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° 9371

DATE : 11th december 1992

OECD TEST OF AN AGRICULTURAL TRACTOR (RESTRICTED CODE) 50.12

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

OECD Approval
N° 1413 Restricted Code
Date 11th december 1992



Tested equipment	
Nature	: TRACTOR
Make	: MASSEY FERGUSON
Model	: B 76/4
Trade name	: 3065 S
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 Telex : 140396 F

This test report may only be duplicated as a whole

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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 : 15th may 1992

2. SPECIFICATIONS

2.1 Tested tractor

Make : MASSEY FERGUSON
Model : B 76/4
Trade name : 3065 S
Number of driving wheels : 4
Type : standard
Serial number : S 339 024
1st serial number : S 339 024

2.2 Engine

2.2.1 Identification

Make : PERKINS
Model : AT4-236
Type : 4 strokes - Turbocharged direct injection diesel
Serial number : U 192375 V

2.2.2 Cylinders

Number : 4
Disposition : vertical, in line
Bore/stroke : 98,4/127 mm
Capacity : 3860 cm^3
Compression ratio : 15,5/1
Arrangement of valves : overhead in line
Cylinders liners : dry

2.2.3 Supercharging :

Make : GARRET AIR RESEARCH
Model : turbocompressor
Type : M-TA-D3
Supercharging pressure : 0,65 bar

2.2.4 Fuel system

Fuel feed system : diaphragm fuel feed pump
Make, type and model of fuel filter : CAV V 7005.3064,
dual element with water
Capacity of fuel tank : 148 l
Make, type and model of injection pump : CAV, DPA 587, rotative
Manufacturer's setting of injection pump : 74 ± 2 mm^3/cp at rated engine speed and full load
Serial number : 19086 KJG
Injection pump timing : 16°± 2 before TDC
Make, type and model of injectors : CAV, 680 1027 EDG
Injection pressure : 230 bars

2.2.5 Governor

Make : CAV
Type : mechanical, incorporated into fuel injection pump
Model : DPA
Governed range of engine speed : 1000 - 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
. Location of air intake : over bonnet

Main : . Make : DONALDSON
. Type and model : dry, FLB 08-0024
. Location : under bonnet horizontal

Maintenance indicator : lamp on desk board

2.2.8 Lubrication system

Type of feed pump : gear
Total oil capacity including filter : 8,5 l
Oil change period : 250 h
Type and number of filter : 1 cartridge
Filter change period : 250 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 : 67
. Fan diameter : 457 mm
Coolant capacity : 19,4 l
Type of temperature control : thermostatic
Surpressure system : 0,7 bar

2.2.10 Starting system

Safety device : switch operated by main clutch pedal
Make : LUCAS
Type and model : pre-engaged M 127
Power : 2,8 kW
Cold starting aid : CAV - Thermostart

2.2.11 Electrical system

Voltage : 12 V negative earth
Generator : alternator
. Make : VALEO
. Type and model : alternator 70 A
. Power : 940 W
Batteries
. Number : 2
. Rating : 80 Ah each at 20 hours rating
. Cold starting capacity : 420 A for 60 s at -18°C

2.2.12 Exhaust system

Make : LUCHAIRE
Type : perforated
Model : 114
Location : under bonnet with vertical stack pipe
Height of outlet above ground : 2626 mm

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2.3 Transmission

2.3.1 Clutch (travel)

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

2.3.2 Gear box

Make : MASSEY FERGUSON
Type and model : mechanically operated gear shift
Arrangement : 4 gears with two positions speed shift,
2 ranges and one reverse group
Number of speeds : 16 forward and 16 reverse
Available option : creeper - speed shift

