STÁTNÍ ZKUŠEBNA ZEMĚDĚLSKÝCH,
POTRAVINÁŘSKÝCH
A LESNICKÝCH STROJŮ

163 04 PRAHA 6, ŘEPY

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

CODE II

Restricted Code

Date of approval: 4th June 1993

O.E.C.D. No. 1452

Agricultural Tractor
ZTS ZETOR 18345 (4WD) 40 km/h version

Manufactured by:
ZTS TEES š.p.
036 57 Martin, Slovakia

Report No. 10676
Date of test: Sept. 1992 - Mar.1993

TABLE OF CONTENTS

Tractor manufacturer's name and address:	ZTS TEES š.p., 036 57 Martin, Slovakia
Location of tractor assembly:	Martin, Slovakia
Submitted for test by:	The manufacturer
Selected for test by:	The manufacturer
Place of running-in:	Martin, Slovakia
Duration of running-in:	60 hours
Location of test:	SZZPLS Praha 6 - Řepy, Czech Republic

I. SPECIFICATIONS OF TRACTOR

TRACTOR

Make:	ZTS ZETOR
Model:	18345 40 km/h version
Type:	Wheeled, unit construction, all wheels drive
Number of driving wheels:	4
Serial No.:	18345 0003
1st Serial No.:	18345 0001

ENGINE

Make:	ZTS
Model:	Z 8604.020
Type:	4-stroke diesel engine, direct injection, water cooled, turbocharged with intercooler
Serial No.:	000 006

Cylinders

Number/disposition:	6, in-line, vertical
Bore/stroke:	110 mm/128 mm
Capacity:	7299 cm^3
Compression ratio:	16.8:1
Arrangement of valves:	Overhead

Cylinder liners:	Wet, replaceable
Supercharging	
Make, model and type:	ČZM, K 273060 G 1321, exhaust driven with intercooler
Pressure:	210 kPa
Fuel system	
Fuel feed system:	Lift pump piston-type, integral with fuel injection pump
Make, model and type of fuel filters:	AUTOBRZDY, 443 741 429 000, two-stage with paper cartridge
Capacity of fuel tank:	245 dm^3
Make, model and type of injection pump:	MOTORPAL, 6M 3165, in-line
Serial No.:	Rw 0011
Manufacturer's production setting of injection pump:	
Flow rate (rated engine speed and full load):	38.80 dm^3/h
Timing:	$21^{o}\pm1^{o}$ before TDC
Make, model and type of injection:	MOTORPAL, DOP 150 S 535-1417, 5 hole
Injection pressure:	20.0+0.8 MPa
Governor	
Make, model and type:	MOTORPAL, RV 3M 300/1100-3311, centrifugal, variable speed with overpressure corrector
Governed range of engine speed:	600-2450 rev/min
Rated engine speed:	2200 rev/min
Air cleaner	
Make, model and type:	SANDRIK, SPP 750, dry with paper element, integrated cyclon type pre-cleaner
Location of air intake:	Under bonnet forward of radiator
Maintenance indicator:	Warning light on instrument panel
Lubrication system	
Type of feed pump:	Gear

Type of filter:	Full flow with replaceable paper element
Number:	2

Cooling system

Type of coolant:	Water and anti-freeze
Type of pump:	Centrifugal, belt driven
Specification of fan:	Axial, belt driven
Number of blades:	8
Fan diameter:	460 mm
Coolant capacity:	29 dm^3
Type of temperature control:	Thermostat
Superpressure system:	40±10 kPa

Starting system

Make, model and type:	ELMOT, R20e, electrical, solenoid engaged
Starter motor power rating:	5.5 kW
Cold starting aid:	None
Safety device:	Gear selector lever to be in neutral position

Electrical system

Voltage:	12 V, negative earth
Generator:	
Make, model and type:	PAL, 443 113 516 650, alternator, belt driven
Power:	770 W
Battery:	
Number:	2
Rating:	125 Ah at 20 hours

Exhaust system

Make, model and type:	ZTS, 63.614.400, expansion and absorption muffler
Location:	Left-hand side of engine, vertical

TRANSMISSION TO WHEELS

Clutch

Make, model and type:	ZTS, 89.021.500, dry for transmission only
Number of plates:	1
Diameter of plates:	380 mm
Method of operation:	Hydraulically with air booster by pedal

Gear box

Make, model and type:	ZTS, P 135.1, mechanical
Arrangement:	Synchromesh gear box with 8 speeds, group gear box with two speed ranges and reverse (L, H and R) and 2-speed hydraulically actuated torque multiplier (M+ and M-)
Number of gears:	32 forward and 16 reverse
Available options:	None

Rear axle and final drives

Make, model and type:	ZTS, 63.153.400, crown wheel and bevel pinion differential and planetary final drives
Differential lock:	
Type:	Mechanical
Method of engagement:	Hydraulically by pedal
Method of disengagement:	Self-disengaging

Front axle and final drives

Make, model and type:	ZTS, 63.174.400, crown wheel and bevel pinion differential and planetary final drives
Differential lock:	
Type:	Mechanical
Method of engagement:	Hydraulically by pedal
Method of disengagement:	Self-disengaging

