



**Report on test in accordance with OECD
STANDARD CODE 2 for the Official Testing
of Agricultural and Forestry Tractor Performance**

Restricted Code

OECD No. 2 /1882

Date of approval: 01 february 2000



Agricultural Tractor

URSUS 5714 (4WD) – 8 speed version

Manufacturer

Zakłady Przemysłu Ciągnikowego
„URSUS” S. A., Warszawa, Poland

**INSTYTUT BUDOWNICTWA, MECHANIZACJI I ELEKTRYFIKACJI ROLNICTWA
w Warszawie, Oddział Kłudzienko**

IBMER, 05-824 Kłudzienko, PL

**telefon: +48 22 755-50-16
telex: 81-22-31
telefax: +48 22 755-60-45**

This is a report on a tractor test in accordance with OECD STANDARD CODE for the Official Testing of Agricultural and Forestry Tractor Performance, CODE 2, Paris 1999.

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

Duration of tests: September till November 1999

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

TABLE OF CONTENTS

	page
1. SPECIFICATION OF TRACTOR	1
1.1 Identification.....	1
1.2 Engine.....	1
1.3 Transmission.....	3
1.4 Power take-off.....	5
1.5 Hydraulic power lift.....	6
1.6 Three point linkage.....	7
1.7 Swinging drawbar.....	10
1.8 Trailer hitch	10
1.9 Holed drawbar.....	10
1.10 Steering	10
1.11 Brakes.....	11
1.12 Wheels.....	11
1.13 Protective structure	11
1.14 Seat	12
1.15 Lighting	11
2. TEST CONDITIONS	13
2.1 Overall dimensions	13
2.2 Ground clearance.....	13
2.3 Tractor mass.....	13
2.4 Ballast.....	14
2.5 Tyres and track width specifications	14
2.6 Fuel.....	14
2.7 Oils and lubricants.....	14
3. COMPULSORY TEST RESULTS	16
3.1 Main power take-off.....	16
3.2 Hydraulic power and lifting force	20
3.3 Drawbar power test (unballasted tractor)	22
4. OPTIONAL TEST RESULTS	24
4.1 Turning area and turning circle	24
4.2 Location of centre of gravity	24
4.3 Braking.....	24
4.4 Measurement of external noise	27
5. REPAIRS	27
6. REMARKS	27



IBMER - Kłodzisko
URSUS 5714 (4WD) – 8 speed version

Test No. ZMT 99-03

- Tractor manufacturer name and address: Zakłady Przemysłu Ciągnikowego „URSUS” S. A., 02-495 Warszawa, Plac Czerwca 1976 roku nr 1
- Location of tractor assembly: same
- Submitted for test by: The manufacturer
- Selected for test by: The manufacturer with agreement of IBMER
- Place of running-in: Zakłady Przemysłu Ciągnikowego „URSUS” S. A.
- Duration of running-in: 50 hours
- Location of test: IBMER-ZMT 05-824 Kłodzisko, Poland

1 SPECIFICATION OF TRACTOR

1.1 Identification

- Make: URSUS
- Model: 5714 – 8 speed version
- Type: wheeled tractor, four wheel drive
- Number of driving wheels: 4
- Serial N°: 0120206
- 1st serial N°: 0120206

1.2 Engine

- Make: URSUS
- Model: 4410 specification No 87088
- Type: water-cooled 4-stroke Diesel, direct injection
- Serial N°: P016643C

1.2.1 Cylinders

- Number: 4
- Dispositions: in line
- Bore / Stroke: 101 / 127 mm
- Capacity: 4070 cm³
- Compression ratio: 16
- Arrangement of valves: overhead, in line
- Cylinder liners: dry, replaceable

1.2.2 Supercharging

none



- 1.2.3 *Fuel system*
- Fuel feed system: diaphragm fuel feed pump type 47 PMO 4
 - Make, model, type of fuel filter(s) : 1, with replaceable cartridge type FPV 5.8
 - Capacity of fuel tank: 80 dm³
 - Make, model, type of injection pump: WSK Poznań rotative DPA 3241F571
 - Serial N°: 0001CPp
 - Manufacturer's production setting of injection pump:
 - Flow rate:(rated engine speed and full load) 17,09 dm³/h
 - Timing: 24° before T.D.C.
 - Make, model, type of injectors: LUCAS PERKINS 5281631 FW multihole Lucas 5621647 EOM BDLL150S6600CF
 - Injection pressure: 20,0 MPa
- 1.2.4 *Governor*
- Make, model, type: WSK Poznań, mechanical, variable speed, incorporated into fuel injection pump
 - Governed range of engine speed: 750 ÷ 2380 rev/min
 - Rated engine speed: 2200 rev/min
- 1.2.5 *Air cleaner*
- Pre cleaner
 - Make, model, type: ZSM Brodnica, cyclon type, build on main cleaner
 - Location of air intake: over bonnet
 - Main cleaner
 - Make, model, type: ZSM Brodnica 7005219M91 oil bath
 - Maintenance indicator: none
- 1.2.6 *Lubrication system*
- Type of feed pump: splash and pressure lubrication gear pump
 - Type of filter(s) : full flow oil filter PP 8.9
 - Number of filters: 1
- 1.2.7 *Cooling system*
- Type of coolant: water or water-anti freeze mixture
 - Type of pump: centrifugal
 - Specification of fan: 1 belt driven
 - Number of fan blades: 8