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 drive

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	Number of engine revolutions for one revolution of driving wheels	Nominal travelling speed(*) at rated engine speed of 2200 rev/min (km/h)
T forward	1	318,393	1,941
	2	210,783	2,931
	3	152,327	4,056
	4	105,213	5,873
T reverse	1	327,680	1,886
	2	216,931	2,848
	3	156,770	3,941
	4	105,281	5,706
T + S forward	1	251,916	2,453
	2	166,773	3,706
	3	120,523	5,127
	4	83,245	7,423
T + S reverse	1	259,263	2,383
	2	171,638	3,600
	3	124,038	4,981
	4	85,673	7,212
L forward	1	79,395	7,782
	2	52,561	11,756
	3	37,984	16,267
	4	26,236	23,551

T : Turtle - L : Rabbit - S : speed shift

(*) Calculated with a tyre dynamic radius index of 745 mm (ISO 4251/1-1984)
Number of revolutions of front wheels for one revolution of rear wheels : 1,362

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2.3 Transmission (continued)

2.3.6 Total ratios and travelling speeds (continued)

Range	Gear	Number of engine revolutions for one revolution of driving wheels	Nominal travelling speed(*) at rated engine speed of 2200 rev/min (km/h)
L	1	81,710	7,562
	2	54,094	11,422
reverse	3	39,092	15,806
	4	27,001	22,884
L + S	1	62,818	9,836
	2	41,587	14,858
forward	3	30,054	20,560
	4	20,758	29,766
L + S	1	64,650	9,557
	2	42,800	14,437
reverse	3	30,530	19,977
	4	21,364	28,923

T : Turtle - L : Rabbit - S : speed shift

(*) Calculated with a tyre dynamic radius index of 745 mm (ISO 4251/1-1984)
Number of revolutions of front wheels for one revolution of rear wheels : 1,362

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 : 702 mm with tyres 16.9 R 34
Distance from the median plane of the tractor : 0 mm
Distance behind rear axle : 450 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

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2.4 Main power take-off (continued)

2.4.2 Power take-off proportional to engine speed (continued)

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 : 702 mm with tyres 16.9 R 34
Distance from the median plane of the tractor : 0 mm
Distance behind rear axle : 400 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 tyre : 16.9 R 34
Travelling distance for one revolution of power take-off shaft : 0,595 (540); 0,324 (1000)
Number of power take-off shaft revolutions for one revolution rear wheels : 7,872 (540); 14,433 (1000)
Direction of rotation with forward gear engaged : clockwise

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 66,7 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"

