DLG-Testzentrum Technik und Betriebsmittel



OECD No. 2/2323/1

Date of Approval: 9th March 2006
Date of Approval -Extension-: 05th May 2006

REPORT on test in accordance with
OECD STANDARD CODE 2 for the
Official Testing of Agricultural Tractor Performance

Agricultural Tractor

Massey Ferguson 8470

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: May till June 2005

DLG-Test Centre Technology and Farm Inputs, 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: 9th March 2006 OECD No.: 2/2323

For the extension report:

Date of Approval: 05th May 2006

No. of Approval: 2/2323/1

The manufacturer requested an extension report because:

The manufacturer offers the MF 8470 as a stepless version and for special markets also as a stepshift version. In case of a stepshift version the continuously variable transmission of the tractor MF 8470 has been modified into a gear box with stepshifts by a special electronic control unit. The driver can change the transmission ratio from step to step by the hand lever in the armrest or by power shuttle (located to the left of steering wheel).
The specification of the tractors is the same. Only the software of the gear box is different. All the test results of OECD test report 2/2323 are valid for the extended model.

Remark: The test of the Massey Ferguson 8470 tractor was performed with the Massey Ferguson 8480 tractor (DLG test no.: 2005-060).
Details see section "6. Remarks", page39.

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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Massey Ferguson 8470 **DLG-Test No. 2005-059**

[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:	80 h
[C]	Location of test:	DLG-Testing Station, D-64823 Gross-Umstadt

1 SPECIFICATIONS OF TRACTOR

1.1 Identification

1.1.1

[C]	- Make:	Massey Ferguson
[C]	- Model:	8470
[C]	- Type:	4WD, wheel tractor, unit construction

1.1.2 Numbers

[D]	- 1st serial No.:	N.A.
[C]	- Serial No.:	N167999

1.1.3 Other specifications:

[C]	- Transmission version:	DynaVT, 40 km/h
[D]	- Engine version:	exhaust emission according to TIER2, EPA and guideline 2000/25/EG
[D]	- Technical type number:	Y26

1.2 Engine

[C]	- Make/Model/Type:	SISU DIESEL / 84.329 ETA / water-cooled 4-stroke Diesel-engine, direct injection, supercharged and intercooler (air to air),
[C]	- Serial No.:	P08256

1.2.1	Cylinders	
[C]	- Number/disposition:	6 / vertical in line
[D]	- Bore/stroke:	111 mm / 145 mm
[D]	- Capacity:	8419 cm^3
[D]	- Compression ratio:	17.5 ± 0.5 : 1
[D]	- Arrangement of valves:	Overhead valves, 2 per cylinder
[D]	- Cylinder liners:	Wet
1.2.2	Supercharging	
[D]	- Make / Model / Type:	BORG WARNER / S2B / exhaust driven supercharger with air to air intercooler
[D]	- Pressure	Max. 150 kPa
1.2.3	Fuel system	
[D]	- Fuel feed system:	1 electrical fuel supply pump
	- Fuel filter	
[D]	Make/Model:	STANADYNE / fuel manager
[C]	Type :	2 replaceable paper element filter
[D]	- Capacity of fuel tank:	600 dm^3
	- Injection pump	
[D]	Make/Model:	BOSCH / VP 44 – 0470506042
[D]	Type:	Rotary
[D]	Serial no.:	N.A.
[C]	Manufacturer's production setting:	137 ± 2 mm^3/stroke at full load and rated speed;
[C]	Flow rate:	54 ± 0.8 dm^3/h at 2200 min^{-1} and full load
[D]	Timing:	electronically controlled
	- Injectors	
[D]	Make/Model:	STANADYNE / M33876
[D]	Type :	Multi hole
[D]	Injection pressure:	27 ± 0.8 MPa
1.2.4	Governor	
[D]	- Make/Model/Type:	SISU DIESEL / EEM2 / electronically driven all speed governor
[C]	- Governed range of engine speed:	800 to 2349 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 / SRB 13
[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:	Electrical pump
[D]	- Type of filter:	Full flow, replaceable paper 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:	11
[C]	Fan diameter:	715 mm
[D]	- Coolant capacity:	34 dm^3
[D]	- Type of temperature control:	Calorstat
	- Superpressure system:	50 kPa

1.2.8	Starting system	
[D]	- Make/Model/Type:	AET Phillips & Temro / EEM2 / electrical, solenoid pre-engaged drive starter motor
[D]	- Starter motor power rating:	3 kW
[C]	- Cold starting aid:	Grid heater
[C]	- Safety device:	Starter only operating when clutch pedal depressed
1.2.9	Electrical system	
[C]	- Voltage:	12 V, negative earth
	- Generator:	
[C]	Make/Model/Type:	ISKRA / AAN 5125 3-phase alternator
[D]	Power:	n.a.
[C]	- Battery:	2 lead acid battery, 12 V / 480 Ah rating at 20 hours
1.2.10	Exhaust system	
[C]	- Make/Model/Type:	AGCO S.A. / 0037 / absorption-reflection type silencer, round 200 mm dia, 1340 mm long
[C]	- Location:	Vertical stack at right A-post of cab, mouth showing upward / forward to the right
1.2.11		
[D]	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 200
[D]	- Type:	Continue variation transmission with stepshifts and variable power branching in a hydrostatic and a mechanic branch; special electronic control unit modifies the cvt into a gear box with stepshifts; ratios electronically selected by lever
[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 "turtle"	heavy use	0-28	0-18
II "rabbit"	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 - change of of transmission ratio step by step - forward and reverse Hand lever in the right armrest which controls following functions: - change of transmission ratio step by step - 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 turtle-rabbit - engine under-speed supervisor - Various control modes
[D]	- Available options (not fitted):	Transmission version DynaVT, 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 / HA260 / 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: DANA / AG 280 / 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: Ranges specified in 1.3.2