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	LM+	334.442	2.12
2		275.035	2.58
3		227.125	3.12
4		187.671	3.78
5		154.899	4.58
6		127.384	5.57
7		105.195	6.74
8		86.921	8.16
1	LM-	278.702	2.54
2		229.196	3.09
3		189.271	3.75
4		156.392	4.53
5		129.083	5.49
6		106.154	6.68
7		87.662	8.09
8		72.434	9.79
1	HM+	87.428	8.11
2		71.898	9.86
3		59.374	11.94
4		49.060	14.45
5		40.493	17.51
6		33.300	21.29
7		27.499	25.79
8		22.722	31.21
1	HM-	72.856	9.73
2		59.915	11.84
3		49.478	14.33
4		40.883	17.35
5		33.744	21.01
6		27.750	25.55
7		22.916	30.94
8		18.935	37.45
1	RM+	221.932	3.20
2		182.510	3.89
3		150.718	4.70
4		124.536	5.69
5		102.789	6.90
6		84.531	8.39
7		69.806	10.16
8		57.680	12.29

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	RM-	184.943	3.83
2		152.091	4.66
3		125.598	5.65
4		103.780	6.83
5		85.658	8.28
6		70.442	10.07
7		58.172	12.19
8		48.067	14.75

L: Low range, H: High range, M+: Torque multiplier engaged in position "plus", M-: Torque multiplier engaged in position "minus"

(*) Calculated with a tyre dynamic radius index of 855 mm (ISO 4251/1-1988).

Number of revolutions of front wheels for one revolution of rear-wheels: 1.3008

POWER TAKE-OFF

Main power take-off

Type: Independent

Method of engagement: Hydraulic clutch operated by hand lever, independent of main drive clutch, wet multiplate

Number of shafts: 1

Method of changing power take-off speeds: Manually by shaft turning

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	44.4	20	Yes

Height above ground: 719 mm

Distance from the median plane of tractor: 0 mm

Distance behind rear-wheel axis: 530 mm for 540 RPM, 535 mm for 1000 RPM

P.T.O.	P.T.O. speed rev/min	Engine speed rev/min	Ratio of rotation speeds (engine/P.T.O.)	Power restriction kW
540	540	1908	3.5333	48.0
	623	2200		
1000	1000	1920	1.9200	None
	1146	2200		

Direction of rotation (viewed facing driving end): Clockwise

Power take-off proportional to ground speed: None

POWER LIFT

Make, model and type: ZTS, 63.904.401, hydraulic with mechanical position, draft or mixed control, lower 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: 18.0+2.0 MPa

Opening pressure of cylinder safety valve: 21.0+2.0 MPa

Lift pump type: Gear, main and additional pumps

Transmission between pump and engine: Gear driven from engine

Type and number of filters: 1 magnetic and 1 screen filter in suction side and 3 full flow filters with replaceable paper cartridge in delivery side of pumps of hydraulic and gear box

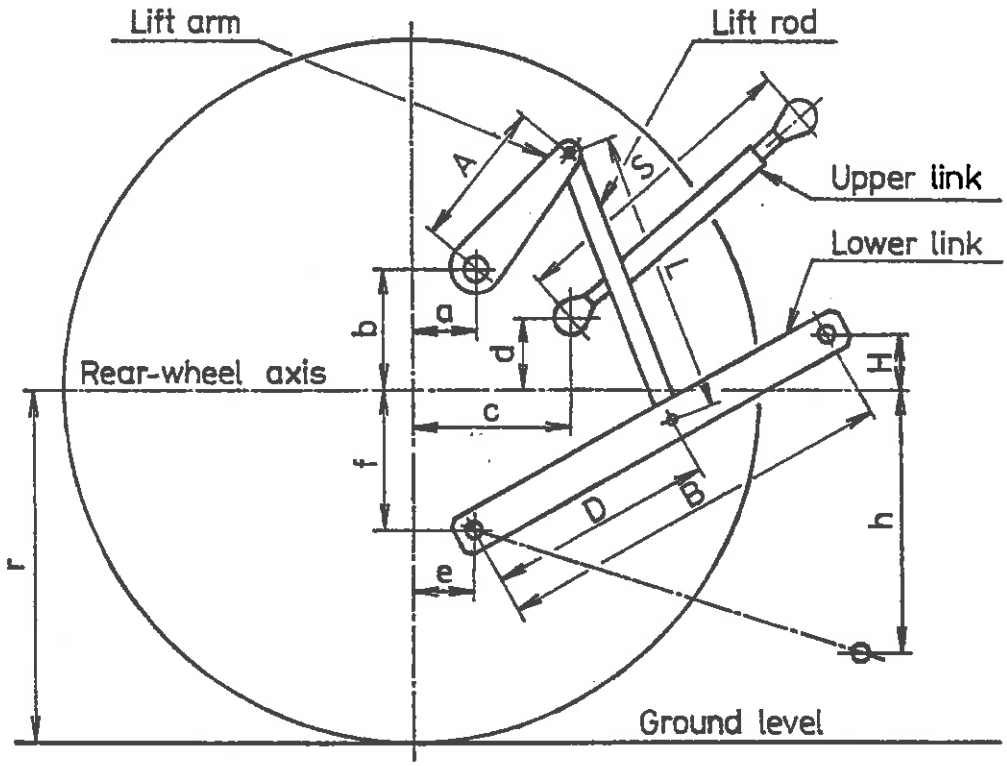
Site of oil reservoir: Transmission housing

