

Test n° 6075
Date : February 1987

OECD approval n° : 1056 RESTRICTED CODE
Date of approval : 6th April 1987

MINISTERE DE L'AGRICULTURE

CENTRE NATIONAL DU MACHINISME AGRICOLE, DU GENIE RURAL, DES EAUX ET DES FORETS
Groupement d'Antony, Division Machinisme Agricole, Moteurs et Tracteurs

OECD TEST OF AN AGRICULTURAL TRACTOR (RESTRICTED CODE)

Report on test in accordance with the OECD standard code for the official testing
of agricultural tractors C(84) 163 (Final) appendix IV



Tested tractor

Make : MASSEY FERGUSON
Model : B 50/2
Trade name : 3050
Number of driving wheels : 2
Type : Standard

Submitted by :
Name : MASSEY FERGUSON S.A.
Address : avenue Blaise Pascal
60026 BEUVAIS (FRANCE)
Phone : 44.69.33.33 Telex : 140396 F

CEMAGREF Division MTAN
BP 121 - 92164 ANTONY CEDEX
Phone : (1) 46.66.21.09 Telex : 204565 F

PRINCIPALES UNITÉS DU SYSTÈME INTERNATIONAL (SI) ET AUTRES UNITÉS UTILISÉES

LORS DES ESSAIS (d'après la norme ISO 1000-1981 réimprimée le 30.6.1983)

Grandeurs	Unités SI		Multiples Unités SI	Unité hors SI figurant dans la norme
	Nom	Symbole		
Unités SI de base				
longueur	mètre	m	km, cm	
masse	kilogramme	kg	g, mg	tonne 1 t = 10 ³ kg
temps	seconde	s	ms, μ s	heure 1 h = 60 min
intensité de courant électrique	ampère	A	kA, mA	minute 1 min = 60 s
température thermodynamique	kelvin	K		
Unités SI dérivées				
angle plan	radian	rad		1° = (π / 180) rad
fréquence	hertz	Hz	MHz, kHz	
force	newton	N	kN, mN	
pression	pascal	Pa	kPa	1 bar = 10 ⁵ Pa
contrainte		Pa ou N/m ²	MPa ou N/mm ²	
énergie travail	joule	J	kJ	1 kW.h = 3,6 10 ⁶ J
quantité de chaleur	joule	J	kJ	
puissance	watt	W	kW	
charge électrique	coulomb	C	kC	1 A.h = 3,6 10 ³ C
potentiel électrique	volt	V	kV, mV	
capacité électrique	farad	F	mF	
résistance électrique	ohm	Ω	k Ω , m Ω	
conductance électrique	siemens	S	kS, mS	
température Celsius	degré Celsius	°C		t (°C) = T (K) - 273,15
Autres unités SI figurant dans la norme				
aire, superficie		m ²	cm ²	hectare 1 ha = 10 ⁴ m ²
volume		m ³	cm ³	litre 1 l = 10 ⁻³ m ³
vitesse angulaire		rad/s		
vitesse		m/s		1 km/h = (1/3,6) m/s
accélération (r)		m/s ²		
fréquence de rotation		s ⁻¹		tours par minute (tr/min)
masse volumique		kg/m ³	g/cm ³	t/m ³ , kg/l, g/l
quantité de mouvement		kg.m/s		
moment cinétique		kg.m ² /s		
moment d'inertie		kg.m ²		
moment d'une force		N.m		
viscosité (dynamique)		Pa.s	mPa.s	1 cP = 1 mPa.s
viscosité cinématique		m ² /s	mm ² /s	1 cSt = 1 mm ² /s
intensité acoustique		W/m ²		
niveau de pression acoustique				décibel dB
Unités hors SI ne figurant pas dans la norme				
débit volumique		m ³ /s		l/s, l/h, m ³ /h
débit massique		kg/s		t/h
consommation spécifique de carburant		kg/J		g/(kW.h)

[1] La valeur adoptée en 1901 comme « accélération normale de la pesanteur » est de 9,80665 m/s² (accélération de la pesanteur à 45° de latitude au niveau de la mer). Dans les applications courantes on prend généralement g = 9,8 ou 10 m/s² suivant la précision recherchée.

