Report on test in accordance with
OECD STANDARD CODE I for the Official
Testing of Agricultural Tractor Performance

OECD No. 1/1747



Agricultural Tractor
LANDINI GLOBUS DT 70 (4WD)

Model denomination DBKL

Manufacturer

LANDINI S.p.A., Via G. Matteotti
42042 Fabbrico, Italy

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This is a report on a tractor test in accordance with OECD STANDARD CODE for the Official Testing of Agricultural Tractor Performance (C(87)53(Final), CODE I) and amendments (C(90)79, C(92)52, C(93)52 C(93)133) C(95)17, C(95)194, C(97)19 and C(97)191.

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

Duration of tests: December 1997 till March 1998

DLG-Testing Station for Agricultural Machinery, Max-Eyth-Weg 1,
D-64823 Groß-Umstadt

This report has been approved by the OECD Co-Ordinating Centre (CEMAGREF, France) as being in accordance with the OECD STANDARD CODE.

Date of approval: 17th April 1998 OECD No. 1/1747

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	kN	=	1000	N	=	102 kp
Powers				1	kW	=	1,36 PS
Pressures	1	MPa	=	10	bar	=	10,2 kp/cm^2
	100	kPa	=	1000	mbar	=	750,10 mm Hg

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Tractor manufacturer:	LANDINI S.p.A., via MATTEOTTI 7 42042 FABBRICO, Italy
Location of tractor assembly:	SAN MARTINO (R.E.), Italy
Submitted for test by:	LANDINI S.p.A.
Selected by:	Manufacturer with agreement by DLG
Place of running-in:	Fabbrico and Groß-Umstadt
Duration of running-in:	20 h

Location of test: DLG-Testing Station, D-64823 Groß-Umstadt

SPECIFICATION OF TRACTOR

Tractor

Make/Model/Type:	LANDINI / GLOBUS DT 70 / DBKL
Number of driving wheels:	4
Serial No.:	DBKLE 36507
1st serial No.:	DBKLE 05355

Engine

Make/Model/Type:	PERKINS / 704.30 / U A 4031 watercooled 4-stroke Diesel-engine, direct injection, naturally aspirated
Serial no.:	U A 80869 * U 80038 B *

Cylinders

Number/disposition:	4 / in line
Bore/stroke:	97 / 100 mm
Capacity:	2955 cm^3
Compression ratio:	17.5 : 1
Arrangement of valves:	Overhead valves, push rod operated
Cylinder liners:	Linerless
Supercharging	Not applicable

Fuel system

Fuel feed system:	AC-delco fuel-supply pump, diaphragm type
Fuel filter	
Make:	LUCAS CAV
Type :	replaceable paper element filter, in flow line behind the supply pump
Capacity of fuel tank:	53 dm^3
Injection pump	
Make/Model:	ZEXEL / PFR-KX "cassette" pump
Type :	U 2644D051AJ
Serial no.:	94020
Manufacturer's production setting:	42 ± 0.84 mm^3/stroke at 2600 rev/min and full load
Flow rate:	13.10 ± 0.26 dm^3/h at 2600 rev/min and full load
Timing:	Commencement of delivery before TDC: Static 16°, dynamic 23°
Injectors	
Make/Model:	ZEXEL / mechanic
Type :	572° Z°48 - 2170, nozzles p.n.NP-DLLA 140 PN
Injection pressure:	19.5 + 1.0 MPa

Governor

Make/Model/Type:	CAV / mechanic / 3611M007P, integral with fuel pump
Governed range of engine speed:	750 to 2800 rev/min
Rated engine speed:	2600 rev/min

Air cleaner	
Pre-cleaner	Incorporated in housing of main cleaner
Type:	Cyclon type
Location of air intake:	Above engine, below bonnet
Main cleaner	
Make/Model:	DONALDSON / FPG 07 - 0006
Type:	Dry paper element filter 7", with safety cartridge
Maintenance indicator:	Red pilot lamp on instrument panel
Lubrication system	Pressure lubricated
Type of feed pump:	Gear pump
Type of filter:	Metallic cartridge, full flow oil filter, exchangeable
Number of filter:	1
Cooling system	Water cooling with impeller pump
Type of pump:	Centrifugal pump
Specification of fan:	Belt driven (directly) by crankshaft pulley
Number of fan blades:	6
Fan diameter:	410 mm
Coolant capacity:	10 dm^3
Type of temperature control:	Thermostat with by-pass
Superpressure system:	Overpressure relief valve set to 70 kPa
Starting system	Electrical
Make/Type:	LUCAS / solenoid pre-engaged drive starter motor, 2.5 kW
Cold starting aid:	ISKRA -thermostart, electrical glow plugs
Safety device:	Lever of reversing gear has to be in neutral position

Electrical system

Voltage:	12, negative earth
Generator:	Alternator
Make/Model/Type:	LUCAS / A 115 - 45 / 12 V, 3-phase alternator
Power:	500 W
Battery:	1 lead acid battery, 95 Ah at 20 hours rating

Exhaust system

Make/Model/Type:	LANDINI / 3556478 / expansion type silcencer, 191 x 163 mm oval, 275 mm long
Location:	Silencer below bonnet, vertical stack (optionally horizontal), mouth showing forward, 2355 mm above ground

