Prüfstelle für Landmaschinen



REPORT on test in accordance with OECD No. 2/2234
OECD STANDARD CODE 2 for the *23rd March 2005*
Official Testing of Agricultural Tractor Performance

Agricultural Tractor

AGCO RT 100

Manufacturer

AGCO S.A., B.P. 60307, 60026 Beauvais, FRANCE

This is a report on a tractor test in accordance with OECD STANDARD CODE for the Official Testing of Agricultural Tractor Performance (C(2002)17(FINAL) "Red Code", Code 2).

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

Duration of tests: July till October 2004

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: 23rd March 2005 OECD No. 2/2234

Remark: The test of the AGCO RT 100 tractor was performed with the AGCO RT 120 tractor (DLG-test no.: 2004-244).
Details see section "6. Remarks", page 33.

Statement

The information opposite each item has been validated by the Testing Station. An item marked [C] indicates to the test report user that the information declared by the manufacturer has been checked; an item marked [D] indicates that the manufacturer's declaration has been endorsed.

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[C]	Tractor manufacturer's name and address:	AGCO S.A. ZA n°2 BP 60307, Avenue Blaise Pascal 60026 Beauvais Cedex, FRANCE
[C]	Location of tractor assembly:	60026 Beauvais Cedex, FRANCE
[D]	Submitted for test by:	Manufacturer
[C]	Selected for test by:	Manufacturer with agreement by DLG
[D]	Place of running-in:	Beauvais and Gross-Umstadt
[D]	Duration of running-in:	48 h
[C]	Location of test:	DLG-Testing Station, D-64823 Gross-Umstadt

1 SPECIFICATIONS OF TRACTOR

1.1 Identification

1.1.1

[C]	- Make:	AGCO
[C]	- Model:	RT 100
[C]	- Type:	4WD, wheel tractor, unit construction

1.1.2 Numbers

[D]	- 1st serial No.:	n.a.
[C]	- Serial No.:	N119001

1.1.3 Other specifications:

[C]	- Transmission version:	CVT (continue variation transmission), 40 km/h
[D]	- Engine version:	exhaust emission according to TIER2, EPA and guideline 2000/25/EG
[D]	- Technical type number:	G30

1.2 Engine

[C]	- Make/Model/Type:	CUMMINS / 6BTA6.7MECH / water-cooled 4-stroke Diesel-engine, direct injection, supercharged and intercooler (air to air),
[C]	- Serial No.:	AGCORT115.BETA21600364

1.2.1	Cylinders	
[C]	- Number/disposition:	6 / vertical in line
[D]	- Bore/stroke:	104 mm / 134 mm
[D]	- Capacity:	6830 cm^3
[D]	- Compression ratio:	17.5 ± 1 : 1
[D]	- Arrangement of valves:	Overhead valves, 2 per cylinder
[D]	- Cylinder liners:	no
1.2.2	Supercharging	
[D]	- Make / Model / Type:	Holset / HX35W / exhaust driven supercharger with air to air intercooler
[D]	- Pressure	Max. 134 kPa
1.2.3	Fuel system	
[D]	- Fuel feed system:	1 diaphragm fuel supply pump
	- Fuel filter	
[D]	Make/Model:	Fleetguard / n.a.
[C]	Type :	1 replaceable paper element filter
[D]	- Capacity of fuel tank:	300 dm^3
	- Injection pump	
[D]	Make/Model:	BOSCH / VP 30 - 00470006002
[D]	Type:	Rotary
[D]	Serial no.:	3288253
[C]	Manufacturer's production setting:	Standard: 65 ± 3 (boosted: 69 ± 3) mm^3/stroke at full load and rated speed;
[C]	Flow rate:	Standard: 26 ± 0.8 (boosted: 37 ± 0.8) dm^3/h at 2200 min^{-1} and full load
[D]	Timing:	electronically controlled
	- Injectors	
[D]	Make/Model:	BOSCH / B 3288256
[D]	Type :	DSLA mini sac
[D]	Injection pressure:	26 + 1 MPa
1.2.4	Governor	
[D]	- Make/Model/Type:	BOSCH / - / all speed govenor, attached to injection pump
[C]	- Governed range of engine speed:	950 to 2440 min^{-1}
[C]	- Rated engine speed:	2200 min^{-1}

1.2.5	Air cleaner	
	- Pre-cleaner	
[C]	Make/Model:	DONALDSON / -
[C]	Type:	Cyclone, aspirated, pre-cleaner integrated in housing of main cleaner
[C]	Location of air intake:	on the superior hood
	- Main cleaner	
[C]	Make/Model:	DONALDSON / FPG 10
[C]	Type:	Dry paper element filter with additional safety cartridge
[C]	- Maintenance indicator:	Warning light on dashboard
1.2.6		
	Lubrication system	
[D]	- Type of feed pump:	Gear pump
[D]	- Type of filter:	Full flow, replaceable cartridge
[D]	- Number of filters:	1
1.2.7		
	Cooling system	
[C]	- Type of coolant:	Water-anti-freeze mixture
[C]	- Type of pump:	Centrifugal pump
[C]	- Specification of fan	BWCS viscous drive fan, belt driven, variable fan speed controlled by air flow temperature
[C]	Number of fan blades:	9
[C]	Fan diameter:	560 mm
[D]	- Coolant capacity:	24 dm^3
[D]	- Type of temperature control:	Calorstat
	- Superpressure system:	100 kPa