- Fan diameter: 411 mm
- Coolant capacity: 16,8 dm³
- Type of temperature control: thermostatic
- Superpressure system: 70 kPa
- 1.2.8 *Starting system*
 - Make, model, type: electrical
ELMOT, R11g-12V, electromagnetic engagement
 - Starter motor power rating: 3,0 kW
 - Cold starting aid: THERMOSTART SINTEROM 357/11, 12V
 - Safety device: only operable when the range gear (L, H) lever is in neutral position
- 1.2.9 *Electrical system*
 - Voltage: 12 V
 - Generator: alternator
 - Make, model, type: ELMOT, A124-44a, 14V 44 A
 - Power: 0,6 kW
 - Battery of accumulators: 12V, ZAP Piastów, 6SK-120 Ca
 - Number: 1
 - Rating: 120 Ah at 10 hours
- 1.2.10 *Exhaust system*
 - Make, model, type: expansion and absorption muffler
 - Location: at the right side of the engine, height of outlet above ground - 2640 mm
- 1.3 **Transmission**
 - 1.3.1 *Clutch*
 - Make: URSUS
 - Model: dual clutch
 - Type: dry
 - Number of plates: 2
 - Diameter of plates: 1st: 302 mm – for traveling
2nd: 251 mm – for PTO
 - Method of operation: mechanical by pedal
 - 1.3.2 *Gear box*
 - Make: URSUS
 - Model: mechanical
 - Type: with planetary reduction unit



- Description:
 - gear box with 4 (forward) + 1 (reverse) speeds;
 - planetary reduction unit (H and L);

	Forward	Reverse
Number of gears	4	1
Number of groups	2	2
Total of arrangements	8	2

- Oil cooler: none
- Available options: none

1.3.3 Rear axle and final drives

- Make: URSUS
- Model: crown wheel and pinion differential
- Type: planetary final drives
- Differential lock:
 - Type: mechanical, dog clutch
 - Method of engagement: mechanical by pedal
 - Method of disengagement: self-disengaging

1.3.4 Front axle and final drives

- Make: URSUS
- Model: with non central shaft
- Type: crown wheel and pinion differential, planetary final drives
- Differential lock: none



1.3.5 Total ratios and travelling speeds

Gear No	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
forward			
1	L	288,337	2,00
2		193,206	2,98
3		105,394	5,47
4		85,880	6,71
1	H	69,276	8,32
2		47,239	12,20
3		25,769	22,37
4		20,998	27,45
reverse			
R	L	208,083	2,77
	H	50,876	11,33

^{*)} Calculated with a tyre dynamic radius index of 695 mm (ISO 4251-1 1998)

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

1,43

1.4 Power take-off

1.4.1 Main power take-off

- Type:

independent, driven by the 2nd plate of the main clutch

- Method of engagement:

mechanically by hand lever and clutch pedal

- Number of shafts:

1

- Method of changing power take-off shaft ends and speeds:

by changing PTO shaft



1.4.1.1 Power take-off proportional to engine speed

Power take off at 540 rev/min

- Location:	at the rear of the tractor
- Diameter of power take-off shaft end:	35 mm
- Number of splines:	6 (in conformity with ISO 500 - 1991)
- Height above ground:	568 mm
- Distance from the median plane of the tractor:	0 mm
- Distance behind rear-wheel axis:	296 mm
- PTO speed at rated engine speed:	596 rev/min
- Engine speed at standard PTO speed:	1993 rev/min
- Ratio of rotation speeds:	3,69
- Power restriction:	48,0 kW;
- Maximum torque transmissible:	86,6 daNm
- Direction of rotation (viewed from behind tractor):	clockwise

Power take off at 1000 rev/min

- Location:	at the rear of the tractor
- Diameter of power take-off shaft end:	35 mm
- Number of splines:	21 (in conformity with ISO 500 - 1991)
- Height above ground:	568 mm
- Distance from the median plane of the tractor:	0 mm
- Distance behind rear-wheel axis:	296 mm
- PTO speed at rated engine speed:	1100 rev/min
- Engine speed at standard PTO speed:	2000 rev/min
- Ratio of rotation speeds:	2,00
- Power restriction:	none
- Maximum torque transmissible:	none restriction
- Direction of rotation (viewed from behind tractor):	clockwise

1.4.1.2 Power take - off proportional to ground speed	none
--	------



1.5 Hydraulic power lift

- Make: URSUS
- Model: mechanical-hydraulic power lift; position and load control
- Type: lever type
- Type of hydraulic system: open centre with draught, position and response control
- Type and number of cylinders: one internal, single acting
- Type of linkage lock for transport: none
- Relief valve pressure setting: 20,7 + 24,0 MPa
- Opening pressure of cylinder safety valve: 25,5 MPa
- Lift pump type: 4-cylinder piston
- Transmission between pump and engine: from PTO transmission (non disengaged)
- Type and number of filters: 1, suction strainer
- Site of oil reservoir: gear box
- Type, number and location of tapping points: four at the rear of tractor, quick release 12,5 in conformity with ISO 5675-1992
- Maximum volume of oil available to external cylinders: 16 dm³

