CEMAGREF

CENTRE NATIONAL
DU MACHINISME AGRICOLE
DU GÉNIE RURAL
DES EAUX ET DES FORÊTS

GROUPEMENT D'ANTONY
Parc de Tourvoie
B.P. 121, 92185 Antony Cedex
Tél. : (1) 40 96 61 21 - Télex : 632 672 F
Télécopie : (1) 40 96 61 62

Division Tracteurs et Machines Agricoles

TEST REPORT N° 9488

DATE : 6th may 1993

OECD TEST OF AN AGRICULTURAL TRACTOR (RESTRICTED CODE) 50.3

Reference text : O.E.C.D code II



OECD Approval

N° 1441 Restricted Code

Date : 20th april 1993

Tested equipment	
Nature	: TRACTOR
Make	: MASSEY FERGUSON
Model	: B 101/4
Trade name	: 3125-4 PS/4 (3140 for NAO)
Number of driving wheels	: 4
Type	: standard

Submitted for tests by

Name : MASSEY FERGUSON S.A.

Address : avenue Blaise Pascal
BP 307
60026 BEAUVAIS CEDEX

Phone : 44.89.33.33 Fax : 44.89.34.18

This test report may only be duplicated as a whole

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There are 2 versions of MASSEY FERGUSON tractor 3125 (PS/4)* 30 and 40 km/h. These 2 versions are identical, the maximun forward speed is obtained by an electronic device which does not allow to use 4 LC and 4LD gears with 30 km/h version

The 40km/h version has been tested, all results are also valid for 30 km/h version except the result of measurement of external noise level (5.1)

1. GENERALITIES

Tractor manufacturer's name and address : MASSEY FERGUSON S.A, BP 307 avenue Blaise Pascal 60026 BEAUVAIS

Submitted for tests by : MASSEY FERGUSON S.A.

Selected for tests by the manufacturer with the agreement of CEMAGREF

Place of running in : BEAUVAIS

Duration of running in : 20 h

Date of arrival of the equipment in CEMAGREF : 23rd september 1992

2. SPECIFICATIONS

2.1 Tested tractor

Make : MASSEY FERGUSON
Model : B 101/4
Trade name : 3125-4 PS/4 (3140 for NAO)
Number of driving wheels : 4
Type : standard
Serial number : A 171007
1st serial number : A 171007

2.2 Engine

2.2.1 Identification

Make : PERKINS
Model : 1006-6 T7
Type : 4 strokes - Direct injection diesel turbocharged
Serial number : U 543 392 W

2.2.2 Cylinders

Number : 6
Disposition : vertical, in line
Bore/stroke : 100/127 mm
Capacity : 5985 cm^3
Compression ratio : 16/1
Arrangement of valves : overhead
Cylinders liners : dry

2.2.3 Supercharging

Make : SCHWITZER
Model : turbo compressor
Type : S 2 B 7622 AE/1.0009
Supercharging pressure : 0,74 bar

2.2.4 Fuel system

Fuel feed system : Diaphragm fuel feed pump
Make, type and model of fuel filter : CAV 2 FAS 58488130, dual element with water trap
Capacity of fuel tank : 230 l
Make, type and model of injection pump : CAV, DPA 937, rotative
Serial number : 28927 EKG
Manufacturer's setting of injection pump : 63 ± 2 mm^3/stroke (at rated engine speed and full load)
Injection pump timing : 18° before TDC
Make, type and model of injectors : CAV, LRB 670 3206
Injection pressure : 250 bars

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2.2.5 Governor

Make : CAV
Type : DPA
Model : mechanical, incorporated into fuel injection pump
Governed range of engine speed : 850 - 2310 rev/min

2.2.6 Rated engine speed : 2200 rev/min

2.2.7 Air cleaner

Pre-cleaner : . Make : DONALDSON
. Type and model : cyclone incorporated into main
. Location of air intake : in front of engine and under bonnet

Main : . Make : DONALDSON
. Type and model : dry FBL 10 - 0070
. Location : in front of engine and under bonnet

Maintenance indicator : lamp on desk board

2.2.8 Lubrication system

Type of feed pump : gear
Total oil capacity including filter : 19 l
Oil change period : 400 h
Type and number of filter : 2 cartridges
Filter change period : 400 h
Recommended oil : see "Fuel and lubricants used in test"

2.2.9 Cooling system

Type of coolant : water or water anti-freeze mixture
Type of pump : centrifugal
Description of fan
. Puller
. Number of fan blades : 7
. Fan diameter : 504 mm
Coolant capacity : 25 l
Type of temperature control : thermostatic
Surpressure system : 0,5 bar

2.2.10 Starting system

Safety device : Electrical switch under clutch pedal
Make : LUCAS
Type and model : pre-engaged M 127
Power : 2,8 kW
Cold starting aid : thermostart

2.2.11 Electrical system

Voltage : 12 V negative earth
Generator :
. Make : VALEO
. Type and model : alternator 70 AMS
. Power : 980 W
Batteries
. Number : 2
. Rating : 80 Ah at 20 hours
. Cold starting capacity : 420 A for 60 s at -18°C each

2.2.12 Exhaust system

Make : LUCHAIRE
Type : perforated
Model : 107
Location : under bonnet with vertical stack pipe
Height of outlet above ground : 2869 mm

