

MINISTRY OF AGRICULTURE

CENTRE NATIONAL DU MACHINISME AGRICOLE, DU GENIE RURAL, DES EAUX ET DES FORETS
Antony Group - Agricultural Machinery, Engines and Tractors Division

OECD TEST REPORT ON AN AGRICULTURAL TRACTOR (RESTRICTED CODE)

Complete report on tests carried out on power take-off, lifting force
and drawbar performance (unballasted), in accordance with
C(84) 163 (final)



TRACTOR

- Make: FIAT
- Type: 100-90 DT
- Trade name: 100-90 DT
- Number of driving wheels: 4
- Main user: standard

Submitted by:

FIATAGRI FRANCE
rue des Rochettes
MORIGNY CHAMPIGNY
91150 ETAMPES

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ENGLISH VERSION

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 Nom	Symbole	Multiples Unités SI	Unité hors SI figurant dans la norme
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 (1)		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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(C E M A G R E F)

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Complete test report on power take-off, power lift
and drawbar performance (unballasted), in accordance with
C(84) 163 (final)

Test N° 5554
Date: 1984

Page 1

TRACTOR

Make: FIAT
Type: 100-90 DT
Trade name: 100-90 DT
Number of driving wheels: 4
Main use: standard

SUBMITTED BY:

FIATAGRI FRANCE
rue des Rochettes
MORIGNY-CHAMPIGNY
91150 ETAMPES

CONTENTS

1. Specifications of tractor
2. Compulsory test results
 - 2.1 Main power take-off performance
 - 2.2 Hydraulic lifting force and pump
 - 2.3 Drawbar performance (unballasted)
3. Optional test results

Appendices: Power take-off graphs

This report contains 21 pages
of text and 2 pages of appendix

CEMAGREF Division MTAN
B.P. 121 92164 ANTONY
Tel: (1) 46.66.21.09
Telex: 204565 F

Tractor manufacturer's name and address: FIAT TRATTORI S.p.A. - MODENA - ITALY
Submitted for test by: FIATAGRI FRANCE S.A.

The machine submitted for testing was selected by the manufacturer
with the CEMAGREF's consent

Place of running-in: MORIGNY-CHAMPIGNY

Duration of running-in: 50 hours

I. SPECIFICATIONS OF TRACTOR:

TRACTOR:

- Make: FIAT
- Model: 100-90 DT
- Trade name: 100-90 DT
- Number of driving wheels: 4
- Main use: standard
- Tyre sizes: see driving and steering wheels, below (1)
- Serial N°: 246.009
- 1st Type serial N°: 246.000

ENGINE:

- Make: FIAT
- Model: 8065-06
- Type: 4 stroke diesel, direct injection
- Serial N°: 200.000119

Cylinders

- Number/disposition: 6/in line
- Bore/stroke: 100/115 mm
- Capacity: 5419 cm³
- Compression ratio: 17/1
- Arrangement of valves: overhead
- Cylinder liners: dry

Fuel system

- Fuel feed system: diaphragm pump
- Type of fuel filter(s): 2 replaceable cartridges

(1) All sizes indicated by the manufacturer take into account this tyre equipment

- Capacity of fuel tank: 93 l + 40 l with optional additional tank
- Make, model and type of injection pump: BOSCH VE 6/11 F - 1250 R
- Serial N°: 350102
- Manufacturer's production setting of injection of pump
 - . flow rate: 45 ± 2 mm³/stroke at rated engine speed
 - . timing: $4^\circ \pm 1^\circ$ below T.D.C.
- Make and model of injectors: BOSCH DLLA 124 S or OMAP OLL 124 S or ALTECNADLL 124 S
- Number of holes: 4
- Injection pressure: 230 ± 8 bars

Governor

- Make: BOSCH
- Type: mechanical, variable speed
- Governed range of engine speed from 650 to 2800 rev/min

Rated engine speed: 2500 rev/min

Air cleaner:

- Pre-cleaner
 - . Make: FIAT
 - . Type: Centrifugal - automatic discharge
 - . Location of air intake: forward, under bonnet
- Main
 - . Make: FIAT
 - . Model and type: 4996325 - oilbath
 - . Oil capacity: 1.9 l
 - . Location: forward, under bonnet
- maintenance indicator: none

Lubrication system:

- Feed system: forced feed from gear type pump
- Total oil capacity including filter(s): 13.6 l
- Oil change frequency: 200 hours
- Type of filter: 2 replaceable cartridges
- Filter change frequency: 400 hours
- Oil specifications: see end of tractor specifications

Cooling system

- Type of coolant: water
- Type of pump: centrifugal

- Fan specifications:
 - . Type of operation: belt driven
 - . Number of fan blades: 4
 - . Fan diameter: 450 mm
- Coolant capacity: 23 l
- Type of temperature control: thermostat
- Superpressure system: 0.7 bar

Starting system

- Make: BOSCH or MARELLI
- Type: solenoid engaged
- Power: 3.5 kW
- Cold starting aid: thermostarter
- Safety device: on clutch pedal

Electrical system

- Voltage: 12 V
- Generator:
 - . Make: MARELLI
 - . Type: alternator
 - . Power: 780 W
- Battery
 - . Number of accumulators: 1
 - . Rating: 132 Ah in 20 hours

Exhaust system

Make: FIAT
Model: DGM SA 833 with perforated walls and baffles
Location: Left hand side of engine, vertical
Height above ground of outlet: 2780 mm

STEERING AND DRIVING WHEELS:

- Number: 2
- Location: at front
- Tyres: PIRELLI TM 200
 - . Size: 14.9 R 24
 - . Type of casing: radial
 - . Ply rating: 8
 - . Maximum load on each tyre: 17 kN (at 1.6 bar inflation pressure)
- Track widths: 1712 - 1812 - 1822 - 1912 - 2012 - 2043 - 2146 - 2153 mm
- Track width adjustment method: reversal of wheel rims and discs

DRIVING WHEELS:

- Number: 2
- Location: at rear
- Tyres: PIRELLI TM 300
 - . Size: 16.9 R 38
 - . Type of casing: radial
 - . Ply rating: 8
 - . Maximum load on each tyre: 25.2 kN (at 1.6 bar inflation pressure)
- Track widths: 1500 to 2200 mm (8 positions at 100 mm intervals)
- Track width adjustment method: reversal of rims and wheel discs

WHEELBASE: 2535 mm

TRANSMISSION TO THE WHEELS:Clutch (travel and power take-off)

- Make: FERODO or LUK
- Model: dry dual plate clutch
- Diameter of plates: 304.8 mm
- Method of operation (for tractor travel) : by pedal

Gear box

- Make: FIAT
- Type: mechanical
- Combinations: 1 box with 5 forward ratios and 1 reverse ratio synchro-mesh gear
1 box with 3 speed ratios and 1 optional extra slow ratio
- Number of gears: 15 forward and 3 reverse
- Available option: 20 forward and 4 reverse

Rear axle and final drives

- Make: FIAT
- Type: bevel gear - epicyclic reduction gear
- Differential lock: yes
 - . Type: dog
 - . Method of engagement: by pedal
 - . Method of disengagement: hydraulic disengaging

Front axle

- Make: FIAT
- Type: mechanical - bevel gear - epicyclic reduction gear final drives
- Differential lock: optional
 - . Type: automatic release - NO SPIN

Transmission oils

- Capacities:
 - . Gear box: 11.7 l
 - Frequency of oil change: 1600 hours
 - . Rear axle; final drives and hydraulic system: 44.5 l
 - Frequency of oil change: 1600 hours
 - Frequency of filter change: 400 hours
 - . Front axle; box: 5.7 l, reduction gear: 1.7 l each
 - Type of oil filter: cartridge
 - Oil specifications: see end of tractor specifications

Total ratios and travelling speeds

Group	Gear N°	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed km/h
II (slow)	1	696.540	1.07
	2	521.876	1.43
	3	398.965	1.88
	4	317.801	2.36
	5	253.460	2.95
	rear	527.513	1.42
III (normal)	1	219.629	3.41
	2	164.555	4.55
	3	125.799	5.96
	4	100.176	7.48
	5	79.919	9.38
	rear	166.311	4.50
IV (fast)	1	69.247	10.82
	2	51.867	14.46
	3	39.657	18.92
	4	31.579	23.75
	5	25.183	29.80
	rear	52.448	14.30

Additional group with reduction gear (optional)

Group	Gear N°	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed km/h
I (extra-slow)	1	2209.027	0.34
	2	1655.095	0.45
	3	1265.291	0.60
	4	1007.568	0.75
	5	803.832	0.94
	rear	1672.994	0.45

(tyre index radius: 795 mm)