	Range	Gear	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed*) at rated engine speed of 2200 min^{-1} km/h
	Forward Speed			
[D]	Turtle	1	440.03	1.8
[D]	Turtle	2	360.03	2.2
[D]	Turtle	3	304.64	2.6
[D]	Turtle	4	264.02	3.0
[D]	Turtle	5	232.96	3.4
[D]	Turtle	6	208.44	3.8
[D]	Turtle	7	188.59	4.2
[D]	Turtle	8	165.01	4.8
[D]	Turtle	9	146.68	5.4
[D]	Turtle	10	132.01	6.0
[D]	Turtle	11	116.48	6.8
[D]	Turtle	12	101.55	7.8
[D]	Turtle	13	88.01	9.0
[D]	Turtle	14	76.16	10.4
[D]	Turtle	15	67.12	11.8
[D]	Turtle	16	59.11	13.4
[D]	Turtle	17	51.43	15.4
[D]	Turtle	18	44.50	17.8
[D]	Turtle	19	38.45	20.6
[D]	Turtle	20	33.28	23.8
[D]	Turtle	21	28.91	27.4

[D]	Rabbit	1	208.44	3.8
[D]	Rabbit	2	188.59	4.2
[D]	Rabbit	3	165.01	4.8
[D]	Rabbit	4	146.68	5.4
[D]	Rabbit	5	132.01	6.0
[D]	Rabbit	6	116.48	6.8
[D]	Rabbit	7	104.22	7.6
[D]	Rabbit	8	92.10	8.6
[D]	Rabbit	9	82.51	9.6
[D]	Rabbit	10	74.72	10.6
[D]	Rabbit	11	67.12	11.8
[D]	Rabbit	12	60.00	13.2
[D]	Rabbit	13	53.52	14.8
[D]	Rabbit	14	47.71	16.6
[D]	Rabbit	15	42.13	18.8
[D]	Rabbit	16	37.01	21.4
[D]	Rabbit	17	32.73	24.2
[D]	Rabbit	18	28.91	27.4
[D]	Rabbit	19	25.39	31.2
[D]	Rabbit	20	22.37	35.4
[D]	Rabbit	21	19.70	40.2
	Reverse Speed			
[D]	Turtle	1	440.03	1.8
[D]	Turtle	2	360.03	2.2
[D]	Turtle	3	304.64	2.6
[D]	Turtle	4	264.02	3.0
[D]	Turtle	5	232.96	3.4
[D]	Turtle	6	208.44	3.8
[D]	Turtle	7	188.59	4.2
[D]	Turtle	8	165.01	4.8
[D]	Turtle	9	146.68	5.4
[D]	Turtle	10	132.01	6.0
[D]	Turtle	11	116.48	6.8
[D]	Turtle	12	101.55	7.8
[D]	Turtle	13	88.01	9.0
[D]	Turtle	14	76.16	10.4
[D]	Turtle	15	67.12	11.8
[D]	Turtle	16	59.11	13.4
[D]	Turtle	17	51.43	15.4
[D]	Turtle	18	44.50	17.8

[D]	Rabbit	1	208.44	3.8
[D]	Rabbit	2	188.59	4.2
[D]	Rabbit	3	165.01	4.8
[D]	Rabbit	4	146.68	5.4
[D]	Rabbit	5	132.01	6.0
[D]	Rabbit	6	116.48	6.8
[D]	Rabbit	7	104.22	7.6
[D]	Rabbit	8	92.10	8.6
[D]	Rabbit	9	82.51	9.6
[D]	Rabbit	10	74.72	10.6
[D]	Rabbit	11	67.12	11.8
[D]	Rabbit	12	60.00	13.2
[D]	Rabbit	13	53.52	14.8
[D]	Rabbit	14	47.71	16.6
[D]	Rabbit	15	42.13	18.8

*) Calculated with a dynamic radius index of 955 mm

[D] Number of revolutions of front wheels for one revolution of rear wheels: 1.345

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 540E*) or 1000 min^{-1} p.t.o.
*) 540E: Economic type p.t.o. for reduced engine speed

[C] - Location: At rear of tractor

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

[C] - Number of splines: 6 (540E 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: 890 mm

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

[C] - Distance behind rear wheel axis: 510 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]	540E	2.94	540 748	1588 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

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[C]	- Hydraulic system:	Closed, load sensing, pressure and flow compensated system; supplies rear and front power lift including additional control valves and 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
[D/C]	- Type and number of cylinders:	2 external cylinders, double acting, piston 100 mm bore, tige 40 mm bore, 247 mm stroke
[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:	A10VO45 DFR1/52 R
[D]	- Type:	Variable displacement axial-piston pump
[D]	- Transmission between pump and engine:	Independently driven by gear box
[C]	- Type and number of filters:	1, exchangeable filter in return line
[D]	- Site of oil reservoir:	Separate oil reservoir with 100 dm³ volume on right hand side below cab floor
[C]	- Type, number and location of tapping points:	Double acting, quick-action; 5 coupler-pairs with adjustable flow control and 1 coupler for low pressure return line at rear of tractor Optional: 1 pair of couplers at front of tractor (not fitted)
[D]	- Maximum volume of oil available to external cylinders:	60 dm³