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TESTED TRACTOR

Make : MASSEY FERGUSON
Model : B 60/2
Trade name : 3050
Number of driving wheels : 2
Type : Standard

SUBMITTED BY

Name : MASSEY FERGUSON S.A.
Address : Avenue Blaise Pascal
60026 BEAUVAIS (FRANCE)
Phone : 44.89.33.33 - Telex : 140396 F

SUMMARY

1. Specification of tested tractor
2. Compulsory tests results
 - 2.1. Main power take-off performance
 - 2.2. Lifting force and hydraulic power
 - 2.3. Drawbar performance (unballasted tractor)
3. Optional tests results
 - 3.1. Measurement of external noise level

Annex : Main power take-off performance curves

This test report includes 23 pages of text
and 2 pages of annex
F

CEMAGREF Division MTAN
BP 121 - 92164 ANTONY CEDEX
Phone : (1) 46.66.21.09 Telex : 204565

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- Tractor manufacturer's name and address : MASSEY FERGUSON S.A.
avenue Blaise Pascal 60026 BEAUVAIS (FRANCE)
- Submitted for test by : The manufacturer
- Selected for test by the manufacturer with the agreement of CEMAGREF
- Place of running in : BEAUVAIS
- Duration of running in : 20 hours

1. SPECIFICATION OF TRACTOR

TRACTOR

- Make : MASSEY FERGUSON
- Model : B 60/2
- Trade name : 3050
- Number of driving wheels : 2
- Type : Standard
- Serial number : U 290 005
- 1st serial number : U 077 041

ENGINE

- Make : PERKINS
- Model : A4 - 236
- Type : 4 strokes, direct injection diesel
- Serial number : LD 31194 U 118164 N

Cylinders

- Number : 4
- Disposition : vertical in line
- Bore/stroke : 98,4/127 mm
- Capacity : 3860 cm³
- Compression ratio : 16/1
- Arrangement of valves : overhead in line
- Cylinders liners : dry

Supercharging

None

Fuel system

- Fuel feed system : diaphragm fuel feed pump
- Make, type and model of fuel filter : CAV V 7005 - 3064 - dual element with water trap
- Capacity of fuel tank : 148 l
- Make, type and model of injection pump : CAV 3241 F 490 - rotative
- Serial number : 23462 JDG
- Manufacturer's production setting of injection pump : 58,0-61,5 mm³/stroke (rated engine speed & full load)
- Injection pump timing : 23 ± 2° before T.D.C.
- Make, type and model of fuel injectors : CAV BDL 150S6730 - 4 holes
- Injection pressure : 170 bars

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Governor

- Make : CAV
- Type : Mechanical incorporated in fuel injection pump
- Governed range of engine speed : 900 - 2420 rev/min

Rated engine speed 2200 rev/min

Air cleaner

- Pre-cleaner
 - . Make : DONALDSON
 - . Type : cyclone
 - . Model : vertical
 - . Location : over bonnet
- Main
 - . Make : DONALDSON
 - . Type : dry
 - . Model : ELB 08 - 0024
 - . Warning light on panel
 - . Location : under bonnet - horizontal

Lubrication system

- Type of feed pump : gear
- Total oil capacity including filter : 6,5 l
- Oil change period : 250 h
- Type of filter : cartridge
- Number : 1
- Filter change period : 250 h
- Recommended oil : see "fuel and lubricants used in test"

Cooling system

- Type of coolant : water or water anti-freeze mixture
- Type of pump : centrifugal
- Description of fan
 - . Type : puller
 - . Number of fan blades : 6
 - . Fan diameter : 457 mm
- Coolant capacity : 16,6 l
- Type of temperature control : thermostatic
- Surpressure system : 0,5 bar

Starting system

- Safety device : switch operated by main clutch pedal
- Make : LUCAS
- Type : pre-engaged
- Model and starter motor power rating : LUCAS M 127 - 2,8 kW
- Cold starting aid : CAV - Thermostart

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Electrical system

- Voltage : 12 V - negative hearth
- Generator : alternator
 - . Make : MOTOROLA
 - . Model : 55 AMS
 - . Power : 660 W
- Batteries :
 - . Make : CHLORYDE 372
 - . Number : 2
 - . Rating : 420 A for 60 s at -18°C

Exhaust system

- Make : NELSON
- Type : perforated
- Model : MF 84
- Location : under bonnet with vertical stack pipe
- Height of outlet above ground : 2651 mm

STEERING WHEELS

- Number : 2
- Location : front axle
- Tyres : GOOD YEAR
 - . Size : 7.50 - 16
 - . Ply rating : 6
 - . Type of casing : cross ply
 - . Maximum permissible load on each tyre : 8,5 kN (with inflation pressure : 390 kPa)
- Track widths (mm) : 1383 - 1485 - 1583 - 1587 - 1685 - 1688 - 1786 - 1789 - 1888 - 1891 - 1989 - 1993 - 2091 - 2193
- Method of adjustment : slipping arm bolted in front axle