1.2.8	Starting system	
[D]	- Make/Model/Type:	ISKRA / AZF / electrical, solenoid pre-engaged drive starter motor
[C]	- Starter motor power rating:	3 kW
[C]	- Cold starting aid:	Flame glow plug in air intake manifold (Thermostart)
[C]	- Safety device:	Starter only operating when clutch pedal depressed
1.2.9	Electrical system	
[C]	- Voltage:	14 V, negative earth
	- Generator:	
[C]	Make/Model/Type:	ISKRA / AAK5379 / 3-phase alternator
[D]	Power:	1.68 kW
[C]	- Battery:	2 lead acid battery, 12 V / 420 Ah rating at 20 hours
1.2.10	Exhaust system	
[C]	- Make/Model/Type:	AGCO S.A. / 0040 / absorption-reflection type silencer, round 168 mm dia, 1340 mm long
	- Location:	Vertical stack at right A-post of cab, mouth showing upward / forward to the right
1.2.11	Operating hours meter:	Electronic, counts real hours when engine is running

1.3 Transmission

1.3.1		
[D]	Clutch	No clutch in usual sense, pedal fitted, controls the oil flow in hydrostatic drive by valve

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1.3.2 Gear box

[D]	- Make:	FENDT
[D]	- Model:	ML 130
[D]	- Type:	Continue variation transmission with variable power branching in a hydrostatic and a mechanic branch
[D]	- Power flow:	From crankshaft via torsional-vibration damper and primary shaft to the planetary-gear carrier of via the internal gear to the hydrostatic part, and via the sun gear to the mechanical part; both power branches are rejoint on a summation shaft and transmitted by a 2 step range gear to the rear axle
[D]	- Hydrostatic branch:	Acts as travel clutch, as infinitely variable gearbox and as reversing gear; is composed of a variable displacement axial-piston pump and an adjustable axial-piston motor; the axial-piston pump, driven by internal gear of planetary gear train, is hydrostatically coupled to the axial-piston motor; both are adjusted in common according to the following scheme

Travel speed	Displacement angle [°]	
	pump	motor
Min	0	45
Max	45	0

[D]	- Mechanical branch:	Consists of planetary gear train and of 2-step range gear (primary shaft of range gear simultaneously serves as summation shaft); the sun gear of planetary gear train propels the summation shaft; electromechanical change of travelling ranges at travelling speed below 2 km/h by push button

range		travel speed [km/h]	
		forward	reverse
I	heavy use	0-28	0-18
II	fast transport	0-40	0-19

[D]	- Operation:	Power shuttle (located to the left of steering wheel) which controls following functions: - declutching gearbox in position "neutral" - quick reversing (change of driving direction) - the operating speed of gear ratio change may be varied in 4 steps - continuous change of transmission ratio - forward and reverse Hand lever in the right armrest which controls following functions: - continuous change of transmission ratio - forward and reverse Buttons and switches in the right armrest and the right panel which control following functions - automatic control of travelling speed (cruise control) - change of range I/II - engine under-speed supervisor - Various control modes
[D]	- Available options (not fitted):	transmission version CVT, 50 km/h
[C]	- Lubrication:	Oil circuit in common with rear axle drive, air-oil cooler in front of engine water cooler; 1 oil filter in suction line 1 oil filter in pressure line

1.3.3 Rear axle and final drives

[D]	- Make/Model/Type:	FENDT / HA130 / bevel gear drive with bevel gear differential and planetary final drives
	- Differential lock:	
[D]	Type:	Multi-plate lock
[C]	Method of engagement/ disengagement:	Electro-hydraulically operated by switch, disengaged when brakes are actuated; indicator light

1.3.4	Front axle and final drives	
[C]	- Make/Model/Type:	CARRARO / 20.29 / 4WD axle, transmission via wet multi-plate clutch, shaft in median plane of tractor, bevel gear drive, differential with lock, planetary final drives ; clutch electro-hydraulically operated by non locking push button
	- Differential lock:	
[D]	Type:	Wet multi plate lock and additional limited slip multi plate lock
[D]	Method of engagement/ disengagement: respectively automatic	In common with rear axle differential lock,
1.3.5	Total ratios and travelling speeds:	Not applicable, ranges specified in 1.3.2
[D]	Number of revolutions of front wheels for one revolution of rear wheels:	1.327

1.4 Power take-off

1.4.1	Main power take-off	
[C]	- Type:	Independent
[C]	- Method of engagement:	Driven by wet multi-plate clutch with 178 mm dia, electro-hydraulically operated by push buttons; engagement speed controlled by actuation time of push button; additional remote control of p.t.o. clutch on rear mudguards
[C]	- Number of shafts:	1
[C]	- Method of changing power take-off shaft ends and speeds:	Flanged stub shaft, changeable; 2 speeds may be selected by push-button electro-hydraulically

1.4.1.1 Power take-off proportional to engine speed, 540 or 1000 min^{-1} p.t.o.

[C] - Location: At rear of tractor

[C] - Diameter of p.t.o. shaft end: 35 mm

[C] - Number of splines: 6 (540 min^{-1}) in conformity with ISO 500:1991, type 1
21(1000 min^{-1}) in conformity with ISO 500:1991, type 2

