CONSIGLIO NAZIONALE DELLE RICERCHE

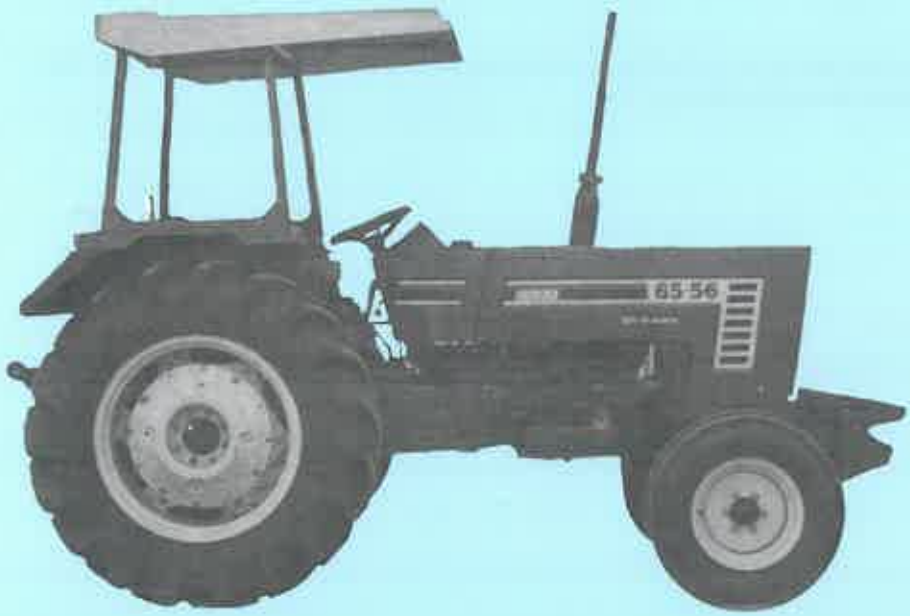
ISTITUTO PER LA MECCANIZZAZIONE AGRICOLA

10135 TORINO - Strada delle Cacce 73
(Italia)

Report No. 1515/T/90

TEST IN ACCORDANCE WITH THE OECD FULL CODE FOR THE OFFICIAL TESTING OF AGRICULTURAL TRACTORS

TRACTOR: Make: **FIAT**
Model: **65-56 LM/12**
Type: **2 WD**



Manufactured by: FIATGEOTECH S.p.A. - Modena - Italy

Date and location of tests: April 1989 - March 1990 - Turin (Italy)

This report has been approved by the O.E.C.D. Co-ordinating Center (CEMAGREF, France) as being in accordance with the O.E.C.D. Tractor Test Code.

Number and date of approval: 1293 dated 15th November 1990

This bulletin is based on engineering tests in accordance with O.E.C.D. Tractor Code. It does not contain an evaluation of performance of the tractor on pratical farm work.

The FIAT 65-56 LM tractor is manufactured in following variants:

1. 65-56 LM/12 model with 12 forward and 3 reverse speeds (4×3 gear units)
2. 65-56 LM/8 model with 8 forward and 2 reverse speeds (4×2 gear units)

In this report all performance characteristics are given corresponding to the International System of Units.

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ANNEX

Fig. No.

Main power take-off test

Curves of power, torque, hourly and specific fuel consumption / crankshaft speed 1
Curves of specific fuel consumption / crankshaft power p.t.o. 2

Tractor manufacturer's name and address:	FIATGEOTECH S.p.A. Viale delle Nazioni, 55 MODENA - Italy
Submitted for test by:	Manufacturer
Selected by:	Manufacturer with agreement by Istituto per la Meccanizzazione Agricola - Torino (Italy)
Place of running-in:	FIATGEOTECH - San Matteo - Modena (Italy)
Duration of running-in:	Engine and tractor appr. 50 hours
Location of test:	Istituto per la Meccanizzazione Agricola - Torino (Italy)

SPECIFICATION OF TRACTOR:

Tractor:	
Make:	FIAT
Model:	65-56 LM/12
Type:	Wheel tractor unit construction, two rear wheel driven
Serial No.:	102002
1st serial No.:	102001
Engine:	
Make:	FIAT
Model:	8045,06
Type:	4-stroke Diesel engine, naturally aspirated, direct injection, water cooled.
Serial No.:	320-320697
Cylinders:	4 cylinders, vertical, in-line, 100 mm bore x 115 mm stroke, capacity 3613 cm^3 compression ratio 17 : 1, overhead in-line valves, replaceable cast-iron dry cylinder liners.
Fuel system:	Forced feed; CORONA model APM 45 FVI fuel pump (optionally FISPA model 4066.03/A); 1 wire-mesh filter on pump suction side and 2 CAV filter with replaceable cartridge element; changing interval: 400 working hours ; capacity of fuel tank: 60 litres; CAV model DPS 8520A 140A injection pump, 39019 serial number. Manufacturer's production setting 13.42 l/h at rated engine speed and full load. Injection timing $3° \pm 1$ before TDC. BOSCH or OMAP multihole injectors, model DLLA 124S (BOSCH) or OLL 124S (OMAP), Serial No. none. Injectors pressure 23 ± 0.8 MPa.
Governor:	BOSCH centrifugal variable speed governor, mechanical type, incorporated in fuel injection pump, governed range engine speed 650 to 2800 rev/min; rated engine speed 2500 rev/min.
Air cleaner:	FIAT main cleaner, 18518.212 model oil bath type with one replaceable cartridge. Oil capacity: 0.7 litres. Air inlet under bonnet in front of engine. Maintenance indicator: none.
Lubrication system:	Forced feed from gear-type pump; one, FIAT make, replaceable cartridge type filter installed on the pressure line to the engine.

Cooling system:	Water cooled with centrifugal impeller pump, overpressure relief valve set to 70 KPa, thermostat with by-pass; 392 mm dia, 4 blades, belt driven fan; cooling water capacity 10 litres. Temperature visual control with thermometer. Superpressure system: radiator cap.
Starting system:	Electrical, MARELLI or BOSCH make, 12 V 3.5 kW; starting motor pinion coupling solenoid operated. Cold starting aid: CAV make, thermostart model with variable resistance or "start-pilot" as option. Safety device: operable only when the gear box is in the neutral position.
Electrical system	
Voltage:	12 V, negative earth.
Generator;	Alternator ISKRA make, AA 108, three phase, 14 V; 500 W power.
ıttery:	One, MARELLI make, 434470-ES; capacity: 92 Ah at 20 hours rating.
Exhaust silencer	FIAT make, DGM-SA 748 model, circular shape 78 mm dia., expansion type; length 675 mm. Vertical position on engine left side, maximum height above ground 2500 mm. As option: FIAT make, DGM-SA 1057 model, square shape 95 x 95 mm, expansion type, 675 mm length; vertical position on engine left side; height above ground 2500 mm.
Transmission to wheels	
Clutch:	LUK or VALEO make, independent dry dual disc clutch; 280 mm dia plates; travelling part: pedal operated; p.t.o. part: hand lever operated.
Gearbox:	Own make. On the tractor model tested: mechanical type syncronized constant mesh gear with total 12 forward and 3 reverse speeds; the transmission consists of two mechanical in series gear units: the first with five speeds fully synchronized (four forward and one reverse), the second with three positions to select the gear ratios (slow, normal and high); each unit is operated by own lever. The FIAT 65-56 LM/12 is available in one other variant: - FIAT 65-56 LM/8 model with 8 forward and 2 reverse speeds; the transmission consists of two mechanical in series gear units: the first with five speeds (four forward and one reverse), the second with two positions to select the the gear group (normal and high).
Rear axle and final drive:	Own make, costant mesh gear type; mechanical differential locking, pedal operated; spur gear final drive.
Front axle:	Own make, telescopic adjustable axle.

FIAT 65-56 LM/12

Total ratios and travelling speed (tyres 14.9 - 30 and pressure 140 KPa)

Gear	Group	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed (*) at rated engine speed (2500 rev/min) km/h
I	Slow	720.952	0.87
II		479,174	1.31
III		327.241	1.91
IV		253.348	2.47
I	Normal	233.451	2.68
II		155.161	4.04
III		105.964	5.91
IV		82.036	7.64
I	High	64.848	9.66
II		43.100	14.53
III		29.434	21.28
IV		22.788	27.49
I	Reverse	501.769	1.25
II		162.478	3.86
III		45.133	13.88

FIAT 65-56 LM/8

Total ratios and travelling speed (tyres 14.9 - 30 and pressure 140 KPa)

Gear	Group	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed (*) at rated engine speed (2500 rev/min) km/h
I	Normal	233.451	2.68
II		155.161	4.04
III		105.964	5.91
IV		82.036	7.64
I	High	64.848	9.66
II		43.100	14.53
III		29.434	21.28
IV		22.788	27.49
I	Reverse	162.478	3.86
II		45.133	13.88

(*) Calculated with a tyre dynamic radius index of 665 mm (ISO 4251/1 - 1984)

POWER TAKE OFF

Main:

Type: independent; shiftable by hand lever to independent or ground speed p.t.o.; one shaft.
Method of engagement: by means of dry dual disc clutch with hand lever.
Position: rear of tractor, in median plane; height above ground 665 mm (with tyre 14.9 - 30).