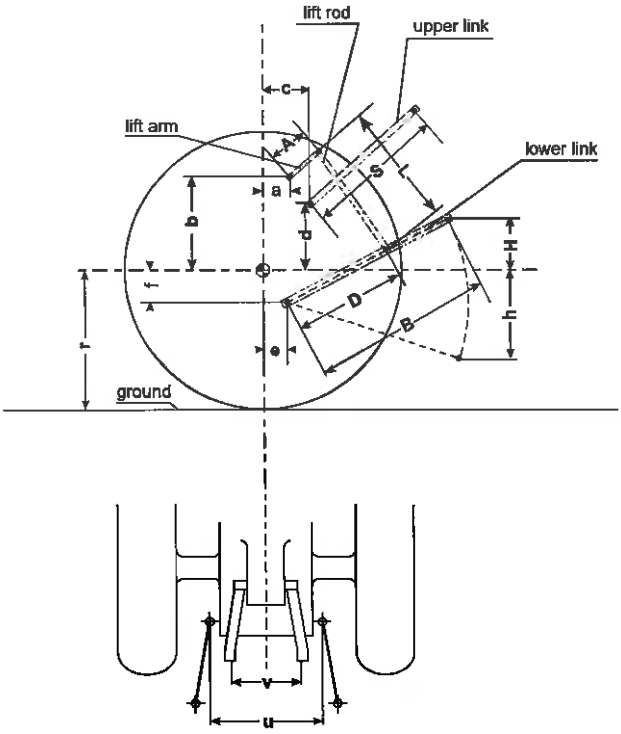
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1.6 Three-point linkage:

1.6.1 Three-point linkage at rear:

[C] - Category: 3, in conformity with ISO 730-1/1994 + Cor. 1:1995, with CBM quick couplers

[C] - Category adapter: None



	Dimensions of rear implement linkage			Projected lengths in mm			
				Dimensions		Settings used in test on page 30	38
[C]	Rear tyres 650/85 R 38 Front tyres 600/70 R 28		(r) *) (r') *)	955 725			
[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)	250 405			
[C]	Horizontal distance between the 2 lower link pivot points		(u)	520			
[C]	Horizontal distance between the 2 lift arm end points		(v)	560			
[C]	Length of upper link		(S)	from 770 to 1070		790	835
[C]	Distance of upper link pivot point from rear wheel axis	horizontal vertical	(c) (d)	450 / 360 / 340 275 / 305 / 395		450 275	340 395
[C]	Distance of lower link pivot points from rear wheel axis	horizontal vertical	(e) (f)	200 325			
[C]	Distance of lower link pivot points from lift rod pivot points on lower links		(D)	550 / 700		550	700
[C]	Length of lift rods		(L)	from 820 to 920		840	820
	Heights (h, H, H') of lower link hitch points relative to rear wheel axis (situated 955 mm above ground), at different adjustments of L These data are valid for unloaded power lift						
[C]	Length of lift rods	(L)		820	920	840	820
[C]	Linkage distance of lift rods	(D)		700		550	700
[C]	Lowest position	(h)		615	805	725	583
[C]	Highest position	(H)		119	5	132	147
[C]	Transport position	(H')		119	5	132	147

*) Assuming r resp. r' = tyre dynamic radius index

1.6.2 [C]	Three-point linkage at front:	Not fitted	
1.7	**Swinging drawbar**		
[C]	- Type:	Longitudinally adjustable in four steps	
[C]	- Height above ground		525 mm
[C]	- Type of adjustment:	-	
[C]	- Distance of hitch point from rear wheel axis	Horizontal:	890 / 1040 / 1090 / 1190 mm
[C]	- Distance of hitch point from p.t.o. shaft end	Vertical: Horizontal:	365 mm 380 / 530 / 580 / 680 mm
[C]	- Lateral adjustment (centre of clevis)	Right/left hand side: 160 / 210 / 260 / 310mm	
[C]	- Distance of pivot point from rear-wheel axis, horizontally:		0 mm
[C]	- Diameter of drawbar pin hole:		30 mm
[D]	- Maximum permissible vertical load:		18 kN
1.8	**Trailer hitch**		
[C]	- Make/Model/Type:	ROCKINGER / 8660001 / automatically	
[C]	- Pin diameter:		38 mm
[C]	- Height above ground:	Centre of clevis adjustable in 6 steps to	780, 850, 920, 980, 1040, 1150 mm
[C]	- Distance of hitch point from rear wheel axis, horizontally:		770 mm
[C]	- Distance of hitch point from power take-off shaft end		
	vertically:	above	-110, -40, 30, 90, 150, 260 mm
	horizontally:		260 mm
[D]	- Maximum permissible vertical load:		20 kN
1.9	**Holed drawbar**	Optionally available, not fitted	

1.10	**Steering**	
[D]	- Make/Model/Type:	DANFOSS/ OSPD 80/205 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 45.0 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,75 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 4 discs with 223,5 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 170 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: 3075 mm

[D] - Track width adjustment:

	Minimum mm	Maximum mm	Adjustment method
Front	1692	2116	offset lug rims and reversing central wheel discs
Rear	1699	2326	central wheel discs shiftable on the axle by clamping pieces

1.13 Protective structure

[C] - Make/Model/Type: MASSEY FERGUSON / 8033 Q1 / 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, mounted on antivibration silent blocks in front, suspended in the rear; 1 door and 4 steps each at the left and right side; rear window, roof hatch and side window to open; water-heating, ventilation system, air conditioner