1.6 Three point linkage

- Category: 2, in conformity with ISO 730/1-1994
- Category adapter: none

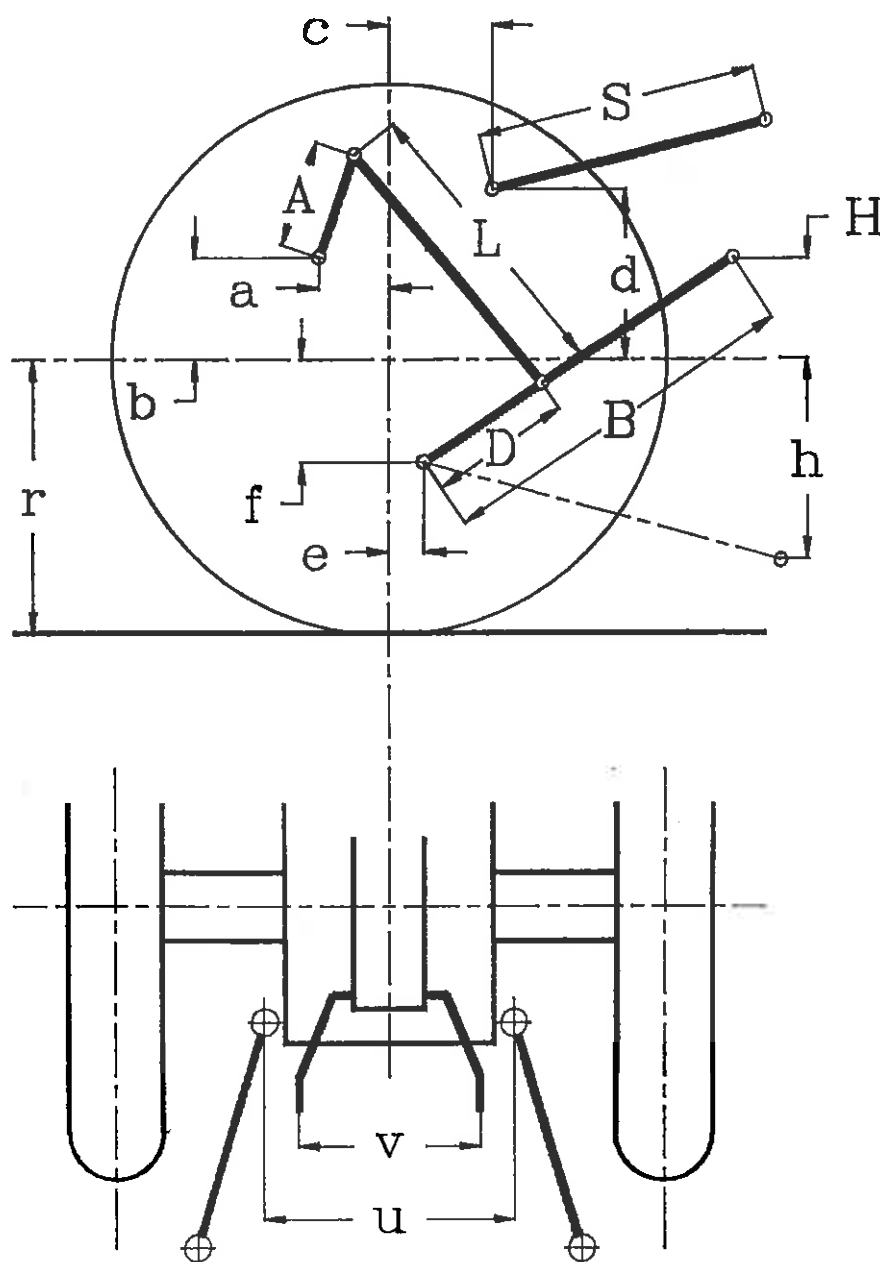


Figure 1
Lift test - Linkage geometry



		Dimension of range mm	Settings used in test mm
Length of lift arms:	(A)	266,7	
Length of lower links:	(B)	972	
Distance of lift arm pivot point from rear-wheel axis:	- horizontally: (a)	195,73	
	- vertically: (b)	232,56	
Horizontal distance between the 2 lower link points:	(u)	492	
Horizontal distance between the 2 lift arm end points:	(v)	534	
Length of upper link:	(S)	645 ÷ 855	755
Distance of upper link pivot point from rear wheel axis:	- horizontally: (c)	A): 186,44; B): 200,41; C): 216,15	200,41
	- vertically: (d)	A): 205,23; B): 170,69; C): 131,83	170,69
Distance of lower link pivot point from rear wheel axis:	- horizontally: (e)	- 31,75	
	- vertically: (f)	212,34	
Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	436	
Length of lift rods:	(L)	610 ÷ 700	655
Height of lower hitch points relative to the rear-wheel axis:			
- in low position:	(h)	333 ÷ 770	578
- in high position:	(H)	35 ÷ 285	146
Height above ground of lower hitch points when locked in transport position*)		Any height within lift range	
*) Assuming r = 695 mm tyre dynamic radius index of ISO 4251/1-1998			

Table 2.1
Dimensions of linkage geometry
when connected to the standard frame



1.7 Swinging drawbar

- Type: fork, pulled out
- Height above ground: 517, 432, 417, 332 mm
- Type of adjustment: mechanical, by pin replacement
- Distance of hitch point from rear-wheel axis, horizontally: 650, 700 mm
- Distance of hitch point from power take-off shaft end:
 - Vertically: 51, 136, 151, 236 mm
 - Horizontally: 350, 400 mm
- Lateral adjustment (centre of clevis):
 - Right hand: 75 and 190 for 350
85 and 205 for 400
 - Left hand: 75 and 190 for 350
85 and 205 for 400
- Distance of pivot point from rear-wheel axis, horizontally: -135 mm
- Diameter of drawbar pin hole: 32,8 mm
- Maximum vertical permissible load: 15,8 kN