Proportional engine speed p.t.o.:

- 540 rev/min: distance behind rear axle 260 mm; diameter of p.t.o. shaft end 35 mm; 6 splines, in conformity with ISO 500/1979; no power restriction; 686 rev/min at rated engine speed; standard p.t.o. speed 540 rev/min at engine speed 1967 rev/min; p.t.o. shaft rotates clockwisely, viewed from tractor rear.
  Ratio of rotation speed:

$$\text{Engine/p.t.o. ratio} = \frac{2500}{686} = 3.643$$

P.t.o. proportional to ground speed:

size of tyres: 14.9-28, radius index 665 mm;
travelling distance for one revolutions of p.t.o. shaft: 0.488 m;
number of p.t.o. shaft revolution for one revolution of the rear wheels: 7.8.
Direction of rotation with forward gear engaged: clockwise, viewed from tractor rear.

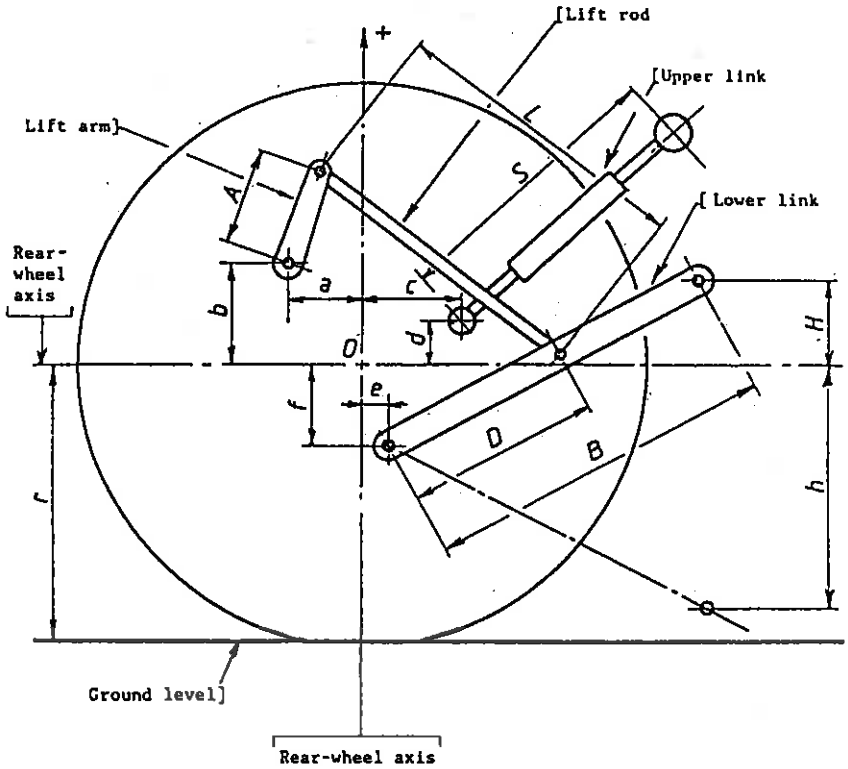
POWER LIFT:

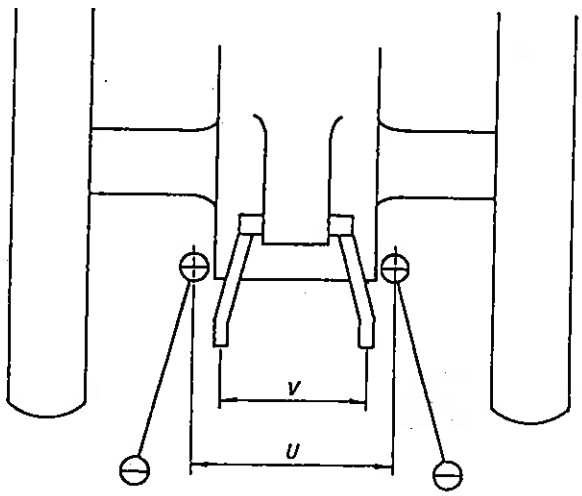
Own make; hydraulic power lift in unit construction, draught and position control operated by two independent levers; lift-o-matic device to raise and to low lower links.

- Hydraulic system: open centre system with hydraulic oil circuit in common with gear box. One single acting cylinder with 100 mm bore and 128 mm stroke.
  Rilief valve pressure setting: 18.6 MPa
  Antishock valve setting: 21.0 MPa
  FIAT A31 lift gear pump, directly driven by engine.
  Delivery 32.8 l/min at rated engine speed.