[C] Tiltable / not tiltable: Not tiltable

- OECD approval

[D] Approval number: 4/0 857

[D] Date of approval: 06th August 2004

[D] Nos. minor modification certificates, if any: none

1.14 Seat

1.14.1	Driver's seat	Fitted to tractor
[C]	- Make/Model:	Grammer / MSG 95 AL / 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:	485 to 590 mm
[C]	- Safety belt:	No
1.14.2	Optional driver's seats	
[D]	- Make/Model/Type:	Grammer / MSG 85/731; MSG 95A/731; MSG 95G/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 EEC legislation

		Height above ground of centre mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
[C]	Headlights	1400	Ø 120	230
[C]	Additional lights	3030	oval 70 x 120	520
[C]	Side Lights	2210	110 x 30	970
[C]	Rearlights	2124	Ø 120	1010
[C]	Reflectors	2115	Ø 55	890

2. TEST CONDITIONS

2.1 Overall dimensions

	Length mm	Width (track width as in 2.5) mm	Height at top of protective structure mm	 exhaust silencer pipe mm
Unballasted	5320	2550	3180	3140

2.2 Ground clearance 500 mm

- Clearance-limiting part: Steps left side

2.3 Tractor mass

- Unballasted (with cab)

	Without driver kg	With driver kg
Front	3560	3585
Rear	5680	5730
Total	9240	9315

2.4 Track specifications Not applicable

2.5 Tyres and track widths specifications

	Front	Rear
Tyres:	KLEBER Topker	KLEBER Topker
- Dimensions	600/70 R 28	650/85 R 38
- Load index speed index	157 A8	173 A8
- Type	radial	radial
- Maximum load (tyre manufacturer's)	41.25 kN*)	65.00 kN*)
- Maximum load (tractor manufacturer's)	41.25 kN	65.00 kN
at travelling speed	50 km/h	50 km/h
at tyre inflation pressure	240 kPa	240 kPa
dynamic radius index	725 mm	955 mm
Chosen track width:	1890 mm	1820 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 0.8328 g/cm³
  at drawbar power tests 0.8328 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 Type	BP Full-Year Engine oil	BP
Viscosity	SAE 10W/30, 10W/40 SAE 15W/30 or 15W/40	10W/40
Classification	API-CH4	API-CH4
Gearbox Rear axle drive Type	BP Super-Tractor-Oil-Universal STOU	BP
Viscosity	SAE 10W/40, 15W/40	10W/40
Classification	API-GL4	API-GL4
Rear axle final drives Type	BP Hypoid-Gear-Oil	BP
Viscosity	SAE 85W/90	85W/90
Classification	API-GL5	API-GL5
Front axle drive Front axle final drives Type	BP Hypoid-Gear-Oil	BP
Viscosity	SAE , 85W/140	85W/140
Classification	API-GL5	API-GL5
Hydraulic system Type	BP STOU	BP
Viscosity	SAE 10W/40	10W/40
Classification	API-CH4	API-CH4

2.7.3 Grease Multi purpose grease TERRAC CHARGE

- Number of lubrication points: 19

3 COMPULSORY TESTS

3.1 Main power take off performance

Date of tests: 2005-05-11
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

185.9	2001	984	1564	44.70	53.67	240	3.46

3.1.2 At rated speed

170.4	2201	1082	1785	44.87	53.88	263	3.16

3.1.3 At standard p.t.o. speed

184.1	2034	1000	1594	44.14	53.00	240	3.47

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

170.4	2201	1082	1785	44.87	53.88	263	3.16

3.1.4.2 85% of the torque obtained in 3.1.4.1

151.7	2305	1133	2156	42.98	52.81	283	2.94

3.1.4.3 75% of the torque defined in 3.1.4.2

114.5	2319	1140	1205	32.82	39.41	287	2.91

3.1.4.4 50% of the torque defined in 3.1.4.2

76.7	2329	1145	1089	24.13	28.97	315	2.65

3.1.4.5 25% of the torque defined in 3.1.4.2

38.5	2339	1150	949	16.84	20.22	437	1.90

3.1.4.6 unloaded

-	2350	1155	946	9.57	11.49	-	-

Power	Speed		Fan	Fuel consumption			Specific energy
	Engine	P.t.o.		hourly		specific	
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