[C] - Height above ground: 750 mm

[C] - Distance from the median plane of the tractor: 0 mm

[C] - Distance behind rear wheel axis: 490 mm

	P.t.o. type	P.t.o. transmission ratio	P.t.o. speed min^{-1}	Engine speed min^{-1}	Power restriction kW	Max. torque transmissible Nm
[D]	540	3.82	540 576	2062 2200	75 kW	not specified
[D]	1000	2.03	1000 1083	2030 2200	not specified	

[C] - Direction of rotation (viewed from behind tractor): Clockwise

1.4.1.2

[D] Power take-off proportional to ground speed: None

1.4.2

[D] Optional power take-off: Front p.t.o., independent, not fitted to tractor

1.5 Hydraulic power lift

[C] - Make/Model: AGCO / -

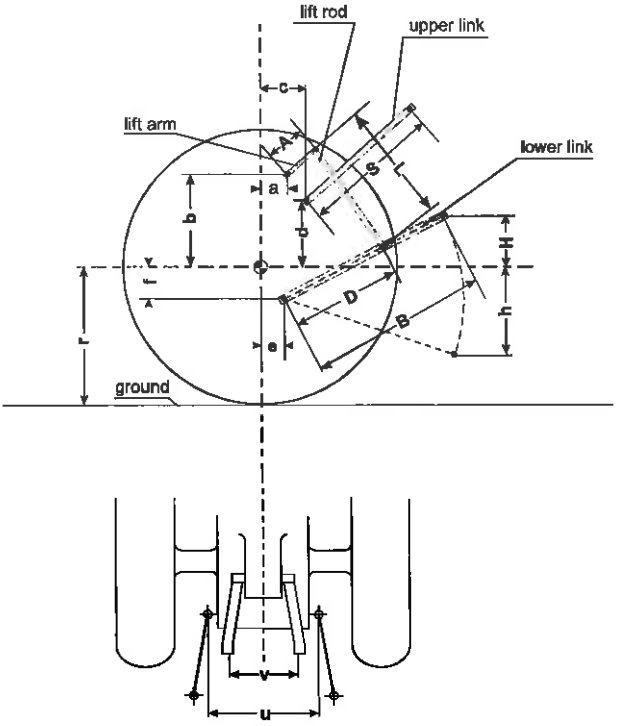
[C] - Type: electronic-hydraulic power lift at rear, desintegrated construction

[C]	- Hydraulic system:	Closed, load sensing, pressure and flow compensated system; supplies rear and front power lift including additional control valves, steering system
[C]	- Rear power lift:	external push buttons left and right on rear mudguards; draft, position and intermixable control; floating position, fast raising (switch with transport lock and button for "vibration damping"), raise limit, lowering throttle, lower link sensing
[C]	- Front power lift:	Optional, not fitted to tractor tested
[C]	- Type and number of cylinders:	2 external cylinders, double acting, 100/90 mm bore (left/right), 247 mm stroke, 40/36 mm piston rod diameter (left/right)
[C]	- Type of linkage lock for transport:	Hydraulic, lowering throttle
[D]	- Relief valve pressure setting:	20.0 + 1.0 MPa
[D]	- Opening pressure of cylinder safety valve:	23.0 + 1.9 MPa
	- Lift pump:	
[D]	- Make:	REXROTH
[D]	- Model:	A10V045 DFR1/52 R
[D]	- Type:	Variable displacement axial-piston pump
[D]	- Transmission between pump and engine:	Independently driven by gear box
[D]	- Type and number of filters:	1, exchangeable filter in return line
[D]	- Site of oil reservoir:	Separate oil reservoir with 80 dm³ volume on right hand side below cab floor
[C]	- Type, number and location of tapping points:	4 double acting, quick-action coupler-pairs at rear of tractor with adjustable flow control
[D]	- Maximum volume of oil available to external cylinders:	60 dm³

1.6 Three-point linkage:

1.6.1 Three-point linkage at rear:

[C]	- Category:	2, in conformity with ISO 730-1/1994 + Cor. 1:1995
[C]	- Category adapter:	None



	Dimensions of rear implement linkage			Projected lengths in mm		
				Dimensions	Settings used in test on page 28	32
[C]	Rear tyres 18.4 R 38 Front tyres 14.9 R 28		(r) *) (r') *)	820 640		
[C]	Length of lift arms		(A)	355		
[C]	Length of lower links		(B)	1030		
[C]	Distance of lift arm pivot points from rear wheel axis	horizontal vertical	(a) (b)	190 295		
[C]	Horizontal distance between the 2 lower link pivot points		(u)	460		
[C]	Horizontal distance between the 2 lift arm end points		(v)	620		
[C]	Length of upper link		(S)	from 670 to 960	740	775
[C]	Distance of upper link pivot point from rear wheel axis	horizontal vertical	(c) (d)	445 / 405 / 365 140 / 230 / 315	445 140	365 315
[C]	Distance of lower link pivot points from rear wheel axis	horizontal vertical	(e) (f)	115 250		
[C]	Distance of lower link pivot points from lift rod pivot points on lower links		(D)	600 / 665	665	665
[C]	Length of lift rods		(L)	from 670 to 790	745	670

Heights (h, H, H') of lower link hitch points relative to rear wheel axis (situated 820 mm above ground), at different adjustments of L

These data are valid for unloaded power lift

[C]	Length of lift rods	(L)	670	790	745	670
[C]	Linkage distance of lift rods	(D)	600 / 665		665	665
[C]	Lowest position	(h)	545 / 470	855/ 710	620	470
[C]	Highest position	(H)	210 / 215	15 / 25	100	210
[C]	Transport position	(H')	210 /215	15 / 25	100	210