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2.6 Three-point linkage

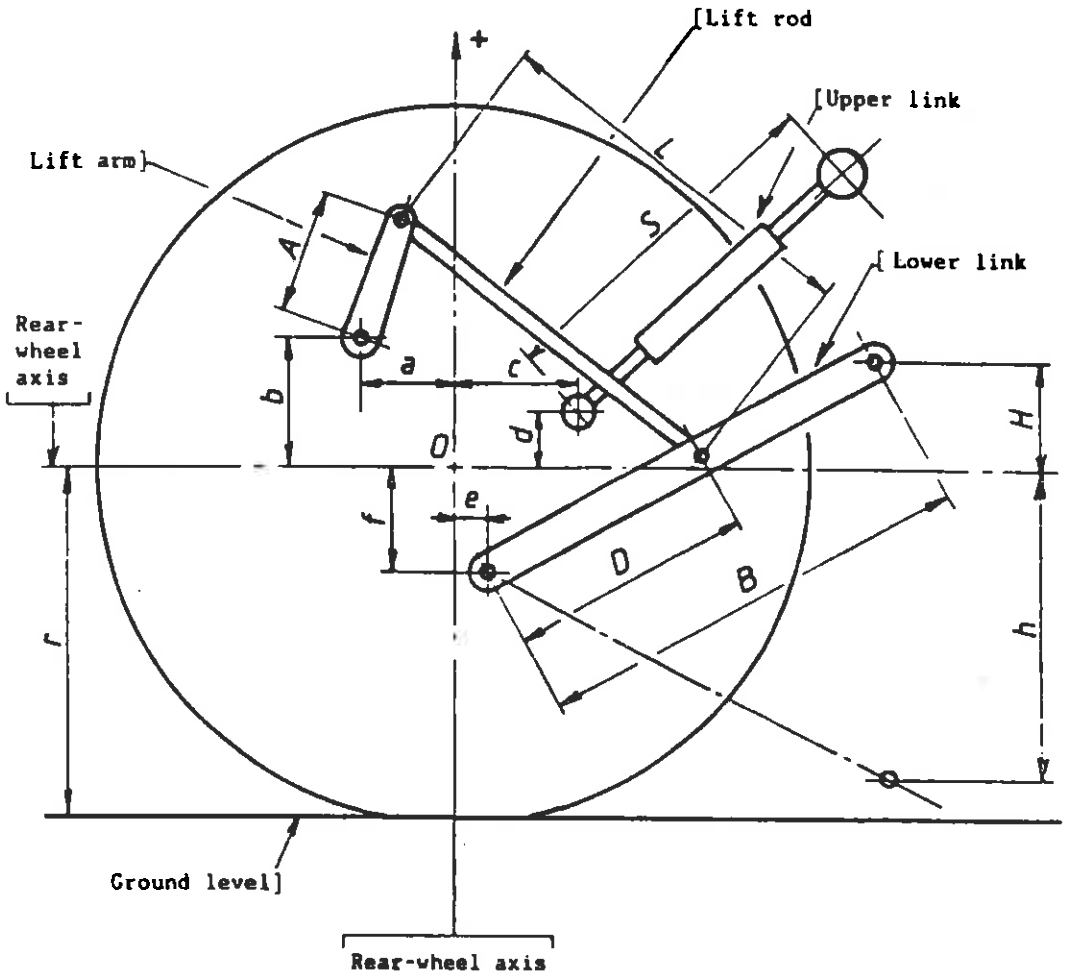
Category : II (in accordance with ISO 730/1-1990 art.II)
Category adapter : none
Controls : . position control by linear sensor measuring the rockshaft position
. draft control by pin sensors at each lower link

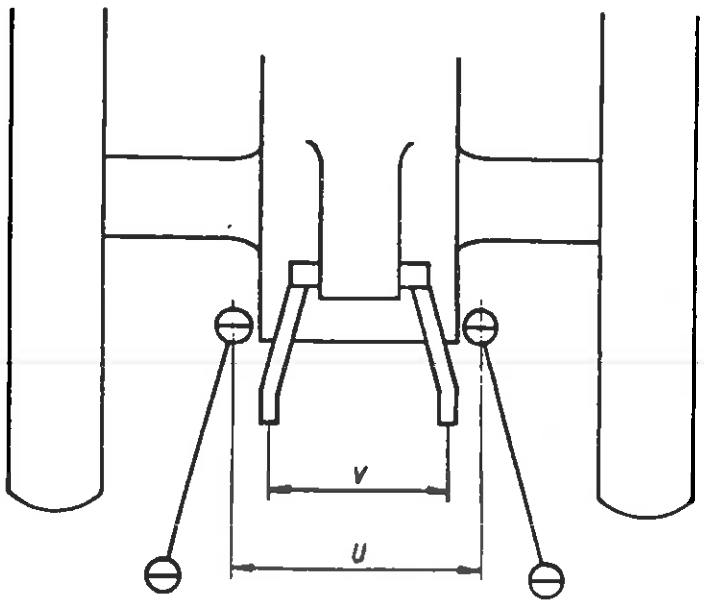
Linkage dimensions (mm)				Settings used for test
Rear tyres : dynamic index radius	16.9 R 34	(r)	745	
Front tyres : dynamic index radius	13.6 R 24	(r')	560	
Length of lift arms		(A)	266	
Length of lower links		(B)	940	
Distance of lift arm pivot point from rear wheels centre line	horizontally	(a)	128	
	vertically	(b)	330	
Horizontal distance between the two lower link points		(u)	576	
Horizontal distance between the two lift arm end points		(v)	626	
Length of upper link		(S)	from 570 to 770	680
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)	100	
	vertically	(f)	260	
Distance of lower link points to lift rod pivot points on lower link		(D)	508 | 608	508
Length of lift rods		(L)	from 565 to 765	720
Height of lower hitch points relative to the rear wheels centre				
- in low position		(h)	from 191 to 708	500
- in high position		(H)	from - 5 to 328	1
Height of lower hitch points when locked in transport position (*)			from 740 to1073	