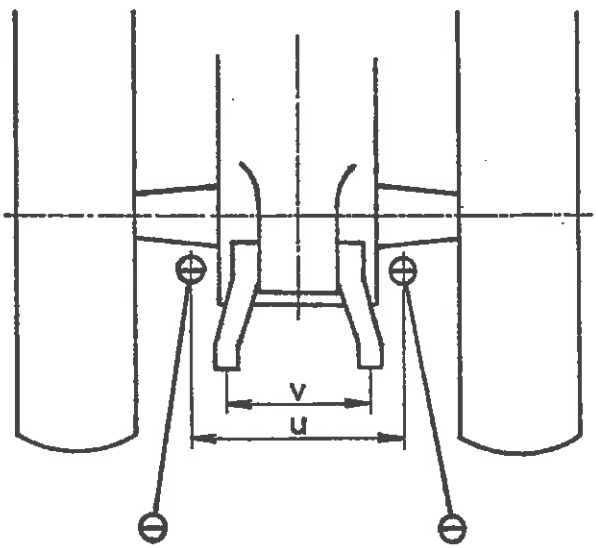
Type, number and location of tapping points:	7 pressure and 1 return, quick release at rear of tractor, quick release 1 and 2 only for main pump
Maximum volume of oil available to external cylinders:	15 dm^3

Three-point linkage

Category: 3, in conformity with ISO 730/1-1990

Category adapter: None





Linkage geometry dimensions:

		Dimension or range mm	Settings used in test mm
Length of lift arms	(A)	330	330
Length of lower links	(B)	994	994
Distance of lift arm pivot point from :horizontally	(a)	170	170
rear-wheel axis :vertically	(b)	285	285
Horizontal distance between the 2 lower link points	(u)	542	542
Horizontal distance between the 2 lift arm end points	(v)	640	640
Length of upper link	(S)	659 to 880	735
Distance of upper link pivot point from :horizontally	(c)	385	385
rear-wheel axis :vertically	(d)	123, 170, 210	210
Distance of lower link pivot point from :horizontally	(e)	130	130
rear-wheel axis :vertically	(f)	255	255
Distance of lower link pivot points to lift rod pivot points on lower links	(D)	501	501
Length of lift rods	(L)	503 to 588	571
Height of lower hitch points relative to the rear-wheel axis:			
- in low position	(h)	506 to 692	625
- in high position	(H)	61 to 205	127
Height above ground of lower hitch points when locked in transport position (*)		Any height withing lift range	

(*) Assuming the tyre dynamic radius index r=855 mm of ISO 4251/1-1988

SWINGING DRAWBAR

Type:	Clevis
Height above ground:	
Maximum:	439 mm
Minimum:	439 mm

Type of adjustment:	Swinging, sliding drawbar in two distance of hitch point from power take-off shaft end - 400 and 500 mm
Distance of hitch point from rear-wheel axis, horizontally:	907, 924, and 930 mm for 400 mm and 1009, 1025 and 1030 mm for 500 mm
Distance of hitch point from power take-off shaft end:	
Vertically:	280 mm
Horizontally:	377, 394 and 400 mm for 400 mm and 540 RPM, 479, 495 and 500 mm for 500 mm and 540 RPM, 372, 389 and 395 mm for 400 mm and 1000 RPM, 474, 490 and 495 mm for 500 mm and 1000 RPM
Lateral adjustment:	
Right-hand:	78 and 156 mm for 400 mm, 82 and 164 mm for 500 mm
Left-hand:	78 and 156 mm for 400 mm, 82 and 164 mm for 500 mm
Distance of pivot point from rear-wheel axis, horizontally:	385 mm to rear
Diameter drawbar pin hole:	33 mm
Maximum vertical permissible load:	9 kN for 400 mm, 7 kN for 500 mm

TRAILER HITCH

Type:	Automatic clevis
Hole diameter:	42 mm
Height above ground:	758, 808, 858, 908 and 958 mm
Distance of hitch point from rear-wheel axis, horizontally:	930 mm
Distance of hitch point from power take-off shaft end:	
Vertically:	39, 89, 139, 189 and 239 mm
Horizontally:	400 mm for 540 RPM, 395 mm for 1000 RPM
Maximum vertical permissible load:	10 kN

HOLED DRAWBAR

Number of holes:	9
Distance between holes:	80 mm
Hole diameter:	32 mm
Thickness/width of the drawbar:	2x20 mm/100 mm
Height above ground:	
Maximum:	982 mm
Minimum:	230 mm
Horizontal distance to power take-off shaft end:	594 mm for 540 RPM, 589 mm for 1000 RPM

SEMI-TRAILER HITCH

Type:	Towing hook
Hole diameter:	47 mm
Height above ground:	489 mm
Distance of hitch point from rear-wheel axis, horizontally:	709 mm
Distance of hitch point from power take-off shaft end:	
Vertically:	230 mm
Horizontally:	179 mm for 540 RPM, 174 mm for 1000 RPM
Maximum vertical permissible load:	21 kN