2.3 Transmission

2.3.1 Clutch (travel)

Make : VALEO
Type : dry, single plate, pushed type
Number of plates : 1
Diameter of plates : 330 mm
Method of operation (for travel) : foot pedal

2.3 Transmission (continued)

2.3.2 Gear box

Make : MASSEY FERGUSON
Type and model : mechanically operated gear shift, speedshift
Arrangement : 4 gears with four positions speed shift,
2 ranges and one reverse groupe
Number of speeds : 32 forward gears and 32 reverse gears
Available option : none

2.3.3 Rear axle and final drives

Make : MASSEY FERGUSON
Type and model : crown wheel and pinion and outboard epicyclic gear reduction
Differential lock :
. Type and model : mechanical hydraulically actuated
. Method of engagement : electrical switch
. Method of disengagement : when brake pedal is depressed

2.3.4 Front axle and final drives

Make : GKN
Type and model : crown wheel and pinion and outboard epicyclic gear reduction
Differential lock : automatic
Driven : from main shaft

2.3.6 Total ratios and travelling speeds

Range	Gear	Overall gear ratios	Nominal travelling speed (*) at rated engine speed of 2200 rev/min km/h
T forward	1 A	332,516	2,133
	1 B	284,101	2,496
	1 C	240,686	2,946
	1 D	205,635	3,448
	2 A	195,701	3,623
	2 B	167,207	4,241
	2 C	141,655	5,006
	2 D	121,026	5,859
	3 A	148,686	4,769
	3 B	127,037	5,582
	3 C	107,624	6,589
	3 D	91,951	7,712
	4 A	109,879	6,453
	4 B	93,881	7,553
	4 C	79,534	8,916
	4 D	67,952	10,435
T reverse	1 A	365,075	1,914
	1 B	311,919	2,273
	1 C	264,253	2,683
	1 D	225,770	3,141

T : Turtle, A B C D : quadrupler positions
(*) Calculted for dynamic index radius of 20.8 R 38 : 855 mm (ISO 4251/1-1984)

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2.3.6 Total ratios and travelling speeds (continued)

Range	Gear	Overall gear ratios	Nominal travelling speed (*) at rated engine speed of 2200 rev/min km/h
T reverse	2 A	214,864	3,300
	2 B	183,579	3,863
	2 C	155,526	4,559
	2 D	132,876	5,337
	3 A	163,245	4,344
	3 B	139,476	5,084
	3 C	118,162	6,001
	3 D	100,954	7,024
	4 A	120,638	5,878
	4 B	103,073	6,880
	4 C	87,322	8,121
	4 D	74,605	9,505
L forward	1 A	88,715	7,993
	1 B	75,798	9,355
	1 C	64,215	11,043
	1 D	54,863	12,925
	2 A	52,213	13,581
	2 B	44,610	15,896
	2 C	37,793	18,763
	2 D	32,289	21,961
	3 A	39,669	17,876
	3 B	33,893	20,922
	3 C	28,714	24,695
	3 D	24,532	28,905
	4 A	29,316	24,188
	4 B	25,047	28,311
	4 C	21,220	33,417
	4 D	18,129	39,114
L reverse	1 A	97,401	7,280
	1 B	83,219	8,521
	1 C	70,502	10,058
	1 D	60,235	11,772
	2 A	57,325	12,370
	2 B	48,979	14,478
	2 C	41,494	17,089
	2 D	35,451	20,002
	3 A	43,553	16,281
	3 B	37,212	19,056
	3 C	31,525	22,493
	3 D	26,934	26,327
	4 A	32,186	22,780
	4 B	27,500	26,662
	4 C	23,297	30,438
	4 D	19,905	35,624

T : Turtle, L : rabbit, A B C D : quadrupler positions
(*) Calculted for dynamic index radius of 20.8 R 38 : 855 mm (ISO 4251/1-1984)

Number of revolutions of front wheels for one revolution of rear wheels : 1,343

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2.4 Main power take-off

2.4.1 General specifications

Type : rear independant power take-off (wet, hydraulic, multiplate clutch)

Engagement by lever with electrical switch located at the middle of the upper right hand side console

Number of shafts : 1

Method of changing power take-off speed : speed and spline change achieved by physically replacing the 540 rev/min shaft by the 1000 rev/min and vice-versa

2.4.2 Power take-off proportional to engine speed

540 rev/min

Location : at the rear of the tractor on vertical center plane
Diameter of power take-off shaft : 34,9 mm
Number of splines : 6 (in accordance with ISO R 500-1979)
Height above ground : 812 mm with tyres 20.8 R 38
Distance from the median plane of the tractor : 0 mm
Distance behind rear axle : 475 mm

Power take-off speed : 601 rev/min
for rated engine speed : 2200 rev/min

Engine speed : 1976 rev/min
for standard power take-off speed : 540 rev/min

Engine to power take-off ratio : 3,66
Power restriction : none
Direction of rotation (viewed facing driving end) : clockwise

1000 rev/min

Location : at the rear of the tractor on vertical center plane
Diameter of power take-off shaft : 34,9 mm
Number of splines : 21 (in accordance with ISO R 500-1979)
Height above ground : 812 mm with tyres 20.8 R 38
Distance from the median plane of the tractor : 0 mm
Distance behind rear axle : 475 mm

Power take-off speed : 1100 rev/min
for rated engine speed : 2200 rev/min

Engine speed : 2000 rev/min
for standard power take-off speed : 1000 rev/min

Engine to power take-off ratio : 2,00
Power restriction : none
Direction of rotation (viewed facing driving end) : clockwise