*) Assuming r resp. r' = tyre dynamic radius index (in conformity with ISO 4251-1:1998)

1.6.2 [C]	Three-point linkage at front:	Not fitted	
1.7	**Swinging drawbar**		
[C]	- Type:	Longitudinally adjustable in five steps	
[C]	- Height above ground		420 mm
[C]	- Type of adjustment:		
[C]	- Distance of hitch point from rear wheel axis	Horizontal: 750 / 850 / 1010 / 1060 / 1160 mm	
[C]	- Distance of hitch point from p.t.o. shaft end	Vertical: Horizontal: 260 / 360 / 520 / 570 / 670 mm	280 mm
[C]	- Lateral adjustment (centre of clevis)	Right/left hand side:	240 mm
[C]	- Distance of pivot point from rear-wheel axis, horizontally:		400 mm
[C]	- Diameter of drawbar pin hole:		30 mm
[D]	- Maximum permissible vertical load:		18 kN
1.8	**Trailer hitch**	Optionally available, not fitted	
1.9	**Holed drawbar**	Optionally available, not fitted	

1.10	**Steering**	
[D]	- Make/Model/Type:	DANFOSS/ OSPC 160 ON + OVR / hydrostatic steering, acting on front wheels
[C]	- Method of operation:	By steering wheel and cylinder directly acting on steering levers
[D]	Pump:	Gear pump with 35.4 dm³/min delivery at rated engine speed (only if delivery of axial-piston pump of hydraulic circuit is ordered by control valves)
[D]	Ram:	1 integrated ram (symmetrical design) acting on steering levers; 270 mm stroke, 70 mm bore and 38 mm dia of piston rod
[D]	- Working pressure:	15.0 MPa
1.11	**Brakes**	
1.11.1	Service brake	
[D]	- Make/Model/ Type:	FENDT & KNOTT / - / Pedal operated combined muscle / power braking system acting on both axles
	Rear axle brake:	Muscle power brake, 1 wet multi disc brake with 5 discs with 222 mm diameter each on left and right differential half shafts
	Front axle brake:	Power braking system, controlled by relay valve in brake circuit, hydraulically operated; 1 wet multi disc brake on drive shaft to front axle; 5 discs with 222 mm dia
[C]	- Method of operation:	Pedal operated, hydraulic transmission
[C]	-Trailer braking take-off:	None
1.11.2	Parking brake	
[D]	- Type:	Mechanical brake, acting on rear axle
[C]	- Method of operation:	Operated by lever

1.12 Wheels

[C] - Number

Front:	2, driving and steering
Rear:	2, driving

[C] - Wheelbase: 2780 mm

[D] - Track width adjustment:

	Minimum mm	Maximum mm	Adjustment method
Front	1610	1844	Adjustable gauge-bowl rims
Rear	1760	1890	Adjustable gauge-bowl rims

1.13 Protective structure

[C] - Make/Model/Type: MASSEY FERGUSON / 6003 S3 / Cab

[C] - Manufacturer's name and address: AGCO S.A., ZA N°2 BP 60307
Avenue Blaise Pascal, 60026 Beauvais Cedex
FRANCE

- Protective device

[C] Cab: Safety cab with integrated safety frame; welded and screwed profile steel tube construction; sound- and vibration insulated;
cab supports:
at front by rubber absorbers; at rear by pneumatic damping fixed to the rear axle; 1 door and 3 steps each at the left and right side; rear window and side window to open; water-heating, ventilation system, air conditioner

[C] Tiltable / not tiltable: Not tiltable

- OECD approval

[D] Approval number: 4/0 765

[D] Date of approval: March 11th, 2003

[D] Nos. minor modification certificates, if any: 1

1.14 Seat

1.14.1	Driver's seat	Fitted to tractor
[C]	- Make/Model:	Grammer / MSG 95G / 741
[C]	- Type:	Air suspended upholstered seat with backrest and armrests
[C]	- Seat and steering wheel reversible:	No
[C]	- Type of suspension:	Pneumatic
[C]	- Type of damping:	Hydraulic
	- Range of adjustment	
[C]	Longitudinal:	200 mm
[C]	Vertical:	400 to 590 mm
[C]	- Safety belt:	Yes
1.14.2	Optional driver's seats	
[D]	- Make/Model/Type:	Grammer / MSG 85/731; MSG 95A/731 / mechanical suspension or pneumatic suspension
1.14.3	Passenger seat:	
[C]		Optional, fitted to tractor tested

1.15 Lighting

Electrical, 12 Volt, according to US legislation

		Height above ground of centre mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
[C]	Headlights	1280	160 x 100	195
[C]	Side Lights	2765	140 x 75	930
[C]	Rearlights	1840	Ø 120	1015
[C]	Reflectors, 1st pair	1800	Ø 55	810
	2nd pair	740	100 x60	600

2. TEST CONDITIONS

2.1 Overall dimensions

	Length	Width (track width as in 2.5)	Height at top of	
			protective structure	exhaust silencer pipe
	mm	mm	mm	mm
Unballasted	4670	2250	2900	2915

2.2 Ground clearance

370 mm

- Clearance-limiting part: Bracket of swinging drawbar

2.3 Tractor mass

- Unballasted (with cab)