FRONT TOWING HITCH Not fitted

STEERING

Make, model and type:	ORSTA, LAGB 100-1, 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:	14.0 MPa

BRAKES

Service brake

On the rear axle:

Make, model and type:	ZTS, 63.227.000, wet disc, multiplate, 5 discs on each side
Method of operation:	Hydraulically with air brake booster by pedals, coupled or independent

On the front axle:

Make, model and type:	ZTS, 63.228.200, dry disc on the driving shaft to the front axle
Method of operation:	Hydraulically with air brake booster by coupled pedals
Trailer braking take-off:	Air brake operated by tractor

Parking brake

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

WHEELS

Number:	
Front:	2, steering and driving
Rear:	2, driving
Wheelbase:	2859 mm

Track width adjustment:

	Minimum mm	Maximum mm	Adjustment method
Front	1690	1990	By changing wheel discs to either side of wheel centre
Rear	1860	1860	None

PROTECTIVE STRUCTURE

Make, model and type:	VĽAD, BK UR IV, cab with integrated safety frame
Manufacturer's name and address:	VĽAD, 081 17 Prešov, Slovakia

Protective device: Cab, not tiltable

O.E.C.D. approval number: CSS 0234/1

DRIVER'S SEAT

Make, model and type: GRAMMER, LS95H1/90AR, 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

MISCELLANEOUS

Additional seat: None

LIGHTING

	Height above ground of centre mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
Headlights	1340	120x120	250
Sidelights	2050	60x65	895
Sidelights	2890 (*)	ϕ60	955
Rearlights	1845	105x70	820
Rearlights	2890 (*)	ϕ60	955
Reflectors	1195	ϕ78	955

(*) At top of cab

II. TEST CONDITIONS

Overall dimensions

Length mm	Width		Height at top of	
	minimum mm	maximum mm	protective structure mm	exhaust silencer mm
4740	2440	2440	3020	3290

Ground clearence
(unballasted tractor): 345 mm

Clearance-limiting part: Semi-trailer hitch

Tractor mass (with cab)

	Without driver kg	With driver kg
Front	2280	2290
Rear	3860	3925
Total	6140	6215

Tyre and track width specifications

	Front	Rear
Tyres:		
Make	BARUM	TAURUS
Dimensions	16.9-28	20.8R38
Ply rating	8	153 A8
Type	diagonal	radial
Maximum load (tyre manufacturer's)	17.40 kN	36.50 kN
Maximum load (tractor manufacturer's)	17.20 kN	24.73 kN
Inflation pressure (tyre manufac.)	170 kPa	160 kPa
Dynamic radius index	670 mm	855 mm
Chosen track width:	1890 mm	1860 mm

Oils and lubrication

Capacity and change interval:

	Capacity dm^3	Oil change h	Filter change h
Engine	19.0	200	200
Gear box	75.0	1200	(*)
Front axle	2.6	2400	-
Rear axle	Common with gear box		
Final drive (front)	2x1.3	2400	-
Final drive (rear)	2x4.0	1200	-
Hydraulic system	Common with gear box		
Steering	8.0	1200	1200

(*) At switch on warning light on instrument panel

Specifications:

	Recommended	Used during test
Engine oil: Type Viscosity Classification	 SAE 20W/40 14.0 cSt at 100 °C API SE/CD+	As recommended
Transmission oils: Type Viscosity Classification	 SAE 80W 7.5 cSt at 100 °C API GL-4	As recommended
Steering oil: Type Viscosity Classification	 OL-N22 19.8 cSt at 40 °C ISO 6743 HH 22	As recommended

Hydraulic fluid: Same as transmission

Grease:

Number of lubrication points: 20

Fuel

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

Density at 15 °C: 0.835 g/cm^3 for P.T.O. tests
0.835 g/cm^3 for drawbar tests

III. TEST RESULTS

COMPULSORY TESTS RESULTS

1. MAIN POWER TAKE-OFF

Date and location of tests: 2nd September 1992, SZZPLS Praha
Type of dynamometer: FROUDE AG 400

Power	Speed		Fuel consumption			Specific energy
	Engine	P.T.O.	Hourly		Specific	
kW	rev/min		kg/h	l/h	g/kWh	kWh/l
1.1 MAXIMUM POWER - TWO-HOUR TEST						
129.4	2200	1146	31.89	38.33	246	3.38
1.2 POWER AT RATED ENGINE SPEED						
129.4	2200	1146	31.89	38.33	246	3.38
1.3 STANDARD POWER TAKE-OFF SPEED 1000 rev/min						
118.2	1920	1000	26.68	32.07	226	3.69
1.4 PART LOADS 1.4.1 the torque corresponding to maximum power at rated engine speed						
129.4	2200	1146	31.89	38.33	246	3.38
1.4.2 85 % of torque obtained in 1.4.1						
113.4	2268	1181	29.48	35.43	260	3.20
1.4.3 75 % of torque defined in 1.4.2						
86.2	2300	1198	23.56	28.32	273	3.04
1.4.4 50 % of torque defined in 1.4.2						
58.4	2335	1216	18.25	21.94	313	2.66
1.4.5 25 % of torque defined in 1.4.2						
29.6	2365	1232	13.15	15.81	444	1.87
1.4.6 unloaded						
-	2408	1254	8.04	9.66	-	-