(*) Assuming the dynamic index radius = 745 mm (ISO 4251/1-1984)

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2.7 Linkage geometry





2.8 Swinging drawbar

Height above ground : . maximum : 462 mm
. minimum : 462 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 : 293 mm right and left hands
Distance of pivot point from rear axle horizontally : 106 mm
Diameter drawbar pin hole : 30 mm
Maximum vertical permissible load : 17 kN

2.9 Trailer hitch

Height above ground : . maximum : 919 mm
. minimum : 509 mm
Distance of hitch point from rear axle centre, horizontally : 619 mm
Distance of hitch point from power take-off shaft end :
. vertically above maximum : 223 mm
minimum : 162 mm
. horizontally : 144 mm
Diameter of pin hole : 33 mm
Maximum vertical permissible load : 30 kN

2.10 Linkage drawbar

Height above ground : . maximum : 1073 mm
. minimum : 37 mm
Horizontal distance to power take-off shaft end : 565 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 : 781 mm
Width of clevis : 365 mm
Diameter of pin hole : 32 mm

2.12 Steering

Method of operation : hydrostatic steering system, gearbox 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 : in common with transmission housing
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
Method of operation : hand lever - cable and rod

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2.13 Brakes (continued)

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 : 32 l/min

2.14 WHEELS

2.14.1 Number and location

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

2.14.2 Wheelbase : 2375 mm

2.14.3 Track width adjustment

	Minimum mm	Maximum mm	Adjustment method
Front	1433	1923	Reversing wheels and off-set lug rims
Rear	1502	2117	Reversing wheels and off-set lug rims

2.17 Protective structure specifications

2.17.1 Specifications

Manufacturer's name : MASSEY FERGUSON S.A.
Trade name : 3000 AA
Type of structure : . cab
. tiltable : no
CEMAGREF test : none
OECD approval number : CSS 0128/7

Description : the cab is made up from 3 major sub-assemblies, the plateform, side pillars and roof and the front pillars. These sub-assemblies are bolted together to form the complete cab structure

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 1502 mm track width (mm)
Headlights	1095	167 x 107	1104
Sidelights	1566	120 x 80	489
Rearlights	1580	300 x 62	474
Reflectors	663	98 x 62	525

3. CONDITIONS DURING TEST

3.1 Overall dimensions

LENGTH m	WIDTH		HEIGHT	
	min m	max m	exhaust silencer m	at top of protective structure
3,959	1,899	2,495	2,626	2,620

3.2 Ground clearance : 357 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	1515	1530
Rear	2395	2450
Total	3910	3980

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3.4 Tyres and track width specifications

	Front	Rear	
Tyres :	MICHELIN	MICHELIN	
. dimensions	13.6 R 24	16.9 R 34	
. ply rating	8	8	
. type of casing	radial	radial	
. maximum load (tyre manufacturer's)	15,1	23,3	kN
. maximum load (tractor manufacturer's)	15,1	23,3	kN
. inflation pressure (tyre manufacturer's)	2,0	1,7	bar
. dynamic radius index	560	745	mm
Chosen track width :	1753	1604	mm

3.5 Oils and lubricayion recommended and used during tests

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

- Grease : B.P TERRAC CHARGE

. Number of lubrication points : 10

3.6 Fuel

. Type : Diesel Oil
. Gravity at 15°C : 0,851
. Viscosity : (NFT 60.100) : 4,84 cSt