	Without driver kg	With driver kg
Front	2330	2355
Rear	4500	4550
Total	6830	6905

2.4 Track specifications

Not applicable

2.5 Tyres and track widths specifications

	Front	Rear
Tyres:	Goodyear Super Traction	Goodyear Super Traction
- Dimensions	14.9 R 28	18.4 R 38
- Load index speed index	128 A8	146 A8
- Type	radial	radial
- Maximum load (tyre manufacturer's)	18.00 kN*)	30.00 kN*)
- Maximum load (tractor manufacturer's)	18.00 kN	30.00 kN
at travelling speed	40 km/h	40 km/h
at tyre inflation pressure	160 kPa	160 kPa
dynamic radius index	640 mm	820 mm
Chosen track width:	1700 mm	1890 mm

*) With other tyres higher load capacity possible

2.6 Fuel

- Type:	ARAL-Diesel-fuel, in conformity with DIN 51601	
- Density at 15°C:	At p.t.o. tests	0.8318 g/cm³
	at drawbar power test	0.8379 g/cm³

2.7 Oils and lubrication

2.7.1 Capacity and change interval

	Capacity dm³	Oil change h	Filter-change h
Engine	20	400	400
Gear box and rear axle	58	1200	400
Front axle	6	800	-
Rear axle	in common with gearbox		
Final drives (front each)	1.5	800	-
Final drives rear (each)	13	1200	-
Hydraulic system	100	1200	1200

2.7.2 Specifications:

	Specified	Used during test
Engine	BP	BP
Type	Full-Year Engine oil	
Viscosity	SAE 10W/30, 10W/40 SAE 15W/30 or 15W/40	10W/40
Classification	API-CH4	API-CH4
Gearbox Rear axle drive	BP	BP
Type	Super-Tractor-Oil-Universal STOU	
Viscosity	SAE 10W/40, 15W/40	10W/40
Classification	API-GL4	API-GL4
Rear axle final drives	BP	BP
Type	Hypoid-Gear-Oil	
Viscosity	SAE 85W/90	85W/90
Classification	API-GL5	API-GL5
Front axle drive Front axle final drives	BP	BP
Type	Hypoid-Gear-Oil	
Viscosity	SAE 85W/140	85W/140
Classification	API-GL5	API-GL5
Hydraulic system	BP	BP
Type	STOU	
Viscosity	SAE 10W/40	10W/40
Classification	API-CH4	API-CH4

2.7.3 Grease Multi purpose grease TERRAC CHARGE

- Number of lubrication points: 15

3 COMPULSORY TESTS

3.1 Main power take off performance

Date of tests: 2004-09-21
Location of tests: DLG-Testing Station Groß-Umstadt
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power	Speed			Fuel consumption			Specific
	Engine	P.t.o.	Fan	hourly		specific	energy
kW	min^{-1}	min^{-1}	min^{-1}	kg/h	dm^3/h	g/kWh	kWh/dm^3

Maximum power

3.1.1 At 2-hour test

77.8	2034	1000	1653	20.61	24.78	265	3.14

3.1.2 At rated speed

76.2	2199	1081	2004	21.89	26.32	287	2.90

3.1.3 At standard p.t.o. speed

77.8	2034	1000	1653	20.61	24.78	265	3.14

3.1.4 Part loads, the governor hand lever in the position corresponding to maximum power at full load (curve a)

3.1.4.1 the torque corresponding to maximum power at rated speed

76.2	2199	1081	2004	21.89	26.32	287	2.90

3.1.4.2 85% of the torque obtained in 3.1.4.1

67.1	2276	1119	1935	20.70	24.89	308	2.70

3.1.4.3 75% of the torque defined in 3.1.4.2

50.7	2294	1128	1927	17.65	21.22	348	2.39

3.1.4.4 50% of the torque defined in 3.1.4.2

34.4	2335	1148	1900	14.70	17.67	427	1.95

3.1.4.5 25% of the torque defined in 3.1.4.2

17.6	2376	1168	1844	11.37	13.67	646	1.29

3.1.4.6 unloaded

-	2420	1189	1757	8.32	10.01	-	-

Power	Speed		Fan	Fuel consumption			Specific
	Engine	P.t.o.		hourly		specific	energy
kW	min^{-1}	min^{-1}	min^{-1}	kg/h	dm^3/h	g/kWh	kWh/dm^3

3.1.5 Part loads, the governor hand lever in the position corresponding to standard p.t.o. speed at full load (curve b)

3.1.5.1 the torque corresponding to maximum power

77.8	2034	1000	1653	20.61	24.78	265	3.14

3.1.5.2 85% of the torque obtained in 3.1.5.1

66.8	2050	1008	1736	18.30	22.00	274	3.04

3.1.5.3 75% of the torque defined in 3.1.5.2

50.4	2071	1018	1902	16.22	19.50	322	2.58

3.1.5.4 50% of the torque defined in 3.1.5.2

34.8	2136	1050	1384	12.53	15.06	360	2.31

3.1.5.5 25% of the torque defined in 3.1.5.2

17.7	2185	1074	1462	9.55	11.48	540	1.54

3.1.5.6 unloaded

-	2230	1096	1383	6.68	8.03	-	-

OPTIONAL RESULTS

Power kW	Speed Engine min^{-1}	Speed P.t.o. min^{-1}	Fan min^{-1}	Fuel consumption hourly kg/h	Fuel consumption hourly dm³/h	Fuel consumption specific g/kWh	Specific energy kWh/dm³
3.1.6 Part loads at different engine speeds							
3.1.6.1 maximum power at rated engine speed							
76.2	2199	1081	2004	21.89	26.32	287	2.90
3.1.6.2 80% of power obtained in 3.1.6.1 at max. speed setting							
61.1	2288	1125	1792	19.54	23.49	320	2.60
3.1.6.3 80% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
60.9	1979	973	1308	16.38	19.69	269	3.09
3.1.6.4 40% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
30.4	1985	976	1581	10.94	13.15	360	2.31
3.1.6.5 60% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
45.7	1318	648	961	10.81	13.00	237	3.52
3.1.6.6 40% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
30.3	1314	646	985	7.94	9.55	262	3.17