Power	Speed		Fuel consumption			Specific energy
	Engine	P.T.O.	Hourly		Specific	
kW	rev/min		kg/h	l/h	g/kWh	kWh/l
1.5 PART LOADS AT STANDARD POWER TAKE-OFF SPEED 1000 rev/min						
1.5.1 the torque corresponding to maximum power						
118.2	1920	1000	26.68	32.07	226	3.69
1.5.2 85 % of torque obtained in 1.5.1						
103.2	1972	1027	24.31	29.22	236	3.53
1.5.3 75 % of torque defined in 1.5.2						
79.0	2014	1049	19.67	23.64	249	3.34
1.5.4 50 % of torque defined in 1.5.2						
53.6	2051	1068	15.20	18.27	284	2.93
1.5.5 25 % of torque defined in 1.5.2						
27.4	2093	1090	10.57	12.70	386	2.16
1.5.6 unloaded						
-	2143	1116	6.21	7.46	-	-

No load maximum engine speed: 2408 rev/min

Torque (equivalent crankshaft) at maximum power: 561.7 Nm

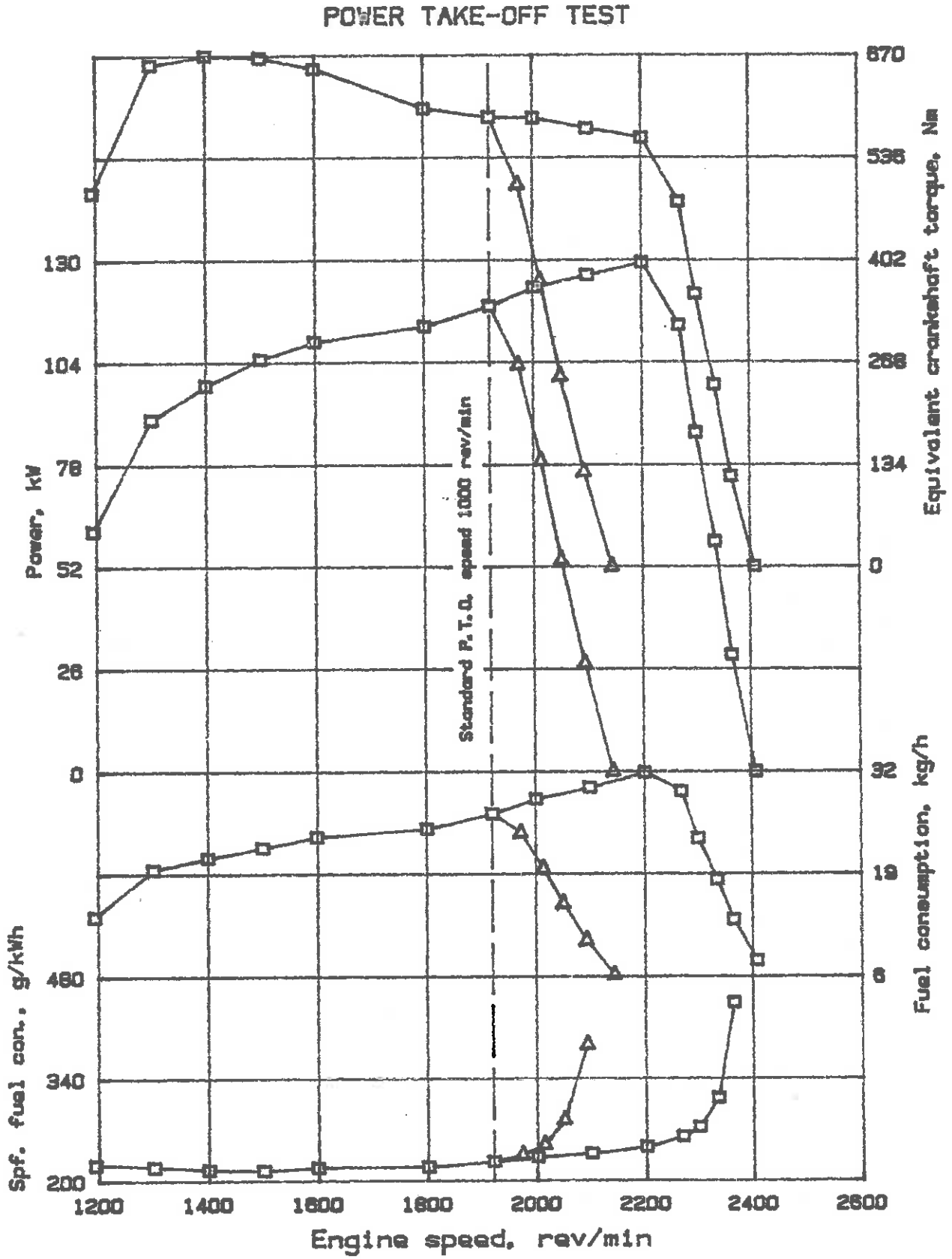
Maximum torque (equivalent crankshaft): 669.8 Nm
(engine speed: 1400 rev/min)