DRIVING WHEELS

- Number : 2
- Location : rear axle
- Tyres : GOOD YEAR DYNATORQUE II
 - . Size : 16.9 - 30
 - . Ply rating : 6
 - . Type of casing : cross ply
 - . Maximum permissible load on each tyre : 18,60 kN (with inflation pressure : 130 kPa)
- Track widths (mm) : 1502 - 1604 - 1705 - 1807 - 1813 - 1914 - 2016 - 2117
- Method of adjustment : helicoidal ramps

WHEELBASE : 2371 mm

TRANSMISSION

Clutch

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

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Gear box

- Make : MASSEY FERGUSON
- Type : basic gear box to be manual (4 x 4 speeds)
- Arrangement : mechanically operated gear shift - multipower as an option
- Number of speeds : 32 forward and 32 reverse
- Available option : creeper

Rear axle and final drive

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

Front axle

- Make : own make
- Type : telescopic

Transmission oils

- Capacity :
 - . Gear box and transmission housing)
 - . Power lift) 64 l

- Change period : 1200 h
- Type of oil filter : removable cartridge in metallic filter elements
- Recommended oil : see "fuel and lubricants used in test"

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Gear	Group N°	Number of engine revolution for 1 revolution of driving wheels	Nominal travelling speed at rated engine speed (km/h)
1	ST	347,825	1,657
2		291,672	1,976
3		248,497	2,320
4		210,783	2,735
AR 1		326,247	1,767
AR 2		273,578	2,107
AR 3		233,081	2,473
AR 4		197,707	2,916
1	ST + MP	275,202	2,095
2		230,773	2,498
3		196,613	2,932
4		166,773	3,456
AR 1		258,130	2,233
AR 2		216,457	2,663
AR 3		184,416	3,126
AR 4		156,428	3,685
1	FT	173,617	3,320
2		145,588	3,959
3		124,037	4,647
4		105,213	5,479
AR 1		185,100	3,114
AR 2		155,217	3,714
AR 3		132,241	4,359
AR 4		112,171	5,139
1	FT + MP	137,367	4,196
2		115,191	5,004
3		98,140	5,873
4		83,245	6,924
AR 1		146,453	3,936
AR 2		122,809	4,694
AR 3		104,630	5,509
AR 4		88,751	6,495

ST : Slow Turtle - FT : Fast Turtle - MP : MultiPower

(dynamic index radius : 695 mm)

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Gear	Group N°	Number of engine revolution for 1 revolution of driving wheels	Nominal travelling speed at rated engine speed (km/h)
1	SR	86,734	6,646
2		72,731	7,925
3		61,965	9,308
4		52,561	10,967
AR 1		81,353	7,085
AR 2		68,220	8,449
AR 3		58,121	9,918
AR 4		49,300	11,692
1	SR + MP	68,625	8,400
2		57,546	10,017
3		49,028	11,757
4		41,587	13,861
AR 1		64,367	8,955
AR 2		53,976	10,679
AR 3		45,986	12,535
AR 4		39,007	14,777
1	FR	43,293	13,314
2		36,304	15,878
3		30,930	18,636
4		26,236	21,971
AR 1		46,157	12,488
AR 2		38,705	14,893
AR 3		32,976	17,480
AR 4		27,971	20,608
1	FR + MP	34,254	16,828
2		28,784	20,067
3		24,472	23,554
4		20,758	27,768
AR 1		36,520	15,784
AR 2		30,624	18,823
AR 3		26,091	22,093
AR 4		22,131	26,046

SR : Slow Rabbit - FR : Fast Rabbit - MP : MultiPower

(dynamic index radius : 695 mm)

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POWER TAKE-OFF

Main power take-off

- Type : rear independant PTO (hydraulic mutiplate clutch)
- Method of engagement : lever located at the middle of the upper right hand side console
- Method of changing power take-off speeds : speed and spline change accomplished by physically replacing the 540 rev/min shaft by the 1000 rev/min shaft and vice-versa

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 R500)
 - . Height above ground : 652 mm
 - . Distance from the median plane of the tractor : 0
 - . Distance behind rear axle : 450 mm
 - . Power take-off speed at rated engine speed : 600 rev/min
 - . Engine speed at standard power take-off speed : 1980 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 R500)
 - . Height above ground : 652 mm
 - . Distance from the median plane of the tractor : 0
 - . Distance behind rear axle : 450 mm
 - . Power take-off speed at rated engine speed : 1100 rev/min
 - . Engine speed at standard power take-off speed : 2000 rev/min
 - . Engine to power take-off ratio : 2
 - . Power restriction : none
 - . Direction of rotation (viewed facing driving end) : clockwise