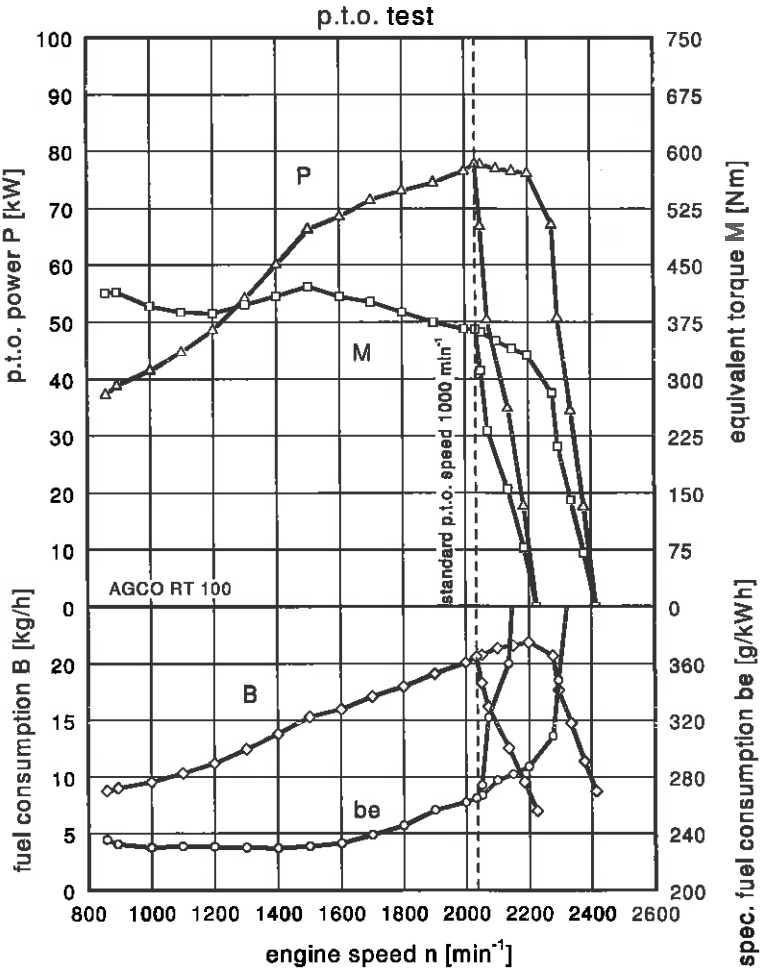
No load maximum engine speed:	2420	min^{-1}
Equivalent flywheel torque at rated engine speed:	331	Nm
Equivalent flywheel torque at 2-hour test:	365	Nm
at engine speed:	2034	min^{-1}
Maximum equivalent flywheel torque:	422	Nm
at engine speed:	1501	min^{-1}

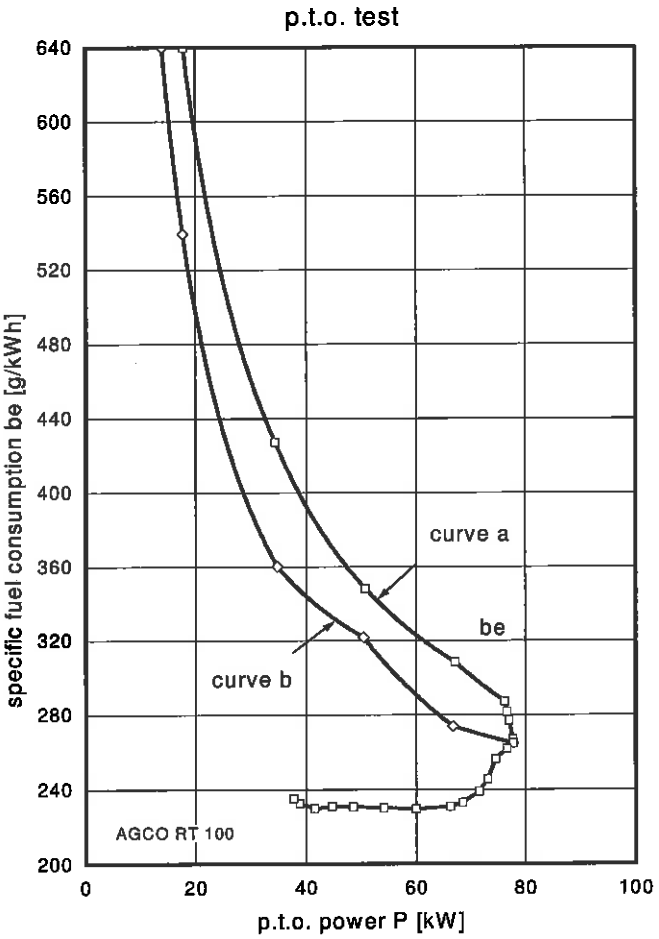
Mean atmospheric conditions

temperature:	22	°C
pressure:	99.8	kPa
relative humidity:	35	%

Maximum temperatures

coolant:	68	°C
oil:	106	°C
fuel:	45	°C
air intake:	23	°C


p.t.o. test
p.t.o. power P [kW]
equivalent torque M [Nm]
fuel consumption B [kg/h]
spec. fuel consumption be [g/kWh]
engine speed n [min-1]
P
M
B
be
AGCO RT 100
standard p.t.o. speed 1000 min-1
100
90
80
70
60
50
40
30
20
10
0
750
675
600
525
450
375
300
225
150
75
0
360
320
280
240
200
800
1000
1200
1400
1600
1800
2000
2200
2400
2600