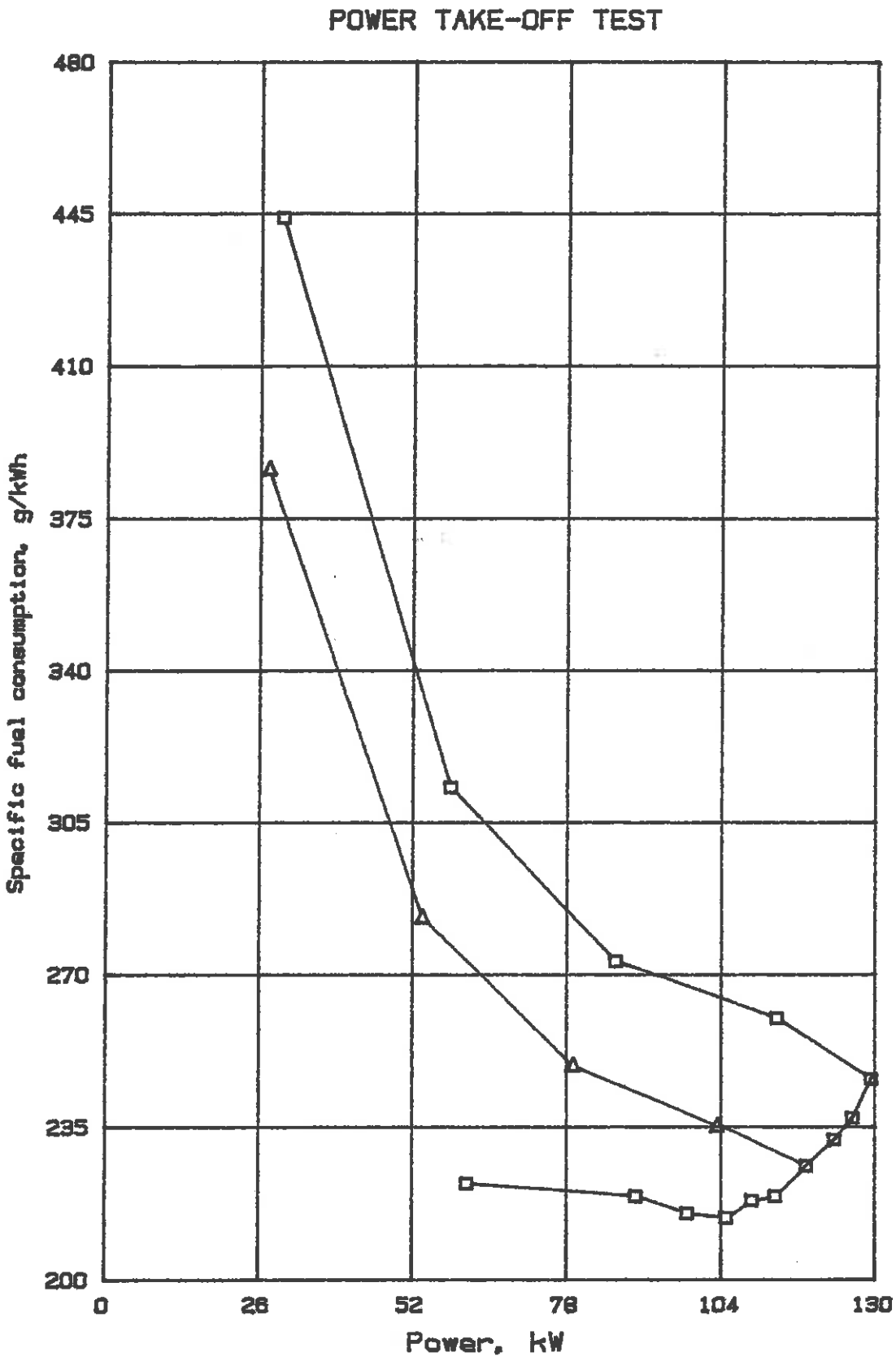
Mean atmospheric conditions:

Temperature: 20 °C
Pressure: 97.9 kPa
Relative humidity: 57 %

Maximum temperatures:

Coolant: 90 °C
Engine oil: 111 °C
Fuel: 39 °C
Engine air intake: 30 °C


POWER TAKE-OFF TEST
Power, kW
130
104
78
52
26
0
Spf. fuel con., g/kWh
480
340
200
Standard P.T.O. speed 1000 rev/min
Equivalent crankshaft torque, Nm
670
536
402
268
134
0
Fuel consumption, kg/h
32
19
6
1200
1400
1600
1800
2000
2200
2400
2600
Engine speed, rev/min


POWER TAKE-OFF TEST
480
445
410
375
340
305
270
235
200
Specific fuel consumption, g/kWh
0
26
52
78
104
130
Power, kW

2. HYDRAULIC POWER AND LIFTING FORCE

Date of test: 19th November 1992

2.1 HYDRAULIC POWER TEST

Main pump

Sustained pressure with relief valve open: 19.7 MPa

Pump delivery rate at minimum pressure: 22.5 l/min

	Flow rate l/min	Pressure MPa	Power kW
At 90 % of the actual relief valve pressure setting	21.5	17.7	6.3
At maximum hydraulic power	21.5	17.7	6.3