2.4.3 Power take-off proportional to ground speed :

Speed of shaft : both 540 and 1000 rev/min
Size of : 20.8 R 38
Travelling distance for one revolution of power take-off shaft : 0,667 (540); 0,364 (1000)
Number of power take-off shaft revolutions for one revolution rear wheels : 8,053 (540); 14,76 (1000)
Direction of rotation with forward gear engaged : clockwise

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2.5 Power lift

Make : MASSEY FERGUSON
Type : top link, electronic position, draft or mixed control, open centre system
Type and number of cylinders : 2, single acting, diameter 89 mm
Type of linkage lock for transport : hydraulic lock
Relief valve pressure setting : 188 bars
Opening pressure of cylinder safety valve : 200 bars
Lift pump type : gear
Transmission between pump and engine : mechanical
Make and number of filters : 1 - PUROLATOR
Time between oil changes : 1200 h
Time between filter changes : 600 h
Oil capacity : 64 l
Site of oil tank : transmission housing
Type and number of tapping points : 2 - on lift cover
Maximum volume of oil available to external cylinders : 25 l
Recommended oil : see "fuel and lubricants used in test"

2.6 Three-point linkage

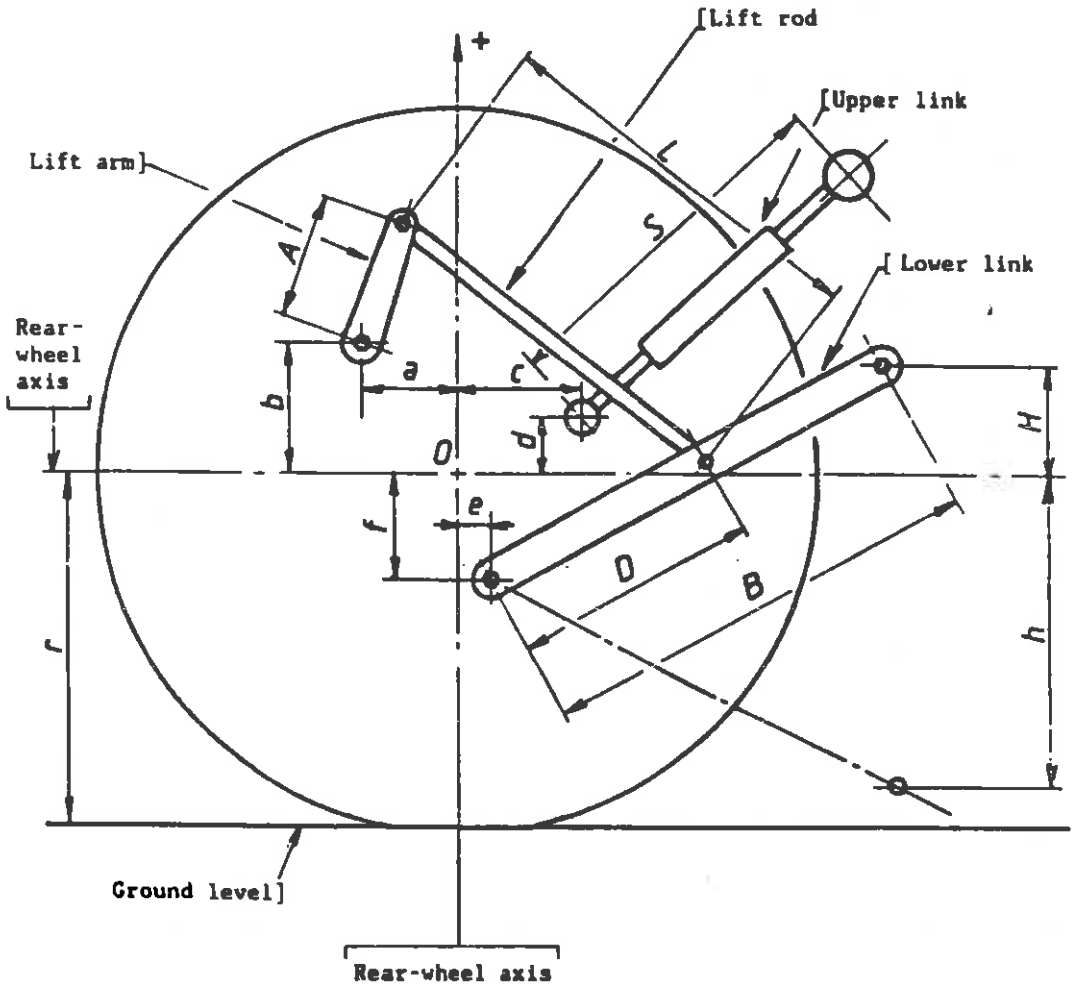
Category : II - III (in accordance with ISO 730/1-1977 art.II)
Category adapter : by changing the rockshafts
Controls : . position control by linear sensor measuring the rockshaft position
. draft control by pin sensors at each lower link

