STÁTNÍ ZKUŠEBNA ZEMĚDĚLSKÝCH, POTRAVINÁŘSKÝCH A LESNICKÝCH STROJŮ

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Report on test in accordance with the OECD Standard Code for the Official Testing of Agricultural Tractor Preformance

CODE 2

Restricted Code

Date of approval: 21st March 1994

OECD No. 1515/1



Agricultural Tractor

JOHN DEERE 2400 (2WD) 30 km/h version

Manufactured by: ZETOR a.s., 632 00 Brno, Czech Republic

Report No. 11237/1

Date of test: November 1993-January 1994

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GENERAL NOTE

Make:	JOHN DEERE	ZETOR
Model:	2400 (30 km/h version)	7320 (30 km/h version)
Type:	2WD	2WD

The JOHN DEERE 2400 (2WD) 30 km/h version and ZETOR 7320 (2WD) 30 km/h version tractors being mechanically similar, the tests have not been repeated and the approval number is valid for the both tractor models.

All tests were carried out on the ZETOR 7320 (2WD) 30 km/h version.

Tractor manufacturer's name and address:	ZETOR a.s., 632 00 Brno, Czech Republic
Location of tractor assembly:	Brno, Czech Republic
Submitted for test by:	JOHN DEERE PRODUCT ENGINEERING CENTER, P.O.Box 8000 Waterloo, Iowa 50704-8000, U.S.A.
Selected for test by:	The manufacturer
Place of running-in:	Brno, Czech Republic
Duration of running-in:	60 hours
Location of test:	SZZPLS Praha 6 - Řepy, Czech Republic

1. SPECIFICATIONS OF TRACTOR

1.1 IDENTIFICATION

Make:	JOHN DEERE
Model:	2400 30 km/h version
Type:	Wheeled, unit construction, rear wheels drive
Number of driving wheels:	2
Serial No.:	001 000
1st Serial No.:	001 000

1.2 ENGINE

Make:	ZETOR
Model:	7301
Type:	4-stroke diesel engine, direct injection, water cooled, turbocharged
Serial No.:	036 634

1.2.1 Cylinders

Number/disposition:	4, in-line, vertical
Bore/stroke:	102 mm/120 mm
Capacity:	3922 cm^3
Compression ratio:	17.0:1
Arrangement of valves:	Overhead
Cylinder liners:	Wet, replaceable

1.2.2 Supercharging

Make, model and type:	HOLSET, H1D or KKK, K24-2460 G/5.14 or ČZ, C14, exhaust driven

Pressure:	179 kPa
Intercooler:	None

1.2.3 Fuel system

Fuel feed system:	Lift pump piston-type, integral with fuel injection pump
Make, model and type of fuel filters:	AUTOBRZDY, 443 741 111 001, one-stage with paper cartridge
Capacity of fuel tank:	95 dm^3
Make, model and type of injection pump:	MOTORPAL, 4M 3137, in-line
Serial No.:	DK 1802
Manufacturer's production setting of injection pump:	
Flow rate (rated engine speed and full load):	16.95±0.26 dm^3/h
Timing:	25°+1° before TDC
Make, model and type of injection:	MOTORPAL, DOP 160 S 430-1436, 4 hole
Injection pressure:	18.6-0.8 MPa

1.2.4 Governor

Make, model and type:	MOTORPAL, RV 3M 300/1100 3300, centrifugal, variable speed
Governed range of engine speed:	from 600 to 2410 rev/min
Rated engine speed:	2200 rev/min

1.2.5 Air cleaner

Make, model and type:	DONALDSON, FPG 07-0006, dry with paper main and secondary elements, integrated cyclon type pre-cleaner
Location of air intake:	Under bonnet forward of radiator
Maintenance indicator:	Warning light on instrument panel

1.2.6 Lubrication system

Type of feed pump:	Gear
Type of filter:	Full flow with replaceable paper element
Number:	1
Oil cooler:	Heat exchanger with engine coolant

1.2.7 Cooling system

Type of coolant:	Water and anti-freeze
Type of pump:	Centrifugal, belt driven
Specification of fan:	Axial, belt driven
Number of blades:	6

Fan diameter:	380 mm
Coolant capacity:	11.6 dm^3
Type of temperature control:	Thermostat
Superpressure system:	40±10 kPa

1.2.8 Starting system

Make, model and type:	PAL, 443 115 144 722, electrical, solenoid engaged
Starter motor power rating:	2.9 kW
Cold starting aid:	None
Safety device:	Clutch pedal to be fully depressed

1.2.9 Electrical system

Voltage:	12 V, negative earth
Generator:	
Make, model and type:	PAL, 443 113 516 651, alternator, belt driven
Power:	770 W
Battery (number of accumulators):	1
Rating:	150 Ah at 20 hours

1.2.10 Exhaust system

Make, model and type:	ZETOR, 7901 1400, expansion and absorption muffler
Location:	Left-hand side of engine, vertical

1.3 TRANSMISSION

1.3.1 Clutch

Make, model and type:	ZETOR, 7201 1100, dry for travelling and p.t.o.
Number of plates:	2
Diameter of plates:	280 mm
Method of operation:	Hydraulically by pedal for travelling and p.t.o. and pneumatically by hand lever for p.t.o.