There are no cylinder safety valves.
Type of linkage lock fo transport: hydraulic. Site of oil reservoir: gearbox cast housing. Number two tapping points on the rear part of tractor. Maximum volume of oil available to external cylinders 0.8 litres.

Implement linkage:
three point linkage, joint balls category 2, according to I.S.O. STANDARD 730/I-1977; dimensions see on pag. 9 .





Dimension of linkage geometry (when connected to the standard frame)

		Dimension or range mm	Settings used in test mm
Length of lift arms	(A)	220	220
Length of lower links	(B)	900	900
Distance of lift arm pivot: horizontally	(a)	- 40	-40
point from rear-wheel axis: vertically	(b)	345	345
Horizontal distance between the 2 lower link points	(u)	430	430
Horizontal distance between the 2 lift arm end points	(v)	430	430
Length of upper link	(S)	from 650 to 940	785
Distance of upper link pivot point from rear : horizontally	(c)	130	130
wheel axis : vertically	(d)	from 270 to 320	320
Distance of lower link pivot point from rear : horizontally	(e)	35	35
wheel axis : vertically	(f)	105	105
Distance of lower link pivot points to lift rod pivot points on lower links	(D)	420	420
Length of lift rods	(L)	from 455 to 580	575
Heigth of lower hitch points relative to the rear-wheel axis:			
- in low position	(h)	from 145 to 505	435
- in high position	(H)	from 215 to 450	260
Height above ground of liwer hitch points when locked in transport position (*)		from 880 to 1115	-

(*) Assuming the dynamic radius index: 665 mm (ISO 4251/1-1984)

Swinging drawbar:

Own make; clevis type.
Vertical height with tyres14.9-30, to centre of clevis: min 430 mm max 540 mm above ground; adjustments obtained changing the setting of the drawbar on the drilled guide; clevis coupling pin diameter 28 mm; distance of hitch point from rear axle horizontally: 620-665-710 mm behind, changeable by sliding on drilled guide.
Position relative to p.t.o., horizontally and vertically:
- 450-405-360 mm behind
- from 125 mm below to 235 mm below
Lateral adjustements: 5 position (one in the middle and two for each side at 135 mm and 270 mm).
Pivot position relative to rear wheels horizontally 115 mm.
Maximum vertical load: not allowed by italian legislation and by manufacturer.

Hitch:

Own make; clevis type; height above ground (with tyres 14.9 -30) 480-650-780 and 850 mm, changeable by sliding on drilled guides; hitch hole 28 mm dia; distance of hitch hole to rear axle horizontally 325 mm; position relative to p.t.o.: vertical 185 and 15 mm below; 115 and 185 mm above; 65 mm horizontal, behind.
Maximum vertical load 12,6 kN according to italian legislation (with tyres 14.9-30; 6 ply)

Holed drawbar:

Available as option.

Steering:

Own make, hydrostatic control, with independent hydraulic circuit. Distributor DANFOSS make, Orbitrol OSPC 100; gear pump delivery 22.8 l/min at rated engine speed, one double acting cylinder directly acting on the front wheel, transversaly mounted, bore 48 mm, stroke 215 mm, piston rod 22 mm dia; working pressure 10 ± 0.2 MPa.
Oil capacity 1.8 litres. One wire-mesh oil filter, own make.

Brakes:

Service brake:
Own make, multiple oil bath disc brakes type, 6 plates each wheel, mechanically acting on rear wheels; operated by two independent pedals locked together for road drive.
Trailing braking take-off: hydraulic.

Parking brake:
Own make, hand lever operated; the parking brake acts on the final part of service brake by means of different linkage.

Steering brake:
divided pedal of service brake, for normal use locked together.

Wheels

Steering wheels:
at front, two tyres 7.50-16; 8 ply;
Driving wheels:
at rear, two tyres 14.9-30; 6 ply;

- Wheelbase:

2170 mm

- Track width adjustment:

	Minimum mm	Maximum mm	Adjustment method
Front	1440	2040	by 100 mm steps extending axle
Rear	1414	1914	manual through 8 position

Optional tyre:

Tyre size			
At front		At rear	
7.50-16	6 ply	12.4-36	6 ply

Protective structure: FIATAGRI safety frame, TS 28 type. OECD REPORT CSD 0891/70 for the FIAT 65-56 LM/12 (2WD) and CSD 0891/72 for the FIAT 65-56 LM/8 (2 WD) tractors.