Transmission

Clutch (travel alone)

Make/Model/Type:	LUK / OMG / dry single disc clutch with "cerametallic" plate
Diameter of plate:	11" (280 mm)
Method of operation:	Mechanical, by pedal

Gear box

Make/Type:	LANDINI / mechanical, max. speed 40 km/h
Arrangement:	1. Synchro-mesh gearbox with 5 speeds (1-5), -helical toothed gears- 2. Synchro-mesh range gear with 3 groups (S / N / F) 3. creep speed gear, with 2 ranges (CR / F), sliding gear respectively dog clutch shifted, the creep range CR cannot be combined with group F of range gear 4. synchro-mesh reversing gear (F / R)

The creeper gear is not to be used for heavy drawbar work

Number of gears:	Total 25 forward and 25 reverse gears, 4 shifting levers

Available options:	1. Synchro-mesh gearbox with 4 speeds in 3 ranges (S / N / F), combined with synchronized reverse shuttle, providing a total of 12 forward and 12 reverse gears 2. Creeper (optional extra), to reduce gears in the S and N ranges, providing a total of 20 forward and 20 reverse gears
Lubrication:	Force feed lubrication by low flow rate pump (1st stage of tandem pump), oil cooler on the right of engine water cooler; oil filters in suction line and delivery line; oil reservoir in common with hydraulic circuit

Rear axle and final drives

Make/Type:	LANDINI / bevel gear drive, bevel gear differential with lock, spur gear final drives
Differential lock:	Works by toothed meshing sleeve, electro-mechanically operated engaged by switch, disengaged by brake action

Front axle and final drives

Make/Model:	DANA SPICER EUROPE S.p.A. / A G 70 CDS
Type:	4 WD axle, pivoting around central pin; transmission via clutch, transmission shaft, central differential and spur gear final drives
Wheel drive:	Front wheel drive engaged by electro-hydraulically operated wet multi-plate clutch; 2 methods of operation are selectable by rotary switch: 1. Standard operation - transmission ratio 1 : 1 - conventional four wheel drive is engaged 2. Fast-Run operation - transmission ratio 1 : 1.78 - conventional four wheel drive is engaged only up to a steering angle of 35°; Fast-Run device is engaged for turns with more than 35° steering angle; Fast-Run device automatically disengages when steering angle drops below 35° or when F-range is engaged
Clutch:	Oil immersed, multi-plate clutch, consisting of 2 couplings 1. assigned for Standard practice 2. assigned for Fast-Run practice
Transmission shaft:	Central transmission shaft without universal joints
Differential lock:	Locked by toothed meshing sleeve, engaged by electro-hydraulical control for simultaneous mesh with rear differential lock, disengaged by brake action

Total ratios and travelling speeds

Range		Gear	Number of engine revolutions for one revolution of the driving wheels		Nominal travelling speed*) at rated engine speed 2600 rev/min km/h	
			forward	reverse	forward	reverse
fast F	slow S	1	395.58	391.40	1.65	1.67
		2	295.31	292.19	2.21	2.23
		3	206.99	206.99	3.15	3.18
		4	155.24	155.24	4.20	4.24
		5	116.62	116.62	5.59	5.59
	normal N	1	148.00	146.44	4.40	4.45
		2	110.49	109.32	5.90	5.96
		3	77.44	76.63	8.42	8.51
		4	58.08	57.47	11.22	11.34
		5	43.63	43.17	14.94	15.10
	fast F	1	54.27	53.70	12.01	12.14
		2	40.51	40.09	16.09	16.26
		3	28.40	28.10	22.95	23.20
		4	21.30	21.07	30.61	30.93
		5	16.00	15.83	40.74	41.18
creep CR	slow S	1	2900.90	2870.29	0.22	0.23
		2	2165.60	2142.75	0.30	0.30
		3	1517.91	1501.89	0.43	0.43
		4	1138.43	1126.42	0.57	0.58
		5	855.22	846.19	0.76	0.77
	normal N	1	1085.37	1073.92	0.60	0.61
		2	810.26	801.71	0.80	0.81
		3	567.93	561.93	1.15	1.16
		4	425.94	421.44	1.53	1.55
		5	319.98	316.60	2.04	2.06

*) calculated with the radius index (ISO 4251/1-1992) 665 mm

Number of revolutions of front wheels for one revolution of rear wheels:
1.405 (Standard operation)
2.498 (Fast-Run operation)

Power take-off

Main power take-off: Usable as independent p.t.o. or as ground speed p.t.o.;
1 shaft at rear of tractor, 35 mm diameter, 6 splines
in conformity with ISO 500 / 1991, type 1;
651 mm above ground, in tractor's median plane,
334 mm behind rear- wheel axis

Power take-off proportional to engine speed: Independent p.t.o.,

elektro-hydraulically operated multi-plate clutch (acting as p.t.o. brake too) controlled by rotary switch

P.t.o. speeds: 4 p.t.o. speeds are shiftable by 2 levers
Direction of rotation: Clockwise with exception of 540 R p.t.o.
(viewed from behind tractor)

p.t.o. type	p.t.o. transmission ratio	p.t.o. speed rev/min	engine speed rev/min	maximum torque transmissible Nm
540	4.477	540 581	2418 2600	unrestricted
+) 540 R	4.766	540 545	2574 2600	unrestricted
++) 540E	3.143	540 827	1697 2600	unrestricted
1000	2.385	1000 1090	2385 2600	unrestricted