184.1	2034	1000	1594	44.14	53.00	240	3.47

3.1.5.2 85% of the torque obtained in 3.1.5.1

163.7	2128	1046	1584	40.99	49.22	250	3.33

3.1.5.3 75% of the torque defined in 3.1.5.2

123.4	2140	1052	1342	33.02	39.65	268	3.11

3.1.5.4 50% of the torque defined in 3.1.5.2

82.8	2150	1057	956	23.47	28.18	283	2.94

3.1.5.5 25% of the torque defined in 3.1.5.2

41.5	2160	1062	949	15.39	18.48	371	2.25

3.1.5.6 unloaded

-	2168	1066	936	8.30	9.97	-	-

OPTIONAL RESULTS

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

3.1.6 Part loads at different engine speeds

3.1.6.1 maximum power at rated engine speed

170.4	2201	1082	1785	44.87	53.88	263	3.16

3.1.6.2 80% of power obtained in 3.1.6.1 at max. speed setting

136.3	2313	1137	1203	37.28	44.76	274	3.04

3.1.6.3 80% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed

135.9	1979	973	1154	32.13	38.58	236	3.52

3.1.6.4 40% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed

68.1	1975	971	948	18.53	22.25	272	3.06

3.1.6.5 60% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed

102.5	1318	648	915	22.15	26.60	216	3.85

3.1.6.6 40% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed

68.3	1316	647	917	15.50	18.61	227	3.67

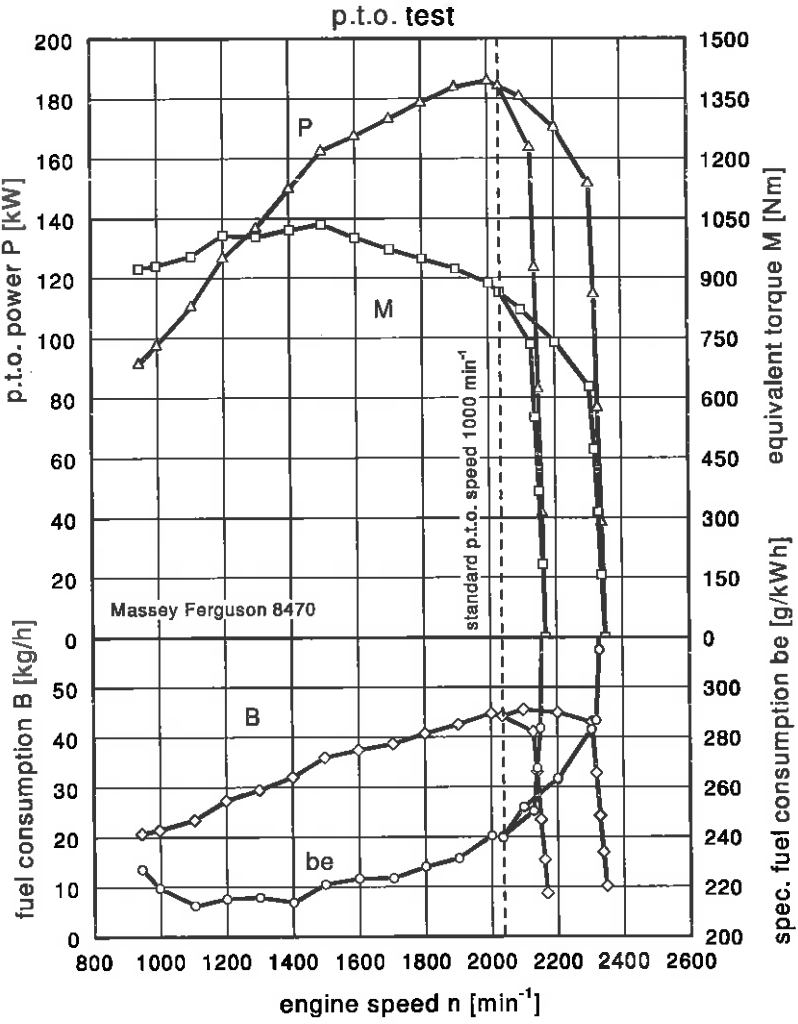
No load maximum engine speed:	2350	min^{-1}
Equivalent flywheel torque at rated engine speed:	739	Nm
Equivalent flywheel torque at 2-hour test:	887	Nm
at engine speed:	2001	min^{-1}
Maximum equivalent flywheel torque:	1035	Nm
at engine speed:	1499	min^{-1}

