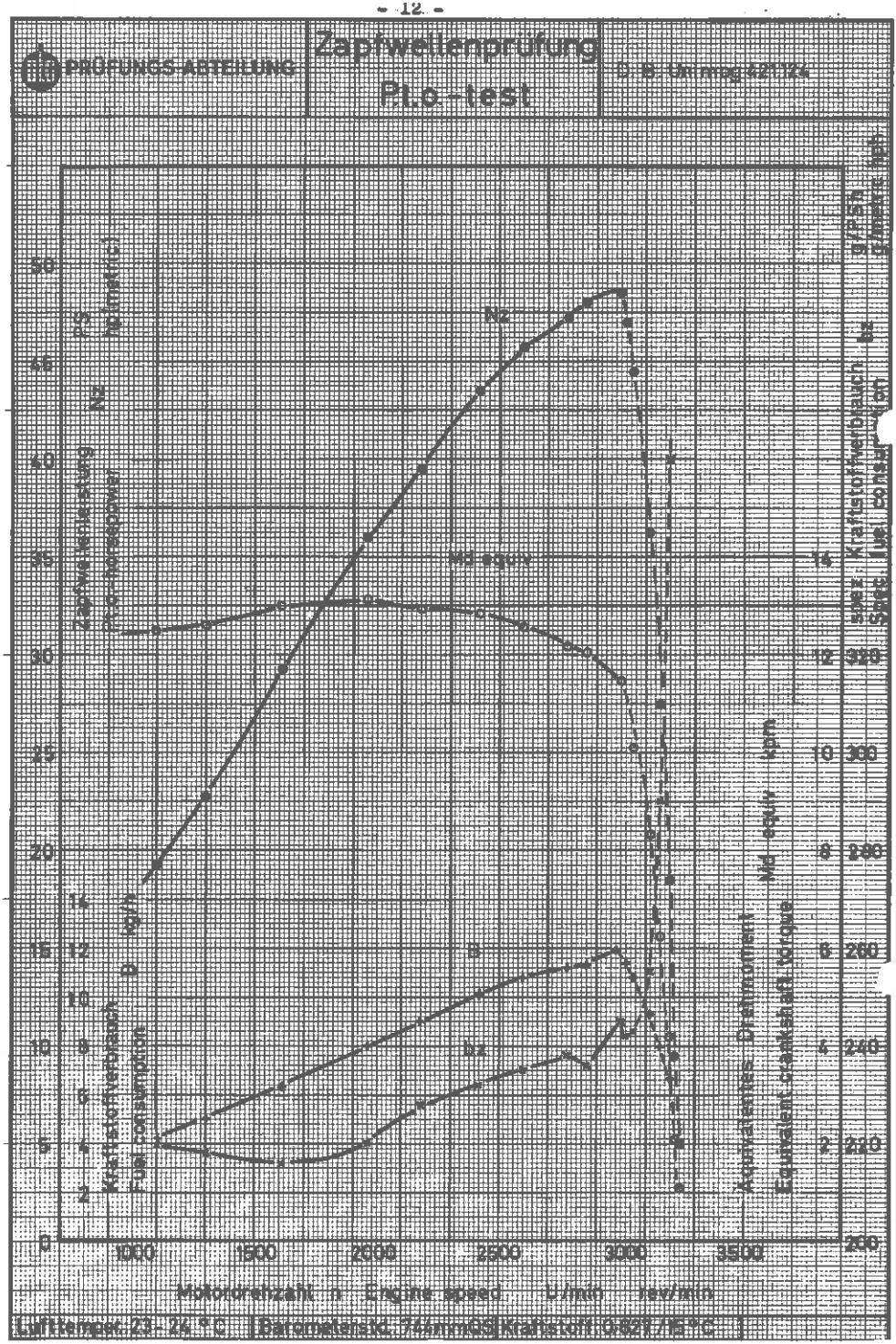
No load maximum engine speed: 3260 rev/min

Equivalent crankshaft torque at maximum power: 11,7 kpm

Maximum equivalent torque: 13,4 kpm at 1940 rev/min of the engine

Mean atmospheric conditions: temperatures: 24°C
pressure: 744 mm Hg
relative humidity: 65%

Maximum temperatures: coolant: 83°C
engine oil: 110°C
fuel: 26°C


PRÜFUNGS-ABTEILUNG
Zapfwellenprüfung
Pto-test
Nz
Md equiv
bz
Kraftstoffverbrauch
Fuel consumption
Zapfwellenleistung
Pto power
Äquivalentes Drehmoment
Equivalent crankshaft torque
Kraftstoffverbrauch
Fuel consumption
Motordrehzahl n Engine speed U/min rev/min