+) 540 R: P.t.o. with anticlockwise rotation by separate reverse shuttle
++)540 E: Economic-type p.t.o. for reduced engine speed

Power take off proportional to ground speed: Shiftable by separate lever by sliding sleeve, speed not shiftable

Direction of rotation: Clockwise, with forward gear engaged
(viewed from behind tractor)

p.t.o. type	travelling distance in mm per p.t.o. revolution	number of p.t.o. revolutions per revolution of rear driving wheels
proportional to ground speed	423	9.889

Power lift

Make: LANDINI
Type: Mechanic - hydraulic power lift, unit construction;
electronic-hydraulic power lift optional

Hydraulic system: Open centre system
SAUER SUNDSTRAND PNN8 + 11 S SC 46
tandem type gear pump, driven by engine;
washable metal filter in suction line,
oil reservoir in common with gear box;

2 separate hydraulic circuits, fed by 2 pumps:

High flow rate pump:
Feeds power lift;
max. flow rate 30.0 dm^3 / min at rated engine speed,
max pressure 18.5 ± 1.0 Mpa,

Low flow rate pump:
Max.flow rate 27.3 dm^3 / min at rated engine speed,
max. pressure 17.0 + 0.5 Mpa,
exchangeable filter in delivery line

pump feeds:

Hydrostatic steering circuit - pressure 17.0 + 0.5 Mpa -

low pressure circuit - pressure 1.7 - 1.8 Mpa -,
for operating of: Fast-Run-, 4WD- and p.t.o. clutch,
further p.t.o. brake and differential lock

oil cooling circuit - pressure 0.5 Mpa -

gear box lubrication circuit - pressure 0.15 Mpa -

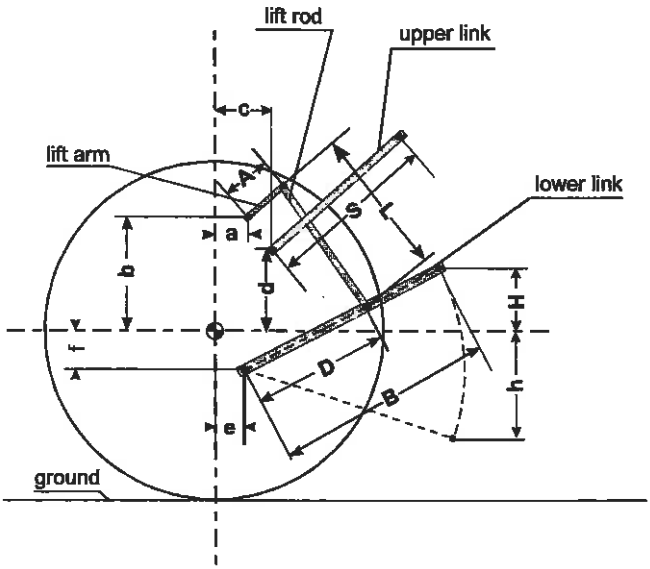
LANDINI control valve,
draft and position control, intermix, floating position,
no separate linkage lock for transport position,
upper link sensing;

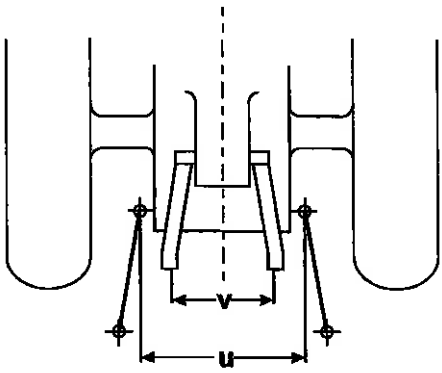
1 single acting main cylinder in lift housing,
90 mm bore and 116 mm stroke,
2 single acting supplementary cylinders,
40 mm bore and 220 mm stroke;

antishock valve set to 21.0 Mpa

3 SALAMI supplementary control valves,
single / double acting,
6 oil tapping points at rear of tractor,
maximum volume of oil, available to external cylinders 15 dm^3

Three-point linkage: Category 2, acc. to ISO 730 / 1 - 1994
with WALTERSCHEID quick couplers





Dimensions of rear implement linkage			projected lengths in mm dimensions (general)	dimensions used for tests on page 27
Rear tyres 420/70 R 30		(r) *)	665	
Front tyres 360/70 R 20		(r') *)	490	
Length of lift arms		**(A)**	**240**	
Length of lower links		(B)	760	
Distance of lift arm pivot points from rear wheel axis	horizontal	(a)	59	
	vertical	(b)	264	
Horizontal distance between lower link pivot points		(u)	285	
Horizontal distance between lift arm end points		(v)	470	
Length of upper link		(S)	525 to 755	620
Distance of upper link pivot point from rear wheel axis	horizontal	(c)	298/289/281/270	270
	vertical	(d)	205/233/259/296	296
Distance of lower link pivot points from rear wheel axis	horizontal	(e)	119	
	vertical	(f)	185	
Distance of lower link pivot points from lift rod pivot points on lower links		(D)	390	
Length of lift rods		(L)	450 to 570	520