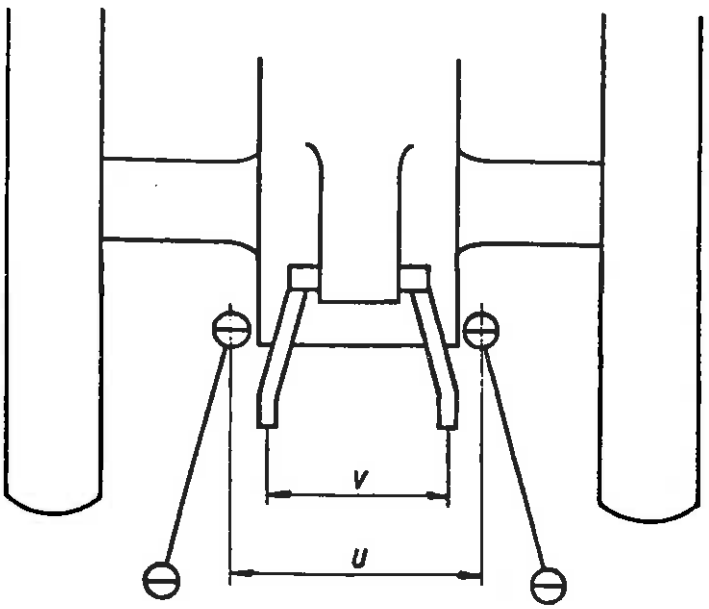
Linkage dimensions (mm)				Settings used for test
Rear tyres : dynamic index radius	20.8 R 38	(r)	855	
Front tyres : dynamic index radius	16.9 R 28	(r')	670	
Length of lift arms		(A)	295	
Length of lower links		(B)	940	
Distance of lift arm pivot point from rear wheels centre line	horizontally	(a)	+128	
	vertically	(b)	+330	
Horizontal distance between the two lower link points		(u)	610	
Horizontal distance between the two lift arm end points		(v)	626	
Length of upper link		(S)	from 669 to 827	740
Distance of upper link pivot point from rear wheels centre	horizontally	(c)	382	
	vertically	(d)	+120/160/200	160
Distance of lower link pivot point from rear wheels centre	horizontally	(e)	+161	
	vertically	(f)	-280	
Distance of lower link points to lift rod pivot points on lower link		(D)	550/650	550
Length of lift rods		(L)	from 595 to 827	772
Height of lower hitch points relative to the rear wheels centre				
- in low position		(h)	from 174 to 758	568
- in high position		(H)	from -7 to 341	2
Height of lower hitch points when locked in transport position (*)			from 848 to 1196	

(*) Assuming the dynamic index radius = 855 mm (ISO 4251/1-1984)

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2.7 Linkage geometry





2.8 Swinging drawbar

Height above ground : . maximum : 578 mm
. minimum : 578 mm
Type of adjustment : none
Distance of hitch point from rear axle centre, horizontally : 875 mm
Distance of hitch point from power take-off shaft end : . vertically : 234 mm
. horizontally : 400 mm
Lateral adjustment : 283 mm right and left hands
Distance of pivot point from rear axle horizontally : 106 mm to rear
Diameter drawbar pin hole : 33 mm
Maximum permissible load : .vertically 17 kN

2.9 Trailer hitch

Height above ground : . maximum : 1035 mm
. minimum : 649 mm
Distance of hitch point from rear axle centre, horizontally : 619/634 mm
Distance of hitch point from power take-off shaft end :
. vertically above maximum : 223 mm
minimum : 162 mm
. horizontally : 144/162 mm
Diameter of pin hole : 33 mm
Maximum vertical permissible load : 17 kN

2.10 Linkage drawbar

Height above ground : . maximum : 1196 mm
. minimum : 97 mm
Horizontal distance to power take-off shaft end : 627,5 mm
Number of holes : 9
Distance between holes : 80 mm
Hole diameter : 24 mm
Thickness and width of drawbar : 30 X 80 mm

2.11 Front towing hitch

Vertical height at centre of clevis : 890 mm
Width of clevis : 80 mm
Diameter of pin hole : 32 mm

2.12 Steering

Method of operation : hydrostatic steering system, gear box housing mounted on gear pump
Make : DANFOSS steering unit
Model : OSPC - ON
Type : open center type with integral system relief valves, anti-shock end and anti-cavitation valves
Working pressure : 15,7 to 16,2 MPa
Oil capacity : 64 l
Oil change period : 1200 h
Filter change period : 600 h
Recommended oil : see "fuels and lubricants used in test"

2.13 Brakes

2.13.1 Service brake

Make : MASSEY FERGUSON and GIRLING
Model : oil-immersed, 652 cm² friction area on each brake
Type : single disk brake, hydraulic actuated Girling hydraulic master cylinder
MF hydraulic slave annular piston.
Method of operation : independant or dependant operation of twin pedals (which can be latched)

2.13.2 Parking brake

Make and type : SIRMAC - HUSCO - 4 disks
Method of operation : hand lever - cable and rod

2.13.3 Trailer brake

Make : BOSCH
Type : hydraulically actuated valve to regulate oil flow and pressure to the trailer brakes
proportional and progressive trailer/tractor braking effort is achieved by linking their services together via a sensive valve
Method of operation : automatic, as the right hand side tractor brake pedal is depressed
Maximum braking pressure : 130-150 bars
Maximum flow : 30 l/min

2.14 WHEELS

2.14.1 Number and location

. Front : 2 steering and driving
. Rear : 2 driving

2.14.2 Wheelbase : 2699 mm

2.14.3 Track width adjustment

	Minimum mm	Maximum mm	Adjustment method
Front	1686	2171	Lugs
Rear	1588	2180	Lugs

2.17 Protective structure specifications

2.17.1 Specifications

Manufacturer's name : MASSEY FERGUSON S.A.
Trade name : 3000 E
Type of structure : . cab
. tiltable : no
CEMAGREF test : 7152
OECD approval number : CSS 094/9