POWER TAKE-OFFMain power take-off

- Type: independant
- Method of engagement:
 - Dog clutch: using hand selection lever - proportional to engine speed or to ground speed
 - Clutch: by lever controlling second clutch disc
- Number of P.T.O. shaft ends: 2 (replaceable)
- Way of changing P.T.O. speed: by changing P.T.O. shaft end

Power take-off proportional to engine speed**540 rev/min:**

- Location: at rear
- Diameter of power take-off shaft end: 34.9 mm
- Number of splines: 6 (in accordance with ISO R 500)
- Height above ground: 736 mm
- Distance from the median plane of the tractor: 0 mm
- Distance in relation to rear axle axis: 505 mm
- Rotation speeds
 - * power take-off speed: 635 rev/min
 - at rated engine speed: 2500 rev/min
 - * engine speed: 2124 rev/min
 - at standard power take-off speed: 540 rev/min
 - * Ratio of rotation speeds (engine speed/p.t.o. speed): $59/15 = 3.933$
 - * Power limit and maximum transmissible torque: maximum engine power
 - * Direction of rotation (viewed facing driving end): clockwise

1000 rev/min:

- Location: at rear
- Diameter of power take-off shaft end: 34.9 mm
- Number of splines: 21 (in accordance with ISO R 500)
- Height above ground: 736 mm
- Distance from the median plane of the tractor: 0
- Distance in relation to rear axle axis: 505 mm
- Rotation speeds
 - * power take-off speed: 1037 rev/min
 - at rated engine speed: 2500 rev/min
 - * engine speed: 2410 rev/min
 - at standard power take-off speed: 1000 rev/min
 - * Ratio of rotation speeds (engine speed/p.t.o. speed): $53/22 = 2.409$
 - * Direction of rotation (viewed facing driving end): clockwise

Power take-off proportional to ground speed

- Travelling distance for one revolution of power take off shaft: 0.29 m at 540 rev/min
0.18 m at 1000 rev/min
- Number of power take-off revolutions for one revolution of rear wheels: 17.28 at 540 rev/min
28.22 at 1000 rev/min
- Direction of rotation with forward gear engaged : clockwise

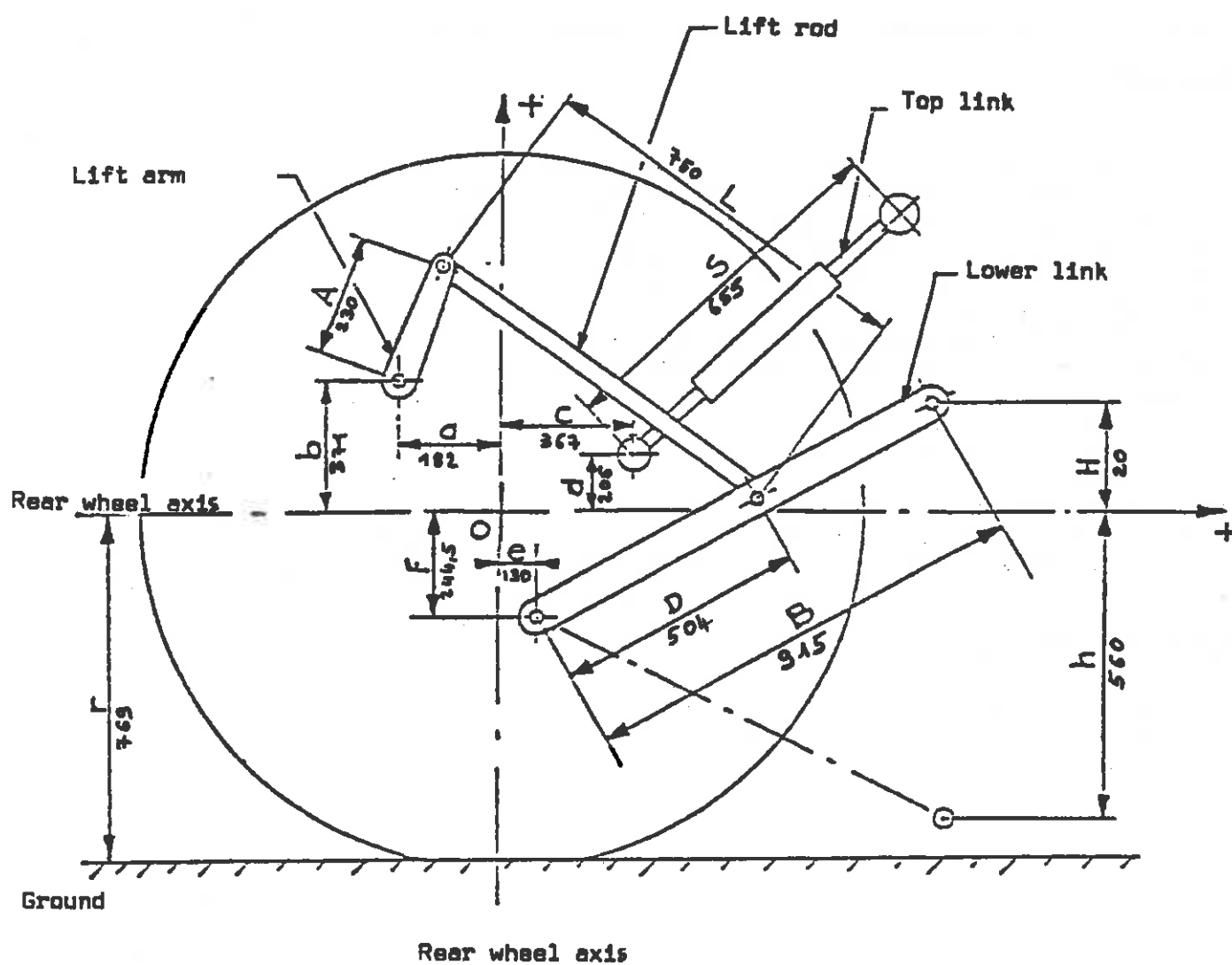
POWER LIFT:

- Make: FIAT
- Type: position control, load control, mixed control
- Type and number of cylinders: 1 single acting cylinder
- Type of linkage lock for transport: hydraulic valve lock
- Relief valve pressure setting: 186-191 bars
- Opening pressure of cylinder safety valve: 230 ± 5 bars
- Lift pump type: gear
- Transmission between pump and engine: by pinion
- Type and number of filters: 1 replaceable cartridge
- Frequency:
 - . of oil change: 1600 hours
 - . of filter change: 400 hours
- Oil capacity: 44.5 l
- Position of oil tank: transmission
- Type, number and location of tapping points: 1 dual acting, at rear
- Maximum volume of usable oil for controlling external cylinders: 26 l (stationary)
- See end of tractor specifications for oil qualities

THREE-POINT LINKAGE:

- Category: 2 (in accordance with ISO 730/I)
- Adaptation parts for changing category: none

Side view of hydraulic power lift



Hydraulic lift dimensions (mm)				Settings used in tests
Rear tyres with load	(r)	769		
Front tyres with load	(r')	564		
Length of lift arms	(A)	230		
Length of lower links	(B)	970 (telescopic arms)		
		915 (fixed arms)		915
Distance of lift arm horizontally	(a)	182		
pivot point from rear vertically	(b)	371		
wheel centre line				
Horizontal distance between the 2 lift arm end points	(u)	475		
Horizontal distance between the 2 lift arm end points	(v)	500		
Length of upper link	(S)	from 580 to 870		655
Distance of upper link horizontally	(c)	367 - 379		367
pivot point from rear vertically	(d)	206 - 156		206
wheel centre line				
Distance of lower link horizontally	(e)	130		
pivot point from rear vertically	(f)	244.5		
wheel centre line				
Distance of lower link pivot points to lift rod pivot points on lower links	(D)	436 - 504		504
Length of lift rods	(L)	from 638 to 768		750
Height of lower hitch points relative to the rear wheel centre lines:				
- in low position	(h)	from 681 to 367		560
- in high position	(H)	from 20 to 297		20

BRAKES:

Service brake

- Make: FIAT
- Type: wet disc brakes
- Method of operation: hydraulic circuit operated by 2 coupling pedals
- Trailer braking take-off: hydraulic (in accordance with national regulations)

Parking brake

- Type: independant
- Method of operation: hand lever operating on discs locked rigidly on a transmission shaft

PROTECTIVE STRUCTURE:

- Manufacturer's name and address: FIAT TRATTORI S.p.A. MODENA - ITALY
- Make and model: FIAT CS 18
- Protective device: Cab
- OECD approval number: CSD 0820
- Options: Cab CS 19 (CSD 0819),
Frame TS 27 (CSD 0821)