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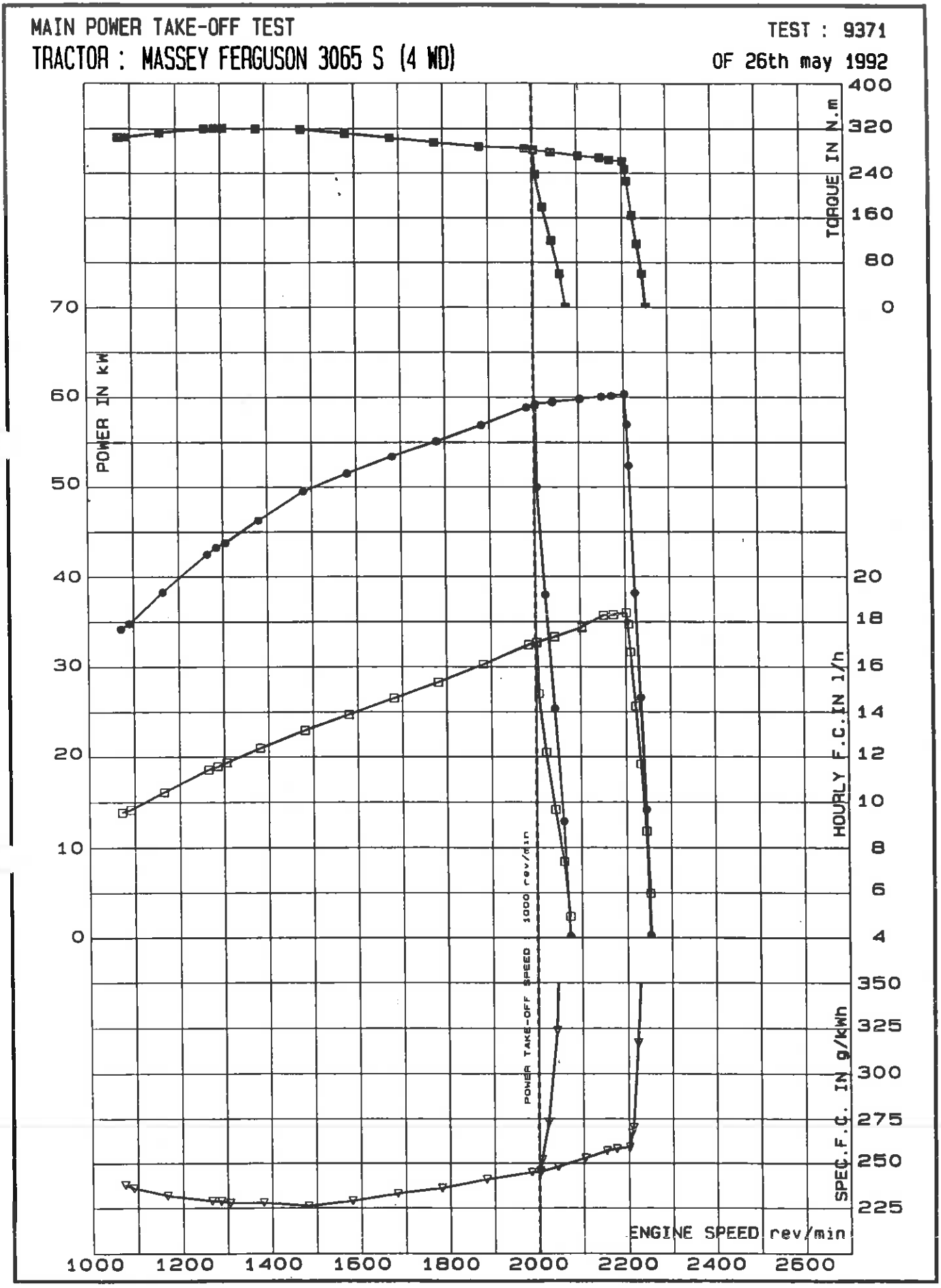
4. COMPULSORY TESTS RESULTS .