Description : see test report

2.17.2 Driver's seat

Make : GRAMMER DS 85H/90 AR
Type of suspension : parallelogram
Type of damping : gas cylinder
Range of adjustment . longitudinal : 150 mm
. vertical : 60 mm

2.17.3 Miscellaneous

Passenger's seat : either factory fitted or as an accessory
Location : left of the operator
Number of places : 1

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2.18 Lighting

Unrestricted beam angle of head light in plan view in accordance with French regulation

	Height above ground of centre (mm)	Size (mm)	Distance from outside edge of tractor to centre at 2180 mm track width (mm)
Headlights	1208	167 x 107	991
Sidelights	1775	120 x 80	410
Rearlights	1844	300 x 62	289
Reflectors	804	98 x 62	557

3. CONDITIONS DURING TEST

3.1 Overall dimensions

LENGTH m	WIDTH		HEIGHT	
	min m	max m	exhaust silencer m	at top of protective structure
4,527	1,943	2,407	2,869	2,869

3.2 Ground clearance : 428 mm limited by drawbar bracket

3.3 Tractor mass (kg)

(With or without driver but with tanks full and cab)

	Without driver kg	With driver kg
Front	2100	2115
Rear	3275	3335
Total	5375	5450

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3.4 Tyres and track width specifications

	Front	Rear	
Tyres :	GOOD YEAR	GOOD YEAR	
. dimensions	16.9 R 28	20.8 R 38	
. ply rating	8	10	
. type of casing	radial	radial	
. maximum load (tyre manufacturer's)	21,8	35	kN
. maximum load (tractor manufacturer's)	21,8	35	kN
. inflation pressure (tyre manufacturer's)	1,8	1,3	bar
. dynamic radius index	670	855	mm
Chosen track width :	1968	1680	mm

3.5 Oils and lubrication recommended and used during tests

Engine oil . Type . Viscosity . Classification	BP TERRAC MANAGER 10 W 30 MIL L 2104 D
Transmission oils . Type . Viscosity . Classification	BP TERRAC MANAGER 10 W 30 MIL L 2104 D
Final drives oils . Type . Viscosity . Classification	BP TERRAC MANAGER 10 W 30 MIL L 2104 D
Front differential and final drives . Type . Viscosity . Classification	BP TERRAC MANAGER 10 W 30 MIL L 2104 D
Hydraulic fluid . Type . Viscosity . Classification	BP TERRAC MANAGER 10 W 30 API GL 4
Steering oil . Type . Viscosity . Classification	BP TERRAC MANAGER 10 W 30 API GL 4

- Grease : BP TERRAC CHARGE

. Number of lubrication points : 10

3.6 Fuel

. Type : Diesel Oil (in accordance to AFNOR standard NFM 15-- 008)
. Gravity at 15°C : 0,851
. Viscosity : (NFT 60.100) : 4,84 cSt

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4. COMPULSORY TESTS RESULTS .

4.1 Main power take-off performance

Location and date of tests : Antony , of 6th october 1992
Type of dynamometer : SCHENCK W780

Power	Speed		Fuel consumption			Specific
	Engine	Power take-off	Hourly		Specific	energy
kW	rev/min		kg/h	l/h	g/kWh	kWh/l
MAXIMUM POWER - TWO HOURS TEST						
86,5	2211	1105	21,09	24,78	244	3,49
MAXIMUM POWER AT RATED ENGINE SPEED						
86,5	2211	1105	21,09	24,78	244	3,49
PART LOADS (governor control being set for maximum power at rated engine speed) (1) Torque corresponding to 85% of the torque at maximum power at rated engine speed .						
74,3	2244	1122	18,74	22,02	252	3,37
(2) 75% of the torque defined in (1) .						
55,4	2257	1129	15,37	18,06	277	3,07
(3) 50% of the torque defined in (1) .						
37,2	2273	1136	12,08	14,20	325	2,62
(4) 25% of the torque defined in (1) .						
18,7	2286	1143	8,88	10,44	475	1,79
(5) Unloaded						
-	2299	1150	5,74	6,74	-	-
MAXIMUM POWER AT STANDARD POWER TAKE-OFF SPEED (1000 +/- 25 rev/min)						
83,8	2004	1002	19,44	22,85	232	3,67
PART LOADS (governor control being set for maximum power at standard power take-off speed) (6) Torque corresponding to 85% of the torque at maximum power at standard power take-off speed						
71,6	2015	1008	16,99	19,96	237	3,59
(7) 75% of the torque defined in (6) .						
54,1	2035	1017	13,81	16,23	255	3,33
(8) 50% of the torque defined in (6) .						
36,2	2051	1026	10,34	12,50	294	2,90
(9) 25% of the torque defined in (6) .						
18,3	2071	1035	7,62	8,96	417	2,04
(10) Unloaded						
-	2090	1045	4,70	5,52	-	-

