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

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Division Tracteurs et Travail du Sol

TEST REPORT **N° 7817** **DATE 25th MAY 1990**

OECD TEST OF AN AGRICULTURAL TRACTOR (RESTRICTED CODE) 50.12

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

OECD Approval
N° 1259 Restricted Code
Date 2nd May 1990



Tested equipment	
Nature	: TRACTOR
Make	: MASSEY FERGUSON
Model	: B 415/2
Trade name	: 3645
Number of driving wheels	: 2
Type	: standard

Submitted for tests by

Name : MASSEY FERGUSON S.A.
Address : avenue Blaise Pascal
BP 307
60026 BEAUVAIS CEDEX

Tel : 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

Date of arrival of the equipment in CEMAGREF : 12th december 1990

Place of running in : BEAUVAIS

Duration of running in : 20 h

2. SPECIFICATIONS

2.1 Tested tractor

Make : MASSEY FERGUSON
Model : B 415/2
Trade name : 3645
Number of driving wheels : 2
Type : standard
Serial number : P 146 038
1st serial number : P 146 038

2.2 Engine

2.2.1 Identification

Make : PERKINS
Model : 1006-6 T 5
Type : 4 strokes, direct injection diesel
Serial number : YB 31233 U 504 789 S

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 : AIRESEARCH (GARRET)
Model : turbo-compressor
Type : TB4135
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 : 260 l
Make, type and model of injection pump : CAV, DPS 940, rotative
Serial number : 46676 DFG
Manufacturer's setting of injection pump : 72 ±2 mm^3/stroke (at rated engine speed and full load)
Injection pump timing : 18° before T.D.C.
Make, type and model of injectors : CAV, LRB 670 3201 LF
Injection pressure : 250 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

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2.2.7 Air cleaner

Pre-cleaner : . Make : DONALDSON
. Type and model : cyclone incorporated into main
. Location : under bonnet

Main : . Make : DONALDSON
. Type and model : dry, FLB 10 - 0070
. Location : 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 cartridge
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 : M 127, pre-engaged
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 : 840 W
Batteries
. Number : 2
. Rating : 80 Ah at 20 hours
. Cold starting : 420 A for 60 s at -18 °C

2.2.12 Exhaust system

Make : LUCHAIRE
Type : perforated
Model : 107
Location : under hood with vertical stack pipe
Hight of outlet above ground : 2905 mm

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2.3 Steering wheels

Number : 2
Location : front axle
Tyres : GOOD YEAR
. Size : 11.00 - 16
. Ply rating : 8
. Type of casing : cross ply
. Maximum permissible load on each tyre : 13,1 kN (with inflation pressure 180 kPa)

Track width : 1543 - 1622 - 1644 - 1724 - 1746 - 1826 - 1848 - 1927 - 1949 - 2028 - 2051 - 2130 - 2153 - 2231
2254 - 2333 mm
Method of adjustment : telescopic

2.4 Driving wheels

Number : 2
Location : rear axle
Tyres : GOOD YEAR
. Size : 20.8 - 38
. Ply rating : 8
. Type of casing : cross ply
. Maximum permissible load on each tyre : 30 kN (with inflation pressure 130 kPa)

Track width : 1588 - 1680 - 1780 - 1880 - 1980 - 2080 - 2180 mm
Method of adjustment : lugs

2.5 Wheelbase : 2777 mm

2.6 Transmission

2.6.1 Clutch (travel only)

Mak : VALEO
Type : dry, single plate clutch, pulled type
Number of plates : 1
Diameter of plates : 350 mm
Method of operation (for travel) : foot pedal

2.6.2 Gear box

Make : MASSEY FERGUSON
Type and model : basic gearbox to be manual (4 x 2 speeds)
Arrangement : mechanically operated gear shift, speedshift as an option
Number of speeds : 16 forward, 16 reverse, totaly 32 speeds
Available option : creeper

2.6.3 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

2.6.4 Front axle

Make : MASSEY FERGUSON
Type and model : not driven, telescopically adjustable

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2.6.5 Transmission oils

Capacity :

. Gear box : }
. Hydraulic system : } 88 l
. Rear axle final drives : }

Change period : 1200 h

Filter change period : 600 h

Type of oil filter : removable cartridge in metallic filter elements

Recommanded oils : see "fuel and lubricants used in tests"

