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

O.E.C.D. No. 679



Agricultural Tractor EICHER 3255

trade name: EICHER 4048

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

Deutsche Landwirtschafts-Gesellschaft e.V.
Zimmerweg 16 · D-6000 Frankfurt a. M. 1
Telefon: (0611) 72 07 11 · Telex: 04 131 85 dlg d

This bulletin is based on engineering tests in accordance with the O.E.C.D. STANDARD CODE for the Official Testing of Agricultural Tractor Performance. It does not contain an evaluation of the tractor performance on practical work.

Duration of tests: March 1979 till February 1980

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: 11th June 1980 O.E.C.D. No. 679

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/cm²	or 1 kp/cm²	= 0,981 bar
	1000 mbar = 750,1 mm Hg		

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PRÜFUNGS-ABTEILUNG
EICHER 3255

Test No. 79-55

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Tractor manufacturer:	GEBRÜDER 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 50 hours, tractor appr. 90 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	EICHER
Model:	3255 trade name 4048 wheel tractor, unit construction, rear wheel driven
Serial no.:	15o391

Engine

Make:	PERKINS ENGINES S.A.
Model:	AD 3.152
Type:	4-stroke Diesel-engine, direct injection, water-cooled
Serial no.:	CE 22706 U 560211 E
Cylinders:	3, in line, bore 91,4 mm, stroke 127 mm, displacement 2500 cm^3; compression ratio 18,5 replaceable dry cylinder liners
Valves:	Overhead
Fuel system:	AC DELCO fuel feed pump CAV distributor injection pump WW 47E 900/3/2420 manufacturer's production setting 54 mm^3/stroke at rated engine speed; with injection timing mechanism, injection timing $16^o + 10^o$ before TDC; CAV multihole injection nozzles BDLL 1505 6372, injection pressure 175 bar; CAV fuel filter with replaceable cartridge; capacity of fuel tank 85 l
Governor:	Mechanically acting centrifugal variable speed governor, incorporated in injection pump; governed range of engine speed 760 to 2330 rev/min, rated engine speed 2170 rev/min

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Air cleaner:	MANN PICLON dry paper element filter with precleaner, with replaceable cartridge and electrically operating maintenance indicator
Exhaust silencer:	LEISTRITZ multi chamber reflexion-type silencer, 100 mm dia, 640 mm long, on the left hand side of engine cowling, mouth showing upward, mouth 2285 mm above ground
Lubrication system:	Forced feed from gear pump; strainer in sump; PERKINS oil filter in full flow with replaceable cartridge and by-pass valve; cartridge change at all oil changes; oil capacity 6,5 l; recommended oil quality MIL-L-2104 B; recommended oil viscosities: winter SAE 10W summer SAE 20W/20 tropics SAE 30 oil change interval 150 hours
Cooling system:	Pressurized water cooling system with pump; overpressure set to 0,5 bar; thermostat with by-pass; fan with 4 blades, 394 mm dia, cooling water capacity 10 l
Starting system:	Electrical LUCAS screw-push starter motor M 45 G-12V, 1,8 kW; CAV flame plug in intake pipe
Electrical equipment:	12 Volt BOSCH 3-phase alternator G1 14V 28A, 1 lead-acid battery 88 Ah at 20 hours rating

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Transmission

Clutch:	FICHTEL UND SACHS AG dry dual disc clutch DUT 250/250 gearbox drive pedal operated, p.t.o. drive hand lever operated; both discs 250 mm dia
Gear box:	Own make speed change gear with 4 forward speeds and 1 reverse speed, reverse and 1st gear collar shifted, 2nd gear sliding gear shifted, 3rd and 4th gear synchronized; group gear with 2 groups L and H, L-group collar shifted, H-group sliding gear shifted; additional reduction gear with 2 groups RGL and RGH, collar shifted; totally 16 forward speeds and 4 reverse speeds
Rear axle and final drives:	MASSEY-FERGUSON S.A. bevel gear drive with crown wheel and pinion; bevel gear differential with lock, pedal operated, self disengaging; planetary final drives
Front axle:	Not propelled

Oil capacity:	Gear box in common with rear axle drive and hydraulic system	47 l
	rear axle final drives each	2 l
Oil- and oilfilter change:		600 hours
Recommended oil qualities:	Transmission oil SAE 90 MIL-L-2105 B	
	gear box: Multi-purpose transmission oil SAE 20W/30 acc. to MF specif. M 1139	

Total ratios and speeds see page 8

Power take-off Independent p.t.o.
at rear of tractor,
driven through the second disc of the dual disc clutch;
height above ground 563 mm,
300 mm behind rear axle centre line,
in tractor's median plane;
2 interchangeable p.t.o. shafts for 540 rev/min and 1000 rev/min p.t.o. speeds;
by interchanging p.t.o.-stub-shafts correct speed ratio is selected:

540 rev/min p.t.o.
35 mm dia, 6 splines DIN 9611 and ISO 500 type 1;
619 rev/min at rated engine speed,
standard p.t.o. speed 540 rev/min at 1893 rev/min engine speed