Zapfwellenprüfung
P.t.o. – test
Motor-drehzahl n Engine speed U/min rev/mn
Kraftstoffverbrauch B kg/h
Fuel consumption
Spez. Verbrauch g/PSxh
Spec. fuel consumption g/metric hph
Äquivalentes Drehmoment
Equivalent torque
kp equiv
lbf equiv
Zapfwellenleistung Nzw PTO horsepower
Zapfwellendrehzahl nzw PTO speed
Nutz-drehmoment Mu equiv
Nutz-leistung Nu PTO horsepower
Prüfstand-Anhang

(2) DRAWBAR PERFORMANCE with all-wheel drive, driving wheel tyres 12,5-18 e.Sp. at front and at rear

Date of tests: 4.8. till 18.8.1970

Type of track: concrete

Height of drawbar above ground: 820 mm

Gear No. and Group	Speed km/h	Horse-power metr.hp	Draw-bar pull kp	Engine speed rev/min	Wheel slip %	Specific energy metr.hp h/l	Specific fuel consumpt. g/metr.hp h	Temperatures Fuel °C	Coolant °C	Engine oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure mm Hg
(i) MAXIMUM POWER with ballast													
1 crawl	0,09	1,3	4220	3234	14,9	not recorded		36	85	105	35	72	750
2 crawl	0,15	2,3	4210	3237	14,7	not recorded		36	85	105	35	74	750
3 crawl	0,27	4,2	4225	3224	14,9	not recorded		36	85	105	35	74	750
4 crawl	0,49	7,7	4240	3215	14,7	1,14	723	36	85	105	35	74	750
1 creep	0,77	12,0	4205	3197	14,8	1,60	515	36	85	105	35	77	750
2 creep	1,38	21,7	4250	3149	14,8	2,26	365	34	85	105	26	83	750
3 creep	2,36	36,6	4190	3036	14,9	2,71	305	40	85	105	31	92	748
1 inter	2,96	38,8	3540	2999	10,0	2,67	307	38	85	105	26	96	749
1 select	3,87	40,1	2800	2999	6,6	2,80	293	37	85	105	25	85	749
4 creep	4,95	41,3	2250	3008	4,6	2,86	288	34	85	105	25	74	749
2 inter	5,71	41,2	1950	3000	4,2	2,83	291	32	85	105	22	90	749
2 select	7,27	41,5	1540	2996	3,0	2,87	287	34	85	105	24	86	750
3 inter	10,38	41,1	1070	2993	2,0	2,84	289	35	85	105	25	65	750
3 select	13,25	39,0	795	3005	0,9	2,70	304	36	85	105	27	70	749
(ii) FIVE-HOUR-TEST AT 75% OF PULL AT MAXIMUM POWER IN 2nd GEAR OF INTERMEDIATE GROUP													
2 inter	6,00	32,2	1450	3094	3,3	2,67	307	32	85	98	22	90	751
(iii) FIVE-HOUR-TEST AT PULL CORRESPONDING TO 15% WHEEL SLIP IN TEST (i)													
2 creep	1,38	21,7	4250	3149	14,8	2,26	365	34	85	105	25	75	751

Engine oil consumption during ten hours duration of tests (ii) and (iii) : 38 g/h

(2) DRAWBAR PERFORMANCE with all-wheel drive, driving wheel tyres 12,5-18 e.Sp. at front and at rear

Date of tests: 4.8. till 18.8.1970

Type of track: concrete

Height of drawbar above ground: 860 mm

Gear No. and Group	Speed km/h	Horse-power metr.hp	Draw-bar pull kp	Engine speed rev/min	Wheel slip %	Specific energy metr.hp h/l	Specific fuel consumpt. g/metr.hp h	Temperatures Fuel °C	Coolant °C	Engine oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure mm Hg
(v) MAXIMUM POWER without ballast													
3 creep	2,51	30,7	3300	3072	15,0	2,54	323	36	85	95	24	92	756
1 inter	2,87	34,9	3280	3047	15,0	2,63	311	40	85	95	28	92	756
1 select	3,78	39,9	2850	2998	10,1	2,75	297	36	85	95	26	66	757
4 creep	4,89	41,3	2280	2996	7,0	2,87	286	35	85	95	24	77	757
2 inter	5,68	41,0	1950	2992	5,4	2,85	288	36	85	95	24	80	757
2 select	7,30	41,9	1550	2996	4,2	2,93	281	34	85	95	23	86	755
3 inter	10,49	41,4	1065	3000	2,3	2,90	284	33	85	95	23	80	756
3 select	13,33	41,2	835	2995	1,0	2,86	288	33	85	95	24	75	755