2.6.6 Total ratios and travelling speeds

Group	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	1	299,965	2,364
	2	190,776	3,717
	3	139,768	5,074
	4	100,622	7,047
T (rear)	1	249,971	2,796
	2	158,980	4,397
	3	116,473	6,001
	4	83,852	8,336
T + S	1	237,340	2,988
	2	150,947	4,698
	3	110,588	6,412
	4	79,615	8,907
T + S (rear)	1	197,783	3,534
	2	125,789	5,557
	3	92,157	7,585
	4	66,346	10,535
R	1	89,644	8,184
	2	55,105	12,869
	3	40,371	17,565
	4	29,064	24,398
R (rear)	1	74,703	9,681
	2	45,921	15,221
	3	33,643	20,776
	4	24,220	28,859
R + S	1	68,555	10,344
	2	43,601	16,264
	3	31,943	22,200
	4	22,997	30,836
R + S (rear)	1	57,129	12,235
	2	36,334	19,238
	3	26,519	26,259
	4	19,764	36,474

T : Turtle - R : Rabbit - S : Speedshift
(*) Calculated with a tyre dynamic index of 855 mm (ISO 4251/1 - 1984)

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2.7 Main power take-off

2.7.1 General specifications

Independant

Wet hydraulic multiplate clutch

Engagement by lever with electrical switch located at the middle of the upper RH 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

2.7.2 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 : 779 mm with tyres 20.8-38
Distance from the median plane of the tractor : 0 mm
Distance behind rear axle : 550 mm

Power take-off speed : 596 rev/min
for rated engine speed : 2200 rev/min

Engine speed : 1992 rev/min
for standard power take-off speed : 540 rev/min

Engine to power take-off ratio : 3,69
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 : 779 mm with tyres 20.8-38
Distance from the median plane of the tractor : 0 mm
Distance behind rear axle : 498 mm

Power take-off speed : 1053 rev/min
for rated engine speed : 2200 rev/min

Engine speed : 2090 rev/min
for standard power take-off speed : 1000 rev/min

Engine to power take-off ratio : 2,09
Power restriction : none
Direction of rotation (viewed facing driving end) : clockwise

2.7.3 Power take-off proportional to ground speed : None

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2.8 Power lift

Make : MASSEY FERGUSON
Type : top link, electronic position, draft or mixed control
Type hydraulic system : 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 : gears
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 : 88 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 : 34 l
Recommended oil : see "fuel and lubricants used in test"

2.9 Three-point linkage

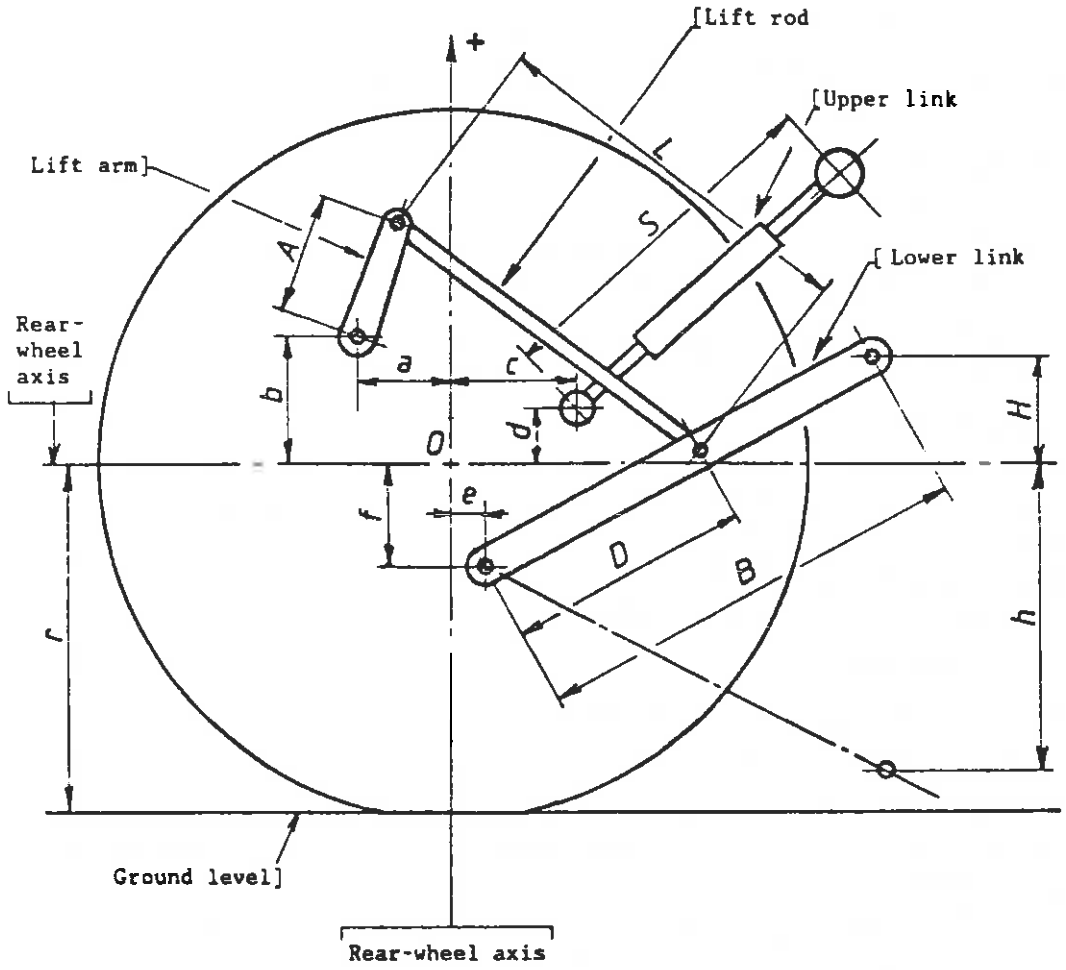
Category : II - III (in accordance with ISO 730/I - 1977)
Category adapter : yes
Controls : Position control by linear sensor measuring the rockshaft position
Draft control by pin sensors at each lower link