Seat: Driver's seat:
GRAMMER make, DS 44/2H model, upholstered seat with back rest, double acting hydraulic damper suspension; height of unloaded seat above driver's platform adjustable from 590 mm to 640 mm in a continuos way, longitudinal adjustment 160 mm;

Passenger seat: none

'ighting: Electrical 12 V, in accordance with Italian legislation

	Height above ground of centre mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
Headlights	1060	180 x 120	80
Sidelights	1460	90 x 60	780
Rearlights	1460	80 x 60	665
Reflectors 1st pair	1210	90 x 55	760

TEST CONDITIONS

Overall dimensions

	Length	Width		Height to top of	
		mini	maxi	exhaust silencer	protective structure
	m	m	m	m	m
With ballast	3.88	1.84	2.34	2.50	2.40
Without ballast	3.60	1.82	2.32	2.50	2.40

Ground clearance: 480 mm below part of hydraulic circuit under the gear box

Tractor mass
(with safety frame and full fuel tank):

	Without driver		With driver	
	Without ballasts	With ballasts	Without ballasts	with ballasts
	kg	kg	kg	kg
Front	880	1270	900	1290
Rear	1390	1660	1440	1710
Total	2270	2930	2340	3000

Ballasts:

	Weights		Water (kg)
	Number	Total mass (kg)	
Front wheels	-	-	-
Front weight	10	330	-
Rear wheels	6	330	-
Optional	-	-	-

Fuel:

- Type: Esso Diesel oil, in conformity with national standard.
- Density at 15° C: 0.831 g/cm^3

Tyres and track width specifications

	Front	Rear
Tyres:	GOOD YEAR	GOOD YEAR
dimensions	7.50-16	14.9-30
ply rating	8	6
tyre	diagonal	diagonal
maximum load	745 kg (30km/h)	1665 kg (30km/h)
inflaction pressure (tyre manufacturer's)	280 KPa	140 KPa
dynamic radius index	375 mm	665 mm
Chosen track width:	1440 mm	1414 mm

Oils and lubrication

- Capacity and change interval

	Capacity dm^3	Oil change h	Filter change h
Engine	7.3	200	400
Gear box with hydraulic sistem, rear axle and final reduction	40	400	-
Steering system	1.8	800	300

- Specifications (SAE, API, MIL-L, ISO)

	Recommended	Used during test
Engine oil - Type: - Viscosity: - Classification:	 AMBRA SUPER SAE 15 W 40 MIL-L-2104 C	As recommended
Trasmission oils - Type: - Viscosity: - Classification:	 TUTELA MULTI F SAE 20 W 40 MF 1135 and M2 C86 A	As recommended
Hydraulic fluid - Type: - Viscosity: - Classification:	 TUTELA MULTI F SAE 20 W 40 MF 1135 and M2 C86 A	As recommended
Steering oil - Type: - Viscosity: - Classification:	 TUTELA MULTI F SAE 20 W 40 MF 1135 and M2 C86 A	As recommended

- Grease: FIAT TUTELA G9

Number of lubrication points: 9

COMPULSORY TESTS RESULTS

(1) MAIN POWER-TAKE-OFF PERFORMANCE

Date and Location of tests: 04/05/1989 I.M.A.,TORINO,ITALY
Type of dynamometer: PARASITIC CURRENTS,BORGHI & SAVERI FA 300-30 SP

POWER	SPEED		FUEL CONSUMPTION			SPECIFIC ENERGY
	ENGINE	P.T.O.	HOURLY		SPECIFIC	
kW	rev/min	rev/min	l/h	kg/h	g/kWh	kWh/l
MAXIMUM POWER - 2 - hour test						
44.14	2500	686	13.37	11.16	253	3.30
POWER AT RATED ENGINE SPEED						
44.22	2500	686	13.29	11.10	251	3.33
STANDARD POWER-TAKE-OFF SPEED (540+-10 rev/min)						
39.94	1967	540	11.14	9.30	233	3.59
PART LOADS						
(1) the torque corresponding to maximum power at rated engine speed						
44.22	2500	686	13.29	11.10	251	3.33
(2) 85% of torque obtained in (1)						
39.04	2597	713	12.04	10.05	257	3.24
(3) 75% of torque defined in (2)						
29.66	2630	722	9.94	8.30	280	2.98
(4) 50% of torque defined in (2)						
20.02	2663	731	7.96	6.65	332	2.52
(5) 25% of torque defined in (2)						
10.12	2692	739	6.59	5.50	543	1.54
(6) unloaded						
---	2735	751	4.85	4.05	---	---

PART LOADS AT STANDARD POWER-TAKE-OFF SPEED (540+-10 rev/min)