p.t.o. test
specific fuel consumption be [g/kWh]
640
600
560
520
480
440
400
360
320
280
240
200
0
20
40
60
80
100
p.t.o. power P [kW]
curve a
be
curve b
AGCO RT 100

3.2 HYDRAULIC POWER AND LIFTING FORCE

- Date of tests: 23rd September 2004

3.2.1 Hydraulic power test

3.2.1.1 Hydraulic fluid data

- Hydraulic fluid type:	STOU
- Viscosity index (ISO 3448+Corr 1:1993):	SAE 10W/40
- Viscosity at 65°C:	34 cst

3.2.1.2 Compulsory Reporting (Test Results):

	Pressure	Reservoir oil Temperature °C (65°C traget)		Engine speed	Flow rate	Power
		Min.	Max.			
	MPa	°C	°C	min^{-1}	l/min	kW
Rated Engine Speed *(Manufacturers Specification)*	-	-	-	2200	-	-
3.2.1.2.1 Maximum (sustained) pressure with relief valve open as measured at the coupler Pump stalled: No	20.0	69	70	2441	-	-
3.2.1.2.2 Flow rate corresponding to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting and corresponding hydraulic power	18.0	74 [1)] 68 [2)]		2375 [1)] 2349 [2)]	77.9 [1)] 114.8 [2)]	23.4 [1)] 34.6 [2)]
3.2.1.2.3 Maximum available flow and maximum power from one coupler pair	3.6 16.4	61 70		2439 2361	110.5 107.9	- 29.6
3.2.1.2.4 Maximum available flow and maximum power from coupler pairs operating simultaneously (flow through two or more coupler pairs if required)	1.7 18.9	63 68		2440 2348	127.4 110.8	- 34.9

- Tapping point used for test: At rear of tractor, [1)] 1 double acting control valve
  [2)] 2 double acting control valves parallel connection

3.2.2 Power lift test at rear power lift

Linkage settings for test - see on page 14

	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	715 mm 706 mm	900 mm 885 mm
Max. corrected force exerted through full range	61.30 kN	48.55 kN
Corresponding pressure	18.0 MPa	
Moment about rear axle	70.20 kNm	85.19 kNm
Max. tilt angle of mast from vertical	-	12°

Lifting heights relative to horizontal lower links												
mm	-460	-370	-300	-200	-100	0	100	200	300	336	400	420
Lifting forces at hitch points, corrected to 18.0 MPa												
kN		61.30	63.10	66.20	69.35	72.50	76.45	78.40	77.25	76.05		
Lifting forces at standard frame, corrected to 18.0 MPa												
kN	54.55		55.30	56.35	56.35	56.70	56.70	56.35	54.20		50.30	48.55

3.3 DRAWBAR POWER TEST (unballasted tractor)

Date of tests: 7th and 8th October 2004
Type of track: Concrete

	Height of drawbar above ground	Tyre inflation pressure Front	Rear
Unballasted	430 mm	80 kPa	80 kPa

3.3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor)

Gear number and range	Power kW	Drawbar pull kN	Speed km/h	Engine speed min^{-1}	Slip of wheels %	Fan speed min^{-1}	Specific fuel consumption g/kWh	Specific energy kWh/dm³	Temperature Fuel °C	Coolant °C	Engine oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure kPa
I	41.6	66.13	2.26	2285	15.0	1790	492	1.70	37	64	110	22	34	100.0
I	48.0	66.43	2.60	2099	14.9	1834	441	1.90	36	65	110	22	34	100.0
I	59.0	63.64	3.34	2046	6.5	1796	348	2.41	36	64	109	22	35	100.0
I	62.2	57.97	3.86	2038	4.9	1644	329	2.55	35	65	109	21	36	100.0
I	63.0	54.60	4.15	2043	4.2	1747	326	2.57	33	63	106	22	34	100.1
I	64.7	47.59	4.90	2038	3.2	1537	318	2.63	32	64	102	20	37	100.2
I	63.7	40.66	5.64	2035	2.7	1902	322	2.60	35	64	109	20	49	100.1
I	64.3	35.54	6.52	2034	2.2	1784	319	2.63	34	64	109	19	52	100.1
I	66.7	33.47	7.17	2035	1.7	1301	311	2.69	31	68	112	11	69	100.1
I	66.3	29.18	8.18	2035	1.8	1358	312	2.69	34	69	114	12	68	100.1
I	66.1	25.24	9.42	2037	1.7	1356	313	2.68	33	68	114	12	68	100.1
I	65.0	21.70	10.78	2036	1.5	1507	318	2.63	33	68	112	17	62	100.1
I	63.6	18.54	12.35	2036	1.3	1527	324	2.58	34	67	112	17	60	100.1