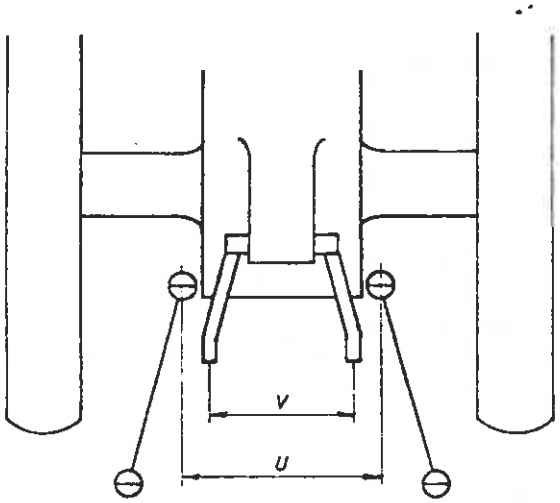
Linkage dimensions (mm)				Settings used for test
Rear tyres : dynamic index radius		(r)*	855	
Front tyres : dynamic index radius		(r')*	450	
Length of lift arms		(A)	362	
Length of lower links		(B)	975	
Distance of lift arm pivot point from rear wheels centre line	horizontally	(a)	185,4	
	vertically	(b)	431,8	
Horizontal distance between the two lower link points		(u)	511	
Horizontal distance between the two lift arm end point		(v)	610	
Length of upper link		(S)	from 666 to 786	765
Distance of upper link pivot point from rear wheels centre	horizontally	(c)	428	
	vertically	(d)	179|237	179
Distance of lower link pivot point from rear wheels centre	horizontally	(e)	225	
	vertically	(f)	-300	
Distance of lower link points to lift rod pivot points on lower link		(D)	525	
Length of lift rods		(L)	from 675 to 865	797
Height of lower hitch points relative to the rear wheels centre				
- in low position		(h)	from 722 to 324	531
- in high position		(H)	from 0 to 328	75
Height of lower hitch points when locked in transport position			from 855 to1183	/

* Assuming (r) : tyre dynamic index raduis of ISO 4251/1-1984

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2.10 Linkage geometry





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2.11 Swinging drawbar

Height above ground : . maximum : 462 mm
. minimum : 462 mm
Type of adjustment : none
Distance of hitch point from rear axle centre, horizontally : 898 mm to rear
Distance of hitch point from power take-off shaft end : . vertically : 234 mm
. horizontally : 355 mm (540)/400mm (1000)
Maximun permissible load : .vertically 30 kN
.horizontally 100 kN
Lateral adjustment : 250 mm (left and right hand)
Distance of pivot point from rear axle horizontally : 128 mm to rear
Diameter drawbar pin hole : 32 mm