POWER	SPEED		FUEL CONSUMPTION			SPECIFIC ENERGY
	ENGINE	P.T.O.	HOURLY		SPECIFIC	
kW	rev/min	rev/min	l/h	kg/h	g/kWh	kWh/l
(1) the torque corresponding to maximum power						
39.12	1967	540	10.90	9.10	233	3.59
(2) 85% of torque obtained in (1)						
34.56	2044	561	9.88	8.25	239	3.50
(3) 75% of torque defined in (2)						
26.48	2087	573	8.02	6.70	253	3.30
(4) 50% of torque defined in (2)						
18.08	2138	587	6.26	5.23	289	2.89
(5) 25% of torque defined in (2)						
9.37	2215	608	4.63	3.87	413	2.02
(6) unloaded						
---	2288	628	3.05	2.55	---	---

STANDARD SPECIFIC CONSUMPTION: 257/332/239/289 (g/kWh)
No load maximum engine speed: 2735 rev/min
Torque (equivalent crankshaft) at rated engine speed: 168.6 N/m
Maximum torque: 204.6 Nm at 1100 rev/min of the engine
Mean atmospheric conditions: Temperature 23.0 C
Pressure 1000.0 mbar
Relative Humidity 55 %
Maximum Temperature: Coolant 82.0 C
Engine oil 114.0 C
Fuel 32.0 C
Engine air intake 23.0 C

2. HYDRAULIC POWER AND LIFTING FORCE

- Date of tests: 17th November 1989

2.1 Hydraulic power test

- Sustained pressure with relief valve open: 17 MPa
- Pump delivery rate at minimum pressure: 26 l/min

	Flow rate l/min	Pressure MPa	Power kW
Flow rate corresponding to a hydraulic pressure equivalent to 90 per cent of the actual relief valve pressure setting and corresponding hydraulic power	25.35	16.7	6.93
Flow rate and hydraulic pressure corresponding tomaximum hydraulic power	25.35	17.0	7.04

- Tapping point used for test: at rear of tractor
- Temperature of hydraulic fluid: 65° C

2.2 Power lift test

	at the hitch point		on the frame	
Height of lower hitch points above ground in down position	230	mm	230	mm
Vertical movement	695	mm	695	mm
Maximum corrected force exerted through full range	12.1	kN	11.35	kN
Corresponding pressure of hydraulic fluid	16.7	MPa	16.7	MPa
Moment about rear-wheel axis	-	kNm	17.54	kNm
Maximum tilt angle of mast from vertical	-	degrees	4	degrees

Lifting heights relative to the horizontal plane including the lower link pivot points									
mm	- 325	- 300	- 200	- 100	- 0	100	+ 200	+ 300	+ 370
Lifting forces									
at the hitch points kN	12.10	12.40	13.30	13.85	14.00	14.00	13.65	13.30	13.10
Corresponding pressure: 16.7 MPa									
at the frame kN	12.40	12.50	13.50	13.60	13.40	13.50	12.50	11.85	11.35
Corresponding pressure: 16.7 MPa									

3. DRAWBAR PERFORMANCE

Date of tests: 20th-21rd March 1990

Type of track: concrete

Tyre size: front: 7.50-16 (8 ply)

rear: 14.9-30 (6 ply)

	Height of hitch above ground	Tyre inflation pressure Front	Rear
Unballasted	570 mm	280 kPa	140 kPa
Ballasted	810 mm	280 kPa	140 kPa