1.3.2 Gear box

Make, model and type:	ZETOR, 6011 1900, mechanical
Arrangement:	Partially synchromesh gear box with 5 forward and 1 reverse speeds, group gear box with two speed ranges (T and R) and pneumatically actuated torque multiplier (M)
Number of gears:	20 forward and 4 reverse
Available options:	None
Oil cooler:	None

1.3.3 Rear axle and final drives

Make, model and type: ZETOR, 6211 2800, crown wheel and bevel pinion differential and spur gear final drives

Differential lock:

Type: Mechanical

Method of engagement: Mechanically by pedal

Method of disengagement: Self-disengaging

1.3.4 Front axle and final drives

Make, model and type: ZETOR, 7211 3300, telescopic with adjustable track

1.3.5 Total ratios and travelling speeds

Gear	Group	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2200 rev/min km/h (*)
1	TM	408.110	1.51
2		313.633	1.97
3		225.061	2.75
4		158.092	3.91
5		115.231	5.36
1	T	310.865	1.99
2		238.900	2.59
3		171.433	3.60
4		120.421	5.13
5		87.774	7.04
1	RM	96.359	6.41
2		74.052	8.34
3		53.139	11.63
4		37.327	16.55
5		27.207	22.71
1	R	73.399	8.42
2		56.407	10.95
3		40.477	15.27
4		28.433	21.73
5		20.724	29.82
R	TM	306.980	2.01
	T	233.833	2.64
	RM	72.481	8.52
	R	55.211	11.19

(*) Calculated with a tyre dynamic radius index of 745 mm (ISO 4251/1-1992)

T: Turtle range; R: Rabbit range; M: Torque multiplier engaged

1.4 POWER TAKE-OFF

1.4.1 Main power take-off

Type: Independent, through second plate in main clutch

Method of engagement: Pneumatically operated by hand lever or hydraulically by clutch pedal

Number of shafts: 1

Method of changing power take-off speeds: Manually by exchanging shafts

1.4.1.1 Power take-off proportional to engine speed

Location: At rear of tractor

P.T.O.	Diameter of power take-off shaft end mm	Number of splines	In conformity with ISO 500/1991
540	34.9	6	Yes
1000	34.9	21	Yes

Height above ground: 752 mm

Distance from the median plane of the tractor: 0 mm

Distance behind rear-wheel axis: 263 mm

P.T.O.	P.T.O speed rev/min	Engine speed rev/min	Ratio of rotation speeds (engine speed/p.t.o. speed)	Power restriction and maximum torque kW/Nm
540	540	1994	3.6923	None
	596	2200		
1000	1000	2050	2.0500	None
	1073	2200		

Direction of rotation (viewed from behind tractor): Clockwise

1.4.1.2 Power take-off proportional to ground speed

P.T.O. and range	Travelling distance for one revolution of power take-off shaft m	Number of power take-off shaft revolutions for one revolution of (rear) driving vheels
T	0.087	53.695
R	0.370	12.6649