2.12 Trailer hitch

Height above ground : . maximum : 1000 mm
. minimum : 760 mm
Distance of hitch point from rear axle centre, horizontally : 749 mm
Distance of hitch point from power take-off shaft end :
. vertically : from 1 to 240 mm
. horizontally : 251 mm
Maximum vertical permissible load : 30 kN (static load)
Diameter of pin hole : 30 mm

2.13 Linkage drawbar

Height above ground : . maximum : 1051 mm
. minimum : 261 mm
Horizontal distance to power take-off shaft end : 650 mm (540) and 700 mm (1000)
Number of holes : 9
Distance between holes : 80 mm
Hole diameter : 24 mm
Thickness and width of drawbar : 30/80 mm

2.14 Front towing hitch

Vertical height at centre of clevis : 848 mm
Width of clevis : 340 mm
Diameter of pin hole : 32 mm

2.15 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 : 88 l
Oil change period : 1200 h
Filter change period : 600 h
Recommended oil : see "fuels and lubricants used in test"

2.16 Brakes

2.16.1 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)

2.16.2 Parking brake

Make and Type : SIRMAC - HUSCO
Method of operation : hand lever - cable and rod

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2.16.3 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 : 15 l/min

2.17 Protective structure specifications

2.17.1 Specifications

Manufacturer's name : MASSEY FERGUSON S.A.
Trade name : 3000 - C
Type of structure : . cab
. tiltable : no
CEMAGREF test : 7727
OECD approval number : CSS 057/10

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

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	1237	167 x 107	991
Sidelights	1775	120 x 80	410
Rearlights	1844	300 x 62	289
Reflectors	754	98 x 62	556,5

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3. CONDITIONS DURING TEST

3.1 Overall dimensions

LENGTH m	WIDTH		HEIGHT	
	min m	max m	exhaust silencer m	at top of protective structure
4,649	2,088	2,488	2,905	2,905

3.2 Ground clearance : 428 mm limited by drawbar bracket

3.3 Track setting : . front : 1622 mm
. rear : 1680 mm

3.4 Tractor mass (kg)

(with driver, with tanks full and with cab)

Front	Rear	Total
1725	3455	5180

3.5 Fuel

. Type : Diesel Oil (in accordance to AFNOR standard NFM 15-008)
. Gravity at 15°C : 0,853

3.6 Recommended and used during test lubricants

Engine oil :
. Make : BP
. Type : SUPER TOU - MIL L 2104-C
. Viscosity : 10 W 30

Transmission oils)
Hydraulic fluid) Make : BP
Steering oil) Type : Agrotrans
Final drives) Classification : GL4
Front differential) Viscosity : 80 W 90
and final drives)