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(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 12,5-18 e.Sp. 8 ply, without ballast
track: 1436 mm

Wheel equipment rear: 12,5-18 e.Sp. 8 ply, without ballast
track: 1436 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	5,25	5,25	5,02	5,12
Radius of turning circle	4,80	4,88	4,57	4,65

(4) LOCATION OF CENTRE OF GRAVITY

	without ballast 12,5-18 e.Sp. mm
Height above ground	890
Distance forward from the vertical plane containing the rear wheel's axis	1390
Distance of the median plane of the tractor	0

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(5) BRAKE PERFORMANCE

A) FOOT BRAKE

Date of test: 23.7.1970

Type of track: concrete

Type of decelerometer: Moto Meter Bremsverzögerungs- und Pedalkraft-schreiber, Moto Meter Hermann Schlaich 7000 Stuttgart N

Travelling speed of tractor: 24,5 km/h

With cold brakes

		Tractor with ballast	Tractor without ballast
Deceleration	m/s^2	7,0	7,6
Stopping distance	m	5,4	5,2
Force on pedal	kp	68	34
Force on pedal to achieve a deceleration of 2,5 m/s^2	kp	15	11

BRAKE FADE CHARACTERISTICS

			Tractor with ballast	Tractor without ballast
Deceleration	hot/cold	%	100	92
Stopping distance	cold/hot	%	100	97
Force on pedal	cold/hot	%	131	136

B) PARK BRAKE

Tractor facing up slope.
Pull on hand brake 25 kp, tractor does not roll

Tractor facing down slope.
Pull on hand brake 25 kp, tractor does not roll

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(6) AMBIENT NOISE, EMITTED BY THE TRACTOR

Date of test: 23.7.1970

Type of track: concrete

Type of sound level meter: Bruel & Kjaer type 2203

Results of test

Speed: 4 select

Travelling speed before acceleration: 18,5 km/h

Sound level: 84 dBA

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(7) NOISE AT THE DRIVER'S EAR LEVEL

Date of test: 30.7.1970

Type of track: concrete

Type of sound level meter: EZGN, Rohde & Schwarz, 8000 München

Type of octavfilter: PBO, Rohde & Schwarz, 8000 München

A folding top and safety frame were fitted on the tractor

Results of tests with folding top open

	Drawbar pull at which the tractor develops the maximal sound level kp	Travelling speed nominal km/h	Travelling speed effective km/h	Sound level dBA	Sone
3 creep	2750	2,78	2,67	89	
1 inter	2750	3,20	3,03	89	
1 normal	2800	4,02	3,72	90	
4 creep	2000	5,04	5,05	89	
2 inter	1900	5,78	5,68	90	
2 normal*)	1400	7,29	7,45	90	68
3 inter	900	10,31	10,85	89	
3 normal	500	13,00	13,90	90	
4 inter	500	18,66	19,60	89	
with folding top closed					
3 creep	1700	2,78	2,91	90	
1 inter	2100	3,20	3,26	91	
1 normal	1500	4,02	4,25	91	
4 creep	1400	5,04	5,25	91	
2 inter	1200	5,78	5,88	91	
2 normal*)	1050	7,29	7,65	92	62
3 inter	700	10,31	11,95	90	
3 normal	400	13,00	14,20	90	
4 inter	350	18,66	20,00	89	

The 2 normal gear corresponds to the travelling speed nearest to 7,25 km/h

(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date and location of tests: 12.8.1970, Groß- Umstadt
Hydraulic fluid: Engine oil HD 20 W/20

POWER LIFT

Height above ground in down position hitch point mm	Height above ground in down position test frame mm	Total vertical movement mm	Maximum force exerted through full lift range kp	Pressure of hydr. oil kp/cm²	Linkage load at which unballasted front end of tractor lifts off the ground kp
Linkage giving maximum mechanical advantage					
At hitch points					
270	-	575	1460	154	*)
On the frame					
270	265	628	1440	154	2200
Linkage giving minimum mechanical advantage					
At hitch points					
470	-	545	1560	154	*)
On the frame					
470	457	663	1470	154	2200

*) greater than max. lifting force

Type of linkage lock for transport: Hydraulic lock
Opening pressure of the cylinder overpressure relief valve: no valve fitted

PUMP CHARACTERISTICS

(i) opening pressure of relief valve: 160 kp/cm²
sustained pressure by the open relief valve: 154 kp/cm²

Pump delivery rate at external tapping
(ii) at minimum pressure: 31 l/min
(iii) at maximum hydraulic power: 29,7 l/min
maximum hydraulic power: 8,25 metric hp
delivery pressure: 125 kp/cm²