1000 rev/min p.t.o.
35 mm dia, 21 splines, DIN 9611 and ISO 500 type 2;
1142 rev/min at rated engine speed,
standard p.t.o. speed 1000 rev/min at 1900 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 16,9 R 30)

Group	Reduction gear	Gear	Total ratio engine : driving wheels	Nominal travelling speed *) at rated engine speed km/h
Forward speeds				
L	RGL	1	555,91	1,02
		2	379,03	1,50
		3	277,50	2,05
		4	206,74	2,75
	RGH	1	238,86	2,38
		2	162,86	3,49
		3	119,23	4,77
		4	88,83	6,40
H	RGL	1	138,98	4,09
		2	94,76	6,00
		3	69,38	8,20
		4	51,69	11,00
	RGH	1	59,71	9,52
		2	40,71	13,96
		3	29,81	19,07
		4	22,21	25,60
Reverse speeds				
L	RGL	R	408,19	1,39
	RGH	R	175,38	3,24
H	RGL	R	102,05	5,57
	RGH	R	43,85	12,97

*) calculated with the RADIUS INDEX 695 mm as per WdK 154

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Power lift

Hydraulic system:

MASSEY-FERGUSON S.A.
hydraulic power lift in unit construction;
MF axial-type pump with 30 l/min delivery at rated engine speed,
in gear box, driven by the disc of the p.t.o. clutch;
MF control valve for lifting, lowering, draft control, position control and floating position;
top link sensing;
maximum oil pressure 205 bar;
1 single acting main cylinder with 85,6 mm bore and 120,7 mm stroke,
without overpressure relief valve;

MF gear-type pump for auxiliary hydraulic system
38 l/min delivery at rated engine speed,
in gear box, driven by the disc of the p.t.o. clutch;
both pumps stall during manipulation of p.t.o. clutch hand lever;
1 double acting additional MF control valve and 2 oil tappings fitted on tractor tested;
up to 3 single or double acting additional control valves with oil tappings available

oil capacity 47 l in common with gear box;
max. 13 l may be taken off through oil tappings when tractor is travelling,
15 l when tractor is working stationary

Implement linkage:

Three point linkage category II DIN 9674

lift rods adjustable	from	630	to	740 mm
lifting range above ground with				
short lift rods	from	425	to	1030 mm
long lift rods	from	125	to	835 mm

Holed bar:	Long bar, fitted on clevis of lower links; length between the joint balls 810 mm, width 80 mm, thickness 30 mm; centre hole and 2 holes on either side between the joint balls, 2 holes on either side outside of the joint balls; totally 9 holes, all holes 33 mm diameter; height above ground adjustable by power lift in the range from 200 to 1105 mm, depending on lift rods length, measured at the surface of the bar; distance of holes centre line with lower links in horizontal position: from rear axle centre 943 mm from p.t.o. shaft end 643 mm

Pull attachment

Trailer hitch:	CRAMER height above ground adjustable by shifting to 765 mm and 874 mm, hitch hole 33 mm diameter; distance of hitch hole centre to rear axle centre 490 mm; permissible vertical load 1000 kg
Towing hitch:	668 mm above ground

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Steering	ZAHNRADFABRIK FRIEDRICHSHAFEN AG hydrostatic steering model 8450 with own oil circuit; PLESSEY gear type pump with 6 cm^3/rev delivery, directly driven by engine; oil capacity 5 l, transmission oil ATF type A, oil changing once a year; 1 double acting ram with 57 mm bore and 150 mm stroke, acting directly on front axle
Brakes	
Parking brake:	Mechanically acting on the discs of the service brake; operated by hand lever with ratchet
Service brake:	GIRLING hydraulically acting wet disc brake with 3 lining discs on each differential half shaft, disc diameter 222 mm, pedal operated
Steering brake:	2 additional hand levers on the left hand side of driver's seat acting on the parking brake
Wheels	
Steered wheels:	2 pneumatics in front 7,50 - 18 6 ply maximum permissible load per tyre 810 kg at 2,25 bar inflation pressure and 30 km/h; track width adjustable from 1210 to 1815mm in steps of about 101 mm each by extending half axle shafts rims 5,50 F x 18

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Driving wheels:	At rear 2 pneumatics 16,9 R 30 6 ply, radial type tyre casing; maximum permissible load per tyre 1900 kg at 1,3 bar inflation pressure and 30 km/h; track width adjustable from 1430 to 2130 mm in steps of 100 mm each by turning wheels and offset lug type rims; rims W 14L x 30
Wheel base:	2185 mm
Safety frame	Own make OECD tested approval no. CSD 0016/4 - a (F)
Seat	GRAMMER DS 85 H4 upholstered seat with back rest; adjustable spring with shock absorber; height of driver's platform above ground 780 mm; height of unloaded seat above platform adjustable to 3 positions: 470, 500 and 530 mm; for and aft adjustable about 150 mm