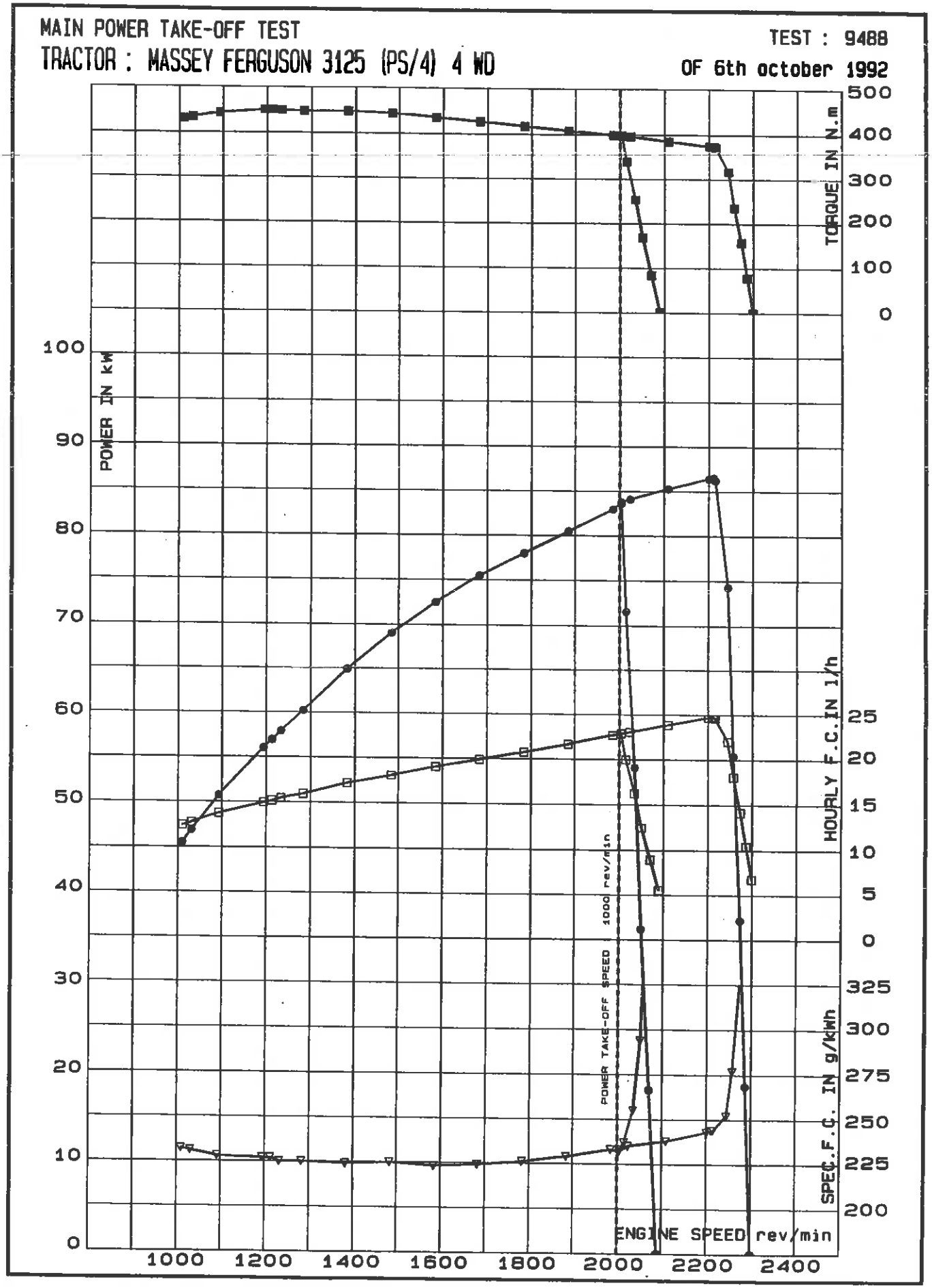
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MAIN POWER TAKE-OFF TEST