PRÜFUNGS-ABTEILUNG
D.-B. Unimog 421.124

Test No. 70-104

OPTIONAL TESTS

(9) ENGINE PERFORMANCE

Date and location of tests: 12.6. till 15.6.1970

Type of dynamometer: Schenck hydraulic dynamometer U1-30

Maximum power

Horsepower metric hp	Engine speed rev/min	Fuel consumption total l/h	Fuel consumption specific g/metric hp h	Specific energy metric hp h/l
At maximum power 2-hour test				
53,4	3000	14,6	225	3,67
At standard p.t.o. speed (540 rev/min)				
51,6	2780	13,8	222	3,73
At standard p.t.o. speed (1000 rev/min)				
52,1	2826	14,0	222	3,72
At the speed recommended by the manufacturer for drawbar work				
53,4	3000	14,6	225	3,67
Fuel consumption at part loads				
(i) 85% of torque at maximum power				
46,9	3100	13,1	231	3,58
(ii) unloaded				
-	3280	5,0	-	-
(iii) 50% of the load defined in (i)				
23,9	3190	8,6	300	2,78
(iv) maximum power				
53,4	3000	14,6	225	3,67
(v) 25% of the load defined in (i)				
12,2	3220	6,8	460	1,79
(vi) 75% of the load defined in (i)				
36,0	3178	10,6	244	3,39

Optimum fuel consumption: 197 g/metric hp h at 21,2 metric hp and 1415 rev/min

Standard fuel consumption 1/2 (acc.to DIN 9606): 5,9 /12,3 l/h

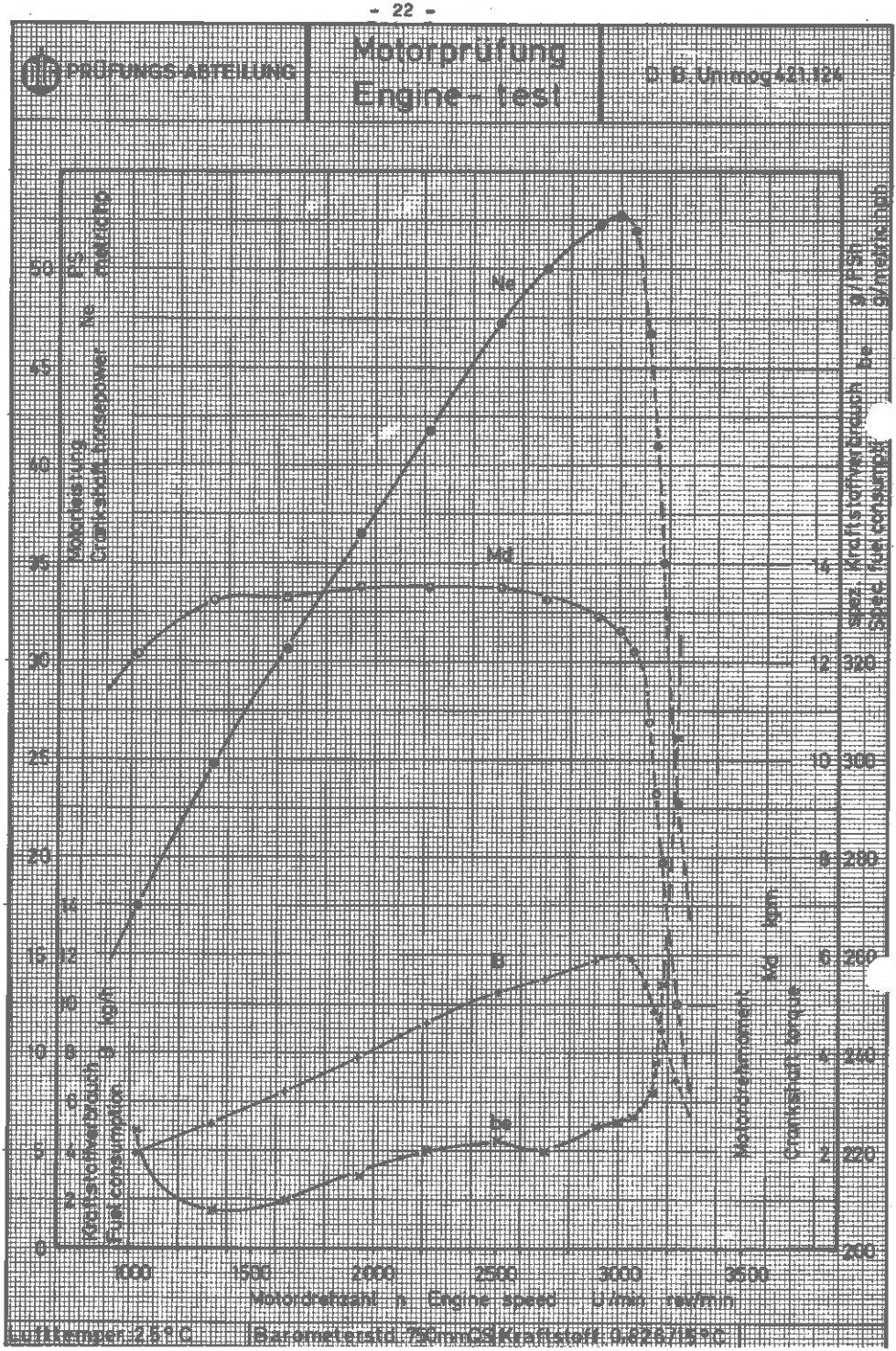
No load maximum engine speed: 3280 rev/min