Heights (h, H, H') of lower link hitch points relative to rear wheel axis (situated 665 mm above ground), at different adjustments of L

These data are valid for unloaded power lift

				data for tests on page 27
Length of lift rods	(L)	450	570	520
Linkage distance of lift rods	(D)	390		
Lowest position	(h)	260	570	465
Highest postion	(H)	285	70	155
Transport position	(H')	285	25	155

*) Assuming r resp. r' = tyre dynamic radius index of ISO 4251/1-1992

Pull equipment

Swinging drawbar:	LANDINI, Class A, swinging drawbar; longitudinally adjustable to 2 positions, turnable;	
	centre of clevis (hitch point):	
	Laterally swingable to both sides in 2 steps up to	78 / 88 or 154 / 169 mm
	height above ground	383 mm or 489 mm
	distance from rear wheel axis, horizontal	689 / 734 mm
	distance from p.t.o. shaft end, horizontal	355 / 400 mm
	vertical	162 / 268 mm
	drawbar can be fixed in central position	
	distance of pivot point from rear wheel axis, horizontal	212 mm
	drawbar pin hole diameter	28.5 mm
	maximum horizontally permissible load	60.0 kN
	maximum vertically permissible load	no permission
Trailer hitch:	LANDINI, Class C tow hook, non automatical; diameter of hitch hole	28.5 mm
	hitch adjustable above ground to: (Centre of coupling mouth)	390 / 440 / 490 mm
	distance of hitch point from:	
	Rear wheel axis, horizontal	620 mm
	p.t.o. shaft end, horizontal	286 mm
	maximum vertically permissible load	15.0 kN
	maximum horizonally permissible load	60.0 kN
Holed drawbar:	Optionally available, not fitted	
Towing hitch:	At front of tractor, height above ground (centre of mouth)	730 mm

Steering

LANDINI-DANFOSS, ORBITROL OSPC 70;

hydrostatic front axle steering, fed by low flow rate pump, separate oil circuit - see on page 11 -

1 integrated cylinder, double acting, balanced, 242 mm stroke, 48 mm bore, 32 mm diameter of piston rod, acting on steering levers;

max. working pressure 17.0 + 0.5 Mpa

Brakes

Service brake:

LANDINI, IBS;

pedal operated muscle power brake with hydraulic transmission, simultaneously acting on both axles, separate brake-fluid reservoir;

rear axle brake
wet multi-plate brake with 4 plates (servo-brake) per half shaft,
plate dimensions 165 x 110 mm

front axle brake
wet multi-plate brake with 2 plates per half shaft
disc dimensions 143 x 91 mm

Steering brake:

Divided pedal of service brake, for normal use locked together

Parking brake:

Acting on rear service brake, mechanically activated by hand lever with ratchet

Trailer brake:

On request available, hydraulic brake

Wheels

At front: Steering and driving, 2 pneumatics

At rear: Driving, 2 pneumatics

Wheel base: 2006 mm

Track width adjustment:

	Minimum	Maximum	Adjustment method
Front	1170 mm	1742 mm	offset lug rims and reversing central wheel discs
Rear	1124 mm	1858 mm	

Possible combinations of tyres sizes:

Front	Rear
360/70 R 20	420/70 R 30
320/70 R 20	420/70 R 28
7.50 R 20	12.4 R 28
9.5 R 20	13.6 R 28
260/80 R 20	380/70 R 28
260/70 R 20	420/70 R 24
11.2 R 20	14.9 R 28
12.4 R 20	14.9 R 30
8.3 R 24	12.4 R 32
8.3 R 24	14.9 R 28

This is the list of the most popular tyres combiniations,
Further tyres combinations are available

Protective structure

Make:	**LANDINI** manufacturer: **LANDINI** S. Martino in Rio R.E. , Italy	
Model/Type:	Concept Cab / CS 27; OECD-tested safety cab with integrated safety frame, approval no.CSS 0385, date of approval 4th January 1997, mounted by antivibration silent blocks on tractor, not tiltable; 2 doors and 2 steps each at the left and right, steps 480 and 660 mm, driver's platform 910 mm above ground, rear window and side windows to open; ventilation - heating - air conditioning unit in front of dashboard (in engine compartment), air intake over paper element filter, in front of windscreen below bonnet; air outlet over 3-steps fan and air vents at the steering column; air vents allow to direct the air flow towards cab floor and in upward direction, recirculation operation possible	

Noise reduction materials:

Roof	wadded cotton waste fabric upholstered with moquette cloth, sustained by ABS ring around the roof	10 mm
Steering console and rear wall	ABS, thermoformed	3 mm
Mudguards	soft foam material covered with imitation leather mudguards partially covered with ABS, thermoformed	5 - 6 mm 1 mm 3 mm
Floor	covered by sheet of tar material with PU - foam with PVC sheet	3.5 mm 30 mm 2 mm

The front wall of cab is externally protected from the engine by an adhesive sheet of tar material covered with a foil of alluminium — 3.5mm