TRACTOR : MASSEY FERGUSON 3125 (PS/4) 4 WD

TEST : 9488

OF 6th october 1992



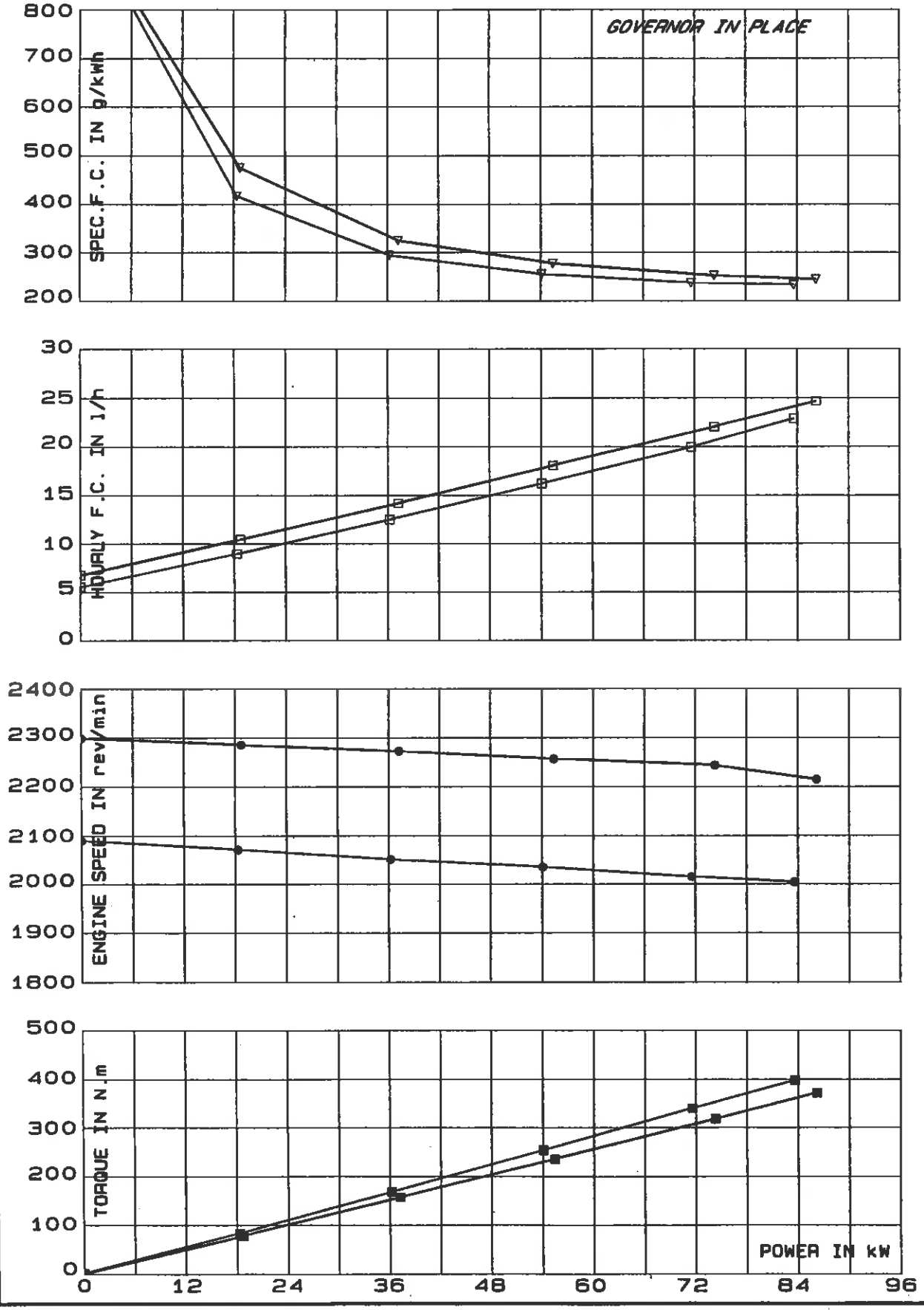
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MAIN POWER TAKE-OFF TEST

TEST : 9488

TRACTOR : MASSEY FERGUSON 3125 (PS/4) 4 WD

OF : 6th october 1992



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4.1 Main power take-off performance (continued)

Other results

No load, maximum engine speed : 2299 rev/min

Equivalent crankshaft torque at maximum power : 374,7 N.m

Maximum equivalent crankshaft torque : 450,5 N.m at 1213 rev/min

Mean atmospheric conditions

Temperature : 19 °C

Pressure : 999 mbar

Relative humidity : 64 %

Maximum temperatures

Coolant : 86 °C

Engine oil : 84 °C

Fuel : 27 °C

Air intake : 23 °C

Fuel consumption at varying load

Charge	Governor control being set for maximum power at rated engine speed		Governor control being set for maximum power at standard pto speed	
	at 85% (1)	at 50% of 85% (2)	at 85% (1)	at 50% of 85% (2)
Hourly consumption (l/h)	22,02	14,20	19,96	12,50
Standard specific consumption (g/kWh)	252	325	237	294

(1) 85% of the torque corresponding to maximum power for the position of the governor hand lever

(2) 50% of the torque defined in (1)

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4.2 Lifting force and hydraulic power

Date : 16th october 1992

4.2.1 Hydraulic power test

- Hydraulic pump
- Tapping point used for test : auxiliary service connection
- Sustained pressure with relief valve open : 182 bars
- Pump delivery rate at minimum pressure : 49,5 l/min

	Flow rate l/min	Pressure bars	Power kW
Flow rate corresponding to a hydraulic pressure equivalent to 90 percent of the actual relief valve pressure setting and corresponding hydraulic power	45,3	169	12,8
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	45,3	169	12,8

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4.2 Lifting force and hydraulic power

4.2.2 Power lift test

Hydraulic fluid : see "fuel and lubricants used in tests"

		at the hitch point	on the frame
Height of lower hitch point above ground in low position	mm	287	192
Vertical movement	mm	570	733
Maximum force exerted through full range	kN	44,5	35,1
Corresponding pressure of hydraulic fluid	bar	169	169
Moment about rear axle	kN.m	49,0	60,1
Maximum tilt angle of mast over range of lift	degree	/	11 °

4.2.2 Power lift test

Lifting height (1)	mm	-383	-288	-200	-100	0	+100	+200	+250	+282	+350
Lifting force (2)	at the hitch point kN	-	44,5	45,7	47,4	48,2	49,0	49,8	49,9	48,7	-
	at the frame kN	38,8	39,0	39,4	39,5	38,9	38,1	37,2	36,8	35,8	35,1

Corresponding pressure : 169 bars

(1) Lifting height relative to the horizontal plane including the lower link pivot points
(2) The values of force measured are corrected to correspond to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting

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4.3 Drawbar performance (unballasted tractor)

Date and location of test : 16th october 1992, Antony

Type of track : Tarmacadam
Height of drawbar above ground : 0,60 m

Tyres	Front	Rear
. Size :	16.9 R 28	20.8 R 38
. Inflation pressure (bar) :	1,1	1,0