Power take-off proportional to ground speed

- Speed of shaft : both 540 and 1000 rev/min
- Size of tyre : 16.9 - 30
- Travelling distance for one revolution of power take-off : 0,55 m (540) - 0,30 m (1000)
- Number of power take-off shaft revolutions for one revolution of the rear wheels : 5,6 (540) - 10,3 (1000)
- Direction of rotation with forward gear engaged : clockwise

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POWER LIFT

- Make : MASSEY FERGUSON
- Type : top link, electronic position, draft or mixed control
- Type and number of cylinders : 2 - single acting
- 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 : PUROLATOR - 1
- Time between oil changes : 1200 h
- Time between filter changes : 600 h
- Oil capacity : 64 l
- Site of oil reservoir : transmission housing
- Type and number of tapping points : 2 - on lift cover
- Maximum volume of oil available to external cylinders : 25 l/min
- Recommended oil : see "fuel and lubricants used in test"

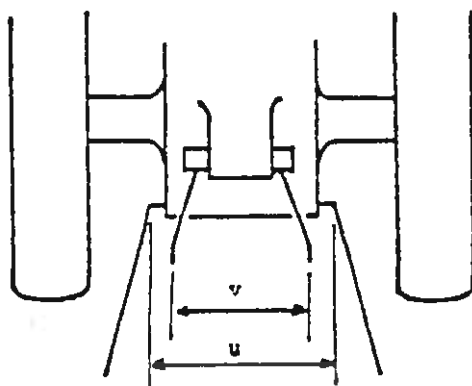
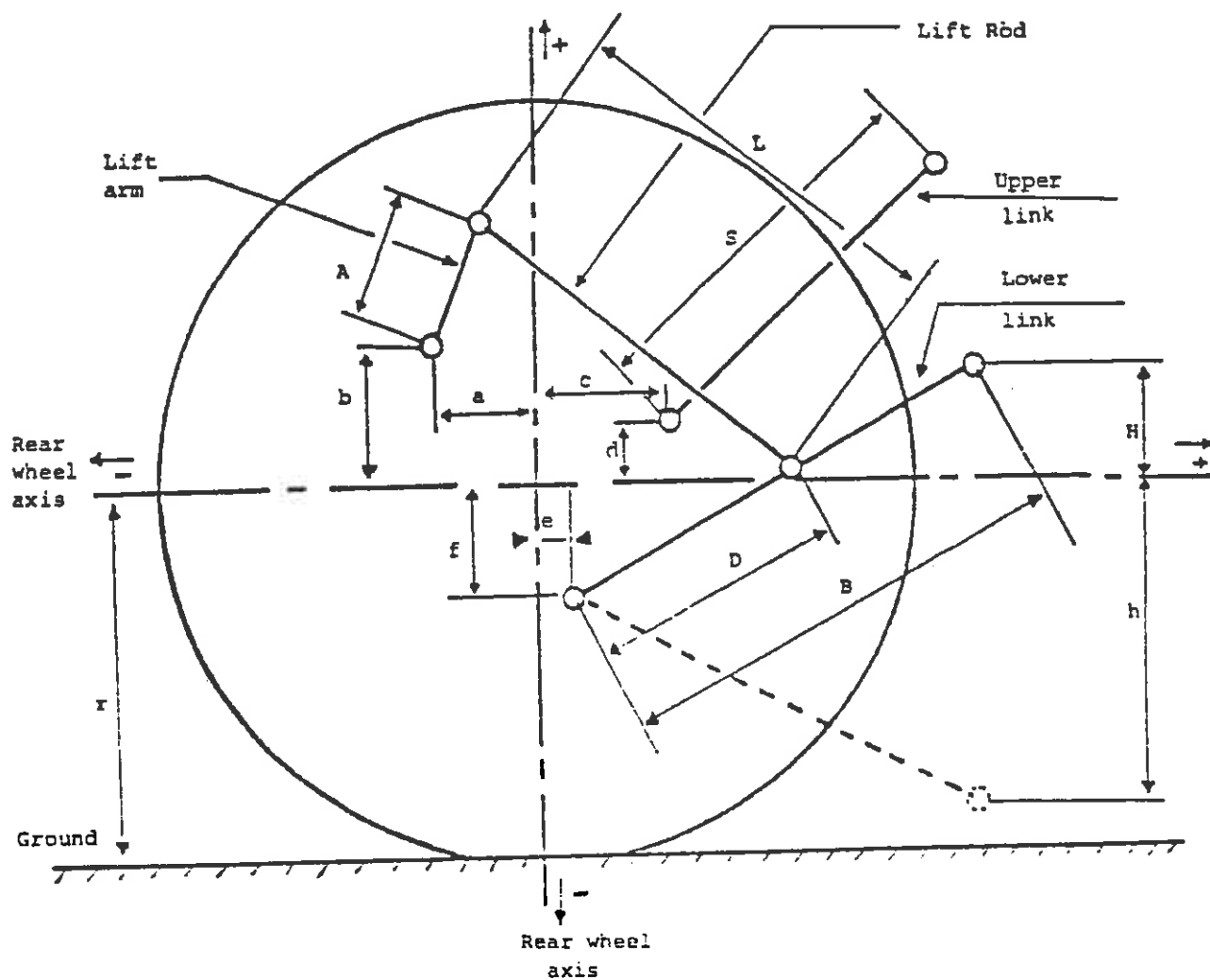
THREE- POINT LINKAGE