1.8 Trailer hitch none

1.9 Holed drawbar

- Number of holes: 6
- Distance between holes: 120, 80, 40, 80, 120 mm
- Hole diameter: 22 mm
- Thickness/width of the drawbar: 25 / 80 mm
- Height above ground:
 - Maximum: 980 mm
 - Minimum: 50 mm
- Horizontal distance to power take-off shaft: 625 mm

1.10 Steering

- Make: URSUS
- Model: ORBITROL
- Type: OSPB 100
- Method of operation: hydrostatic
 - Pump(s): 1
 - Ram(s): 1
- Working pressure: 11,0 MPa



1.11 Brakes

1.11.1 Service brake

- Make: URSUS
- Model: disc brakes
- Type: oil immersed, acting on rear wheels
- Method of operation: two pedals, mechanically actuated, independent, or combined operation
- Trailer braking take-off: none

1.11.2 Parking brake

- Type: mechanical, coupled to both service brakes
- Method of operation: hand lever with ratchet

1.12 Wheels

- Number: 4
 - Front: 2, driving and steering - 11.2 - 24 A8
 - Rear: 2, driving - 16.9 R 30 A8
- Wheelbase: 2330 mm
- Track width adjustment:

	Minimum mm	Maximum mm	Adjustment method
Front	1480	1820	offset lug rims and reversing wheel centres
Rear	1510	2100	offset lug rims and reversing wheel centres

1.13 Protective structure

- Make: URSUS
- Model: 5170
- Type: frame
- Manufacturer's name and address: Z. P. C. „URSUS” S. A., Fabryka Ciągników Lekkich, 02-495 Warszawa, Plac Czerwca 1976 roku nr 1
- Protective device: frame not fitable



- OECD approval:
 - Approval number: 3/1 423
 - Date of approval: 14 December 1999
 - Nos. of minor modification certificates: none

1.14 Seat

1.14.1 Driver's seat

- Make: „AGROMET KUNÓW”
- Model: Grammer
- Type: SA67 / 2LO
- Seat and steering wheel reversible: no
- Type of suspension: spiral spring
- Type of damping: hydraulic damper
- Range of adjustment:
 - Longitudinal: 150 mm
 - Vertical: 60 mm
- Safety belt: no

1.15 Lighting

	Height above ground of centre mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
Headlights	1105	Ø 125	216
Sidelights	1635	65 x 67	773
Rearlights	1510	70 x 95	685
Reflectors	1340	Ø 75	835



2 TEST CONDITIONS

2.1 Overall dimensions (unballasted tractor)

Length	Width		Height at top of	
	minimum	maximum	protective structure	exhaust pipe
mm	mm	mm	mm	mm
3850	1930	2680	2426	2640

2.2 Ground clearance (unballasted tractor) 330 mm

- Clearance-limiting part: swinging drawbar

2.3 Tractor mass

- Mass:

	Ballasted		Unballasted	
	Without driver kg	With driver kg	Without driver kg	With driver kg
Front	1505	1525	1250	1270
Rear	1865	1920	1710	1765
Total	3370	3445	2960	3035

2.4 Ballast

	Weight		Water
	Number	Total mass	
		kg	kg
Front	8	206	-
Rear	6	204	-
Optional	-	-	-



2.5 Tyres and track width specifications

	Front	Rear
Tyres:	STOMIL Olsztyn	
dimensions:	11.2 R 24	16.9 R 30
ply rating:	114 A 8	137 A 8
type:	radial	radial
maximum load (tyre manufacturer's)	11,6 kN	22,6 kN
maximum load (tractor manufacturer's)	11,6 kN	22,6 kN
inflation pressure (tyre manufacturer's)	160 kPa	160 kPa
dynamic radius index:	515 mm	695 mm
Chosen track width:	1480 mm	1510 mm

2.6 Fuel

- Type:

DL in conformity with Polish
standard PN-92/C-96051

- Density at 15° C

0,838 g/cm³

2.7 Oils and lubricants

2.7.1 Capacity and change interval

	Capacity dm ³	Oil change h	Filter change
Engine	8,3	250	250
Gear box, rear axle, hydraulic system	44,0	1000	1000 (clearing)
Rear final drives	3,4	1000	-
Front axle	5,5		
Front final drives	3,0		
Steering	2,25	500	500



IBMER - Kłodzianko
URSUS 5714 (4WD) – 8 speed version

Test No. ZMT 99-03

2.7.2 Specifications:

	Recommended	Used during test
Engine oil Type: Viscosity: Classification:	FALCO SUPEROL SAE 15W/40 API-CD	FALCO SUPEROL SAE 15W/40 API-CD
Transmission and hydraulic system oil Type: Viscosity: Classification:	AGROL SAE 80/90 API GL-4	AGROL SAE 80/90 API GL-4
Steering oil Type: Viscosity: Classification:	ATF 200 SAE 10W/30 API GL-4	ATF 200 SAE 10W/30 API GL-4

2.7.3 Grease

- Number of lubrication points:

LT 42

23



3 COMPULSORY TEST RESULTS

3.1 Main power take-off

- Date and location of test: 22.09.99, ZMT-IBMER Kłodzisko
 - Type of dynamometer bench: Schenck W-450