T: Turtle range; R: Rabbit range

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

1.4.2 Optional power take-off

None

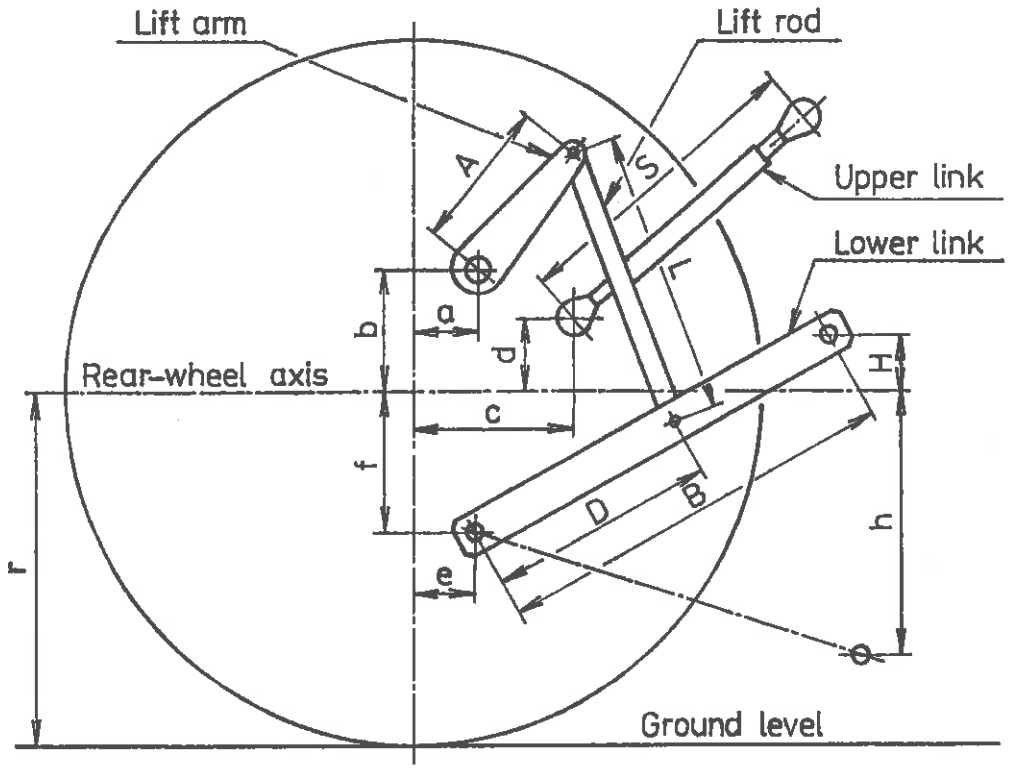
1.5 POWER LIFT

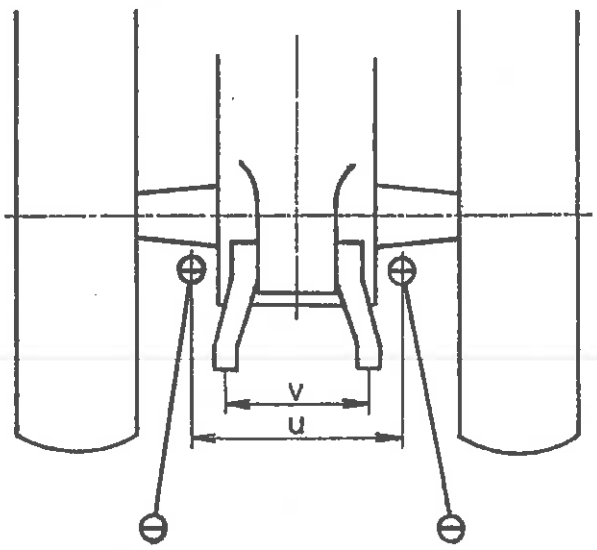
Make, model and type:	ZETOR, 7211 9485, hydraulic with mechanical position, draft or mixed control, top link sensing
Type of hydraulic system:	Open centre
Type and number of cylinders:	1 integral single-acting and 2 external single-acting
Type of linkage lock for transport:	Hydraulic
Relief valve pressure setting (tolerance):	18.0+2.0 MPa
Opening pressure of cylinder safety valve:	21.0+2.0 MPa
Lift pump type:	Gear
Transmission between pump and engine:	Gear driven from engine
Type and number of filters:	1 magnetic, 1 screen and 1 filter with paper cartridge in delivery side of distributor
Site of oil reservoir:	Transmission housing
Type, number and location of tapping points:	2 pressure and 1 return, quick release at rear of tractor
Maximum volume of oil available to external cylinders:	10 dm^3

1.6 THREE-POINT LINKAGE

Category: 2, in conformity with ISO 730/1-1994

Category adapter: None





Linkage geometry dimensions:

			Dimension or range mm	Settings used in test mm
Length of lift arms		(A)	320	320
Length of lower links		(B)	857	857
Distance of lift arm pivot point from rear-wheel axis:	horizontally vertically	(a) (b)	30 362	30 362
Horizontal distance between the 2 lower link points		(u)	636	636
Horizontal distance between the 2 lift arm end points		(v)	450	450
Length of upper link		(S)	590 to 770	658
Distance of upper link pivot point from rear-wheel axis:	horizontally vertically	(c) (d)	288 182, 229, 276, 323	288 276
Distance of lower link pivot point from rear-wheel axis:	horizontally vertically	(e) (f)	83 138	83 138
Distance of lower link pivot points to lift rod pivot points on lower links		(D)	401	401
Length of lift rods		(L)	436 to 572	565
Height of lower hitch points relative to the rear-wheel axis: - in low position - in high position		 (h) (H)	 271 to 605 99 to 370	 545 195
Height above ground of lower hitch points when locked in transport position (*)			Any height withing lift range	
(*) Assuming the tyre dynamic radius index r=745 mm of ISO 4251/1-1992				

1.7 SWINGING DRAWBAR

Type:	Clevis
Height above ground: Maximum: Minimum:	 644 mm 474 mm
Type of adjustment:	Inverting drawbar and clevis
Distance of hitch point from rear-wheel axis, horizontally:	653, 664 and 668 mm
Distance of hitch point from power take-off shaft end: Vertically: Horizontally:	 108, 188, 198 and 278 mm 390, 401 and 405 mm

Lateral adjustment (centre of clevis):	
Right-hand:	80 and 160 mm
Left-hand:	80 and 160 mm
Distance of pivot point from rear-wheel axis, horizontally:	185 mm to front
Diameter drawbar pin hole:	32 mm
Maximum vertical permissible load:	6 kN

1.8 TRAILER HITCH

Type:	Automatic clevis
Hole diameter:	35 mm
Height above ground:	777, 827, 877, 927 and 977 mm
Distance of hitch point from rear-wheel axis, horizontally:	628 mm
Distance of hitch point from power take-off shaft end:	
Vertically:	25, 75, 125, 175 and 225 mm
Horizontally:	365 mm
Maximum vertical permissible load:	10 kN

1.9 HOLED DRAWBAR

Number of holes:	7
Distance between holes:	80 mm
Hole diameter:	32 mm
Thickness/width of the drawbar:	2×20 mm/90 mm
Height above ground:	
Maximum:	940 mm
Minimum:	200 mm
Horizontal distance to power take-off shaft end (rear):	677 mm