4.1 Main power take-off performance

Location and date of tests : Antony , of 26th may 1992
Type of dynamometer : SCHENCK W400

Power	Speed		Fuel consumption			Specific energy
	Engine	Power take-off	Hourly		Specific	
kW	rev/min		kg/h	l/h	g/kWh	kWh/l
MAXIMUM POWER - TWO HOURS TEST						
60,4	2202	1101	15,66	18,40	259	3,28
MAXIMUM POWER AT RATED ENGINE SPEED						
60,4	2202	1101	15,66	18,40	259	3,28
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 .						
52,4	2211	1105	14,17	16,65	270	3,14
(2) 75% of the torque defined in (1) .						
38,2	2222	1111	12,13	14,25	317	2,69
(3) 50% of the torque defined in (1) .						
26,6	2233	1117	9,94	11,68	374	2,27
(4) 25% of the torque defined in (1) .						
14,2	2244	1122	7,41	8,71	522	1,63
(5) Unloaded						
-	2252	1126	5,08	5,97	-	-
MAXIMUM POWER AT STANDARD POWER TAKE-OFF SPEED (1000 +/- 25 rev/min)						
59,3	2003	1002	14,54	17,09	245	3,47
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						
50,0	2006	1003	12,60	14,81	252	3,38
(7) 75% of the torque defined in (6) .						
38,0	2022	1011	10,39	12,21	273	3,11
(8) 50% of the torque defined in (6) .						
25,4	2042	1021	8,23	9,67	324	2,63
(9) 25% of the torque defined in (6) .						
12,9	2061	1031	6,27	7,37	487	1,75
(10) Unloaded						
-	2074	1037	4,21	4,95	-	-

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MAIN POWER TAKE-OFF TEST
TEST : 9371
TRACTOR : MASSEY FERGUSON 3065 S (4 WD)
OF 26th may 1992
POWER IN kW
TORQUE IN N.m
HOURLY F.C. IN l/h
SPEC.F.C. IN g/kWh
POWER TAKE-OFF SPEED 1000 rev/min
ENGINE SPEED rev/min
70
60
50
40
30
20
10
0
400
320
240
160
80
0
20
18
16
14
12
10
8
6
4
350
325
300
275
250
225
1000
1200
1400
1600
1800
2000
2200
2400
2600