Power kW	Speed		Fuel consumption			Specific energy kWh/l
	Engine rev/min	PTO rev/min	Hourly kg/h l/h		Specific. g/kWh	
3.1.1 MAXIMUM POWER - TWO-HOUR TEST						
54,02	2200	1100	14,32	17,09	265,1	3,16
3.1.2 POWER AT RATED ENGINE SPEED						
54,02	2200	1100	14,32	17,09	265,1	3,16
3.1.3 STANDARD POWER TAKE-OFF SPEED						
52,05	2000	1000	13,20	15,75	253,6	3,30
3.1.4 PART LOADS (curve a)						
3.1.4.1 the torque corresponding to maximum power at rated engine speed						
54,02	2200	1100	14,32	17,09	265,1	3,16
3.1.4.2 85 % of torque obtained in 4.1						
47,31	2270	1135	12,42	14,82	262,6	3,19
3.1.4.3 75 % of torque obtained in 4.2						
35,79	2286	1143	10,10	12,05	282,2	2,97
3.1.4.4 50 % of torque obtained in 4.2						
23,97	2300	1150	7,91	9,44	330,1	2,54
3.1.4.5 25 % of torque obtained in 4.2						
12,14	2318	1159	5,85	6,98	482,0	1,74
3.1.4.6 unloaded						
-	2340	1170	4,03	4,81	-	-
3.1.5 PART LOADS AT STANDARD POWER TAKE-OFF SPEED (curve b)						
3.1.5.1 the torque corresponding to maximum power						
52,05	2000	1000	13,20	15,75	253,6	3,30
3.1.5.2 85 % of torque obtained in 5.1						
44,72	2024	1012	11,00	13,13	246,0	3,41
3.1.5.3 75 % of torque obtained in 5.2						
34,03	2050	1025	8,89	10,61	261,3	3,21
3.1.5.4 50 % of torque obtained in 5.2						
22,87	2070	1035	6,75	8,05	295,2	2,84
3.1.5.5 25 % of torque obtained in 5.2						
11,60	2090	1045	4,85	5,79	418,1	2,00
3.1.5.6 unloaded						
-	2120	1060	3,32	3,96	-	-

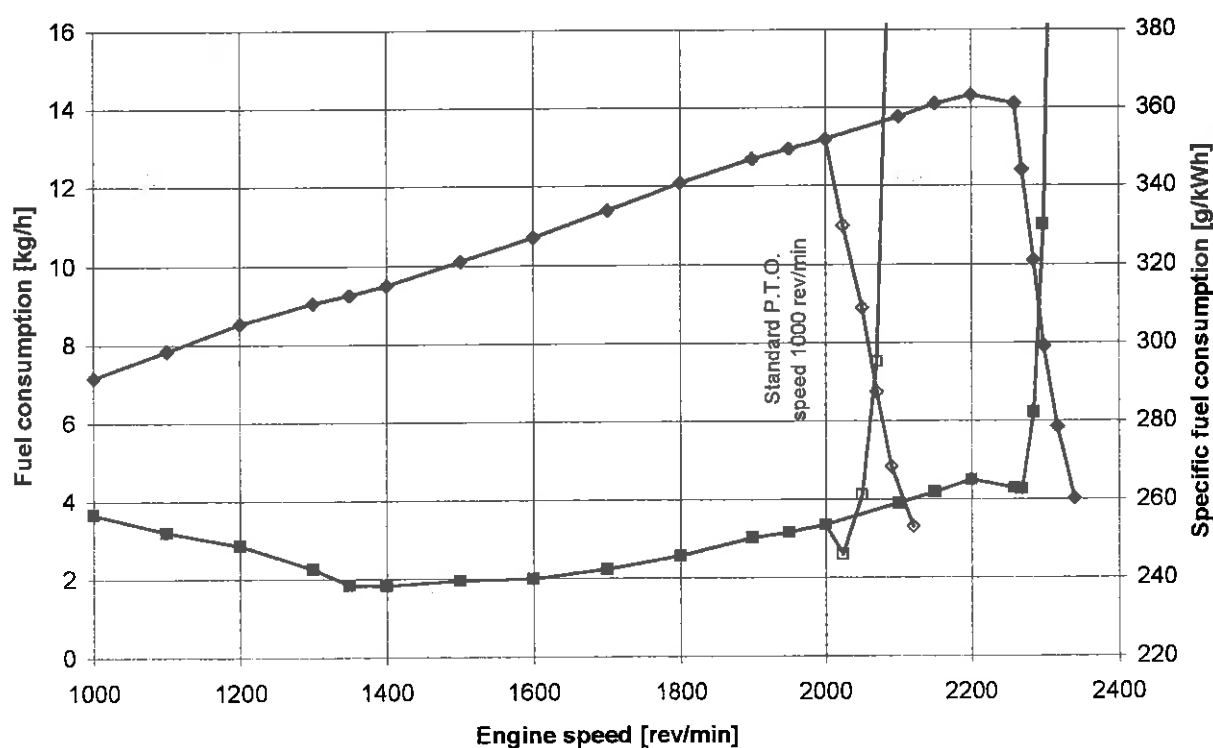
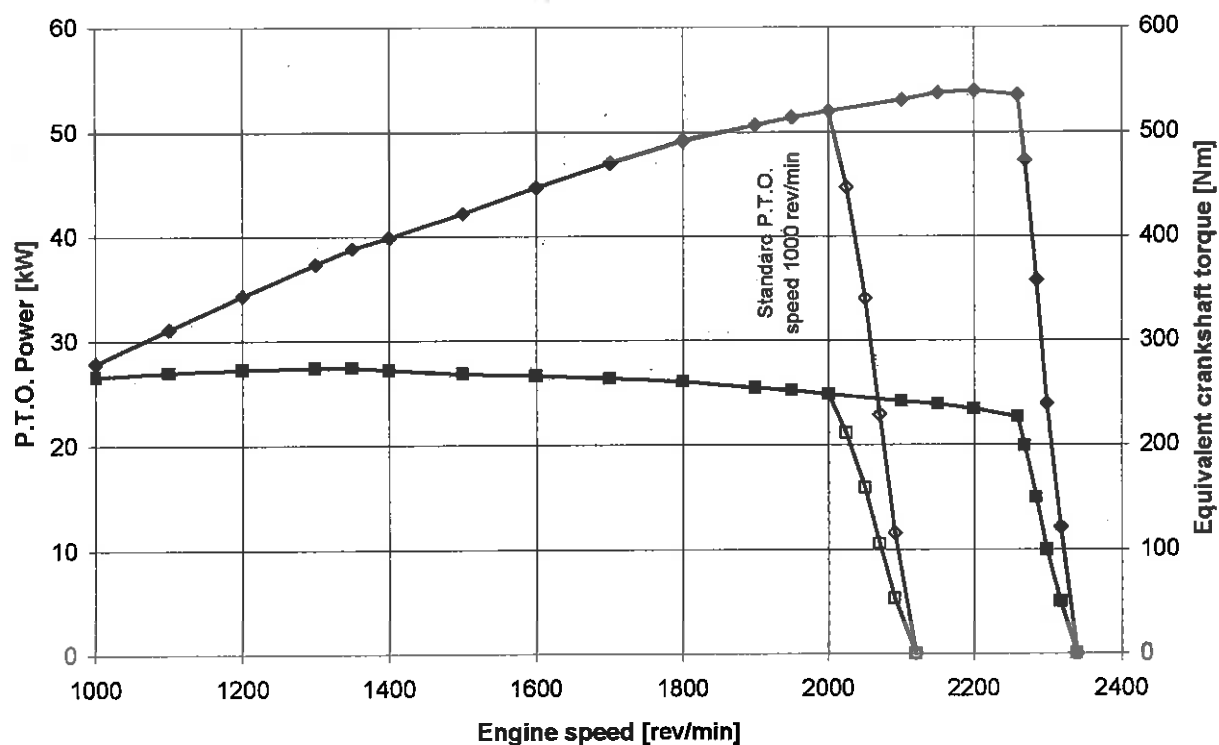