1.10 FRONT TOWING HITCH

Height above ground:	701 mm
Diameter of pin hole:	31 mm

1.11 STEERING

Make, model and type:	DANFOSS, OSPC 100 ON, hydrostatic
Method of operation:	Independent hydraulic circuit for steering
Pump:	Gear, driven from engine

Ram:	Double-acting cylinder on the front axle, symmetrical design
Working pressure:	8.0 MPa

1.12 BRAKES

1.12.1 Service brake

On the rear axle:	
Make, model and type:	ZETOR, 7245 2600, dry disc, multiplate, 2 discs on each side
Method of operation:	Hydraulically by pedals, coupled or independent
On the front axle:	None
Trailer braking take-off:	One line air braking system, operated by tractor pedals

1.12.2 Parking brake

Type:	Common with service brake
Method of operation:	Mechanically by hand lever with ratchet

1.13 WHEELS

Number:	
Front:	2, steering
Rear:	2, driving
Wheelbase:	2256 mm
Track width adjustment:	

	Minimum mm	Maximum mm	Adjustment method
Front	1420	1795	By extending of front axle
Rear	1420	1795	Reversing wheels and off-set lug rims

1.14 PROTECTIVE STRUCTURE

Make, model and type:	ROSTROJ, BK 6245, cab with integrated safety frame
Manufacturer's name and address:	ROSTROJ s.p., 683 01 Rousínov, Czech Republic
Protective device:	
Cab/frame/rollguard/other:	Cab
Tiltable/not tiltable:	Not tiltable
OECD approval number:	CSD 1363/16
Date of approval:	27th January 1994

Modification certificate if any: None

1.15 SEAT

1.15.1 Driver's seat

Make, model and type: MARS, Zetor 5911-5400, upholstered seat

Type of suspension: Parallelogram linkage adjustable for driver's weight

Type of damping: Hydraulic

Range of adjustment:

Longitudinal: 150 mm

Vertical: 60 mm

1.15.2 Optional driver's seat

Make, model and type: KAB, XH2/U4 Fieldmaster or KAB, XH2/TG Plugmaster, upholstered seat with back rest

Type of suspension: Parallelogram linkage adjustable for driver's weight

Type of damping: Hydraulic

Range of adjustment:

Longitudinal: 150 mm

Vertical: 60 mm

1.15.3 Passenger seat

Location: Left-hand side of driver

Number of places: 1

1.16 LIGHTING

	Height above ground of centre mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
Headlights	1080	120×120	188
Sidelights	1560	60×65	655
Rearlights	1535	105×70	750
Reflectors	985	Ø78	760

2. TEST CONDITIONS

2.1 OVERALL DIMENSIONS (unballasted tractor)

Length mm	Width		Height at top of	
	minimum mm	maximum mm	protective structure mm	exhaust silencer mm
3755	1875	2250	2665	2770

2.2 GROUND CLEARANCE (unballasted tractor): 383 mm

Clearance-limiting part: Swinging drawbar in lowest position

2.3 TRACTOR MASS (unballasted tractor with cab)

	Without driver kg	With driver kg
Front	1055	1065
Rear	2145	2210
Total	3200	3275

2.4 TYRES AND TRACK WIDTH SPECIFICATIONS

	Front	Rear
Tyres:		
Make	BARUM	BARUM
Dimensions	7.50-20	16.9-34
Ply rating	6 PR	8 PR
Type	diagonal	diagonal
Maximum load (tyre manufacturer's)	8.75 kN	23.80 kN
Maximum load (tractor manufacturer's)	8.75 kN	18.00 kN
Inflation pressure (tyre manufacturer's)	280 kPa	170 kPa
Dynamic radius index	430 mm	745 mm
Chosen track width:	1420 mm	1420 mm

2.5 OILS AND LUBRICATION

2.5.1 Capacity and change interval

	Capacity dm^3	Oil change h	Filter change h
Engine	12.0	200	200
Gear box	25.0	1200	600
Rear axle		Common with gear box	
Final drive (rear)	2×1.9	1200	-
Hydraulic system		Common with gear box	
Steering	4.6	1200	1200

2.5.2 Specifications

	Recommended	Used during test
Engine oil:		
Type	SAE 20W/40	As recomended
Viscosity	14.0 cSt at 100 °C	
Classification	API SE/CD+	
Transmission oils:		
Type	SAE 80W	As recommended
Viscosity	7.5 cSt at 100 °C	
Classification	API GL-4	
Steering oil:		
Type	OH-HM 32	As recommended
Viscosity	28.8 cSt at 40 °C	
Classification	ISO 6743 HM 32	