Tapping point used for test: External tapping 1 and 4

Temperature of hydraulic fluid: 64 °C

Opening and closing pressures of the unloading valve: Not applicable

Additional pump

Sustained pressure with relief valve open: 19.7 MPa

Pump delivery rate at minimum pressure: 47.3 l/min

	Flow rate l/min	Pressure MPa	Power kW
At 90 % of the actual relief valve pressure setting	40.8	17.7	12.0
At maximum hydraulic power	40.8	17.7	12.0

Tapping point used for test: External tapping 5 and 4

Temperature of hydraulic fluid: 66 °C

Opening and closing pressures of the unloading valve: Not applicable

Main and additional pumps

Sustained pressure with relief valve open: 19.6 MPa

Pump delivery rate at minimum pressure: 70.0 l/min

	Flow rate l/min	Pressure MPa	Power kW
At 90 % of the actual relief valve pressure setting	59.0	17.6	17.3
At maximum hydraulic power	62.0	17.0	17.6

Tapping point used for test: External tapping 5 and 4

Temperature of hydraulic fluid: 68 °C

Opening and closing pressures of the unloading valve: Not applicable

2.2 POWER LIFT TEST

	At the hitch point	On the frame
Height of lower hitch points above ground in down position	230 mm	230 mm
Vertical movement	674 mm	893 mm
Maximum corrected force exerted through full range	70.8 kN	46.9 kN
Corresponding pressure of hydraulic fluid	17.7 MPa	17.7 MPa
Moment about rear-wheel axis	79.6 kNm	81.3 kNm
Maximum tilt angle of mast from vertical	-	14 degrees

Lifting heights relative to the horizontal plane including the lower link pivot points												
mm	-455	-400	-370	-300	+200	+100	0	+100	+200	+304	+400	+438
Lifting forces at the hitch points, corrected to 17.7 MPa												
kN	-	-	80.9	80.8	79.5	77.7	76.0	73.9	72.9	70.8	-	-
Lifting forces at the test frame, corrected to 17.7 MPa												
kN	70.6	69.7	-	67.9	65.5	63.1	60.0	57.3	54.1	51.4	48.1	46.9

3. DRAWBAR POWER AND FUEL CONSUMPTION (UNBALLASTED TRACTOR)

Date of test: 29th and 30th September 1992

Type of track: Bituminous-concrete surface

Height of drawbar above ground	Tyre inflation pressure	
	Front	Rear
439 mm	140 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
3.1 MAXIMUM POWER IN TESTED GEARS						
6 LM-	90.6	53.9	6.05	2262	14.9	327
7 LM+	92.3	54.0	6.15	2249	15.0	329
7 LM-	100.1	46.3	7.78	2199	6.9	302
1 HM+	105.6	49.3	7.71	2199	8.1	288
8 LM+	100.0	45.8	7.86	2198	6.6	304
1 HM-	107.9	40.9	9.50	2198	5.1	288
8 LM-	101.3	38.0	9.60	2199	4.8	305
2 HM+	111.1	41.4	9.66	2203	5.2	283
2 HM-	108.1	33.3	11.69	2200	4.3	287
3 HM+	107.2	32.6	11.84	2203	4.1	288
3 HM-	104.9	26.4	14.30	2199	3.4	294
3.2 FUEL CONSUMPTION						
3.2.1 in selected gear, at maximum power at rated speed						
2 HM+	111.1	41.4	9.66	2203	5.2	283
3.2.1.1 75 % of pull at maximum power at rated speed						
2 HM+	87.8	31.1	10.16	2283	3.9	302
3.2.1.2 50 % of pull at maximum power at rated speed						
2 HM+	60.0	20.7	10.43	2314	2.7	344
3.2.1.3 next higher gear at reduced engine speed; same pull						
2 HM-	87.7	31.1	10.15	1898	3.9	263
3.2.1.4 next higher gear at reduced engine speed; same pull						
2 HM-	60.1	20.7	10.57	1954	2.7	301
3.2.2 in selected gear nearest to 7.5 km/h at rated speed						
1 HM+	105.6	49.3	7.71	2199	8.1	288
3.2.2.1 75 % of pull at maximum power at rated speed						
1 HM+	85.2	37.0	8.29	2289	4.7	305
3.2.2.2 50 % of pull at maximum power at rated speed						
1 HM+	58.7	24.7	8.55	2320	3.2	342
3.2.2.3 next higher gear at reduced engine speed; same pull						
8 LM+	85.4	37.0	8.31	2281	4.7	317
3.2.2.4 next higher gear at reduced engine speed; same pull						
8 LM+	58.7	24.7	8.55	2304	3.2	357

Specific energy	Temperature			Atmospheric conditions		
	Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
kWh/l	°C	°C	°C	°C	%	kPa
2.55	43	83	94	18	56	97.1
2.54	43	84	95	18	56	97.1
2.76	44	84	95	18	56	97.1
2.90	46	83	96	18	57	97.1
2.75	46	82	96	17	57	97.1
2.90	33	82	96	13	67	97.6
2.74	35	83	97	13	67	97.6
2.95	33	81	92	14	65	97.6
2.91	36	81	95	14	65	97.6
2.90	39	82	97	15	62	97.6
2.84	39	82	97	14	59	97.6
2.95	33	81	92	14	65	97.6
2.76	39	81	97	14	59	97.6
2.43	41	80	98	14	59	97.6
and travelling speed as in 3.2.1.1						
3.18	36	81	91	14	59	97.6
and travelling speed as in 3.2.1.2						
2.77	39	80	92	14	59	97.6
2.90	46	83	96	18	57	97.1
2.74	40	81	96	14	54	97.6
2.44	41	80	97	14	54	97.6
and travelling speed as in 3.2.2.1						
2.63	40	82	96	14	54	97.6
and travelling speed as in 3.2.2.2						
2.34	42	80	98	14	54	97.6