Number of grease points 21

Track setting during tests

front axle	1312 mm
rear axle	1430 mm

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Dimensions

Total length	3690 mm without ballast 3690 mm with ballast
Total width:	1835 mm without ballast 1835 mm with ballast
Total height:	2630 mm to top of safety frame
Ground clearance:	425 mm below gear box

Weights

Ready for use as tested, with safety frame

		without driver	with driver
Without ballast	front	975 kg	985 kg
	rear	1730 kg	1800 kg
	total	2705 kg	2785 kg
Front ballast:	5 front weights 4o kg each		200 kg
Rear ballast:	water in the tyres		505 kg
With ballast:	front	1170 kg	1180 kg
	rear	2240 kg	2310 kg
	total	3410 kg	3490 kg

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Lighting equipment — Electrical 12 Volt as per German legislation

	Dimensions mm	Height above ground to centre mm	Distance from outside edge of tractor to centre mm
Head lights	145 x 90	995	785
Side lights	70 x 20	1410	222
Rear lights	30 x 65	1425	267
Reflectors			
1st pair	130 x 40	1200	267
2nd pair	60 ø	630	507

Permissible total weights and axle loads for all available wheel equipment

Wheel equipment front	Wheel equipment rear	Permissible total weight kg	Permissible axle load front kg	Permissible axle load rear kg
7,5 L - 15	14,9 - 28	3500	1600	3000
6,50 - 16	14,9 - 30		1400	3000
7,50 - 16	16,9 - 30		1600	3000
7,50 - 18	12,4 - 32		1600	2890
6,50 - 20	9,5 - 36		1600	2410
	12,4 - 36			3000

All tyres 6 ply

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FUELS AND LUBRICANTS USED IN TESTS

Fuel:	ARAL Diesel-fuel DIN 51601	
	specific gravity at 15° C	
	at engine tests	0,826 kg/l
	at p.t.o. tests	0,831 kg/l
	at drawbar tests	0,826 kg/l
Engine:	ESSO ESSOLUBE HDX	SAE 20W/20
Transmission, rear axle and hydraulic:	ESSO multi purpose oil	20W/30
Final drives:	ESSO transmission oil	SAE 90
Steering:	OEST ATF oil type A	

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COMPULSORY TESTS

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

Date of tests: 18th June 1979
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total 1/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power						
At 2-hour test						
31.9	2170	619	10.50	8.73	274	3.03
At standard p.t.o. speed						
30.2	1893	540	9.63	8.00	265	3.14
At the speed recommended for drawbar work						
31.9	2170	619	10.50	8.73	274	3.03
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						
27.8	2231	636	9.28	7.71	277	3.00
(ii) unloaded						
-	2333	665	3.04	2.52	-	-
(iii) 50% of the load defined in (i)						
14.2	2267	647	5.92	4.92	348	2.39
(iv) maximum power						
31.9	2170	619	10.50	8.73	274	3.03
(v) 25% of the load defined in (i)						
7.2	2301	656	4.43	3.68	512	1.62
(vi) 75% of the load defined in (i)						
21.1	2250	642	7.58	6.30	299	2.78

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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 standard p.t.o. speed						
26.3	1941	554	8.24	6.85	260	3.19
(ii) unloaded						
-	2061	588	2.38	1.98	-	-
(iii) 50% of the load defined in (i)						
13.6	2003	571	5.21	4.33	319	2.61
(iv) maximum power						
30.2	1893	540	9.63	8.00	265	3.14
(v) 25% of the load defined in (i)						
6.9	2042	583	3.80	3.15	456	1.82
(vi) 75% of the load defined in (i)						
20.1	1979	564	6.69	5.56	277	3.00

Standard specific fuel consumption (g/kWh): 277/348/260/319

o load maximum engine speed: 2333 rev/min
Equivalent crankshaft torque at maximum power (2 hours): 140 Nm
Maximum equivalent crankshaft torque: 162 Nm at 1498 rev/min of the engine