Hydraulic fluid: Same as transmission

2.5.3 Grease

Number of lubrication points: 21

2.6 FUEL

Type: Diesel fuel, in conformity with national standard ČSN 65 6506

Density at 15 °C: 0.836 g/cm^3 for p.t.o. tests
0.843 g/cm^3 for drawbar tests

3. COMPULSORY TEST RESULTS

3.1 MAIN POWER TAKE-OFF

Date and location of tests: 10th June 1993, SZZPLS Praha

Type of dynamometer: FROUDE AG 400, eddy-current

Power	Speed		Fuel consumption			Specific
	Engine	P.T.O.	Hourly		Specific	energy
kW	rev/min		kg/h	l/h	g/kWh	kWh/l
3.1.1 MAXIMUM POWER - TWO-HOUR TEST						
54.8	2200	1073	14.33	17.14	261	3.20
3.1.2 POWER AT RATED ENGINE SPEED						
54.8	2200	1073	14.33	17.14	261	3.20
3.1.3 SATNDARD POWER TAKE-OFF SPEED (1000±25 rev/min)						
53.5	2050	1000	13.31	15.92	249	3.36
3.1.4 PART LOADS 3.1.4.1 the torque corresponding to maximum power at rated engine speed						
54.8	2200	1073	14.33	17.14	261	3.20
3.1.4.2 85 % of torque obtained in 3.1.4.1						
48.0	2267	1106	12.81	15.32	267	3.13
3.1.4.3 75 % of torque defined in 3.1.4.2						
36.7	2310	1127	9.98	11.94	272	3.07
3.1.4.4 50 % of torque defined in 3.1.4.2						
24.9	2351	1147	7.93	9.49	318	2.62
3.1.4.5 25 % of torque defined in 3.1.4.2						
12.7	2394	1168	5.77	6.90	454	1.84
3.1.4.6 unloaded						
-	2415	1178	3.85	4.61	-	-

Power	Speed		Fuel consumption			Specific
	Engine	P.T.O.	Hourly		Specific	energy
kW	rev/min		kg/h	l/h	g/kWh	kWh/l
3.1.5 PART LOADS AT STANDARD POWER TAKE-OFF SPEED 1000 rev/min 3.1.5.1 the torque corresponding to maximum power						
53.5	2050	1000	13.31	15.92	249	3.36
3.1.5.2 85 % of torque obtained in 3.1.5.1						
46.3	2085	1017	11.48	13.73	248	3.37
3.1.5.3 75 % of torque defined in 3.1.5.2						
35.4	2128	1038	9.14	10.93	258	3.24
3.1.5.4 50 % of torque defined in 3.1.5.2						
24.1	2177	1062	7.21	8.62	299	2.80
3.1.5.5 25 % of torque defined in 3.1.5.2						
12.4	2228	1087	5.19	6.21	419	2.00
3.1.5.6 unloaded						
-	2253	1099	3.33	3.98	-	-

No load maximum engine speed: 2415 rev/min

Torque (equivalent crankshaft):

- at maximum power: 237.9 Nm
- at rated engine speed: 237.9 Nm
- at standard power take-off speed: 249.2 Nm

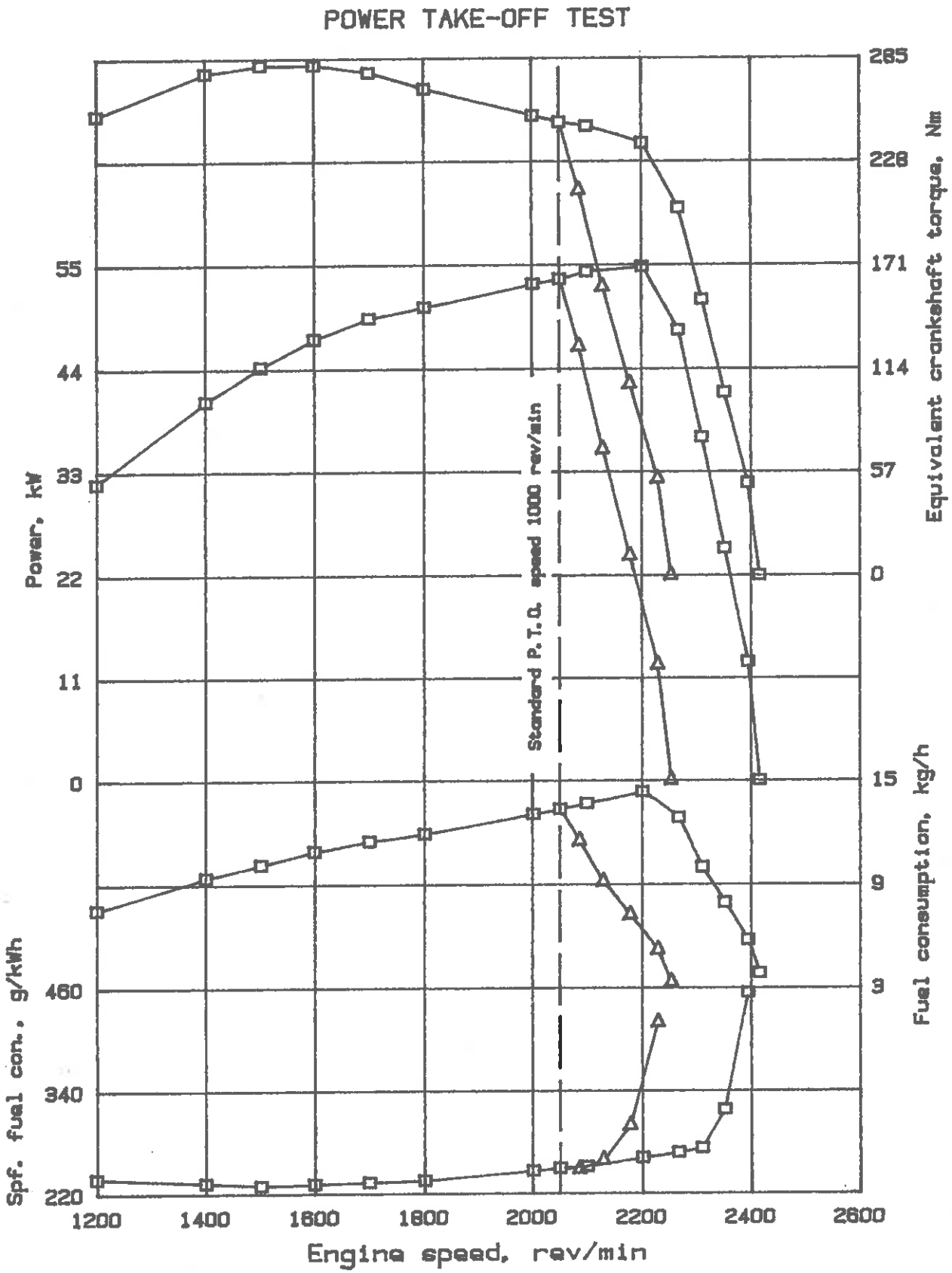
Maximum torque (equivalent crankshaft): 281.3 Nm
(engine speed: 1599 rev/min)