AGCO RT 100 **DLG-Test No. 2004-245**

Gear Number and range	Power	Drawbar pull	Speed	Engine speed	Slip of wheels	Fan speed	Specific fuel consumption	Specific energy	Temperature			Atmospheric conditions		
									Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
	kW	kN	km/h	min^{-1}	%	min^{-1}	g/kWh	kWh/dm^3	°C	°C	°C	°C	%	kPa
I	62.4	16.06	13.99	2034	1.2	1555	329	2.54	34	67	112	17	59	100.1
I	61.1	13.23	16.61	2037	1.0	1482	337	2.48	34	67	112	17	61	100.1
II	64.1	25.96	8.89	2040	1.7	1645	320	2.62	38	66	111	21	34	100.0
II	63.9	23.70	9.72	2040	1.6	1670	320	2.61	37	67	108	22	31	100.0
II	63.4	21.81	10.47	2038	1.5	1690	323	2.60	38	67	110	20	36	100.0
II	63.5	18.34	12.46	2037	1.3	1624	322	2.60	38	67	111	20	34	100.0
II	64.2	16.01	14.44	2035	0.8	1291	324	2.59	26	66	108	26	90	99.7
II	63.8	14.71	15.63	2035	0.7	1349	326	2.57	28	67	111	22	83	99.7

AGCO RT 100 **DLG-Test No. 2004-245**

Gear number and range	Power	Drawbar pull	Speed	Engine speed	Slip of wheels	Fan speed	Specific fuel consumption	Specific energy	Temperature			Atmospheric conditions		
									Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
	kW	kN	km/h	min^{-1}	%	min^{-1}	g/kWh	kWh/dm^3	°C	°C	°C	°C	%	kPa
	FUEL CONSUMPTION													
3.3.2.1	In selected gear, at maximum power at rated speed													
I	66.2	25.91	9.20	2201	1.1	1605	337	2.49	24	62	109	10	49	100.2
3.3.2.1.1	75 % of pull at maximum power at rated speed													
I	52.1	19.34	9.69	2297	0.8	1669	384	2.18	25	62	110	10	47	100.2
3.3.2.1.2	50 % of pull at maximum power at rated speed													
I	35.0	12.77	9.87	2315	0.5	1731	479	1.75	25	60	109	10	48	100.2
3.3.2.1.3	Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.1.1													
I	51.9	19.36	9.66	1998	0.8	1311	331	2.53	26	62	107	11	47	100.2
3.3.2.1.4	Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.1.2													
I	35.0	12.78	9.84	2015	0.6	1305	397	2.11	26	62	108	12	46	100.2
3.3.2.2	In selected gear nearest to 7.50 km/h at rated speed													
I	66.8	31.00	7.76	2201	1.4	1540	332	2.53	31	67	113	12	75	99.7
3.3.2.2.1	75 % of pull at maximum power at rated speed													
I	52.8	23.19	8.19	2296	0.9	1635	374	2.24	31	67	114	11	72	99.8
3.3.2.2.2	50 % of pull at maximum power at rated speed													
I	35.3	15.24	8.35	2318	0.5	1654	466	1.80	31	66	113	11	72	99.8
3.3.2.2.3	Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.1													
I	52.5	23.06	8.19	1994	1.0	1217	323	2.60	31	66	112	10	74	99.8
3.3.2.2.4	Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.2													
I	36.0	15.28	8.47	2031	0.4	1195	383	2.19	32	68	112	10	74	99.8

4 ADDITIONAL TESTS under the responsibility of the DLG Testing Station

Not covered by the approval.

4.1 Power lift test at rear power lift - Maximum Lifting Force (short lift rods):

- Linkage settings for test - see on page 14

	At the hitch points	On the frame
Height of lower hitch points above ground in down position	350 mm	
Vertical movement without lifting forces	680 mm	732 mm
with lifting forces	658 mm	692 mm
Max. corrected force exerted through full range	65.25 kN	63.05 kN
Corresponding pressure	18.0 MPa	
Moment about rear axle	74.70 kNm	110.70 kNm
Max. tilt angle of mast from vertical	-	5°

Lifting heights relative to horizontal lower links												
mm	-250	-220	-200	-100	0	100	200	300	400	438	442	
Lifting forces at hitch points, corrected to 18.0 MPa												
kN		65.25	65.65	67.60	71.35	74.50	78.40	80.95	80.75	79.40		
Lifting forces at standard frame, corrected to 18.0 MPa												
kN	66.80		67.60	68.40	68.95	69.75	70.35	69.75	65.65		63.10	

5	**REPAIRS**	**None**
6	**REMARKS**	The engine of the tractor AGCO RT 100 has two different injection pump characteristics.

- **Standard**, for heavy drawbar work (forward speeds below 15 km/h) and also for PTO-operation with standing tractor or forward speed below 8 km/h

- **Power boosted**, for transport work at forward speeds higher than about 15 km/h and for PTO work at forward speeds higher than about 8 km/h. In this mode the maximum fuel injection at high engine speeds is increased.

The electronic engine control device of the RT 120 model was replaced by the RT 100 module and all relevant measurements were repeated. All other specifications of the models RT 120 and RT 100 are identical.

Head of Vehicle Technology

Dipl.-Ing. (FH) Ottmar Degrell

Test carried out by

Dipl.-Ing. (FH) Thomas Feuerstein

Date: 30th March, 2005



AGCO RT 100 **DLG-Test No. 2004-245**



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