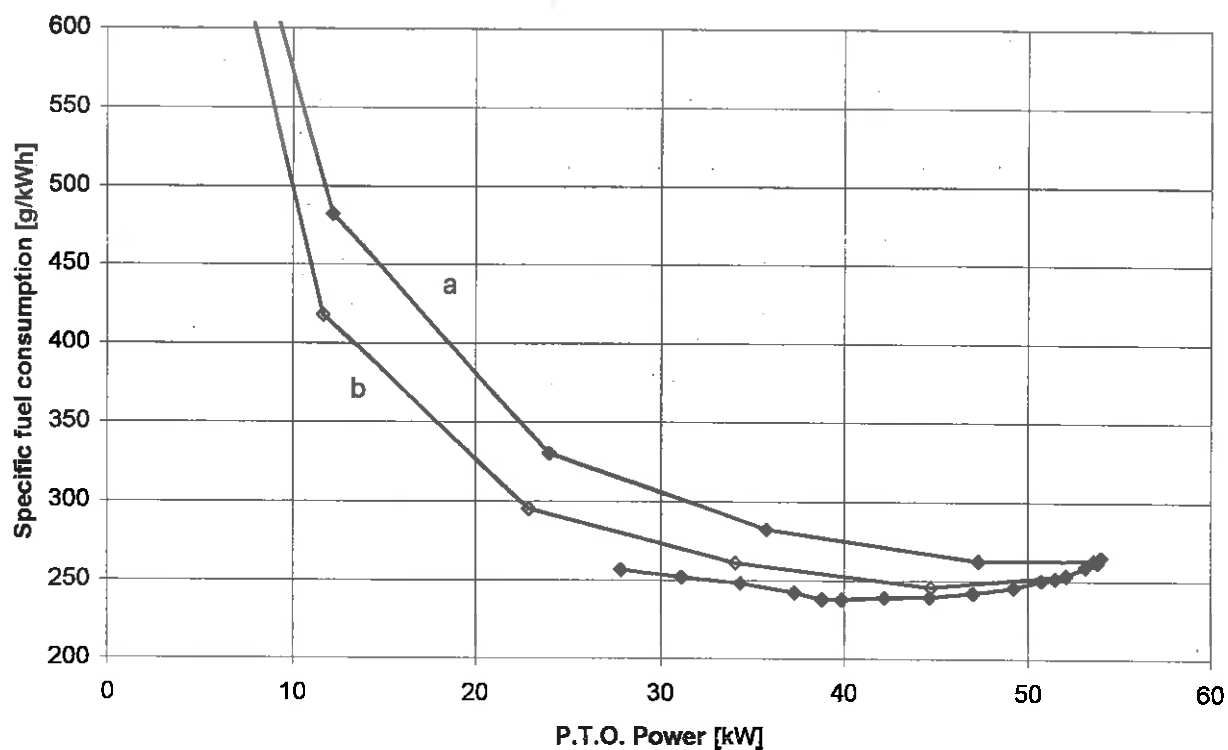
IBMER - Kłodzisko
URSUS 5714 (4WD) – 8 speed version