Grease : BP AGRICHARGE

Number of lubrication points : 10

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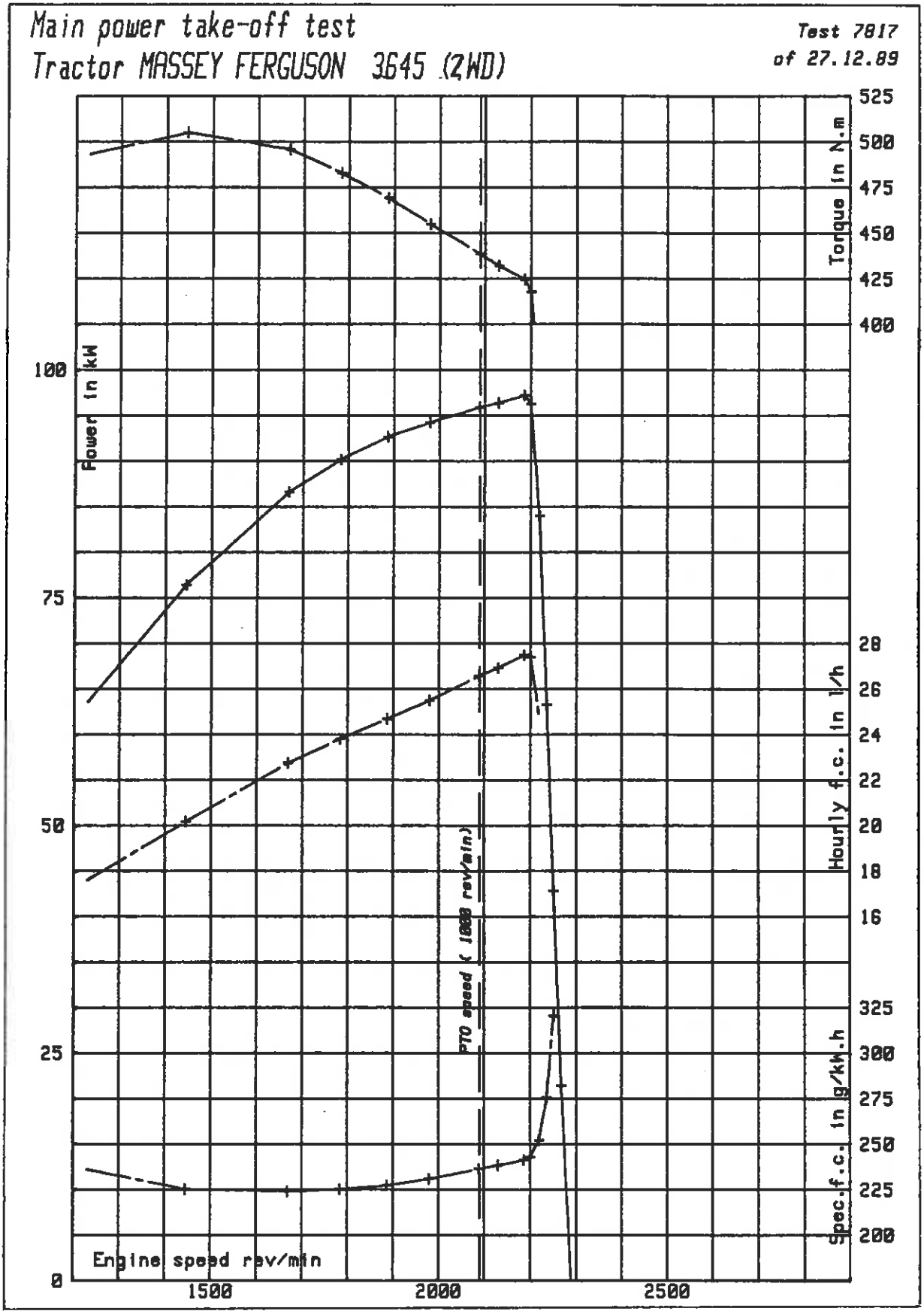
4. COMPULSORY TESTS RESULTS

4.1 Main power take-off performance

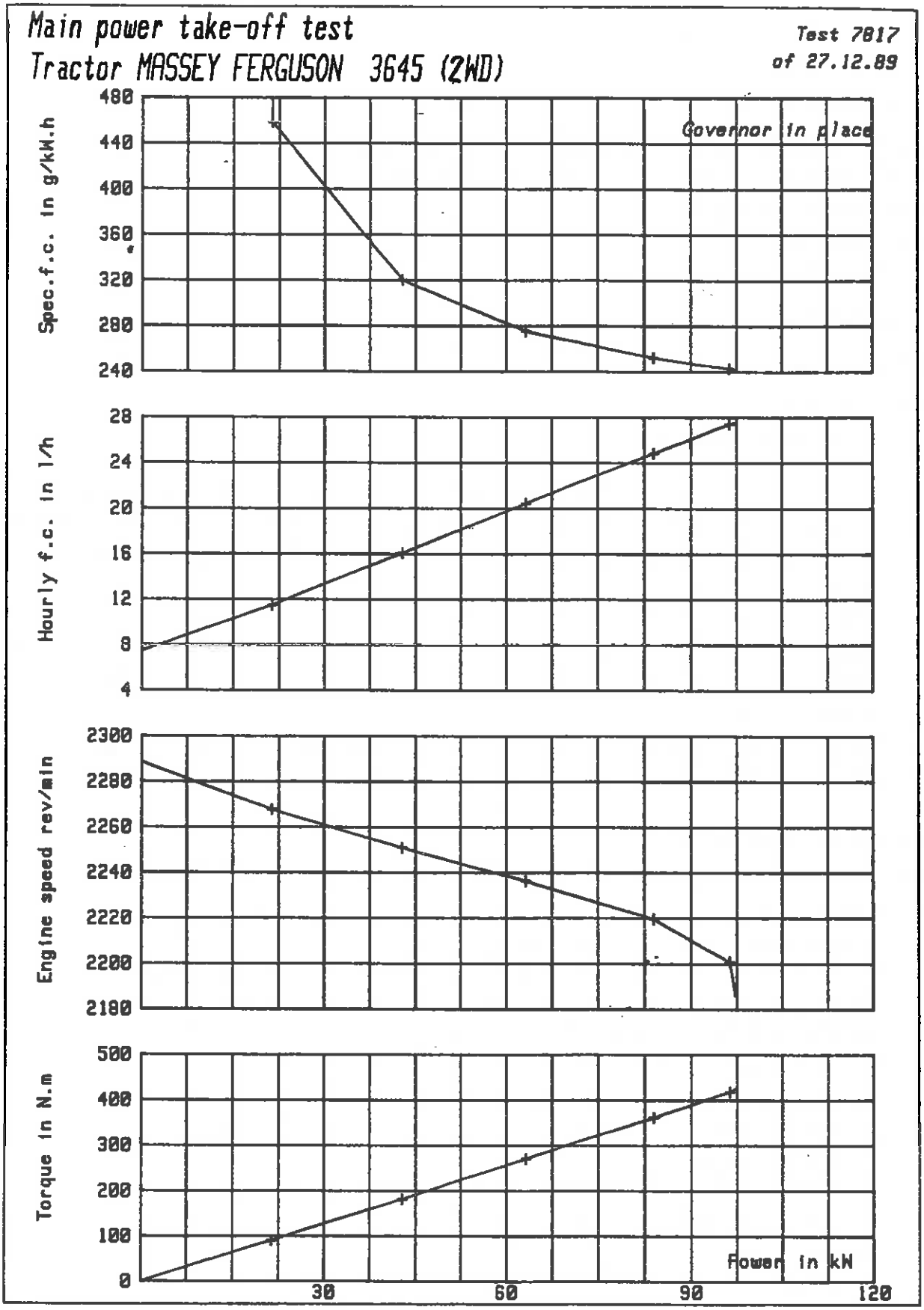
Location and date of tests : ANTONY, 27th december 1989
Type of dynamometer : SCHENCK W780