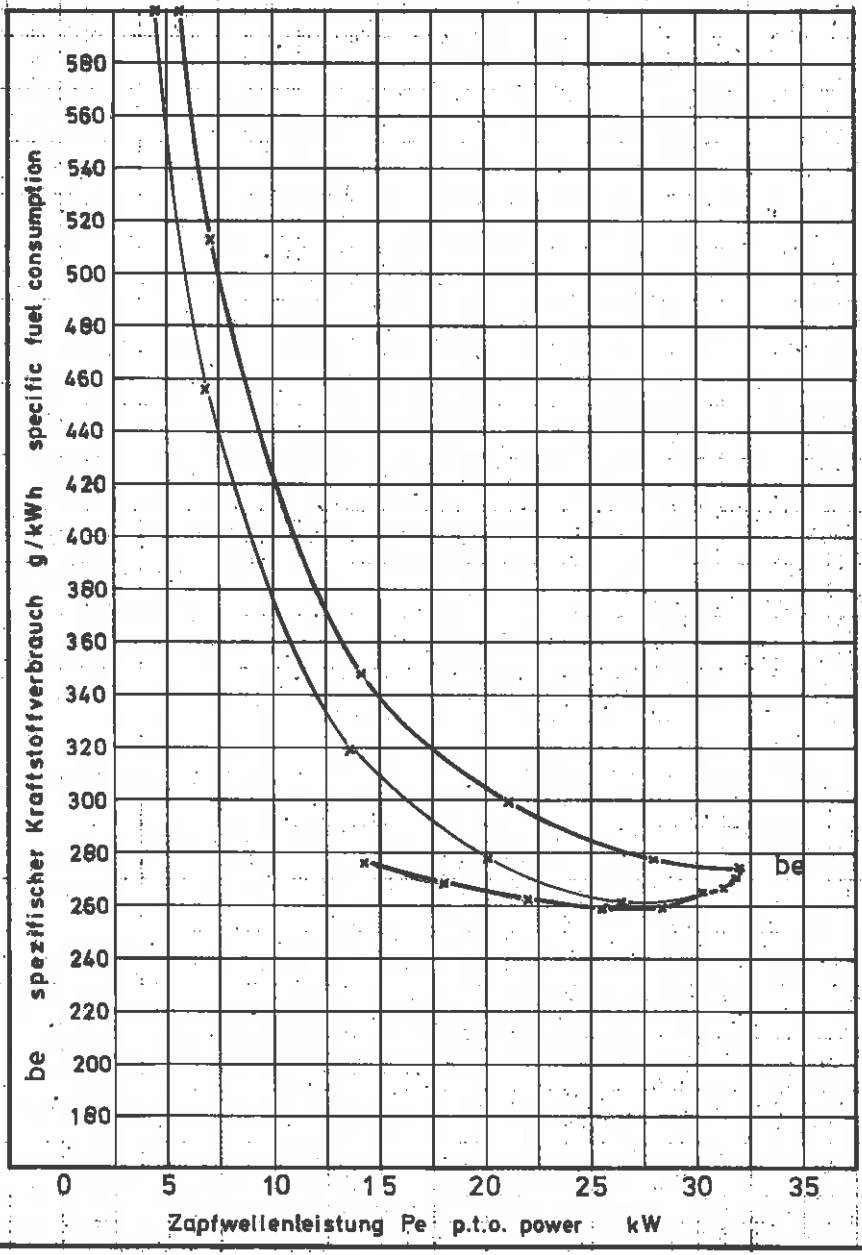
Mean atmospheric conditions:	temperature	22 °C
	pressure	1007 mbar
	relative humidity	55 %
Maximum temperatures:	coolant	68 °C
	engine oil	95 °C
	fuel	23 °C
	engine air intake	24 °C

PRÜFUNGS-ABTEILUNG
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Zapfwellenleistung
P.t.o. performance
Test Nr. 79-55
Pe
M eq.lv
B
be
standard p.t.o. speed
Zapfwellenleistung P.t.o. power Pz kW
Kraftstoffverbrauch fuel consumption B kg/h
Äquivalentes Drehmoment equiv. crankshaft torque M eq.lv Nm
spez. Kraftstoffverbrauch spec. fuel consumption be g/kWh
Motordrehzahl n engine speed U/min rev/min
1000
1200
1400
1600
1800
2000
2200

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Zapfwellenleistung
P.t.o. performance

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(2) DRAWBAR PERFORMANCE

Date of tests: 23rd till 29th January 1980
Type of track: Concrete

Gear no. and group	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 570 mm					
1L RGL	0,90	8,6	3429	2283	14,9
2L RGL	1,31	12,5	3421	2267	15,0
3L RGL	1,79	16,9	3411	2251	15,1
1L RGH	2,06	19,6	3431	2243	14,9
4L RGL	2,37	22,4	3410	2226	14,9
2L RGH	3,06	27,1	3190	2168	10,9
1H RGL	3,70	28,0	2724	2171	8,0
3L RGH	4,38	28,3	2324	2169	6,5
2H RGL	5,61	27,9	1792	2171	4,8
4L RGH	6,01	28,1	1684	2171	4,3
3H RGL	7,76	27,5	1274	2167	3,3
1H RGH	9,04	28,4	1129	2172	2,9
4H RGL	10,48	26,6	915	2168	2,4
2H RGH	13,42	26,0	697	2171	1,9
(ii) FIVE-HOUR-TEST at 75% of pull at maximum power in 2nd H RGL gear					
2H RGL	5,89	22,0	1344	2248	3,4
(iii) FIVE-HOUR-TEST at pull corresponding to 15% wheel slip in test (i)					
4L RGL	2,44	23,3	3431	-	-
(iv) MAXIMUM POWER without ballast height of drawbar above ground 580 mm					
4L RGL	2,40	18,8	2833	2245	15,1
2L RGH	3,01	23,6	2817	2224	14,9
1H RGL	3,59	26,2	2626	2174	11,3
3L RGH	4,30	27,0	2262	2167	8,7
2H RGL	5,54	27,5	1789	2172	6,5
4L RGH	5,94	27,7	1680	2170	6,0
3H RGL	7,72	27,4	1278	2173	4,5
1H RGH	9,01	28,4	1136	2170	4,0
4H RGL	10,46	26,9	927	2170	3,3
2H RGH	13,39	27,6	741	2173	2,7