OPTIONAL TEST RESULTS

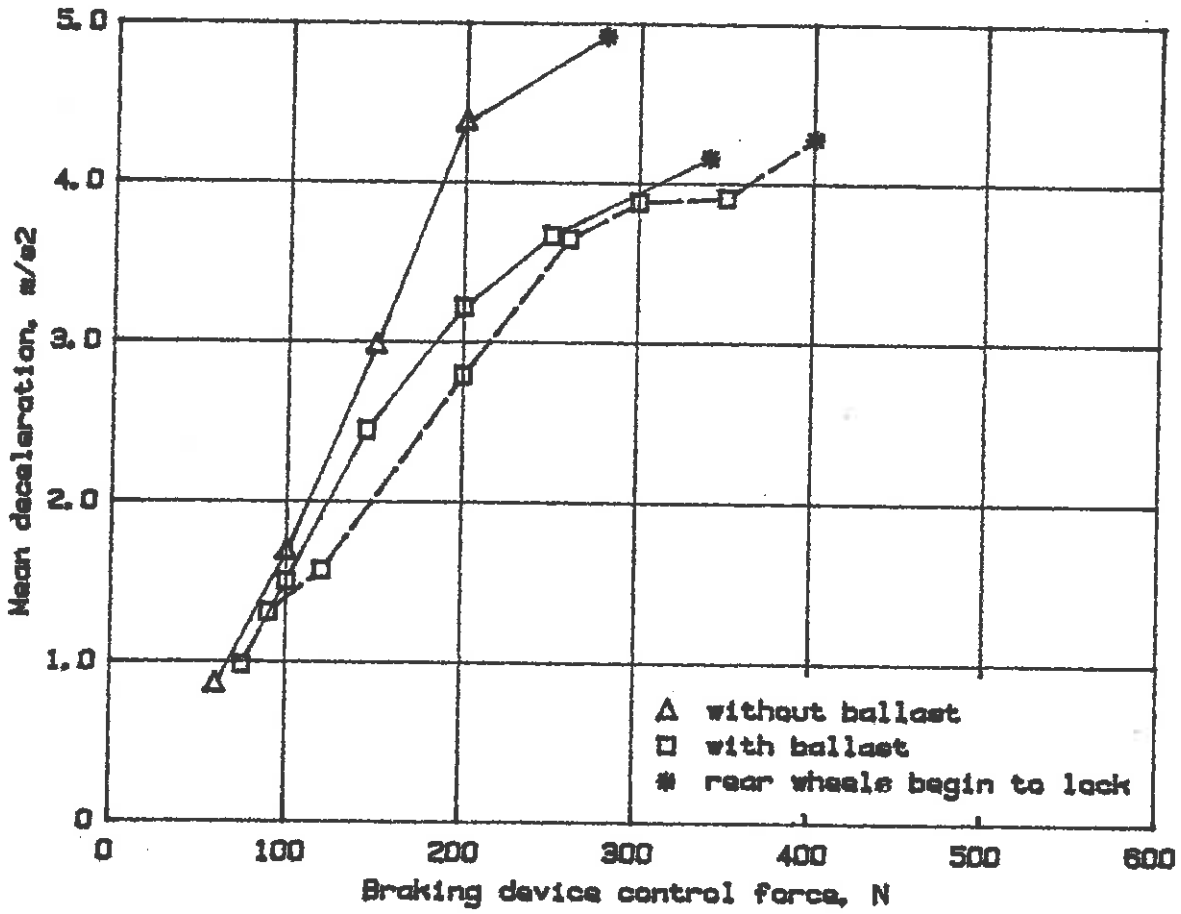
4. BRAKING

Date of test: 16th March 1993

	Tractor mass (with driver)			Speed before application of brakes
	Front kg	Rear kg	Total kg	km/h
Ballasted	3440	4945	8385	39.0
Unballasted	2290	3925	6215	39.4

4.1 COLD SERVICE BRAKING DEVICE TEST (————————)

4.2 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

4.3 PARKING BRAKING DEVICE TEST

	Ballasted tractor on 18 % - slope	
	Uphill	Downhill
Braking device control force	308 N	305 N

5. MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of test:	22nd March 1993
Make and model of sound level meter:	BRÜEL & KJAER, 2231
Type of track:	Bituminous-concrete surface
Gear number:	8 HM-
Travelling speed before acceleration:	29.6 km/h
Sound level:	86.0 dB(A)

6. REPAIRS

None

7. REMARKS

None

Test carried out by: Dipl. Ing. Peter Pernis

Head of the Tractor Department
Dipl. Ing. Peter Pernis

Director
Dipl. Ing. Vladimír Hanzlík