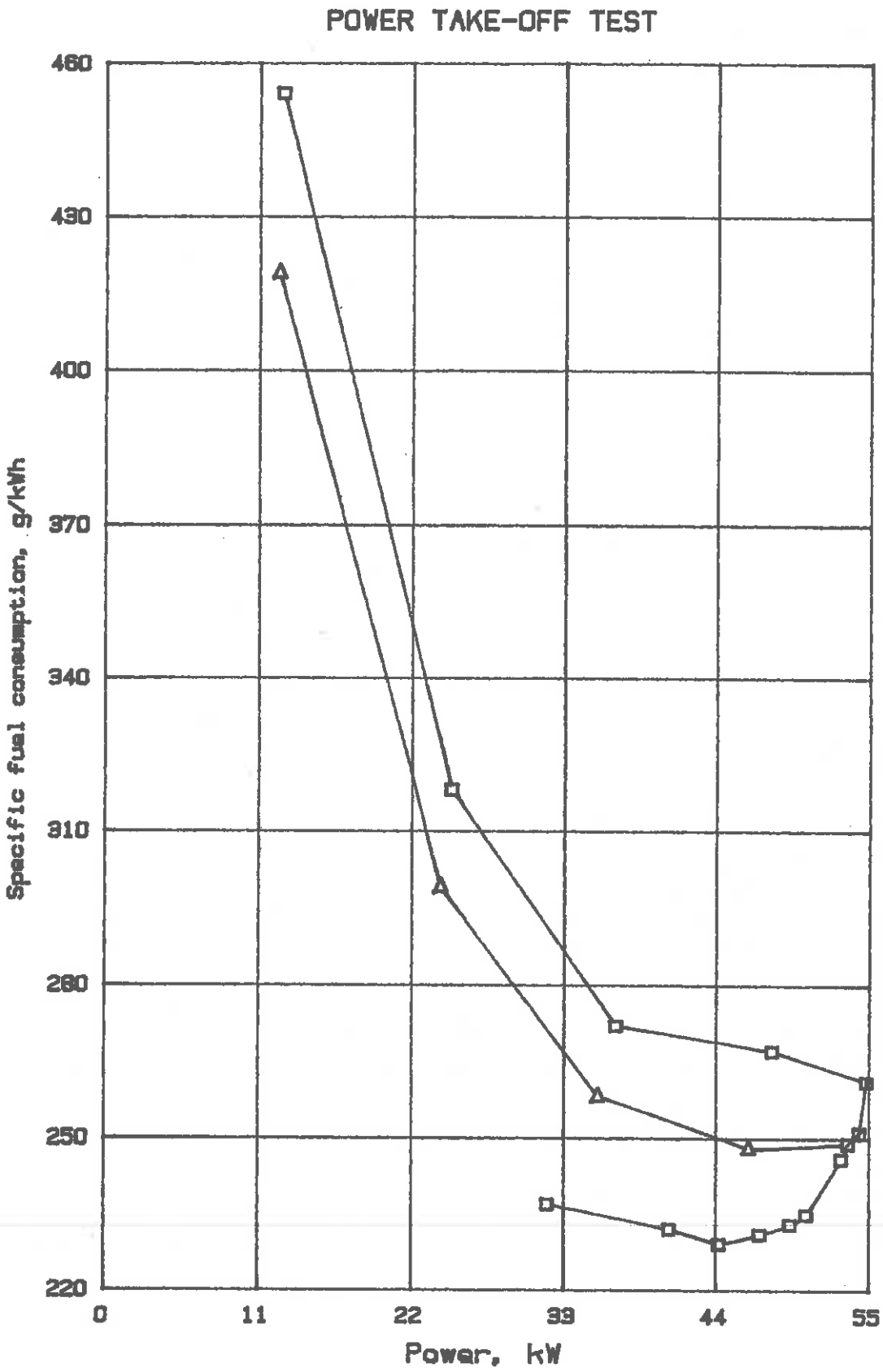
Mean atmospheric conditions:

- Temperature: 34 °C
- Pressure: 96.9 kPa
- Relative humidity: 53 %

Maximum temperatures:

- Coolant: 83 °C
- Engine oil: 107 °C
- Fuel: 52 °C
- Engine air intake: 30 °C


POWER TAKE-OFF TEST
Power, kW
55
44
33
22
11
0
Spf. fuel con., g/kWh
460
340
220
Standard P.T.O. speed 1000 rev/min
Equivalent crankshaft torque, Nm
285
228
171
114
57
0
Fuel consumption, kg/h
15
9
3
1200
1400
1600
1800
2000
2200
2400
2600
Engine speed, rev/min


POWER TAKE-OFF TEST
Specific fuel consumption, g/kWh
460
430
400
370
340
310
280
250
220
0
11
22
33
44
55
Power, kW

3.2 HYDRAULIC POWER AND LIFTING FORCE

Date of tests: 13th and 16th June 1993

3.2.1 Hydraulic power test

Sustained pressure with relief valve open: 19.5 MPa

Pump delivery rate at minimum pressure: 40.0 l/min

	Flow rate l/min	Pressure kPa	Power kW
Flow rate corresponding to a hydraulic pressure equivalent to 90 % of the actual relief valve pressure setting and corresponding hydraulic power	36.1	17.6	10.6
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	36.1	17.6	10.6

Tapping point used for test: External tapping

Temperature of hydraulic fluid: 65 °C

Opening and closing pressures of the unloading valve: Not applicable

3.2.2 Power lift test

Linkage setting for test - see page 10

	At the hitch point	On the frame
Height of lower hitch points above ground in down position	200 mm	200 mm
Vertical movement	690 mm	850 mm
Maximum corrected force exerted through full range	36.1 kN	24.6 kN
Corresponding pressure of hydraulic fluid	17.6 MPa	17.6 MPa
Moment about rear-wheel axis	33.9 kNm	38.1 kNm
Maximum tilt angle of mast from vertical	-	11 degrees

Lifting heights relative to the horizontal plane including the lower link pivot points												
mm	-487	-407	-400	-300	-200	-100	0	+100	+200	+283	+300	+363
Lifting forces at the hitch points, corrected to 17.6 MPa												
kN	-	47.0	46.0	44.5	43.0	41.3	39.4	38.3	36.9	36.1	-	-
Lifting forces at the test frame, corrected to 17.6 MPa												
kN	41.2	-	39.1	37.0	35.1	32.7	31.1	29.1	27.1	-	25.3	24.6

3.3 DRAWBAR PERFORMANCE (unballasted tractor)

Date of tests: 10th November 1993

Type of track: Bituminous-concrete surface

Height of drawbar above ground	Tyre inflation pressure	
	Front	Rear
474 mm	230 kPa	130 kPa

Gear and group	Power	Drawbar pull	Speed	Engine speed	Slip of wheels	Specific fuel consumption
	kW	kN	km/h	rev/min	%	g/kWh
3.3.1 MAXIMUM POWER IN TESTED GEARS						
5 T	34.1	19.2	6.39	2298	15.0	339
2 RM	39.7	19.1	7.48	2275	14.9	335
1 R	40.2	19.2	7.54	2267	15.0	337
2 R	46.4	16.9	9.89	2204	11.8	319
3 RM	47.0	15.8	10.72	2204	10.3	313
3 R	47.7	11.9	14.44	2192	7.1	308
4 RM	47.5	10.8	15.82	2197	6.3	315
4 R	47.1	8.0	21.18	2190	4.5	315
5 RM	46.4	7.5	22.26	2200	3.7	319
3.3.2 FUEL CONSUMPTION 3.3.2.1 in selected gear, at maximum power at rated speed						
3 R	47.7	11.9	14.44	2192	7.1	308
3.3.2.1.1 75 % of pull at maximum power at rated speed						
3 R	38.2	8.9	15.44	2294	4.9	318
3.3.2.1.2 50 % of pull at maximum power at rated speed						
3 R	26.6	6.0	15.94	2330	3.2	354
3.3.2.1.3 next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.1.1						
4 RM	38.1	8.9	15.40	2080	4.9	293
3.3.2.1.4 next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.1.2						
4 RM	26.7	6.1	15.78	2126	3.2	324
3.3.2.2 in selected gear nearest to 7.5 km/h at rated speed						
Out of measure						
3.3.2.2.1 75 % of pull at maximum power at rated speed						
Out of measure						
3.3.2.2.2 50 % of pull at maximum power at rated speed						
Out of measure						
3.3.2.2.3 next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.1						
Out of measure						
3.3.2.2.4 next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.2						
Out of measure						