Gear no. and group	Driving speed km/h	Power kW	Drawbar pull daN	Engine speed rev/min	Slip of wheels %	Specific fuel consumption g/kWh	Specific energy kWh/l	Temperatures Fuel °C	Coolant °C	Engine oil °C	Atmospheric conditions Temperature °C	Relative humidity %	Pressure mbar
3.1 - MAXIMUM POWER IN TESTED GEARS (unballasted tractor)													
3 Normal	5.59	27.84	1795	2642	14.4	321	3.11	24	82	114	20	30	1001.3
4 Normal	7.04	35.45	1814	2581	14.5	303	3.30	24	82	114	20	30	1001.3
1 High	9.06	38.49	1530	2490	9.9	290	3.45	24	82	114	21	30	1001.3
2 High	14.37	38.36	961	2501	5.3	291	3.44	24	82	114	22	30	1001.3
3 High	21.65	36.57	608	2504	2.7	304	3.29	24	82	114	23	30	1001.3
3.2 - MAXIMUM POWER IN TESTED GEARS (ballasted tractor)													
1 Slow	0.83	5.53	2403	2707	14.8	-	-	25.0	82	114	20	35	997.3
2 Slow	1.23	8.22	2403	2675	15.0	-	-	25.0	82	114	20	35	997.3
3 Slow	1.82	11.89	2354	2656	13.7	-	-	25.0	82	114	21	35	997.3
4 Slow	2.31	15.31	2393	2636	14.4	-	-	25.0	82	114	21	35	997.3
1 Normal	2.49	16.56	2393	2623	14.4	383	2.61	25.0	82	114	22	35	997.3
2 Normal	3.74	24.66	2373	2612	14.3	328	3.05	25.0	82	114	22	35	997.3
3 Normal	5.32	35.20	2383	2556	15.0	311	3.22	25.0	82	114	23	35	997.3
4 Normal	7.23	38.61	1922	2495	8.2	289	3.46	25.0	82	114	24	35	997.3
1 High	9.43	39.31	1500	2501	5.6	289	3.46	25.0	82	114	24	35	997.3
2 High	14.48	37.87	941	2492	3.3	293	3.41	25.0	82	114	24	35	997.3
3 High	21.55	35.20	588	2501	2.2	320	3.13	25.0	82	114	24	35	997.3
3.3.1 - FIVE HOUR TEST at 75% of pull at maximum power													
4 Normal	7.75	31.03	1442	2600	5.7	300	3.34	25.0	82	114	24	35	997.3
3.3.2 - FIVE HOUR TEST at pull corresponding to 15% wheelslip - with 280 kg as additional ballast													
1 Normal	3.91	26.12	2403	2285				25.0	82	114	24	35	997.3

Oil consumption during ten hours tests 3.3.1 and 3.3.2: 42 g/h

Test 3.3.2 was carried out with additional ballasts; so, the not quoted figures are irrelevant

4. TURNING AREA AND TURNING CIRCLE

Wheel equipment front: 7.50-16 (8 ply)
rear: 14,9-30 (6 ply)
Track width front: 1440
rear: 1414

	With brakes		Without brakes	
	Right-hand	Left-hand	Right-hand	left-hand
	m	m	m	m
Radius of turning area	3.51	3.42	3.90	3.84
Radius of turning circle	3.37	3.28	3.76	3.70

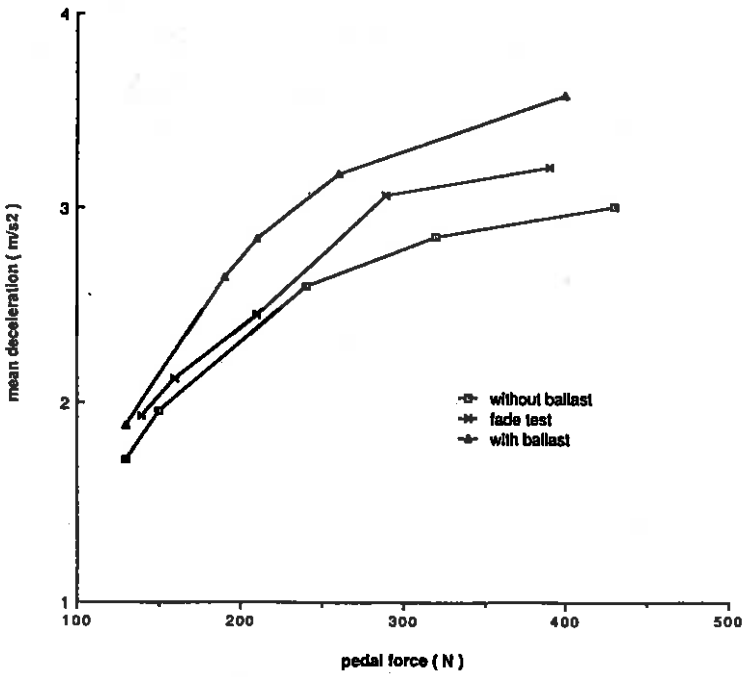
5. LOCATION OF CENTRE OF GRAVITY

Height above ground	700 mm
Distance forward from the vertical plane containing the axis of the rear wheels	835 mm
Distance from the median plane of the tractor, to the left	0 mm

6. BRAKING

- Date of tests: 2nd June 1989

6.1 Cold service braking device test - 6.2 Fade test



Cold service braking device test

	Ballasted tractor	Unballasted tractor
Speed before application of brakes (km/h)	27.50	27.20

Ride test

Maximum deviation of the tractor from its original course: none

Abnormal vibration: none

Brake heating method: by means of towing the tractor for 1 km at 22,0 km/h with towing force of 300 KN.