Driver's seat

- Make: GRAMMER - DS 85 H3 or DS 85 H3A
- Type of suspension: GRAMMER DS 85 H
- Type of damping: SUSPA with dividing piston and gas
- Range of adjustment, vertical: 60 mm - 3 positions on ratchet
horizontal: 150 mm using lever situated below

LIGHTING:

Equipment conforming to national regulations

	Height of centre above ground	Size	Distance from out- side edge of tractor to centre at 1712 mm track width
	mm	mm	mm
Headlights	1200	120x180	790
Sidelights	1600	110x70	240
Rearlights	1680	60x300	250
Reflectors	1520 670	55x90	140

TEST CONDITIONS:Overall dimensions

Length (m)	Width (m)		Height (m)	
	min.	max.	at exhaust outlet	on protective structure roof
4.526	1.93	2.63	2.78	2.65

Ground clearance: 506 mm

Track widths: . Front: 1712 mm
 . Rear : 1800 mm

Tractor mass (kg):

Front	Rear	Total
1535	2595	4130

Fuel used in all tests

- Type: domestic fuel oil (in accordance with standard NF M 15-008)
- Density: 0.841 at 15°C

Oils and lubrication recommended and used during tests

- Engine oil

- . Brand and type: FIAT AMBRA SUPER MIL-L-2104 C
- . Viscosity: 20 W 40

- Transmission, hydraulic system and steering oil

- . Type: FIAT TUTELA MULTI F
- . Viscosity: SAE 20/40

- Brake fluid

- . Type: FIAT AMBRA SUPER MIL-L-2104 C
- . Classification: SAE 10 W

- Grease: FIAT TUTELA G9

- Number of lubrication points: 20

2. COMPULSORY TEST RESULTS:**2.1 MAIN POWER TAKE-OFF PERFORMANCE**

- Date and location of tests: 30th October 1984, Antony
- Type of dynamometer: SCHENCK W 780

Power	Speed		Fuel consumption		Specific energy
	Engine	P.T.O.	Hourly	Specific	
kW	rev/min	rev/min	l/h	g/kWh	kW.h/l
MAXIMUM POWER - 2 hour test					
67.6	2461	1021	20.35	253	3.32
POWER AT RATED ENGINE SPEED					
66.5	2496	1036	20.16	255	3.30
PART LOADS (governor cut at rated engine speed)					
85% of torque obtained at maximum power at rated engine speed					
62.8	2690	1116	20.15	270	3.12
75% of torque defined above at 85% load					
47.7	2714	1126	16.56	292	2.88
50% of torque defined above at 85% load					
32.0	2730	1133	13.08	344	2.44
25% of torque defined above at 85% load					
16.1	2750	1141	10.09	526	1.60
unloaded					
-	2785	1156	6.98	-	-
STANDARD POWER TAKE-OFF SPEED (1000 ± 25 rev/min)					
66.6	2410	1000	19.87	251	3.35
PART LOADS (governor cut at standard P.T.O. speed)					
85% of torque obtained at standard power take-off speed					
62.0	2632	1092	19.70	267	3.15
75% of torque defined above at 85% load					
46.9	2659	1103	16.07	288	2.92
50% of torque defined above at 85% load					
31.5	2676	1110	12.71	339	2.48
25% of torque defined above at 85% load					
15.8	2701	1121	9.64	512	1.64
unloaded					
-	2733	1134	6.73	-	-

2.1 MAIN POWER TAKE-OFF PERFORMANCE (cont.)

Other results

- No load maximum engine speed: 2785 rev/min
- Torque (equivalent crankshaft) at maximum power: 262.6 N.m
- Maximum torque (equivalent crankshaft): 305.6 N.m with engine at 1700 rev/min

Mean atmospheric conditions

- Temperature: 24° C
- Pressure: 1021 mbar
- Relative humidity: 53%

Maximum temperatures

- Coolant: 95° C
- Engine oil: 132° C
- Fuel: 39° C
- Engine air intake: 25° C

Fuel consumption with part loads

Conditions of operation	Governor cut at rated engine speed		Governor cut at standard power take-off speed	
	at 85% (1)	at 50% of 85% (2)	at 85% (1)	at 50% of 85% (2)
Hourly consumption (l/h)	20.15	13.08	19.70	12.71
Standard specific consumption (g/kWh)	270	344	267	339