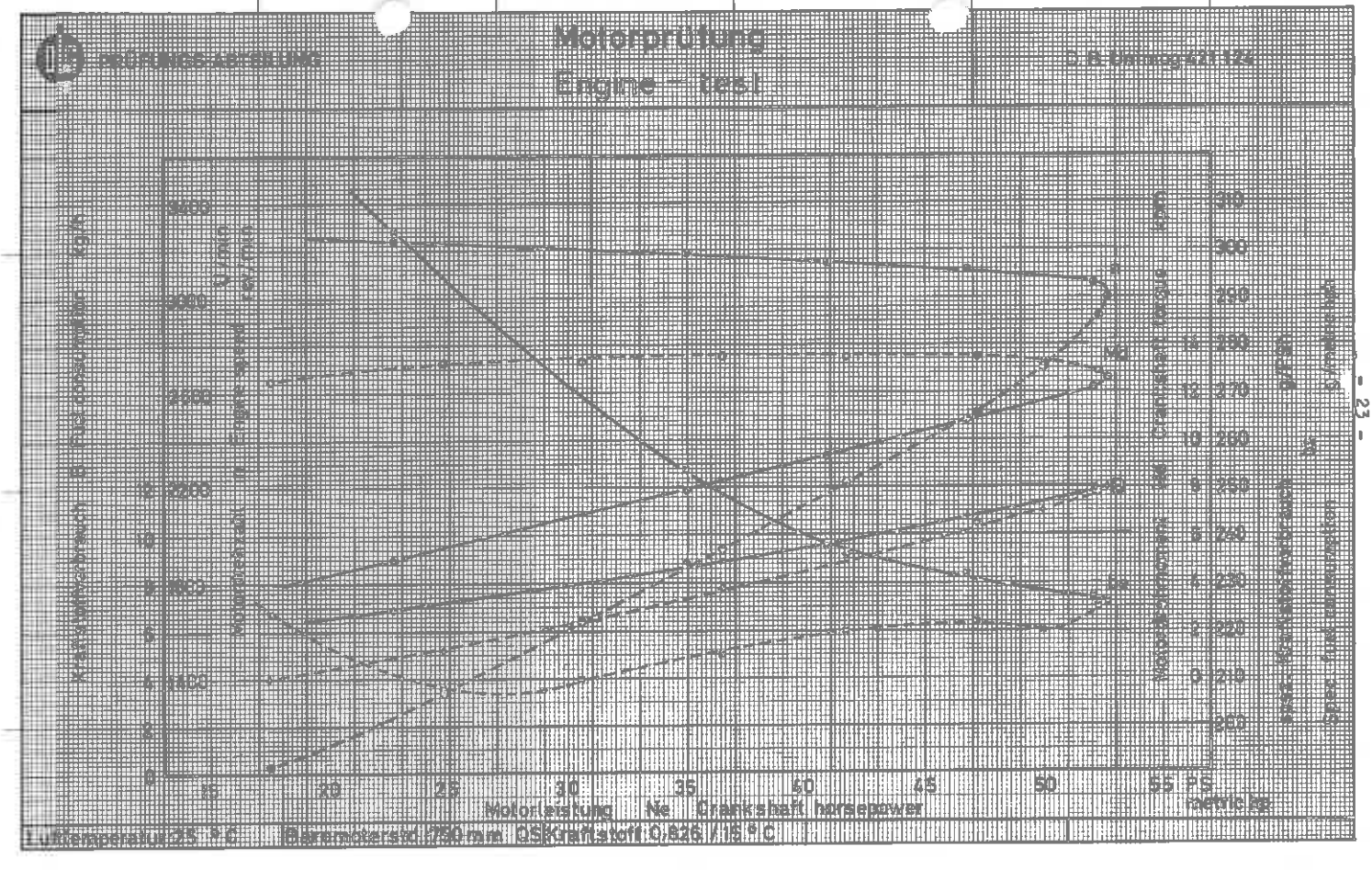
Torque at maximum power: 12,75 kpm

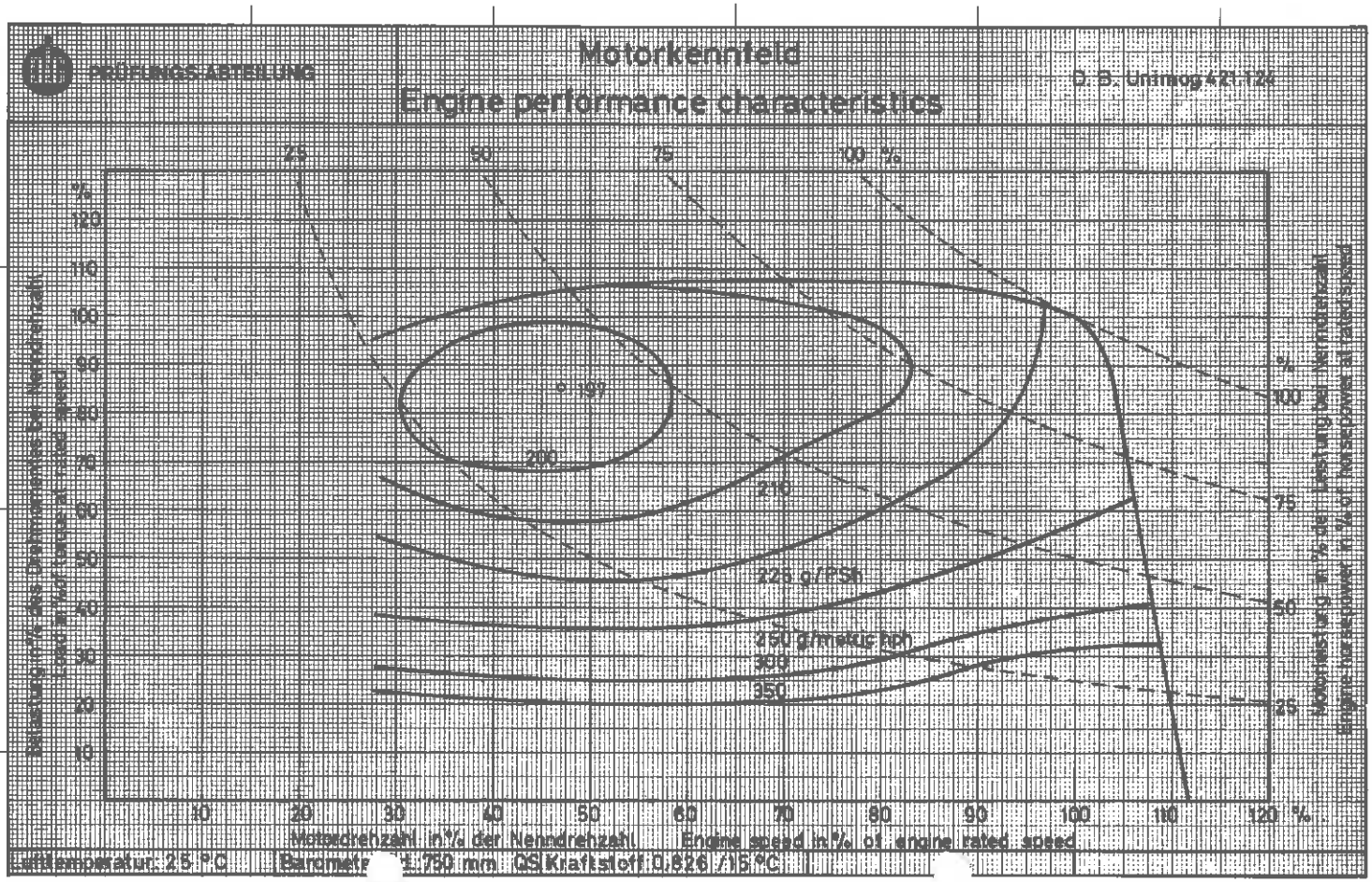
Maximum torque: 13,45 kpm at 2190 rev/min of the engine

Mean atmospheric conditions:
temperature 25°C
pressure 750 mm Hg
relative humidity 58%