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

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Linkage dimensions (mm)			Settings for the test
Rear tyres - dynamic index radius	(r)	695	
Front tyres - loaded radius	(r')	378	
Length of lift arms	(A)	266	
Length of lower links	(B)	940	
Distance of lift arm pivot point from rear wheel center line	horizontally (a)	128	
	vertically (b)	330	
Horizontal distance between the 2 lower link points	(u)	580	
Horizontal distance between the 2 lift arm end points	(v)	604	
Length of upper link	(S)	from 590 to 750	650
Distance of upper link pivot point from rear wheel center line	horizontally (c)	382	
	vertically (d)	120 160 200	120
Distance of lower link pivot point from rear wheel center line	horizontally (e)	100	
	vertically (f)	260	
Distance of lower link points to lift rod pivot points on lower link	(D)	566	
Length of lift rods	(L)	from 640 to 705	705
Height of lower hitch points relative to the rear wheel centre line situated 820 mm above the ground level			
- in low position	(h)	from 368 to 500	500
- in high position	(H)	from 80 to 207	80
Height of lower hitch points when locked in transport position		from 798 to 893	798

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SWINGING DRAWBAR

- Height above ground : maximum : 534 mm
minimum : 534 mm
- Type of adjustment : none
- Distance of hitch point from rear axle centre : 875 mm
- Distance of hitch point from power take-off shaft end :
 - . horizontally : 400 mm to rear
 - . vertically : 234 mm
- Lateral adjustment : 293 mm left hand
293 mm right hand
- Distance of pivot point from rear axle horizontally : 106 mm to rear
- Diameter drawbar pin hole : 30 mm

LINKAGE DRAWBAR

- Height above ground : maximum : 893 mm
minimum : 187 mm
- Horizontal distance to power take-off shaft end : 565 mm
- Number of holes : 9
- Hole diameter : 24 mm
- Thickness and width of drawbar : 30/80 mm
- Distance between holes : 80 mm

TRAILER HITCH

- Height above ground : maximum : 866 mm
minimum : 481 mm
- Distance of hitch point from rear axle centre : 619 mm to rear
- Distance of hitch point from p.t.o. shaft end : vertically above maximum : 223 mm
minimum : 162 mm
horizontally : 144 mm
- Diameter hitch pin hole : 33 mm
- Maximum vertical permissible load : 17 kN

FRONT TOWING HITCH

- Vertical height at center of clevis : 759 mm
- Width of clevis : 365 mm
- Diameter of pin hole : 32 mm

STEERING

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

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BRAKES

Service brake

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

Parking brake

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

Trailer brakes

- 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 sensitive line.
- Method of operation : automatic as the right hand tractor brake pedal is depressed
- Maximum braking pressure : 130-150 bars
- Maximum flow : 15 l/min

PROTECTIVE STRUCTURE SPECIFICATIONS

- Manufacturer's name and address : MASSEY FERGUSON S.A.
avenue Blaise Pascal 60026 BEAUVAIS (FRANCE)
- Trade name : 3000 - A
- OECD approval number : CSD 1050/4
- Description : the cab is made up from 3 major sub-assemblies, the platform, side pillars and roof
and the front pillars. These sub-assemblies are bolted together to form the complete
cab structure.