Test No. ZMT 99-03

- No load maximum engine speed: 2340 rev/min
- Torque (equivalent crankshaft)
 - at maximum power: 23,45 daNm
 - at rated engine speed: 23,45 daNm
 - at standard power take-off speed: 24,85 daNm
- Maximum torque (equivalent crankshaft): 27,45 daNm
(engine speed): 1350 rev/min

Mean atmospheric conditions:	
Temperature:	19° C
Pressure:	1001 hPa
Relative humidity:	55 %
Maximum temperatures:	
Coolant:	88° C
Engine oil:	105° C
Fuel:	35° C
Engine air intake:	23° C







3.2 Hydraulic power and lifting force

- Date of test: 29.09.1999

3.2.1 Hydraulic power test

- Sustained pressure with relief valve open: 21,25 MPa
- Pump stalled: yes
- Pump delivery rate at minimum pressure: 39,00 l/min

	Flow rate l/min	Pressure MPa	Power kW
Flow rate corresponding to a hydraulic pressure equivalent to 90 % of the actual relief valve pressure setting and corresponding hydraulic power	26,38	19,1	8,41
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	33,00	17,5	9,63

- Tapping point used for test: rear
- Temperature of hydraulic fluid: $60 \pm 65^{\circ}\text{C}$
- Opening pressure of the unloading valve: 22,0 MPa
- Closing pressure of the unloading valve: 21,5 MPa

3.2.2 Power lift test

- Linkage settings for test - see Table 2.1 and Figure 1.

	at the hitch point	on the frame
Height of lower hitch points above ground in down position	117 mm	18 mm
Vertical movement	724 mm	976 mm
Maximum corrected force exerted through full range	16,29 kN	9,32 kN
Corresponding pressure of hydraulic fluid	19,35 MPa	19,35 MPa
Moment about rear-wheel axis	-	14,27 kNm
Maximum tilt angle of mast from of vertical	-	14,0 degrees



Lifting heights relative to the horizontal plane including the lower link pivot points														
mm	-465	-400	-366	-300	-200	-100	0	+100	+200	+300	+358	+400	+500	+511
Lifting forces (the values of force measured shall be corrected to correspond to a hydraulic pressure equivalent to 90 % of the actual relief valve pressure setting of the hydraulic lift system)														
at the hitch points in kN	-	-	16,29	16,67	17,66	18,16	18,75	19,14	19,44	19,66	20,13	-	-	-
Corresponding pressure: 19,1 MPa														
at the frame in kN	9,64	9,68	-	10,11	10,65	11,01	10,87	10,74	10,50	10,14	-	9,91	9,38	9,32
Corresponding pressure: 19,1 MPa														



3.3 Drawbar power test (unballasted tractor)

- Date of test: 18.10.1999
 - Type of track: concrete

Gear and range	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 (unballasted tractor)						
1 L	13,69	26,94	1,83	2314	14,4	449,1
2 L	19,98	26,94	2,67	2301	14,4	395,9
3 L	36,07	26,94	4,82	2265	14,4	360,4
4 L	39,95	23,89	6,02	2210	10,7	357,9
1 H	42,18	19,72	7,70	2200	7,4	339,5
2 H	41,65	12,86	11,63	2190	4,3	343,8
3.3.2 FUEL CONSUMPTION						
3.3.2.1 in selected gear, at maximum power at rated speed						
1 H	42,18	19,72	7,70	2200	7,4	339,5
3.3.2.1.1 75 % of pull at maximum power at rated speed						
1 H	33,52	14,79	8,16	2273	5,1	346,1
3.3.2.1.2 50 % of pull at maximum power at rated speed						
1 H	22,81	9,86	8,33	2292	3,9	401,1
3.3.2.1.3 next higher gear at reduced engine speed; same pull and travel -						
2 H	33,52	14,79	8,16	1551	5,1	310,3
3.3.2.1.4 next higher gear at reduced engine speed; same pull and travel -						
2 H	22,81	9,86	8,33	1563	3,9	348,1
3.3.2.2 in selected gear nearest to 7,5 km/h at rated speed						
1 H	42,18	19,72	7,70	2200	7,4	339,5
3.3.2.2.1 75 % of pull at maximum power at rated speed						
1 H	33,52	14,79	8,16	2273	5,1	346,1
3.3.2.2.2 50 % of pull at maximum power at rated speed						
1 H	22,81	9,86	8,33	2292	3,9	401,1
3.3.2.2.3 next higher gear at reduced engine speed; same pull and travel -						
2 H	33,52	14,79	8,16	1551	5,1	310,3
3.3.2.2.4 next higher gear at reduced engine speed; same pull and travel -						
2 H	22,81	9,86	8,33	1563	3,9	348,1



Height of drawbar above ground	Tyre inflation pressure	
	Front	Rear
550 mm	100 kPa	140 kPa