Total oil consumption during ten hours duration of tests (ii) and (iii) 24 g/h

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Tyres size front: 7,50 - 18 6 ply
rear: 16,9 R 30 6 ply

Tread bar height at the beginning of drawbar tests 88 % of the value when new

Specific energy kWh/l	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 0,8 bar							
1,57	525	17	64	90	8	69	1002
1,99	415	17	64	91	8	67	1002
2,17	380	17	64	91	7	67	1002
2,28	361	18	62	81	10	64	1003
2,31	356	18	63	88	8	60	1002
2,56	322	16	63	85	7	69	1002
2,62	315	16	63	85	7	71	1002
2,65	311	16	64	89	7	70	1002
2,63	314	15	64	89	8	72	1002
2,66	311	15	64	89	8	71	1002
2,61	317	15	64	90	8	69	1002
2,67	310	15	64	90	8	70	1002
2,50	330	15	64	88	7	67	1002
2,47	334	20	64	89	10	65	993
2,52	328	15	66	98	10	64	993
-	-	13	65	92	8	72	991
tyre inflation pressure 0,8 bar							
2,18	378	16	63	84	8	71	986
2,30	357	20	63	82	9	60	987
2,45	336	18	64	89	9	64	987
2,53	326	15	64	87	8	74	986
2,59	319	15	64	86	9	74	986
2,60	318	15	64	85	8	76	986
2,57	322	15	64	87	8	76	986
2,66	309	22	65	88	10	81	986
2,52	326	20	65	88	9	91	987
2,58	319	20	65	89	9	94	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: 7,50 - 18 6 ply
rear: 16,9 R 30 6 ply

Track of wheels front: 1312 mm
rear: 1430 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	3,45	3,39	4,05	3,78
Radius of turning circle	3,28	3,21	3,88	3,60

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	824 mm
Distance forward from rear axle centre	778 mm
Distance from tractor's median plane	1 mm to the left

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(5) BRAKING PERFORMANCE

A) SERVICE BRAKE

Date of tests: 28th January 1980
Type of track: Concrete
Type of decelerometer: MOTO-METER-Bremsverzögerungs- und Pedalkraftschreiber

Weight of ballasted tractor with driver 3490 kg

Cold brakes

		With ballast	Without ballast
Travelling speed	km/h	25,0	25,0
Deceleration	m/s^2	4,1	3,9
Stopping distance	m	7,2	7,4
Force on pedal	daN	39	29
Force on pedal to achieve a deceleration of 2,5 m/s^2	daN	20	17

Brake fade characteristics (hot tests)

Deceleration	hot/cold	%	100	100
Stopping distance	cold/hot	%	97	100
Force on pedal	cold/hot	%	95	111

B) PARKING BRAKE

Tractor facing up 16% slope
Pull on hand brake 22 daN, tractor does not roll

Tractor facing down 16% slope
Pull on hand brake 22 daN, tractor does not roll

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(6) AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 25th January 1980
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2209

Results of test

Gear: 4th H RGH
Travelling speed before acceleration: 20,0 km/h
Sound level: 90,0 dB (A)

(7) NOISE AT THE DRIVER'S EAR LEVEL

Date of tests: 25th January 1980
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2209

The tractor was fitted with EICHER safety frame

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)
1L RGL	2784	1,02	0,86	94,0
2L RGL	2757	1,50	1,33	95,0
3L RGL	2786	2,05	1,71	96,0
1L RGH	2761	2,38	2,00	97,0
4L RGL	2818	2,75	2,31	97,5
2L RGH	2791	3,49	2,95	99,0
1H RGL	2627	4,09	3,55	100,0
3L RGH	2260	4,77	4,28	100,5
2H RGL	1825	6,00	5,39	100,0
4L RGH	1682	6,40	5,92	100,5
3H RGL *)	1282	8,20	7,69	100,5
1H RGH	1131	9,52	9,00	101,0
4H RGL	908	11,00	10,41	100,5
2H RGH	731	13,96	13,34	101,0
3H RGH	506	19,07	18,41	100,5
4H RGH	light load	25,60	26,67	95,5

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

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Test No. 79-55

(8) HYDRAULIC PUMP PERFORMANCE AND POWER LIFT

Date of tests: 11th and 17th October 1979

HYDRAULIC PUMP

Power lift circuit

(1)	Opening pressure of relief valve in power lift circuit	175 bar
	Sustained pressure by open relief valve	205 bar
(2)	Pump delivery rate at minimum pressure and rated engine speed	29,8 l/min
(3)	Pump delivery rate at max. hydraulic power	28,3 l/min
	corresponding delivery pressure	175 bar
	power	8,2 kW