(1) Torque equivalent to 85% of torque obtained at maximum power

(2) Torque equivalent to 50% of torque specified above, at 85% load

2.2 HYDRAULIC POWER LIFT AND PUMP

2.2.1 Power lift test

Measurement results	at hitch points	on the frame
Height of lower hitch point above ground in down position (mm)	224	224
Vertical movement (mm)	545	580
Maximum corrected force exerted through full range (kN)	30.4	27.4
Corresponding pressure of hydraulic fluid (bars)	147	147
Moment about rear axle (kN.m)	37.2	23.5
Maximum tilt angle of frame above horizontal (degrees)	-	5

Lifting heights (1)	mm	+ 260	+ 230	+ 200	+ 100	0	- 100	- 200	- 300
Corrected lifting heights (2)	at hitch points kN	-	36.4	-	36.0	35.5	34.9	33.4	30.4
	at frame kN	27.8		27.4	27.5	29.0	29.8	30.0	29.4

(1) Lifting heights relative to the horizontal plane including the lower link pivot points

(2) The reference pressure used for correction is the lowest value obtained during the pump test (see table below)

2.2.2 Pump test

- Tapping point used for test: dual action rear tapping point
- Temperature: 65° C
- Sustained pressure with relief valve open: 190 bars
- Pump delivery rate at minimum pressure: 48.4 l/min

Other measurements	at max. hydraulic power	at hydraulic pressure equivalent to 90% of the actual relief valve pressure setting
Pressure (bars)	147	171
Flow rate (l/min)	45.5	20.5
Power (kW)	11.2	5.8

2.3 DRAWBAR PERFORMANCE (UNBALLASTED TRACTOR)

- Date and place of tests: 27th November 1984, Antony
- Type of track: tarmacadam
- Height of drawbar: 0.43 m
- Tyres

	Front	Rear
• Size:	14.9 R 24	16.9 R 38
• Inflation pressure:	0.8	0.8
- Atmospheric conditions:
 - Temperature: 9° C
 - Pressure: 1009 mbar
 - Relative humidity: 60%

2.3 DRAWBAR PERFORMANCE (UNBALLASTED TRACTOR)

Gear	Speed	Drawbar pull	Power	Engine speed	Slip (of wheels or tracks)	Specific fuel consumption	Specific energy	Temperature		
								Fuel	Coolant	Engine oil
-	km/h	kN	kW	rev/min	%	g/kWh	kWh/l	°C	°C	°C
MAXIMUM POWER										
1 III	3.09	38.8	33.2	2726	15	363	2.32	34	87	109
2 III	4.35	37.0	44.7	2709	12	343	2.45	34	87	115
3 III	5.58	35.2	54.5	2603	10	326	2.58	35	87	116
4 III	7.10	29.0	57.2	2494	5	307	2.74	35	86	117
5 III	8.96	23.0	57.4	2456	3	307	2.74	35	87	117
1 IV	10.41	20.2	58.4	2458	3	300	2.80	34	88	115
(*)										
ADDITIONAL MEASUREMENTS FOR CERTAIN GEAR COMBINATIONS										
(i) Results obtained at maximum power in each gear combination										
(1) 4 III	7.10	29.0	57.2	2494	5	307	2.74	35	86	117
(2) 1 IV	10.41	20.2	58.4	2458	3	300	2.80	34	88	115
(ii) Results at 75% of maximum power										
(1) 4 III	7.88	22.4	48.9	2706	3	331	2.54	34	85	100
(2) 1 IV	11.57	15.3	49.3	2701	2	335	2.51	34	83	90
(iii) Results at 50% of maximum power										
(1) 4 III	8.08	14.8	33.3	2728	1	384	2.19	33	85	100
(2) 1 IV	11.79	10.4	34.1	2726	1	393	2.14	33	83	85
(iv) Upper gear combination, engine speed reduced to obtain same effort as in (ii)										
(1) 5 III	7.82	22.6	49.0	2142	3	297	2.83	32	84	95
(2) 2 IV	11.61	15.4	49.7	2029	1	300	2.80	33	83	85
(v) Above gear combination, engine speed reduced to obtain same effort as in (iii)										
(1) 5 IV	8.20	15.1	34.4	2205	1	332	2.53	32	83	90
(2) 2 IV	11.69	9.8	31.8	2024	1	343	2.45	33	83	95