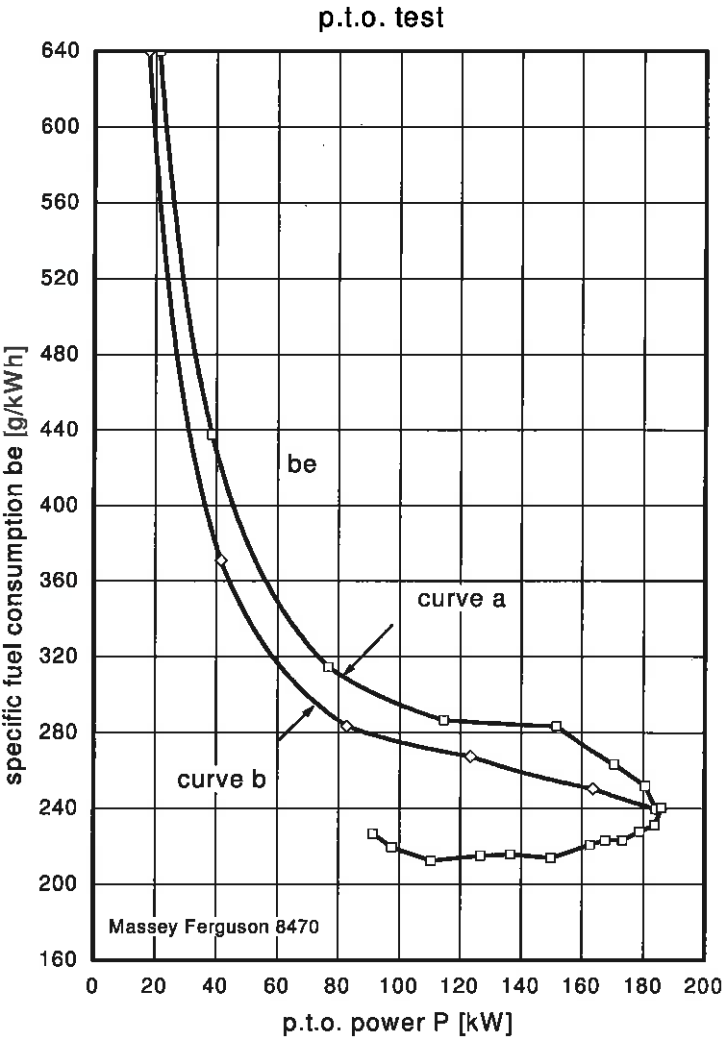
Mean atmospheric conditions

temperature:	19	°C
pressure:	100.1	kPa
relative humidity:	30	%

Maximum temperatures

coolant:	85	°C
oil:	114	°C
fuel:	56	°C
air intake:	22	°C


p.t.o. test
P
M
B
be
Massey Ferguson 8470
standard p.t.o. speed 1000 min-1
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]
200
180
160
140
120
100
80
60
40
20
0
1500
1350
1200
1050
900
750
600
450
300
150
0
50
40
30
20
10
0
300
280
260
240
220
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
160
be
curve a
curve b
Massey Ferguson 8470
0
20
40
60
80
100
120
140
160
180
200
p.t.o. power P [kW]

3.2 HYDRAULIC POWER AND LIFTING FORCE

- Date of tests: 16th June 2005

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	19.3 [1] 19.5 [2]	60 [1] 63 [2]	65 [1] 72 [2]	2259 [1] 2261 [2]	-	-
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	17.4 [1] 17.5 [2]	65 [1] 71 [2]		2261 [1] 2253 [2]	61.9 [1] 109.7 [2]	18.1 [1] 31.7 [2]
3.2.1.2.3 Maximum available flow and maximum power from one coupler pair	3.5 15.0	60 64		2259 2253	93.0 89.7	- 22.5
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)	3.1 16.1	63 69		2255 2253	139.8 132.5	- 35.6

- 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 – Category 3

- 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	230 mm	
Vertical movement without lifting forces	857 mm	1003 mm
with lifting forces	807 mm	915 mm
Max. corrected force exerted through full range	58.65 kN	57.85 kN
Corresponding pressure	17.5 MPa	
Moment about rear axle	72.14 kNm	106.41 kNm
Max. tilt angle of mast from vertical	-	12°

Lifting heights relative to horizontal lower links												
mm	-446	-400	-300	-200	-100	0	+100	+200	+300	+400	+407	+469
Lifting forces at hitch points, corrected to 17.5 MPa												
kN		58.65	67.60	71.75	75.25	78.05	79.45	82.90	85.00	82.20	81.95	
Lifting forces at standard frame, corrected to 17.5 MPa												
kN	57.85	59.90	61.75	61.75	62.00	63.40	66.90	67.15	66.75	63.40		59.25

3.3 DRAWBAR POWER TEST (unballasted tractor)

Remarks:

The MF tractor MF 8470 is fitted with a stepless gear box. But for special markets in the world the gear box is modified to a stepshift version by a special electronic control unit and will be sold as a stepshift tractor. The tractor we tested wasn't fitted with the electronic control unit yet. Because we tested a stepless version of the tractor we weren't able to change the transmission ratio by the hand lever step by step as in usual use.We got a speedchart from the manufacturer wich accords with the speeds and ratios of the stepshift version. We had to adjust the speed by the hand lever. It was not possible to adjust the speed of the speedchart very exactly and that is the reason why we have differences between the calculated speed and the announced speed for each gear.

Massey Ferguson 8470 **DLG-Test No. 2005-059**

Date of tests: 8th till 10th June 2005
Type of track: Concrete

	Height of drawbar above ground	Tyre inflation pressure Front	Rear
Unballasted	520 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 Temperature °C	Relative humidity %	Pressure kPa
Turtle 9	134.0	90.26	5.35	2231	15.3	1375	332	2.50	61	90	122	14	61	100.4
Turtle 10	139.7	90.48	5.56	2115	14.9	1521	327	2.55	62	90	122	13	65	100.4
Turtle 11	144.6	89.44	5.82	2016	15.0	1403	314	2.65	62	89	121	12	69	100.4
Turtle 12	154.4	79.82	6.97	2002	8.7	1532	292	2.85	62	89	119	20	32	100.9
Turtle 13	156.7	69.39	8.13	2001	6.3	1537	286	2.91	61	89	119	20	34	100.9
Turtle 14	160.9	61.04	9.49	2001	4.5	1348	280	2.97	55	84	113	13	56	100.5
Turtle 15	160.0	53.82	10.71	2002	3.8	1350	282	2.96	58	85	117	11	66	100.4
Turtle 16	160.0	47.90	12.02	2002	3.3	1317	282	2.95	60	86	118	11	69	100.4
Turtle 17	158.0	42.21	13.48	2000	2.9	1336	285	2.92	61	87	119	11	67	100.4
Turtle 18	155.4	34.97	16.00	2003	2.3	1362	291	2.87	61	88	120	11	68	100.4

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/dm³	°C	°C	°C	°C	%	kPa

3.3.1 MAXIMUM POWER IN TESTED GEARS (continued)

Rabbit 7	143.9	80.08	6.47	2003	8.7	1568	313	2.66	61	88	119	20	33	100.9
Rabbit 8	151.6	71.27	7.66	2002	6.3	1486	298	2.80	58	87	115	20	33	100.9
Rabbit 9	151.5	63.79	8.55	2001	4.7	1533	294	2.84	54	83	114	20	32	101.4
Rabbit 10	152.3	59.20	9.26	2002	4.2	1577	292	2.85	57	86	117	20	32	101.4
Rabbit 11	154.3	53.71	10.34	2001	3.7	1559	288	2.89	59	87	119	20	30	101.4
Rabbit 12	155.2	46.79	11.94	2003	2.8	1546	287	2.90	60	89	120	20	34	101.4
Rabbit 13	158.3	42.91	13.28	2002	2.7	1555	284	2.94	58	87	118	19	33	100.9
Rabbit 14	157.6	37.87	14.99	2005	2.4	1557	286	2.92	59	88	119	19	34	100.9
Rabbit 15	155.0	33.00	16.92	2007	2.1	1589	290	2.87	60	88	119	19	36	100.9