Seat

Driver's seat

Make/Model:	GRAMMER / DS 83 H/8
Type:	Upholstered seat with back rest
Seat and steering wheel reversible:	NO
Type of suspension:	Mechanical
Type of damping:	Hydraulic shock absorber
Range of adjustment	
longitudinal:	150 mm
vertical:	120 mm
Safety belt:	None, optionally available

Optional driver's seat

Make/Model:	M.T. / GT 60
Type:	Upholstered seat with back rest
Seat and steering wheel reversible:	No
Type of suspension:	Mechanical
Type of damping:	Hydraulic shock absorber
Range of adjustment	
longitudinal:	150 mm
vertical:	80 mm

Passenger seat: None

Operating hours meter: Electronic, counts real operating hours when engine is running

Lighting: Electrical, 12 Volt

	Height above ground of centre mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
Headlights	1062	155 x 95	200
Sidelights	1520	35 x 105	582
Rearlights	1430	110 x 35	648
Reflectors	1357	105 x 32	648

TEST CONDITIONS

Overall dimensions

	Length mm	Width mm	Height at top of protective structure	Height at top of exhaust silencer
Unballasted	3605	1770	2390	2355
Ballasted	4475	1770		

Ground clearance (unballasted tractor) 400 mm

Clearance-limiting part: Bracket of swinging drawbar

Tractor mass (with cab)

	Unballasted		Ballasted	
	without driver kg	with driver kg	without driver kg	with driver kg
Front	1090	1100	2245	2250
Rear	1430	1495	3030	3100
Total	2520	2595	5275	5350

Ballast

	Weigths		Water
	Number	Total mass kg	kg
Front	17	945	210
Rear	8	1168	432

Tyres and track widths specifications

	Front	Rear
Tyres:	GOODYEAR	DT 810
dimensions	360/70 R 20	420/70 R 30
load index speed index	120 A 8	134 A 8
type	radial	radial
maximum load (tyre manufacturer's)	14.00 kN	21.20 kN
at travelling speed	40 km/h	40 km/h
at tyre inflation pressure	160 kPa	160 kPa
maximum load (tractor manufacturer's)	11.25 kN	15.50 kN
radius index (ISO 4251/1-1992)	490 mm	605 mm
Chosen track width:	1440 mm	1330 mm
Rims:	W 11 x 20	W 13 x 30
Technically permissible axle load:	22.50 kN	31.00 kN
Technically permissible total weight:	5350 kN	

Oils and lubrication

Capacity and change interval:

	Capacity dm³	Oil change h	Filter-change h
Engine	8.0	250	250
Gear box, rear axle, hydraulic system and steering	35	1000	*) 250 resp. 500
Final drives at rear	4.0 each		-
Front axle drive	3.5		
Final drives at front	1.5 each	-	

*) 250 h : Oil filter in steering circuit
500 h : Oil filter in suction line

Specifications:

	Recommended	Used during test
Engine oil:		
Type	All-Year Engine oil	SINCLAIR HY VIS HD EXTRA S3 Plus
Viscosity	15 W / 40	15 W / 40
Classification	API - CD CCMC - D4	API - CD CCMC - D4
Transmission oil:		
Used in gearbox,rear axle,front axle drive, hydraulic- and steering system		
Type	Tractor-Universal-Oil	MF SUP HYDR
Viscosity	SAE 15 W / 30	VG 120
Classification	API - GL 4	MF - 1135
used in rear axle and front final drives		
Type	Gear Oil	SINCLAIR HD GEAR OIL EP 90-140
Viscosity	80 W / 90	80 W / 90
Classification	API - GL 5	API - GL 5

Grease:	Multi purpose grease number of lubrication points:14		
Fuel			
Type:	ARAL-Diesel-fuel, in conformity with DIN 51601		
Density at 15°C:	At p.t.o. test	0.828	g/cm³
	at drawbar power test	0.838	g/cm³

COMPULSORY TESTS

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

Date of tests: 6th January 1998
Location of tests: DLG-Testing Station Groß-Umstadt
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed Engine rev/min	Speed P.t.o. rev/min	Fuel consumption hourly dm³/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/dm³
Maximum power						
1.1 At 2-hour test						
40.4	2500	1048	12.91	10.69	264	3.13
1.2 At rated speed						
40.0	2600	1090	13.08	10.83	271	3.05
1.3 At standard p.t.o. speed						
39.4	2385	1000	12.39	10.26	260	3.18
1.4 Part loads, the governor hand lever in the position corresponding to maximum power at full load (curve a)						
1.4.1 the torque corresponding to maximum power at rated speed						
40.0	2600	1090	13.08	10.83	271	3.05
1.4.2 85% of the torque obtained in 1.4.1						
35.1	2683	1125	11.65	9.65	275	3.01
1.4.3 75% of the torque defined in 1.4.2						
26.6	2714	1138	9.59	7.94	298	2.77
1.4.4 50% of the torque defined in 1.4.2						
17.9	2745	1151	7.57	6.27	350	2.36
1.4.5 25% of the torque defined in 1.4.2						
9.0	2771	1162	5.62	4.65	514	1.60
1.4.6 unloaded						
-	2800	1174	3.97	3.29	-	-