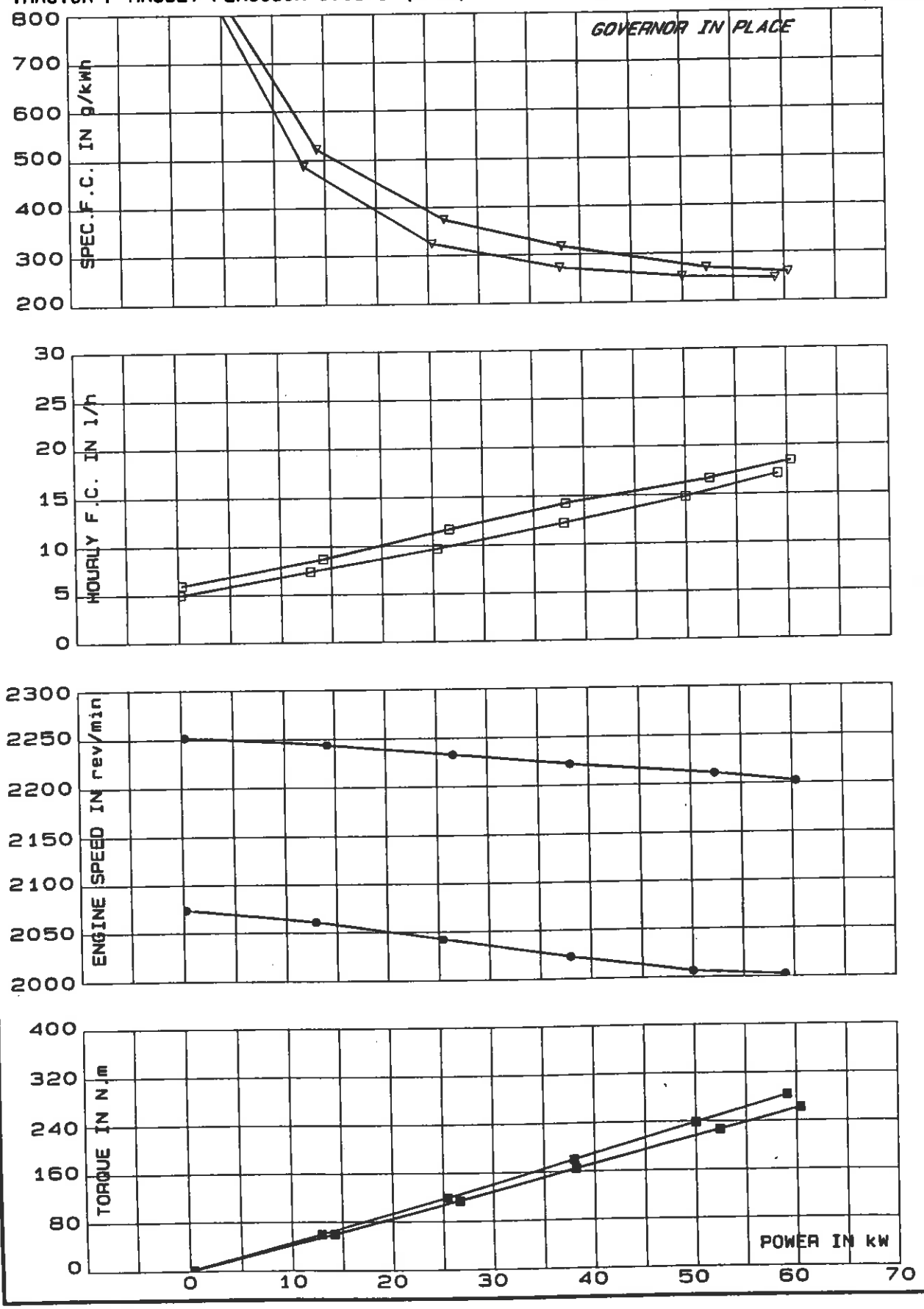
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MAIN POWER TAKE-OFF TEST

TEST : 9371

TRACTOR : MASSEY FERGUSON 3065 S (4 WD)

OF : 26th may 1992



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4.1 Main power take-off performance (continued)

Other results

No load, maximum engine speed : 2252 rev/min

Equivalent crankshaft torque at maximum power at rated engine speed : 261,9 N.m

Maximum equivalent crankshaft torque : 321,4 N.m at 1285 rev/min

Mean atmospheric conditions

Temperature : 24 °C

Pressure : 1010 mbar

Relative humidity : 38 %

Maximum temperatures

Coolant : 85 °C

Engine oil : 105 °C

Fuel : 26 °C

Air intake : 27 °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)	16,65	11,68	14,81	9,67
Standard specific consumption (g/kWh)	270	374	252	324

(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 : 30th june 1992

4.2.1 Hydraulic power test (lift and auxiliary service connection number 1)

- Tapping point used for test : auxiliary service connection
- Sustained pressure with relief valve open : 183 bars
- Pump delivery rate at minimum pressure : 48,5 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	45,7	164	12,4
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	44,9	168	12,6

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	245	187
Vertical movement	mm	501	674
Maximum force exerted through full range	kN	40,3	27,4
Corresponding pressure of hydraulic fluid	bar	164	164
Moment about rear axle	kN.m	41,9	45,2
Maximum tilt angle of mast over range of lift	degree	/	13 °

4.2.3 Power lift test

Lifting height (1)	mm	-298	-240	-200	-100	0	+100	+200	+261	+376
Lifting force (2)	at the hitch point kN	/	40,3	40,6	42,7	43,7	44,6	44,5	44,5	/
	at the frame kN	34,3	33,7	34,1	33,9	33,7	32,2	31,1	30,3	27,4

Corresponding pressure : 164 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 or to maximum power delivered by the hydraulic system, whichever is lower.