Massey Ferguson 8470 **DLG-Test No. 2005-059**

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	Tempe-rature	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													
Turtle 14	149.5	52.14	10.33	2203	3.7	1605	306	2.73	55	87	119	17	51	100.3
3.3.2.1.1	75 % of pull at maximum power at rated speed													
Turtle 14	118.5	38.77	11.00	2306	2.5	1202	323	2.58	57	88	120	17	52	100.3
3.3.2.1.2	50 % of pull at maximum power at rated speed													
Turtle 14	80.9	25.92	11.23	2319	1.6	964	354	2.36	59	88	118	17	52	100.3
3.3.2.1.3	Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.1.1													
Turtle 15	119.4	38.97	11.03	2032	2.6	1079	284	2.93	60	89	119	17	50	100.3
3.3.2.1.4	Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.1.2													
Turtle 15	80.8	25.89	11.24	2044	1.5	950	311	2.68	59	88	118	17	50	100.3
3.3.2.2	In selected gear nearest to 7.50 km/h at rated speed													
Turtle 12	148.8	67.72	7.91	2199	5.8	1531	304	2.74	59	90	123	17	56	100.4
3.3.2.2.1	75 % of pull at maximum power at rated speed													
Turtle 12	119.7	50.64	8.51	2306	3.7	1205	323	2.58	60	90	123	15	59	100.4
3.3.2.2.2	50 % of pull at maximum power at rated speed													
Turtle 12	81.6	33.62	8.74	2318	2.1	1021	356	2.34	60	90	123	15	57	100.4
3.3.2.2.3	Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.1													
Turtle 13	120.6	50.75	8.56	2061	3.5	1073	287	2.90	52	86	112	16	51	100.3
3.3.2.2.4	Next higher gear at reduced engine speed; same pull and travelling speed as in 3.3.2.2.2													
Turtle 13	81.9	33.61	8.78	2072	2.0	984	314	2.65	52	85	112	17	49	100.3

4 ADDITIONAL TESTS under the responsibility of the DLG Testing Station

Not covered by the approval.

4.1 DRAWBAR POWER TEST (ballasted tractor with dual wheels)

4.1.1 Tractor mass

ballasted (with cab); dual wheels (2 front wheels, 4 rear wheels)

	Without driver kg	With driver kg
Front	5190	5210
Rear	7970	8020
Total	13160	13235

4.1.2 Tyres and track width specification

Dual wheels (2 front wheels, 4 rear wheels)

	Front	Rear
Tyres:	Michelin Agribib	Michelin Agribib
- Dimensions	480/70 R 34	520/85 R46
- Load index speed index	146 A8	158 A8
- Type	radial	radial
- Maximum load (tyre manufacturer's)	22.40 kN*)	42.50 kN*)
- Maximum load (tractor manufacturer's)	22.40 kN	37.00 kN
at travelling speed	40 km/h	40 km/h
at tyre inflation pressure	160 kPa	160 kPa
dynamic radius index	725 mm	955 mm
Chosen track width:	2850 mm	2730 mm

*) With other tyres higher load capacity possible

4.1.3 Test Results Drawbar Power Test with dual wheels

Date of tests: 5th and 6th July 2005
Type of track: Concrete

	Height of drawbar above ground	Tyre inflation pressure Front	Rear
Unballasted	520 mm	120 kPa	60 kPa

Gear number and range	Power	Drawbar pull	Speed	Engine speed	Slip of Wheels	Fan speed	Specific Fuel consumption	Specific energy	Temperature Fuel	Coolant	Engine Oil	Atmospheric conditions Temperature	Relative humidity	Pressure
	kW	kN	km/h	min^{-1}	%	min^{-1}	g/kWh	kWh/dm³	°C	°C	°C	°C	%	kPa

4.1.3.1 MAXIMUM POWER IN TESTED GEARS

Turtle 7	133.1	120.51	3.97	2245	15.0	1320	334	2.49	56	86	110	22	42	99.1
Turtle 8	137.3	120.94	4.09	2071	15.0	1617	333	2.50	58	86	118	21	44	99.2
Turtle 9	147.9	112.59	4.73	2001	10.6	1592	305	2.73	56	86	118	21	44	99.2
Turtle 10	149.0	101.67	5.28	2001	9.1	1647	302	2.76	62	89	120	25	29	99.5
Turtle 11	153.9	91.42	6.06	2001	6.8	1640	292	2.86	61	8	118	25	30	99.5
Turtle 12	156.0	77.98	7.20	2000	5.3	1625	289	2.88	60	88	120	22	43	99.5
Turtle 13	156.6	68.30	8.25	2001	4.3	1622	287	2.90	60	89	118	23	36	99.6
Turtle 14	156.3	60.55	9.29	2000	3.7	1622	288	2.89	61	89	121	24	33	99.6
Turtle 15	154.9	51.64	10.80	2002	3.0	1634	290	2.87	59	87	119	23	34	99.6
Turtle 16	153.8	45.65	12.13	2001	2.6	1625	293	2.84	61	88	120	22	36	99.6
Turtle 17	152.1	39.60	13.82	2000	2.2	1621	297	2.80	61	88	119	22	34	99.6
Turtle 18	149.2	33.17	16.19	2003	1.5	1644	301	2.76	62	89	120	23	31	99.6