Power kW	Speed Engine rev/min	Speed P.t.o. rev/min	Fuel consumption hourly dm³/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/dm³
1. 5 Part loads, the governor hand lever in the position corresponding to standard p.t.o. speed at full load (curve b)						
1.5.1 the torque corresponding to maximum power						
39.4	2385	1000	12.39	10.26	260	3.18
1..2 85% of the torque obtained in 1.5.1						
35.1	2489	1044	11.32	9.37	267	3.10
1.5.3 75% of the torque defined in 1.5.2						
26.7	2528	1060	9.08	7.52	282	2.94
1.5.4 50% of the torque defined in 1.5.2						
18.1	2563	1075	7.04	5.83	321	2.57
1.5.5 25% of the torque defined in 1.5.2						
9.1	2594	1088	5.34	4.42	484	1.70
1.5.6 unloaded						
-	2615	1096	3.53	2.92	-	-

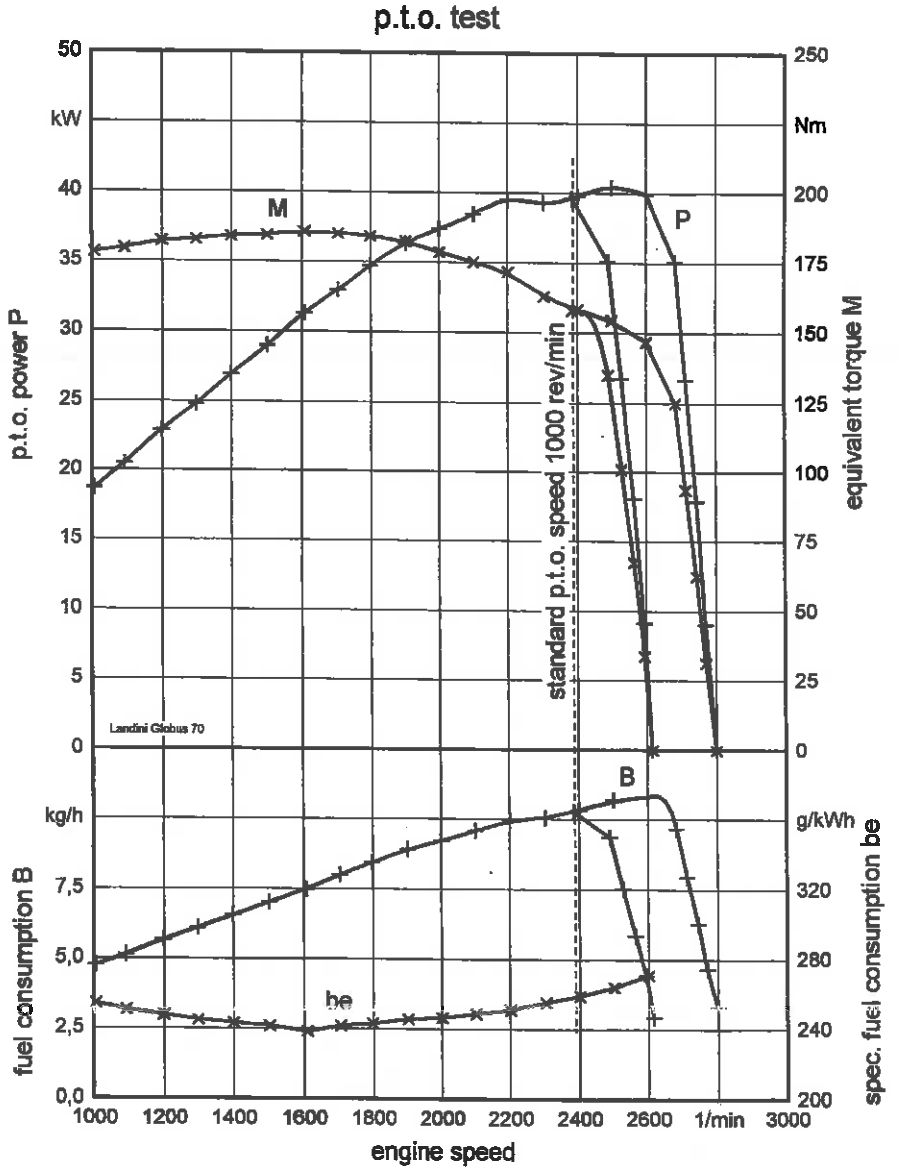
No load maximum engine speed:	2800	rev/min
Equivalent flywheel torque at rated engine speed:	147	Nm
Equivalent flywheel torque at 2-hour test:	155	Nm
at engine speed:	2500	rev/min
Maximum equivalent flywheel torque:	186	Nm
at engine speed:	1609	rev/min