DRIVER'S SEAT

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

MISCELLANEOUS

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

Unrestricted beam angle of head light in plane view : in accordance with national regulation

	Height above ground of centre mm	Size mm	Distance from out- side edge of trac- tor to centre at 2016 mm trackwidth
Headlights	1116	167 x 107	1104
Sidelights	1538	120 x 80	489
Rear lights	1552	300 x 62	474
Reflectors	635	98 x 62	525

Overall dimensions

	Lenght mm	Width		Height at the top of	
		minimum mm	maximum mm	exhaust silencer mm	protective structure mm
Unballasted	3959	1851	2457	2592	2592

Track setting . front : 1383 mm
 . rear : 1502 mm

	Front	Rear	Total
Unballasted	1225	2590	3815

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Fuel used in test

- Type : Diesel oil
- Viscosity : (NFT 60.100) 4,84 cSt
- Gravity at 15°C : 0,843

Lubricants used in test

- Engine oil :
 - . Type : BP TOU
 - . Viscosity : 10 W 30
 - . Classification : MIL-L-2104 C
- Transmission, hydraulic and steering oils :
 - . Type : BP AGROTRANS
 - . Viscosity : 9,3 cSt at 100°C
 - 60,6 cSt at 40°C

- Recommended grease : BP AGRICHARGE

Number of lubrication points : 15

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2. COMPULSORY TESTS RESULTS

2.1. MAIN POWER TAKE-OFF PERFORMANCE :

- Date and location of tests : 11th february 1987 - CEMAGREF
- Type of dynamometer : SCHENCK W780

Power	Speed		Fuel consumption		Specific Energy
	Engine	Power take-off	Hourly	Specific	
kW	rev/min		l/h	g/kWh	kWh/l
MAXIMUM POWER - TWO HOUR TEST					
47,0	2200	600	15,50	278	3,03
MAXIMUM POWER AT RATED ENGINE SPEED					
47,0	2200	600	15,50	278	3,03
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					
40,2	2230	608	13,63	286	2,95
(2) 75% of the torque defined in (1)					
30,9	2265	618	11,28	308	2,74
(3) 50% of the torque defined in (1)					
20,9	2295	626	9,18	371	2,27
(4) 25% of the torque defined in (1)					
10,8	2335	637	7,15	556	1,52
(5) Unloaded					
-	2366	645	5,25	-	-

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2.1. MAIN POWER TAKE-OFF PERFORMANCE : (continued)

Power	Speed		Fuel consumption		Specific
	Engine	Power take-off	Hourly	Specific	Energy
kW	rev/min		l/h	g/kWh	kWh/l
MAXIMUM POWER AT STANDARD POWER TAKE-OFF SPEED (540 rev/min)					
45,7	1980	540	14,40	266	3,17
PART LOADS (governor control being set for maximum power at standard power take-off speed)					
(1) Torque corresponding to 85% of the torque at maximum power at standard power take-off speed					
39,0	1998	545	12,49	270	3,12
(2) 75% of the torque defined in (1)					
30,1	2049	559	10,27	288	2,93
(3) 50% of the torque defined in (1)					
20,4	2090	570	8,36	345	2,44
(4) 25% of the torque defined in (1)					
10,5	2130	581	6,30	505	1,67
(5) Unloaded					
-	2163	590	4,30	-	-

Other results

- No load, maximum engine speed : 2366 rev/min
- Equivalent crankshaft torque at maximum power at rated engine speed : 204,2 N.m
- Maximum equivalent crankshaft torque : 252,6 N.m at 1262 rev/min engine speed

Mean atmospheric conditions

- Temperature : 17°C
- Pressure : 996 mbar
- Relative humidity : 53%

Maximum temperature

- Coolant : 83°C
- Engine oil : 108°C
- Fuel : 24°C
- Air intake : 20°C

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2.1. MAIN POWER TAKE-OFF PERFORMANCE : (continued)

Fuel consumption at varying load

	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)	13,63	9,18	12,49	8,36
Specific standard consumption (g/kWh)	286	371	270	345

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

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

2.2 LIFTING FORCE AND HYDRAULIC POWER

- Date : 26th february 1987

2.2.1. Power lift test :

- Hydraulic fluid : see "Fuel and lubricants used in test"

	at the hitch point	on the frame
Height of lower hitch point above ground in down position mm	195	165
Vertical movement mm	580	710
Maximum force exerted through full range kN	28,8	22,7
Corresponding pressure of hydraulic fluid bar	170	170
Moment about rear rear axle kN.m	30,0	37,5
Maximum tilt angle of mast over range of lift degree		12°

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2.2.1. Power lift test (continued)

Lifting height (1)	mm	-	-	-	-	0	+	+	+	+	+
		270	240	200	100	0	100	200	300	340	440
Lifting force (2)	at the hitch point kN	-	28,8	30,1	32,6	34,9	35,6	36,1	36,3	36,3	-
	at frame kN	25,3	25,9	26,2	27,0	26,7	26,4	25,2	24,3	23,7	22,7

(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.