Power	Speed		Fuel consumption		Specific
	engine	power take-off	hourly	specific	energy
kW	rev/min		l/h	g/kWh	kWh/l
MAXIMUM POWER - TWO HOURS TEST					
97,2	2186	1046	27,49	241	3,54
MAXIMUM POWER AT RATED ENGINE SPEED					
97,2	2186	1046	27,49	241	3,54
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					
84,0	2220	1062	24,82	252	3,38
(2) 75% of the torque defined in (1)					
63,3	2236	1070	20,43	276	3,10
(3) 50% of the torque defined in (1)					
42,8	2251	1077	16,07	320	2,66
(4) 25% of the torque defined in (1)					
21,4	2267	1085	11,49	458	1,86
(5) Unloaded					
-	2289	1095	7,45	-	-
MAXIMUM POWER AT STANDARD POWER TAKE-OFF SPEED (1000 ± 25 rev/min)					
95,9	2089	999	26,57	236	3,61
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					
82,4	2116	1012	23,68	245	3,48
(7) 75% of the torque defined in (6)					
63,0	2134	1021	19,59	265	3,22
(8) 50% of the torque defined in (6)					
41,6	2151	1029	15,09	309	2,76
(9) 25% of the torque defined in (6)					
20,8	2170	1038	10,73	441	1,94
(10) Unloaded					
-	2195	1050	6,83	-	-

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Main power take-off test
Tractor MASSEY FERGUSON 3645 (2WD)
Test 7817
of 27.12.89
Power in kW
Torque in N.m
Hourly f.c. in l/h
Spec.f.c. in g/kW.h
PTO speed (1000 rev/min)
Engine speed rev/min
0
25
50
75
100
1500
2000
2500
200
225
250
275
300
325
16
18
20
22
24
26
28
400
425
450
475
500
525

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Main power take-off test
Tractor MASSEY FERGUSON 3645 (2WD)
Test 7817
of 27.12.89
Governor in place
Spec.f.c. in g/kW.h
480
440
400
360
320
280
240
Hourly f.c. in l/h
28
24
20
16
12
8
4
Engine speed rev/min
2300
2280
2260
2240
2220
2200
2180
Torque in N.m
500
400
300
200
100
0
Power in kW
30
60
90
120

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4.1 Main power take-off performance (continued)

Other results

No load, maximum engine speed : 2289 rev/min
Equivalent crakshaft torque at maximum power at rated engine speed : 424,5 N.m
Maximum equivalent crankshaft torque : 504,8 N.m at 1446 rev/min