Specific energy kWh/l	Fuel °C	Temperature		Atmospheric conditions		
		Coolant °C	Engine oil °C	Temperature °C	Relative humidity %	Pressure kPa
1,87	35	78	92	14	40	99,5
2,12	35	78	93	14	40	99,5
2,33	34	78	96	14	40	99,5
2,34	35	78	100	14	40	99,5
2,47	33	78	105	14	40	99,5
2,44	35	78	105	14	40	99,5
2,47	35	78	105	14	40	99,5
2,42	33	78	103	14	40	99,5
2,09	32	78	97	14	40	99,5
ling speed as in 3.3.2.1.1						
2,70	33	78	97	14	40	99,5
ling speed as in 3.3.2.1.2						
2,41	35	78	97	14	40	99,5
2,47	33	78	105	14	40	99,5
2,42	34	78	100	14	40	99,5
2,09	34	78	100	14	40	99,5
ling speed as in 3.3.2.2.1						
2,70	32	78	96	14	40	99,5
ling speed as in 3.3.2.2.2						
2,41	32	78	95	14	40	99,5



4 OPTIONAL TEST RESULTS

4.1 Turning area and turning circle

Wheel equipment: front: 11.2 R 24
rear: 16.9 R 30

	With brakes		Without brakes	
	Right-hand	Left-hand	Right-hand	Left-hand
	m	m	m	m
Radius of turning area	4,41 / 3,94	4,40 / 4,04	4,96 / 5,30	5,01 / 5,32
Radius of turning circle	4,27 / 3,80	4,26 / 3,90	4,82 / 5,16	4,87 / 5,18

Four-wheel-drive switched: OFF / ON

4.2 Location of centre of gravity

- Height above ground: 845 mm
- Distance forward from the vertical plane containing the axis of the rear-wheels: 975 mm
- Distance from the median plane of the tractor, right-side 14 mm

4.3 Braking

- Date of test: 28 ÷ 29.10.1999

	Tractor mass (with driver)		
	Front	Rear	Total
	kg		
Ballasted tractor	1525	1920	3445
Unballasted tractor	1270	1765	3035

4.3.1 Cold service braking device test

	Speed before application of brakes	Braking device control force	Mean deceleration
	km/h	daN	m/s ²
Ballasted tractor	29,0	60	4,25
Unballasted tractor	29,0	60	4,47



- Maximum deviation of tractor from his original course: none
- Abnormal vibration: none

4.3.2 Fade test

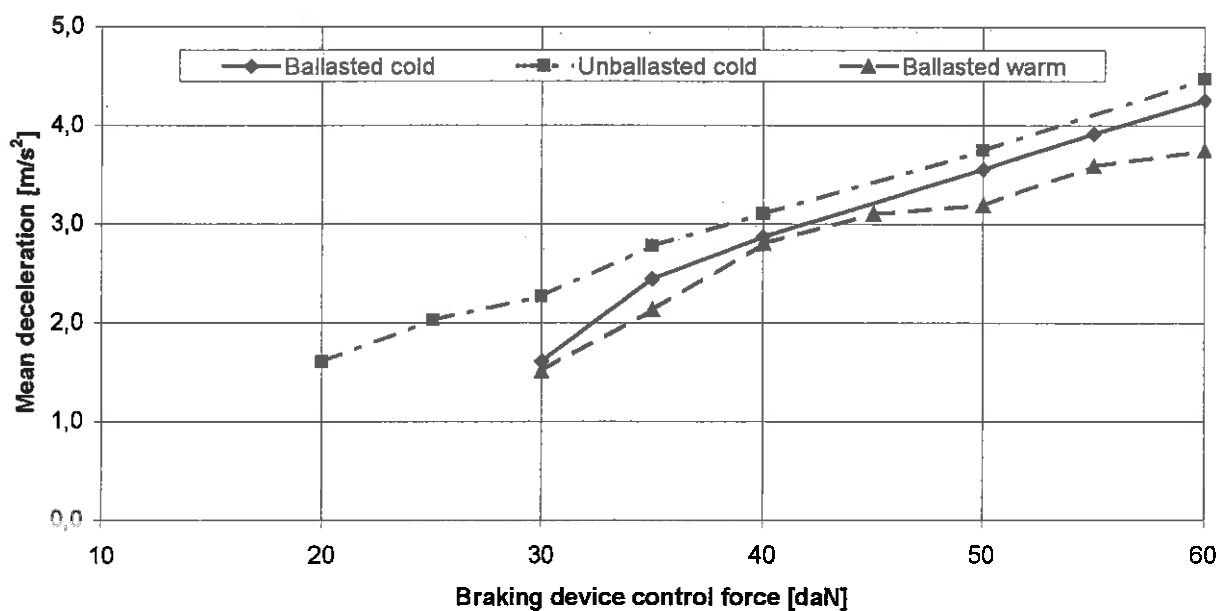
Speed before application of brakes	Braking device control force	Mean deceleration
km/h	daN	m/s ²
29,0	60	3,74

- Maximum deviation of tractor from his original course: none
- 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 1m/s²

4.3.3 Parking braking device test

	Uphill	Downhill
	daN	
Braking device control force	31,0	33,0

Braking test





4.4 Measurement of external noise

- | | |
|--|--------------------|
| - Date of test: | 28.10.1999 |
| - Sound level meter,
Make/Model/Type: | Brüel & Kjaer 2230 |
| - Type of track: | bituminous |
| - Gear number: | 4 H |
| - Travelling speed before
acceleration: | 21,9 km/h |
| - Sound level: | 85,0 dB(A) |

5 REPAIRS

None

6 REMARKS

None