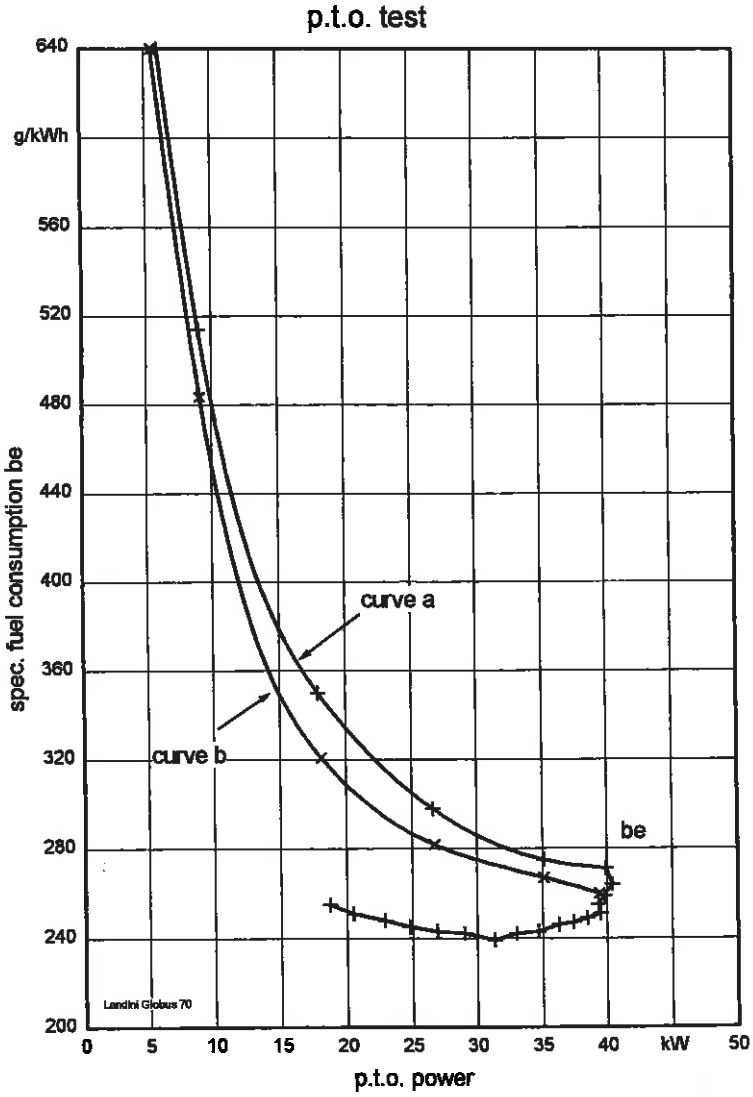
Mean atmospheric conditions

temperature:	21 °C
pressure:	997 hPa
relative humidity:	30 %

Maximum temperatures

coolant:	79 °C
oil:	107 °C
fuel:	46 °C
air intake:	21 °C


p.t.o. test
p.t.o. power P
kW
Nm
equivalent torque M
M
P
standard p.t.o. speed 1000 rev/min
Landini Globus 70
B
be
kg/h
g/kWh
fuel consumption B
spec. fuel consumption be
engine speed
1/min
50
40
35
30
25
20
15
10
5
0
250
200
175
150
125
100
75
50
25
0
7,5
5,0
2,5
0,0
320
280
240
200
1000
1200
1400
1600
1800
2000
2200
2400
2600
3000


p.t.o. test
640
g/kWh
560
520
480
440
400
360
320
280
240
200
spec. fuel consumption be
curve a
curve b
be
Landini Globus 70
0
5
10
15
20
25
30
35
40
kW
50
p.t.o. power

2 HYDRAULIC POWER AND LIFTING FORCE

Date of tests: 15th and 20th January 1998

2.1 Hydraulic power test

Sustained pressure with relief valve open: 18.7 Mpa
Pump stalled: Not applicable, open centre system
Pump delivery rate at minimum pressure: 30.1 dm³/min

	Hydraulic power kW	Flow rate dm³/min	Pressure MPa	Oil temperature °C
At 90% of the actual relief valve setting	8.3	29.7	16.8	65
Maximum	8.4	29.5	17.0	65

Tapping point used for test: At rear of tractor,connected with additional contol valve no 1
Opening and closing pressure of unloading valve: Not applicable, open centre system

2.2 Power lift test

	At the hitch points	On the frame
Height of lower hitch points above ground in down position	200 mm	
Vertical movement without lifting forces with lifting forces	620 mm 595 mm	775 mm 715 mm
Max. corrected force exerted through full range	28.60 kN	19.35 kN
Corresponding pressure	16.8 MPa	
Moment about rear axle	-	31.3 kNm
Max. tilt angle of mast from vertical		11°

Lifting heights relative to horizontal lower links

mm	-335	-300	-285	-200	-100	0	+100	+200	+300	+310	+380
kN			28.60	29.95	30.85	31.05	30.60	30.15	29.95	29.70	