2.2.2 Hydraulic power test :

- Tapping point used for test : auxiliary service connection (spool valve)
- Sustained pressure with relief valve open : 192 bars
- Pump delivery rate at minimum pressure : 52 l/min

		corresponding to maximum hydraulic power	corresponding to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting
Pressure	bars	181	170
Flow rate	l/min	45,5	45,6
Power	kW	13,7	12,9

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2.3. DRAWBAR PERFORMANCE (UNBALLASTED TRACTOR)

- Date and location of test : 24th february 1987 - CEMAGREF

- Type of track : Tarmacadam

- Height of drawbar above ground : 0,75 m

- Tyres	Front	Rear
. Size :	10.00 - 16	16.9 - 30
. Inflation pressure (bars) :	2,5	1,1

- Atmospheric conditions :

. Temperature : 5°C

. Pressure : 1012 mbar

. Relative humidity : 38%

2.3. DRAWBAR PERFORMANCE : (continued)

Gear	Speed km/h	Drawbar pull kN	Power kW	Engine speed rev/min	Wheelslip %	Specific fuel consumption g/kWh	Specific energy kWh/l	Temperatures		
								Fuel °C	Coolant °C	Engine oil °C
MAXIMUM DRAWBAR POWER IN TESTED GEAR										
4 ST + MP	3,02	30,0	25,2	2250	15	407	2,07	14	80	93
2 FT	3,39	30,0	28,3	2240	15	395	2,14	14	81	93
1 FT + MP	3,59	29,8	29,7	2229	15	396	2,13	13	80	95
3 FT	4,00	29,4	32,7	2222	15	376	2,24	13	84	96
2 FT + MP	4,29	29,3	34,9	2211	15	376	2,24	13	82	96
4 FT	4,77	27,6	36,6	2203	13	365	2,31	12	82	98
3 FT + MP	5,24	25,3	36,8	2196	10	369	2,28	9	78	89
1 SR	6,05	22,5	37,8	2192	9	359	2,35	9	82	92
4 FT + MP	6,32	21,5	37,7	2178	8	358	2,35	10	80	94
2 SR	7,34	19,3	39,4	2178	7	341	2,47	10	82	96
1 SR + MP	7,85	18,1	39,5	2170	6	342	2,47	12	82	96
3 SR	8,61	16,7	39,9	2141	5	332	2,54	11	80	97
2 SR + MP	9,30	15,4	39,8	2130	4	336	2,51	10	82	96
4 SR	10,19	14,3	40,5	2119	3	326	2,59	14	82	97
3 SR + MP	10,92	12,9	39,1	2101	3	337	2,50	14	82	96
1 FR	12,39	11,4	39,2	2090	2	337	2,50	12	80	92

2.3. DRAWBAR PERFORMANCE : (continued)

Gear	Speed km/h	Drawbar pull kN	Power kW	Engine speed rev/min	Wheelslip %	Specific fuel consumption g/kWh	Specific energy kWh/l	Temperatures		
								Fuel °C	Coolant °C	Engine oil °C
TRANSMISSION AND FUEL CONSUMPTION CHARACTERISTICS										
(i) Maximum drawbar power in tested gear										
4 SR	10,19	14,3	40,5	2119	3	326	2,59	14	82	97
(ii) 75 % of pull at maximum power										
4 SR	10,93	10,8	32,8	2233	2	352	2,40	14	82	96
(iii) 50 % of pull at maximum power										
4 SR	11,28	7,1	22,2	2269	1	414	2,04	14	82	96
(iv) Higher gear same pull as in (i) reduced engine speed										
3 SR + MP	10,84	10,9	32,8	2064	2	340	2,48	15	81	94
(v) Higher gear as in (ii) reduced engine speed										
3 SR + MP	11,25	7,2	22,5	2112	1	395	2,14	15	80	94

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3. OPTIONAL TESTS RESULTS

3.1. MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of test : 25th february 1987

Type of sound level meter : BRUEL & KJAER 2209

Type of track : TARMACADAM

Gear : 4 FR + MP

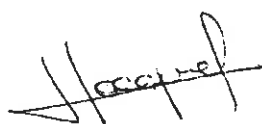
Travelling speed before acceleration : 22,4 km/h