Mean atmospheric conditions

Temperature : 23 °C
Pressure : 1009 mbar
Relative humidity : 36 %

Maximum temperatures

Coolant : 92 °C
Engine oil : 109 °C
Fuel : 23 °C
Air intake : 23 °C

Fuel consumption at variyng 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)	24,82	16,07	23,68	15,09
Standard specific consumption (g/kWh)	252	320	245	309

(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)

4.2 Lifting force and hydraulic power

Date : 12th february 1990

4.2.1 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	324	341
Vertical movement mm	606	655
Maximum force exerted through full range kN	58,7	53,9
Corresponding pressure of hydraulic fluid bar	177	177
Moment about rear axle kN.m	70,4	97,6
Maximum tilt angle of mast over range of lift degree	/	5°

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4.2.1 Power lift test (continued)

Lifting height (1)	mm	-231	-214	-150	-100	0	+100	+200	+350	+375	+441
Lifting force (2)	at the hitch point kN	58,7	58,9	60,6	61,9	63,4	64,7	66,2	68,0	68,6	/
	at the frame kN	/	59,5	59,9	59,7	59,2	58,7	57,7	55,9	55,3	53,9

(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.

4.2.2 Hydraulic power test

Tapping point used for test : auxiliary service connection
Sustained pressure with relief valve open : 197 bars
Pump delivery rate at minimum pressure : 51,2 l/min

		corresponding to maximum hydraulic power	corresponding to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting
Pressure	bars	177	177
Flow rate	l/min	45,8	45,8
Power	kW	13,5	13,5

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4.3 Drawbar performance (unballasted tractor)

Date and location of test : 29th january 1990, Antony

Type of track : Tarmacadam

Height of drawbar above ground : 0,830 m

Tyres	Front	Rear
. Size :	11.00 - 16	20.8 - 38
. Inflation pressure (bar) :	2,5	1,0

Atmospheric conditions :

. Temperature : 14°C
. Pressure : 1005 mbar
. Relative humidity : 56 %

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	2,12	45,0	26,5	2253	15	473	1,81	29	81	93
1 T + S	2,66	44,9	33,2	2253	15	441	1,94	29	81	93
2 T	3,33	44,7	41,4	2236	15	385	2,22	29	82	92
2 T + S	4,32	44,1	52,9	2226	12	348	2,46	30	82	94
3 T	4,62	44,6	57,2	2222	12	339	2,52	31	81	93
3 T + S	5,95	42,6	70,4	2209	10	314	2,73	30	80	99
4 T	6,60	41,2	75,5	2197	9	297	2,87	30	82	99
1 R	7,76	36,4	78,5	2180	7	289	2,96	29	81	101
4 T + S	8,56	33,0	78,5	2176	6	295	2,90	29	83	99
1 R + S	10,02	28,7	79,9	2174	5	290	2,95	28	83	98
2 R	12,56	22,8	79,6	2161	3	285	3,00	27	84	99
2 R + S	16,03	17,5	77,9	2161	3	291	2,93	29	82	99
TRANSMISSION AND FUEL CONSUMPTION CHARACTERISTICS (i) Maximum drawbar power in tested gear										
1 R + S	10,02	28,7	79,9	2174	5	290	2,95	28	83	98
(ii) 75% of pull at maximum power										
1 R + S	10,37	21,9	63,1	2220	4	305	2,80	29	82	98
(iii) 50% of pull at maximum power										
1 R + S	10,61	14,3	42,2	2236	2	371	2,30	30	81	101
(iv) Higher gear same pull as in (i) reduced engine speed										
2 R	10,33	21,2	60,8	1772	4	276	3,10	29	81	95
(v) Higher gear as in (ii) reduced engine speed										
2 R	10,63	14,9	44,0	1804	2	294	2,91	30	81	94
(vi) Higher gear same pull as in (i) reduced engine speed										
2 R + S	OUT OF MEASURE									
(vii) Higher gear same pull as in (ii) reduced engine speed										
2 R + S	10,61	14,4	42,4	1421	2	279	3,06	28	82	93

(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 : 30th january 1990
Type of sound level meter : BRUEL & KJAER 2209
Type of track : Tarmacadam
Gear : 4 R + S
Travelling speed before acceleration : 24,1 km/h
Sound level : 83 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 Travail du Sol
M.HOCQUEL	E.HUGO	J.F.GOUPILLON

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

Diffusion 1990	
N°067	1ère édition