Lifting forces at standard frame. corrected to 16.8 MPa

kN	25.20	25.45		25.45	25.00	24.30	23.65	22.05	20.70		19.35

3 DRAWBAR PERFORMANCE

Date of test: 13th till 23rd January 1998

Type of track: Concrete

Gear and range	Speed km/h	Drawbar pull kN	Power kW	Engine speed rev/min	Slip of wheels %
3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor)					
4 F S	3.70	26.44	27.2	2688	15.0
1 F N	3.88	26.20	28.2	2682	14.9
5 F S	4.85	22.60	30.4	2506	10.1
2 F N	5.13	21.76	31.0	2497	10.0
3 F N	7.58	14.76	31.1	2498	6.3
4 F N	10.35	10.51	30.2	2498	4.3
1 F F	11.15	9.29	28.8	2496	4.2
5 F N	13.82	6.56	25.2	2499	2.9
3.2 MAXIMUM POWER IN TESTED GEARS (ballasted tractor)					
1 F S	1.47	48.54	19.8	2715	15.0
2 F S	1.94	48.50	26.1	2678	14.9
3 F S	2.74	40.81	31.1	2507	9.9
4 F S	3.78	30.21	31.7	2494	6.4
1 F N	3.98	29.28	32.4	2501	6.5
5 F S	5.14	21.61	30.9	2497	4.8
2 F N	5.43	21.40	32.3	2501	4.5
3 F N	7.90	13.77	30.2	2501	3.0
4 F N	10.53	9.67	28.3	2507	2.3
3.3.1 FIVE-HOUR-TEST at 75% of pull at maximum power (at rated engine speed)					
1 F N	4.39	*) 21.27	25.9	2703	4.6
*) drawbar pull at maximum power (measured at rated engine speed): 28.34 kN					
3.3.2 FIVE-HOUR TEST at pull corresponding to 15% wheel slip					
2 F S	1.88	48.40	25.3	2675	-

Oil consumption during ten hours duration of tests 3.3.1 and 3.3.2 : 11g/h

LANDINI GLOBUS DT 70 **Test No. 98-018**

	Height of drawbar above ground	Tyre inflation pressure	
		Front	Rear
unballasted	465 mm	80 kPa	80 kPa
ballasted	430 mm	160 kPa	160 kPA

Specific fuel consumption g/kWh	Specific energy kWh/dm³	Temperatures Fuel °C	Coolant °C	Engine oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure kPa
377	2.22	29	68	94	4	60	99.5
373	2.25	29	67	93	4	60	99.5
353	2.37	43	78	93	7	60	99.5
347	2.42	47	80	100	9	60	99.5
344	2.44	48	80	101	10	60	99.5
355	2.36	46	80	95	10	60	99.5
371	2.26	44	80	96	10	60	99.5
420	1.99	47	80	99	10	60	99.5
412	2.03	39	73	88	4	45	101.5
383	2.19	38	75	89	3	45	101.5
346	2.42	46	81	94	4	45	101.5
338	2.48	46	80	94	4	45	101.5
332	2.53	45	79	93	4	45	101.5
346	2.42	46	80	92	4	45	101.5
333	2.51	46	80	94	4	45	101.5
355	2.36	45	79	92	4	45	101.5
377	2.22	45	80	93	4	45	101.5
361	2.32	33	72	86	-5	45	101.5
with additional ballast: 200 kg							
-	-	-	72	85	-5	45	101.5

Those figures not quoted are irrelevant due to the additional ballast.

4 TURNING AREA AND TURNING CIRCLE
(front wheel drive disengaged)

	without steering brakes	
	right-hand	left-hand
Radius of turning area	4.15 m	4.05 m
Radius of turning circle	3.95 m	3.85 m

5 LOCATION OF CENTRE OF GRAVITY

Height above ground	859 mm
Distance forward from the vertical plane containing the axis of the rear-wheels:	844 mm
Distance from tractor's median plane to the left	12 mm

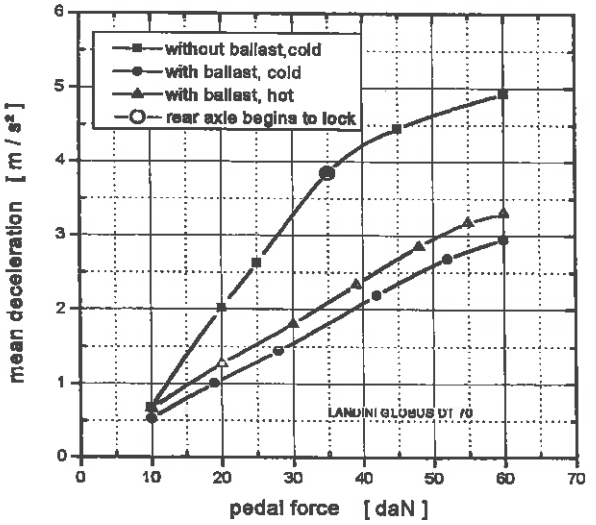
6 BRAKING (front wheel drive disengaged)

Date of tests: 14th January and 19th March 1998

	Tractor mass (with driver) front kg	rear kg	total kg	Speed before application of brakes km/h
Without ballast	1100	1495	2595	41.5
With ballast	2250	3100	5350	35.5

6.1 Cold service braking device test

6.2 Fade test



No significant deviation of tractor from original course and no abnormal vibrations

Brakes-heating: Actuating of brake for 1 km with pedal force corresponding to 1 m/s²

6.3 Parking braking device test

	Ballasted tractor on 18%-slope uphill	downhill
braking device control force	3.6 kN	4.3 kN

7 MEASUREMENT OF EXTERNAL NOISE LEVEL

(Front wheel drive disengaged)

Date of test:	14th January 1998
Type of track:	Concrete
Type of sound level meter:	BRÜEL & KJAER model 2233

Results of test

Gear number:	5 FF
Travelling speed before acceleration:	31.0 km/h
Sound level:	80.0 dB(A)

8 REPAIRS AND REMARKS

None

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