Maximum temperatures:
coolant 93°C
engine oil 114°C
fuel 38°C


PRÜFUNGS-ABTEILUNG
Motorprüfung
Engine - test
D 6 D Unimog 421.124
Ne
Md
be
Leistung
Drehmoment
Kraftstoffverbrauch
Motordrehzahl
Engine speed
U/min
rev/min
Lufttemper. 25°C
Barometerstd. 750mmQS
Kraftstoff 0,825g/l5°C


Motorprüfung
Engine – test
Motorleistung Ne Crankshaft horsepower
Lufttemperatur 25 °C
Barometerstd 750 mm
DS Kraftstoff 0,826 / 15 °C


PRÜFUNGSABTEILUNG
Motorkennfeld
Engine performance characteristics
D. B. Unimog 421 124
25
50
75
100 %
197
200
210
225 g/PSh
250 g/mkp h
300
350
Drehmoment in % des Nennmoments
Engine torque in % of rated torque
Motordrehzahl in % der Nenndrehzahl
Engine speed in % of engine rated speed
Lufttemperatur: 25 °C
Barometer
780 mm
Kraftstoff 0,826 /15 °C

PRÜFUNGS-ABTEILUNG
D.-B. Unimog 421.124

Test No. 70-104

(11) PERFORMANCE IN A HOT ATMOSPHERE

Date and location of test: 19.8.1970

Limiting temperatures specified by the manufacturer:

Coolant: 108°C

Engine oil: 135°C

Special equipment fitted:

Transmission engine : fan 1 : 1

Fuel: Aral Diesel fuel, density at 15°C: 0,827 kg/l
(commercially available quality acc.to DIN 51 601)

Cetan number: not recorded

Engine oil: Aral Diesel engine oil HD 30

Transmission oil: SAE 80

Result of test

Ambient temperature °C	Power at p.t.o. metric hp	P.t.o. speed rev/min	Temperatures Coolant °C	Temperatures Engine oil °C	Atmospheric pressure mm Hg
57	41,4	583	109	134	743

END OF THE REPORT IN ACCORDANCE WITH THE
O.E.C.D. STANDARD-CODE FOR THE OFFICIAL TESTING
OF AGRICULTURAL TRACTORS

ADDITIONAL-TEST outside the O.E.C.D.-Code
under the responsibility of the DLG Testing Station

DRAWBAR PERFORMANCE ON AGRICULTURAL SOIL

Date of tests: 6.8.1970
Location of tests: Semd near Groß-Umstadt
Description of soil: Humous loamy sand, very dry, summer barley stubble
Shear strength of soil: Not recorded
Moisture content of soil: Below 10%
Front axle load: 2128 kp with driver, with ballast as tested on concrete
Rear axle load: 1990 kp with driver, with ballast as tested on concrete
Drawbar height: 825 mm above ground
Tyres: 12,5-18 extra Special, Dunlop
Inflation pressure: 1,5 kp/cm²

Gear No. and Group	Speed km/h	Horse-power metr.hp	Drawbar pull kp	Engine speed rev/min	Slip of wheels %	Specific energy metr.hp h/l	Specific fuel consumption g/metr.hp h	Temperatures Fuel °C	Coolant °C	Engine oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure mm Hg
with rear-wheel drive													
1 select	3,72	15,4	1120	3180	13,7	not recorded		36	85	95	32	55	750
1 select	3,62	16,7	1250	3170	16,0	not recorded		36	85	95	32	55	750
1 select	3,29	16,1	1320	3150	23,2	not recorded		36	85	95	32	55	750
with all-wheel drive													
1 select	3,65	27,0	2000	3085	13,7	not recorded		36	85	95	32	55	750
1 select	3,46	27,5	2150	3065	17,7	not recorded		36	85	95	32	55	750
1 select	2,89	25,1	2350	3030	30,2	not recorded		36	85	95	32	55	750

PRÜFUNGS-ABTEILUNG

Zugprüfung
Drawbar test

D. R. Dmmbg 21.124

mit Ballast with ballast

Reifen: 12.5 - 38 extra Spezial 8PR Duelop
Tires:

Gewicht: vorn 2828 kg hinten 1880 kg mit Fahrer
Weight: front rear with driver

Boden: humoser lehmiger Sand Sommergerstenstoppel
Soil: humous loamy sand summer barley stubble