Sound level : 83 dB(A)

REPAIR AND ADJUSTMENTS DURING TESTS : none

REMARKS : none

Le Technicien
Chargé de l'essai



M. HOCQUEL

L'Ingénieur
Responsable de l'essai



E. HUGO

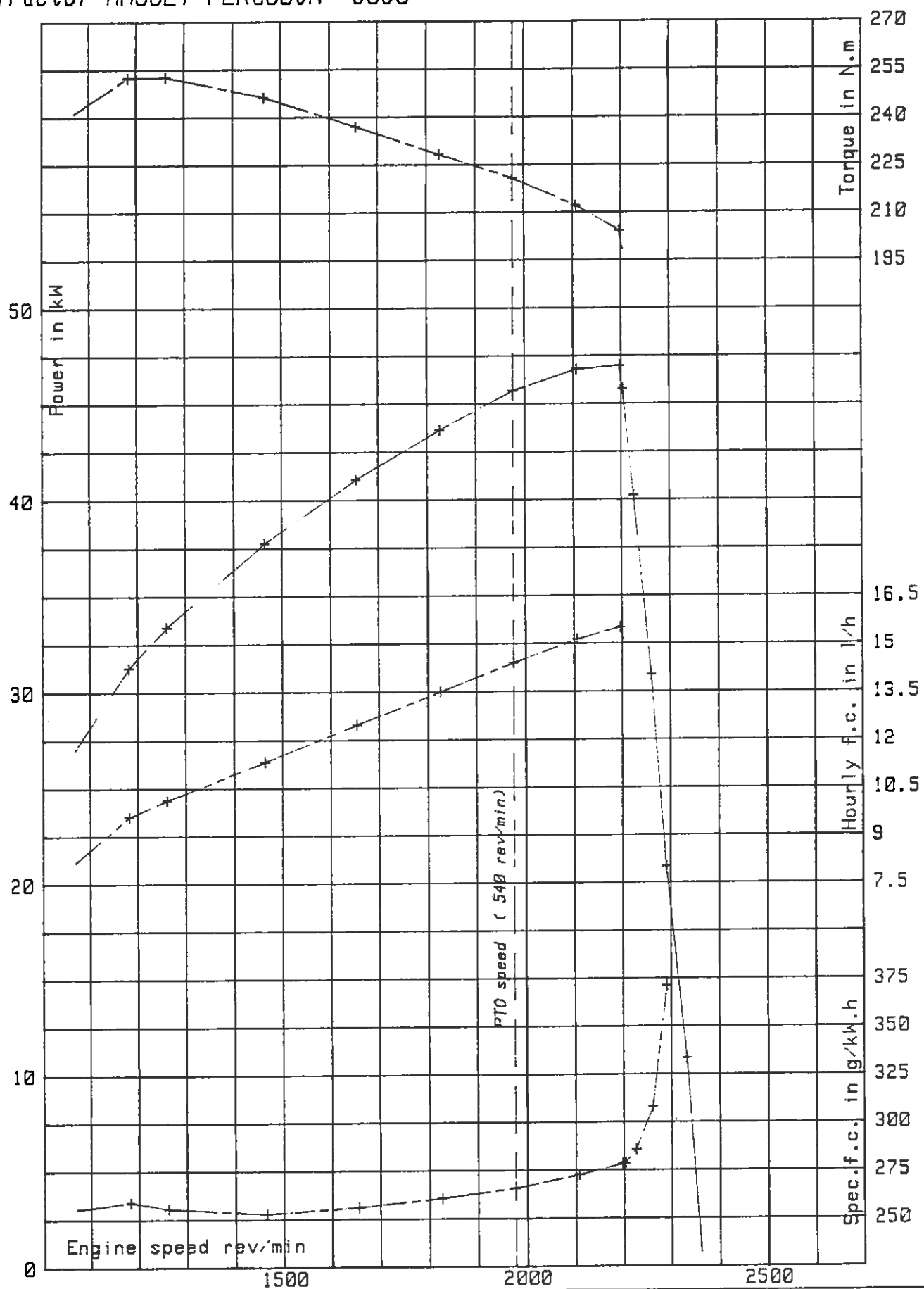
Le Chef de la Division MTAN



J.F. GOUPILLON

Main power take-off test
Tractor MASSEY FERGUSON 3050

Test 6075
of 11-02-87



Main power take-off test
Tractor MASSEY FERGUSON 3050

Test 6075
of 11-02-87