Atmospheric conditions :
- . Temperature : 7°C
- . Pressure : 1020 mbar
- . Relative humidity : 53 %

Gear ratio	Travelling speed km/h	Drawbar pull kN	Power kW	Engine speed rev/min	Wheelslip %	Specific consumption g/kWh	Specific energy kW/l	Temperatures (1) °C	(2) °C	(3) °C
MAXIMUM POWER IN TESTED GEAR										
1 T A	1,94	51,4	27,7	2272	15	453	1,88	22	83	75
1 T B	2,27	50,3	31,7	2265	15	413	2,06	27	83	80
1 T C	2,64	50,6	37,1	2259	15	388	2,19	28	84	80
1 T D	3,10	50,2	43,2	2253	15	343	2,48	25	84	83
2 T A	3,26	49,8	45,1	2250	15	345	2,47	28	83	84
2 T B	3,90	48,5	52,5	2243	13	314	2,71	25	83	83
3 T A	4,48	47,7	59,4	2238	11	313	2,72	31	83	83
2 T C	4,74	47,4	62,4	2235	10	308	2,76	33	84	84
3 T B	5,25	46,8	68,2	2228	10	301	2,82	34	85	86
2 T D	5,54	46,3	71,2	2226	10	292	2,91	33	85	87
4 T A	6,22	42,2	73,0	2221	8	294	2,89	32	86	87
3 T C	6,38	41,6	73,7	2222	7	291	2,93	26	86	87
4 T B	7,32	36,6	74,5	2195	6	286	2,97	33	83	87
3 T D	7,48	35,9	74,6	2193	6	285	2,98	33	84	87
1 L A	7,79	34,8	75,3	2196	6	279	3,05	28	84	87
4 T C	8,72	30,5	74,0	2188	5	287	2,96	32	86	87
1 L B	9,19	29,2	74,6	2192	5	286	2,98	35	85	86
4 T D	10,28	25,6	73,3	2184	4	293	2,90	34	83	84
1 L C	10,96	24,0	73,0	2192	4	291	2,93	32	84	85
1 L D	12,86	20,3	72,6	2185	3	290	2,94	32	82	85
2 L A	13,58	19,2	72,3	2193	3	294	2,89	34	82	86
2 L B	15,58	16,6	71,8	2180	4	296	2,88	30	84	84

A speed sesor releases the front axle above 15 km/h

(1) Fuel temperature - (2) Coolant temperature - (3) Engine oil temperature

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4.3 Drawbar performance (unballasted tractor) (continued)

Gear ratio	Travelling speed km/h	Drawbar pull kN	Power kW	Engine speed rev/min	Wheelslip %	Specific consumption g/kWh	Specific energy kW/l	Temperatures (1) °C	(2) °C	(3) °C
TRANSMISSION AND FUEL CONSUMPTION CHARACTERISTICS (1) Maximum drawbar power in tested gear										
1 L A	7,79	34,8	75,3	2196	6	279	3,05	28	84	87
(2) 75% of pull at maximum power at rated engine speed										
1 L A	8,07	26,1	58,5	2239	4	304	2,80	29	84	85
(3) 50% of pull at maximum power at rated engine speed										
1 L A	8,26	17,4	39,9	2257	3	350	2,43	30	84	85
(4) next higher gear at reduced engine speed, same pull and travelling speed as in (2)										
4 T C	8,12	26,0	58,7	2017	4	288	2,95	33	84	82
(5) next higher gear at reduced engine speed, same pull and travelling speed as in (3)										
4 T C	8,21	17,4	39,6	2010	3	325	2,62	32	83	81
(6) Maximum drawbar power in selected gear nearest to 7,5 km/h										
4 T B	7,32	36,6	74,5	2195	6	286	2,97	33	83	87
(7) 75% of pull at maximum power										
4 T B	7,62	27,4	58,0	2240	4	305	2,79	33	84	86
(8) 50% of pull at maximum power										
4 T B	7,80	18,2	39,4	2258	3	353	2,41	33	81	85
(9) Higher gear at reduced engine speed; same pull and travelling speed as in (7)										
3 T D	7,58	27,6	58,2	2184	4	301	2,83	33	84	87
(10) Higher gear at reduced engine speed; same pull and travelling speed as in (8)										
3 T D	7,78	18,0	38,9	2202	3	346	2,46	33	84	85
(11) Higher gear at reduced engine speed; same pull and travelling speed as in (7)										
1 L A	7,67	27,3	58,2	2130	4	295	2,89	28	83	86
(12) Higher gear at reduced engine speed; same pull and travelling speed as in (8)										
1 L A	7,81	18,3	39,8	2149	3	339	2,51	27	82	83

(1) Fuel temperature - (2) Coolant temperature - (3) Engine oil temperature

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5. OPTIONAL TESTS RESULTS

5.1 Measurement of external noise level

Date of test : 8th october 1992
Type of sound level meter : BRUEL & KJAER 2209
Type of track : Tarmacadam
Gear : 4 L D
Travelling speed before acceleration : 31,6 km/h
Sound level : 85 dB(A)

6. REPAIRS AND ADJUSTMENTS DURING TESTS

none

Le Technicien chargé des essais	L'Ingénieur responsable des essais	Le Chef de la Division Tracteurs et Machines Agricoles
M.NOCQUEL	E.MUGO	J.F.GOUPILLON

- This test report was approved for publication by the requester of the test -

Diffusion 1993	
N°048	1ère édition