Allradantrieb
All wheel drive

Hinterradantrieb
Rear wheel drive

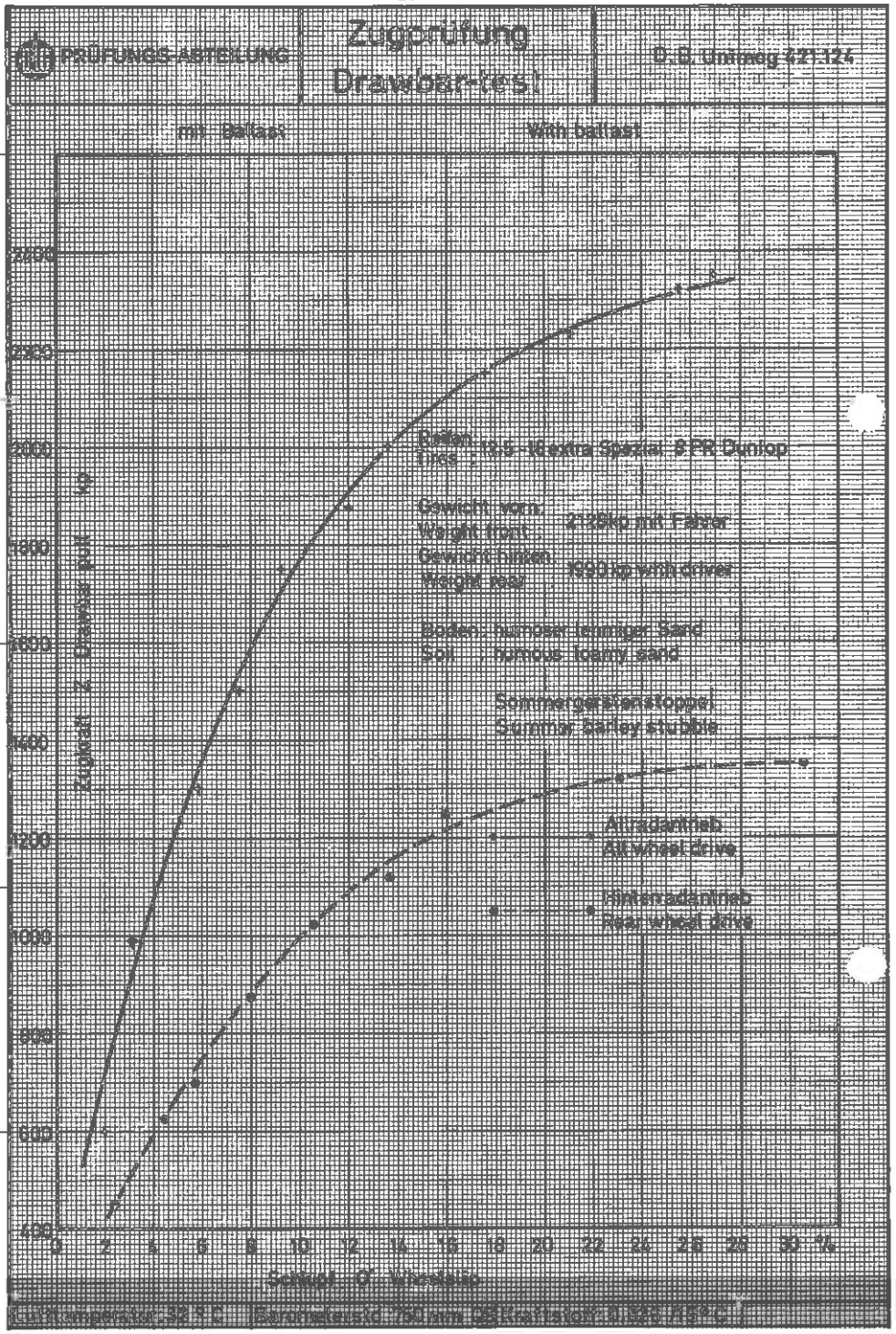
Drehzahl Motor (1/min)
Engine speed

Geschwindigkeit (km/h)
Speed

Zugkraft Z Drawbar pull

0 400 800 1200 1600 2000 2400 kg

Luftemperatur 30 °C Barometerstand 760 mm QS Relative Feuchte 75 %


PRÜFUNGS-ABTEILUNG
Zugprüfung
Drawbar-test
D. B. Umweg 421 124
mit Ballast
With ballast
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
Zugkraft
Drawbar pull
kg
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
%
Schlupf
Slip of wheels
Reifen
Tires
: 13.5-16 extra Spezial, 8 PR Dunlop
Gewicht vorn
Weight front
: 2125 kg mit Fahrer
Gewicht hinten
Weight rear
: 1930 kg with driver
Boden
Soil
: humoser lehmiger Sand
humous loamy sand
Sommergerstenstoppel
Summer barley stubble
Allradantrieb
All wheel drive
Hinterradantrieb
Rear wheel drive