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	Tempe-rature	Relative humidity	Pressure
	kW	kN	km/h	min^{-1}	%	min^{-1}	g/kWh	kWh/dm^3	°C	°C	°C	°C	%	kPa

4.1.3.1 MAXIMUM POWER IN TESTED GEARS (continued)

Rabbit 7	147.0	77.52	6.82	2001	5.0	1611	306	2.72	60	88	119	21	43	99.5
Rabbit 8	150.0	73.51	7.35	2002	4.7	1568	299	2.78	58	88	117	22	40	99.5
Rabbit 9	153.6	65.05	8.50	2001	3.8	1471	293	2.84	52	84	115	19	62	99.6
Rabbit 10	155.3	58.10	9.62	2002	3.5	1488	290	2.87	56	86	118	18	62	99.6
Rabbit 11	156.1	53.01	10.60	2001	3.1	1483	288	2.89	58	88	120	18	61	99.6
Rabbit 12	156.2	47.00	11.96	2002	2.7	1470	288	2.89	59	89	120	18	60	99.6
Rabbit 13	155.4	41.52	13.48	2002	2.4	1490	290	2.87	59	89	121	18	60	99.6
Rabbit 14	154.6	37.23	14.95	2002	2.0	1469	292	2.86	60	89	121	17	61	99.6
Rabbit 15	150.7	32.15	16.88	2002	1.8	1537	299	2.79	58	88	119	17	58	99.7

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	Tempe-rature	Relative humidity	Pressure
	kW	kN	km/h	min^{-1}	%	min^{-1}	g/kWh	kWh/dm^3	°C	°C	°C	°C	%	kPa
	FUEL CONSUMPTION													
4.1.3.2	In selected gear, at maximum power at rated speed													
Turtle 13	144.0	57.63	8.99	2201	3.6	1802	317	2.63	60	87	118	24	42	99.1
4.1.3.2.1	75 % of pull at maximum power at rated speed													
Turtle 13	116.3	43.25	9.68	2313	2.6	1223	331	2.51	57	86	118	21	56	99.1
4.1.3.2.2	50 % of pull at maximum power at rated speed													
Turtle 13	78.7	28.68	9.88	2324	1.7	1206	377	2.21	59	87	118	19	58	99.0
4.1.3.2.3	Next higher gear at reduced engine speed; same pull and travelling speed as in 4.1.3.2.1													
Turtle 14	116.8	43.20	9.73	2021	2.6	1222	294	2.83	59	88	118	20	58	99.0
4.1.3.2.4	Next higher gear at reduced engine speed; same pull and travelling speed as in 4.1.3.2.2													
Turtle 14	79.1	28.66	9.93	2030	1.7	957	320	2.60	59	88	117	19	61	99.0
4.1.3.3	In selected gear nearest to 7.50 km/h at rated speed													
Turtle 12	143.6	66.42	7.78	2200	4.6	1812	317	2.62	60	88	121	24	45	99.1
4.1.3.3.1	75 % of pull at maximum power at rated speed													
Turtle 12	116.8	49.90	8.42	2306	2.3	1207	328	2.54	58	86	117	21	53	99.1
4.1.3.3.2	50 % of pull at maximum power at rated speed													
Turtle 12	78.7	33.14	8.54	2319	2.0	1207	370	2.25	58	86	117	22	49	99.1
4.1.3.3.3	Next higher gear at reduced engine speed; same pull and travelling speed as in 4.1.3.3.1													
Turtle 13	117.3	49.88	8.46	2052	2.9	1302	296	2.81	60	87	118	22	51	99.1
4.1.3.3.4	Next higher gear at reduced engine speed; same pull and travelling speed as in 4.1.3.3.2													
Turtle 13	79.1	33.12	8.60	2053	2.0	972	323	2.58	60	87	116	22	49	99.1

4.2 Additional power lift test at rear power lift with different linkage adjustments to obtain maximum lifting force:

- 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	372 mm	
Vertical movement without lifting forces with lifting forces	730 mm 659 mm	685 mm 649 mm
Max. corrected force exerted through full range	71.75 kN	80.15 kN
Corresponding pressure	17.5 MPa	
Moment about rear axle	88.25 kNm	147.44 kNm
Max. tilt angle of mast from vertical	-	2°

Lifting heights relative to horizontal lower links												
mm	-258	-256	-200	-100	0	+100	+200	+300	+393	+400		
Lifting forces at hitch points, corrected to 17.5 MPa												
kN	71.75		77.35	82.20	87.10	88,50	91.30	92.65		89.20		
Lifting forces at standard frame, corrected to 17.5 MPa												
kN		80.15	83.60	86.40	88.05	87.80	86.40	85.00	82.90			

5	**REPAIRS**	**None**
6	**REMARKS**	The electronic engine control device of the Massey Ferguson 8480 model was replaced by the Massey Ferguson 8470 module and all relevant measurements were repeated. All other specifications of the models Massey Ferguson 8480 and Massey Ferguson 8470 are identical.

Head of Vehicle Technology

Dipl.-Ing. (FH) Ottmar Degrell

Test carried out by

Dipl.-Ing. (FH) Thomas Feuerstein

Date: 30th March 2006

Massey Ferguson 8470 **DLG-Test No. 2005-059**

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