Auxiliary hydraulic circuit

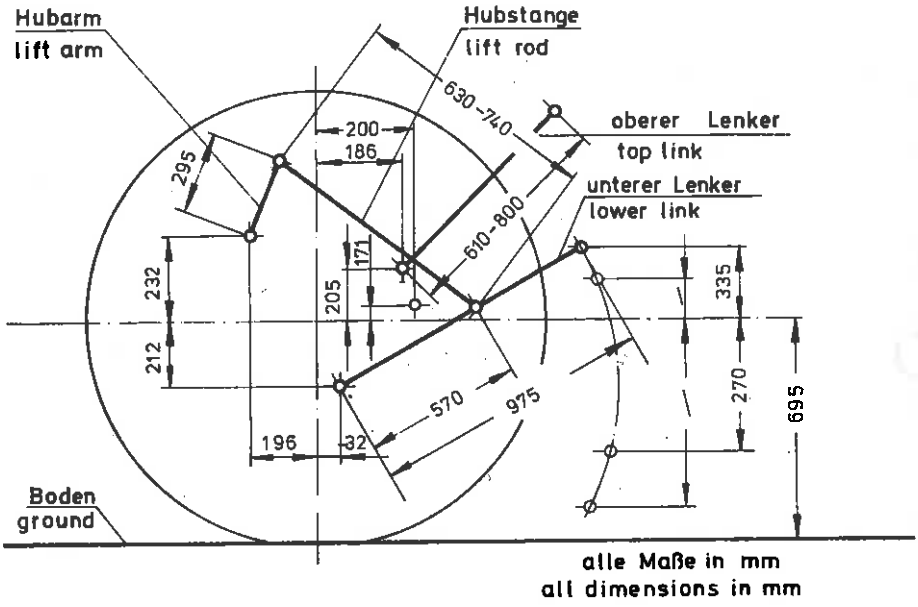
(1)	Opening pressure of relief valve in remote circuit	157 bar
	Sustained pressure by open relief valve	179 bar
(2)	Pump delivery rate at minimum pressure and rated engine speed	38,0 l/min
(3)	Pump delivery rate at max. hydraulic power	37,3 l/min
	corresponding delivery pressure	157 bar
	power	9,7 kW

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POWER LIFT

Dimensions of linkage geometry for the table on page 27



LINKAGE GEOMETRY when connected to the standard frame	Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view:		
Lower links	975 mm	975 mm
Lift arms	295 mm	295 mm
Lift rods	630 mm	630 mm
Top link	766 mm	753 mm
Distance of lift rod connection point from pivot point of lower link	570 mm	570 mm
The following dimensions are given relative to rear axle centre line 695 mm above ground		
Lower link pivot point	32 mm forward, 212 mm below	32 mm forward, 212 mm below
Top link pivot point	186 mm behind, 205 mm above	200 mm behind, 171 mm above
Lift arm pivot point	196 mm forward, 232 mm above	196 mm forward, 232 mm above
Maximum and minimum height of lower link hitch points	335 mm above, 270 mm below	335 mm above, 270 mm below
Height of lower link hitch points above ground when locked in highest transport position	1030 mm	1030 mm

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LIFTING FORCES

Lifting heights relative to horizontal lower links

mm	-358	-300	-200	-100	-68	-63	-58	0	+100
at hitch points maximum mechanical advantage									
daN							1750	1890	2020
minimum mechanical advantage									
daN	1470	1540	1640	1730				1790	1810

Max. force exerted throughout the whole range 1750 N

Front of tractor does not lift

at test frame maximum mechanical advantage									
daN						1800		1800	1820
minimum mechanical advantage									
daN					1720			1720	1720

Max. force exerted throughout the whole range 1420 N

Front of tractor does not lift if front axle is ballasted to its max. allowable load (1600 kg)

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+200	+300	+352	+400	+500	+547	+600	+647	+692
lift rods 630 mm long								
2060	2040		2020	2040	2080			
lift rods 740 mm long								
1810	1830	1890						

lift rods 630 mm long, high top link pivot point

1780	1720		1630	1530		1470	1420	

lift rods 630 mm long, low top link pivot point

1670	1610		1530	1440		1360		1300

All values of forces for pressure 175 bar at max. hydraulic power, see page 25; calculated from measurements at max. oil pressure 205 bar