Specific energy	Temperature			Atmospheric conditions		
	Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
kWh/l	°C	°C	°C	°C	%	kPa
2.49	17	77	85	6	98	96.7
2.52	18	77	85	6	98	96.7
2.50	19	77	86	6	98	96.7
2.65	21	77	88	6	98	96.7
2.69	21	76	89	6	98	96.7
2.74	19	77	90	7	97	96.7
2.68	20	77	87	8	89	96.7
2.67	24	77	89	8	89	96.7
2.64	24	77	91	8	82	96.6
2.74	19	77	90	7	97	96.7
2.65	21	77	86	8	82	96.6
2.38	20	76	88	8	82	96.6
2.88	21	77	88	7	85	96.6
2.60	20	76	88	7	87	96.6

4. OPTIONAL TEST RESULTS

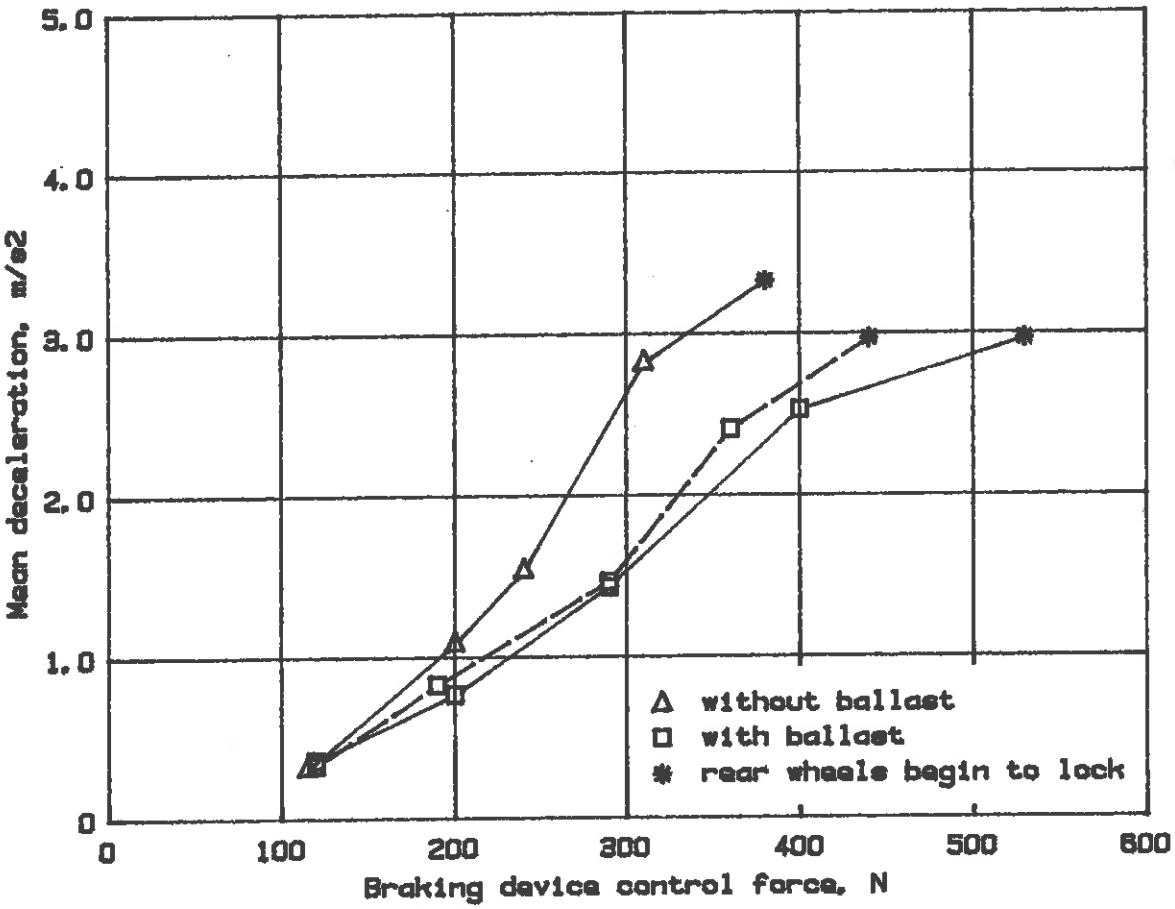
4.1 BRAKING

Date of tests: 25th January 1994

	Tractor mass (with driver)			Speed before application of brakes km/h
	Front kg	Rear kg	Total kg	
Ballasted	1750	3600	5350	32.0
Unballasted	1065	2210	3275	32.4

4.1.1 Cold service braking device test (————)

4.1.2 Fade test (— — — — —)



Maximum deviation of tractor from its original course: Not significant

Abnormal vibration: None

Brake heating method: Driven with brakes applied for 1 km at 80 % of maximum speed with a pedal force corresponding to a deceleration of 1 m/s^2

4.1.3 Parking braking device test

	Ballasted tractor on 18 % slope	
	Uphill	Downhill
Braking device control force	242 N	235 N

4.2 MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of tests:	16th December 1993
Make and model of sound level meter:	BRÜEL & KJAER, 2231
Type of track:	Bituminous-concrete surface
Gear number:	5 R
Travelling speed before acceleration:	24.3 km/h
Sound level:	84.0 dB(A)

5. REPAIRS

None

6. REMARKS

None

Test carried out by: Dipl. Ing. Peter Pernis

Head of the Tractor Laboratory

Dipl. Ing. Peter Pernis

Director

Dipl. Ing. Vladimír Hanzlík