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4.3 Drawbar performance (unballasted tractor)

Date and location of test : 17th june 1992, Antony

Type of track : Tarmacadam

Height of drawbar above ground : 0,47 m

Tyres	Front	Rear
. Size :	13.6 R 24	16.9 R 34
. Inflation pressure (bar) :	1,3	1,1

Atmospheric conditions :

. Temperature : 15 °C
. Pressure : 1019 mbar
. Relative humidity : 59 %

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	1,73	33,9	16,3	2236	15	549	1,55	25	81	86
1 T + S	2,19	33,6	20,4	2229	15	487	1,75	27	83	89
2 T	2,60	33,3	24,1	2225	15	438	1,94	29	79	93
2 T + S	3,28	33,3	30,3	2217	15	402	2,12	29	81	94
3 T	3,56	33,4	33,0	2214	15	386	2,21	44	82	95
3 T + S	4,53	33,0	41,5	2204	15	358	2,38	45	80	96
4 T	5,30	32,3	47,5	2191	12	336	2,53	47	85	96
4 T + S	7,07	25,4	49,9	2177	7	322	2,64	51	82	97
1 L	7,39	24,6	50,4	2160	7	316	2,69	42	82	96
1 L + S	9,52	18,8	49,7	2159	5	319	2,67	42	85	96
2 L	11,47	15,6	49,8	2155	4	316	2,69	43	82	96
2 L + S	14,60	12,1	49,1	2145	3	322	2,64	49	80	97
3 L	15,65	11,4	49,4	2149	5	320	2,66	51	84	97

CEMAGREF

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	7,39	24,6	50,4	2160	7	316	2,69	42	82	90
(2) 75% of pull at maximum power at rated engine speed										
1 L	7,72	18,4	39,4	2208	5	341	2,50	48	79	93
(3) 50% of pull at maximum power at rated engine speed										
1 L	7,91	12,3	27,0	2222	3	397	2,15	48	78	91
(4) next higher gear at reduced engine speed, same pull and travelling speed as in (2)										
1 L + S	7,72	18,3	39,1	1746	4	293	2,91	34	79	90
(5) next higher gear at reduced engine speed, same pull and travelling speed as in (3)										
1 L + S	7,87	12,3	26,8	1747	3	324	2,62	34	79	90
(6) Maximum drawbar power in selected gear nearest to 7,5 km/h										
4 T + S	7,07	25,4	49,9	2177	7	322	2,64	51	82	97
(7) 75% of pull at maximum power										
4 T + S	7,34	19,2	39,2	2209	5	344	2,48	51	82	96
(8) 50% of pull at maximum power										
4 T + S	7,52	12,8	26,7	2223	3	409	2,08	51	82	95
(9) Higher gear at reduced engine speed; same pull and travelling speed as in (7)										
1 L	7,33	19,2	39,1	2099	5	329	2,59	48	79	93
(10) Higher gear at reduced engine speed; same pull and travelling speed as in (8)										
1 L	7,53	12,7	26,7	2116	3	379	2,25	48	79	91

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

CEMAGREF

5. OPTIONAL TESTS RESULTS

5.2 Measurement of external noise level

Date of test : 19th june 1992
Type of sound level meter : BRUEL & KJAER 2209
Type of track : Tarmacadam
Gear : 4 L + S
Travelling speed before acceleration : 22,3 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.HOCQUEL	E.HUGO	J.F.GOUPILLON

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

Diffusion 1993	
N°004	1ère édition