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OPTIONAL TESTS

(9) ENGINE PERFORMANCE

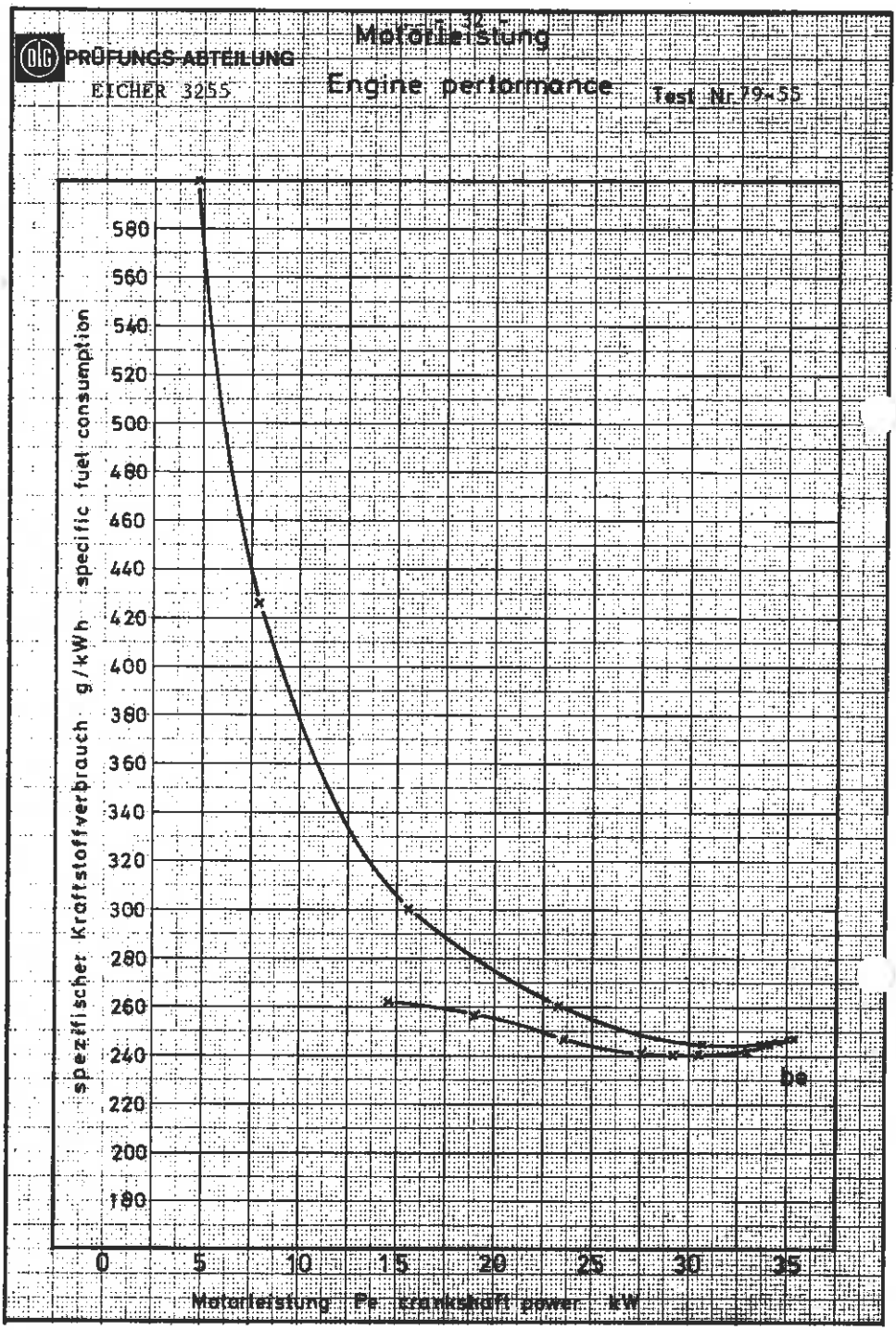
Date of tests: 22th and 23rd March 1979
Type of dynamometer: SCHENCK eddy-current dynamometer W 150