(*) It was not possible to take measurements in 2 IV

2. COMPULSORY TEST RESULTS (cont.):

Comments: none

3. OPTIONAL TEST RESULTS:

None

Engineer in charge
of tests



E. HUGO

Head of MTAN
Division



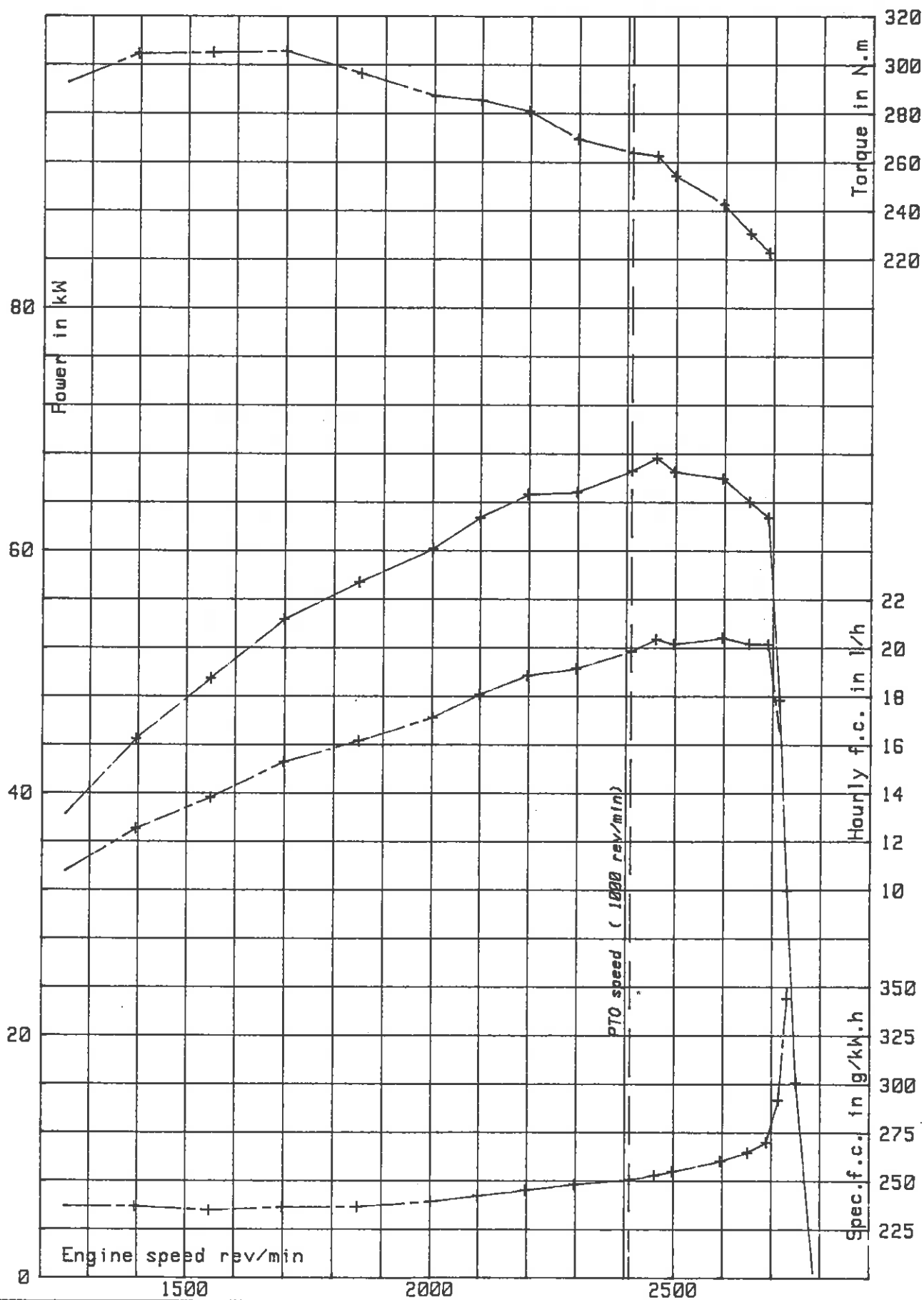
J.F. GOUPILLON

Appendices:

- . Power take-off - Full load characteristics curves (1 page)
- . Power take-off - Curves obtained with the engine running with the governor in place (1 page)

Main power take-off test
Tractor FIAT 100-90 DT

Test 5554
of 31.10.84



Main power take-off test Tractor FIAT 100-90 DT

Test 5554
of 31.10.84