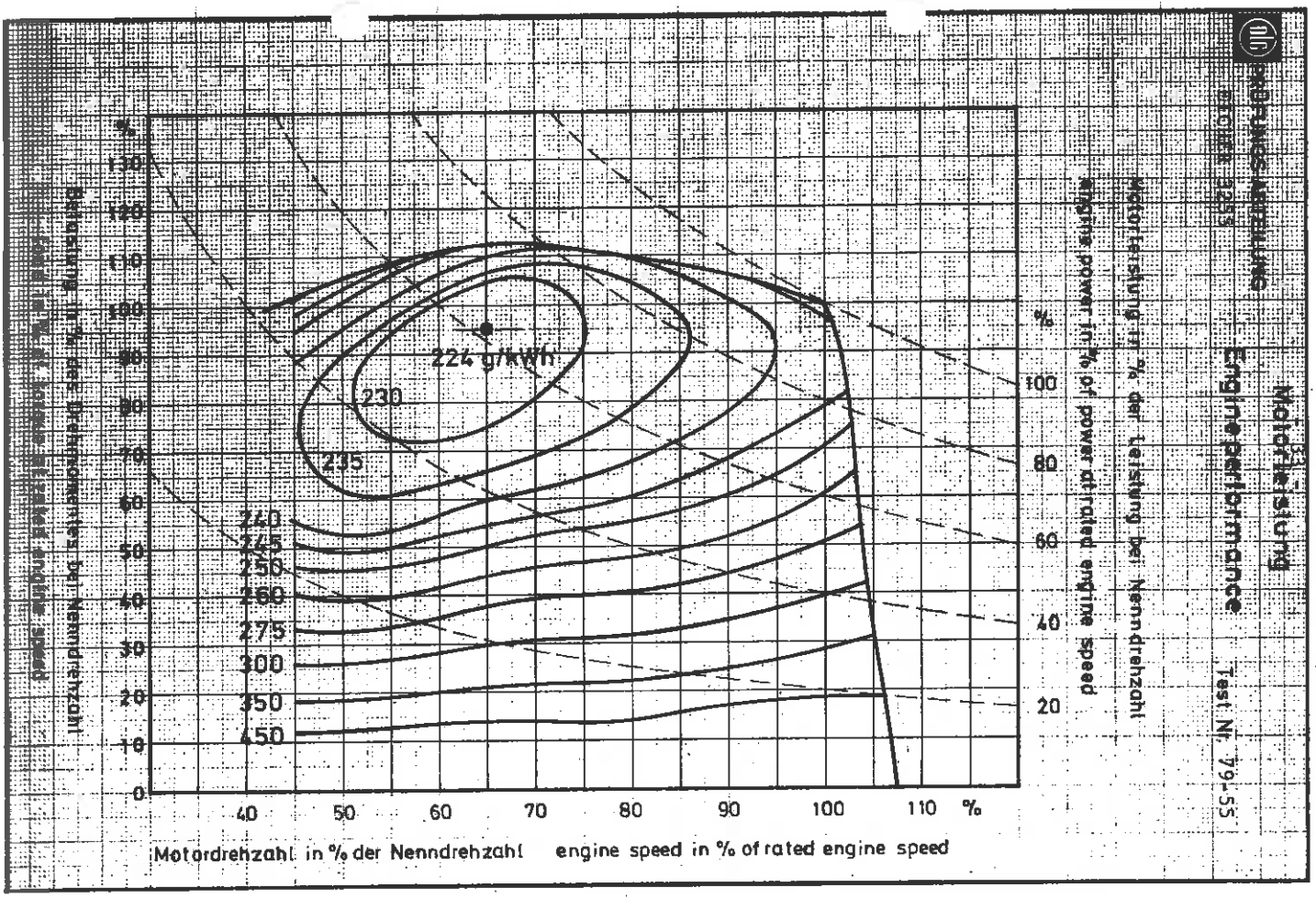
Power kW	Engine speed rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power					
At 2-hour test					
35.3	2170	10.58	8.74	248	3.33
At standard p.t.o. speed (540 rev/min)					
32.9	1893	9.63	7.96	242	3.42
At the speed recommended for drawbar work					
35.3	2170	10.58	8.74	248	3.33
Part loads					
(i) 85% of the torque at maximum power at 2-hour test					
30.6	2219	9.08	7.50	245	3.38
(ii) unloaded					
-	2329	2.61	2.16	-	-
(iii) 50% of the load defined in (i)					
15.7	2267	5.70	4.71	301	2.75
(iv) maximum power					
35.3	2170	10.58	8.74	248	3.33
(v) 25% of the load defined in (i)					
7.9	2299	4.10	3.39	426	1.94
(vi) 75% of the load defined in (i)					
23.2	2241	7.34	6.06	261	3.17

Optimum fuel consumption: 224 g/kWh at 21,8 kW and 1411 rev/min
No load maximum engine speed: 2329 rev/min
Torque at maximum power (2 hours): 155 Nm
Maximum torque: 175 Nm at 1501 rev/min of the engine

Mean atmospheric conditions:	temperature	21 °C
	pressure	992 mbar
	relative humidity	43 %
Maximum temperatures:	coolant	67 °C
	engine oil	100 °C
	fuel	22 °C
	engine air intake	23 °C

Motorleistung
Engine performance
Test Nr. 79-55
PRÜFUNGS-ABTEILUNG
DTC-IBR 3235
Pe
M
B
be
Nr
Kraftstoffverbrauch B kg/h
fuel consumption
spez. Kraftstoffverbrauch be g/kWh
spec. fuel consumption
Motorleistung Pe kW
crankshaft power
Motordrehmoment
crankshaft torque
Motordrehzahl n engine speed U/min rev/min
1000
1200
1400
1600
1800
2000
2200


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Motorleistung
Engine performance
Test Nr. 79-55
spezifischer Kraftstoffverbrauch g/kWh specific fuel consumption
580
560
540
520
500
480
460
440
420
400
380
360
340
320
300
280
260
240
220
200
180
be
0
5
10
15
20
25
30
35
Motorleistung Pe kraftstoff power kW


Motorleistung in % der Leistung bei Nenndrehzahl
Engine power in % of power at rated engine speed
Test Nr. 79-55
Motorleistung
Engine performance
MOTOREN-WERKE
Motordrehzahl in % der Nenndrehzahl
engine speed in % of rated engine speed
224 g/kWh
230
235
240
245
250
260
275
300
350
450
%
100
80
60
40
20
0
40
50
60
70
80
90
100
110

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Fachbereich Landtechnik — Prüfungsabteilung —
Zimmerweg 16 (DLG-Haus)
D-6000 Frankfurt am Main 1