6.3 Parking braking device test

	Uphill	Downhill
Braking device control force	12.1 kN	11.8 kN

7. MEASUREMENT OF EXTERNAL NOISE LEVEL

- Date of tests: 29 th May 1989
- Type of sound level meter: impulse precision BRUEL & KJAER 2209 model.
- Type of track: concrete

7.1 Results of test with DGM SA 748 model

- Gear number: 4 High
- Travelling speed before acceleration: 22,56 km/h
- Sound level: 85,0 dB (A)

8. REPAIRS AND ADJUSTMENT DURING TEST = none

9. REMARKS = none

TEST CARRIED OUT BY:

W. Faccio

M. Giangualano

HEAD OF I.M.A.
TEST DEPARTMENT

R. Gioia

DIRECTOR OF I.M.A.

L. Lisa

Turin, 16th May 1990

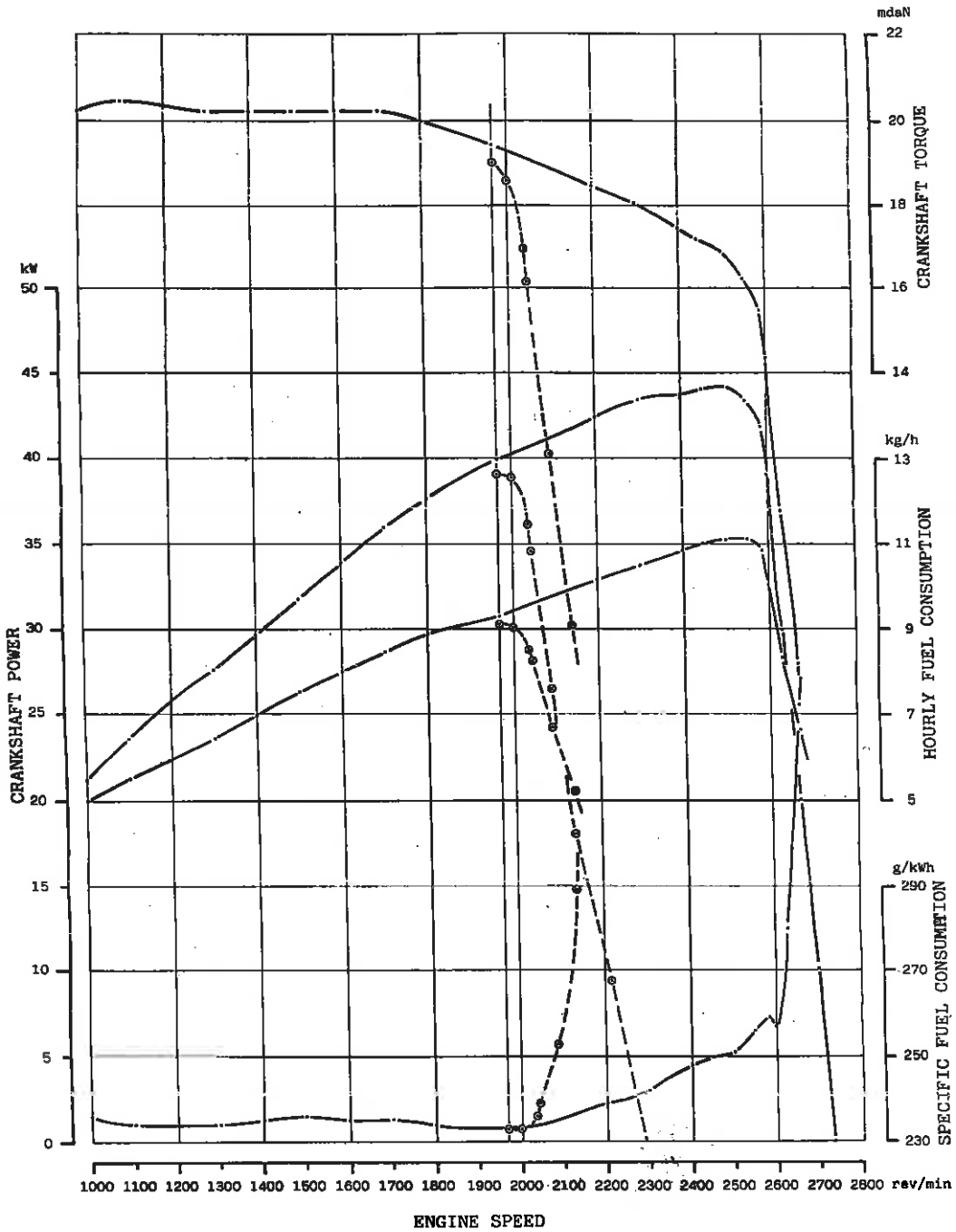


Fig. 1 - POWER TAKE-OFF TEST

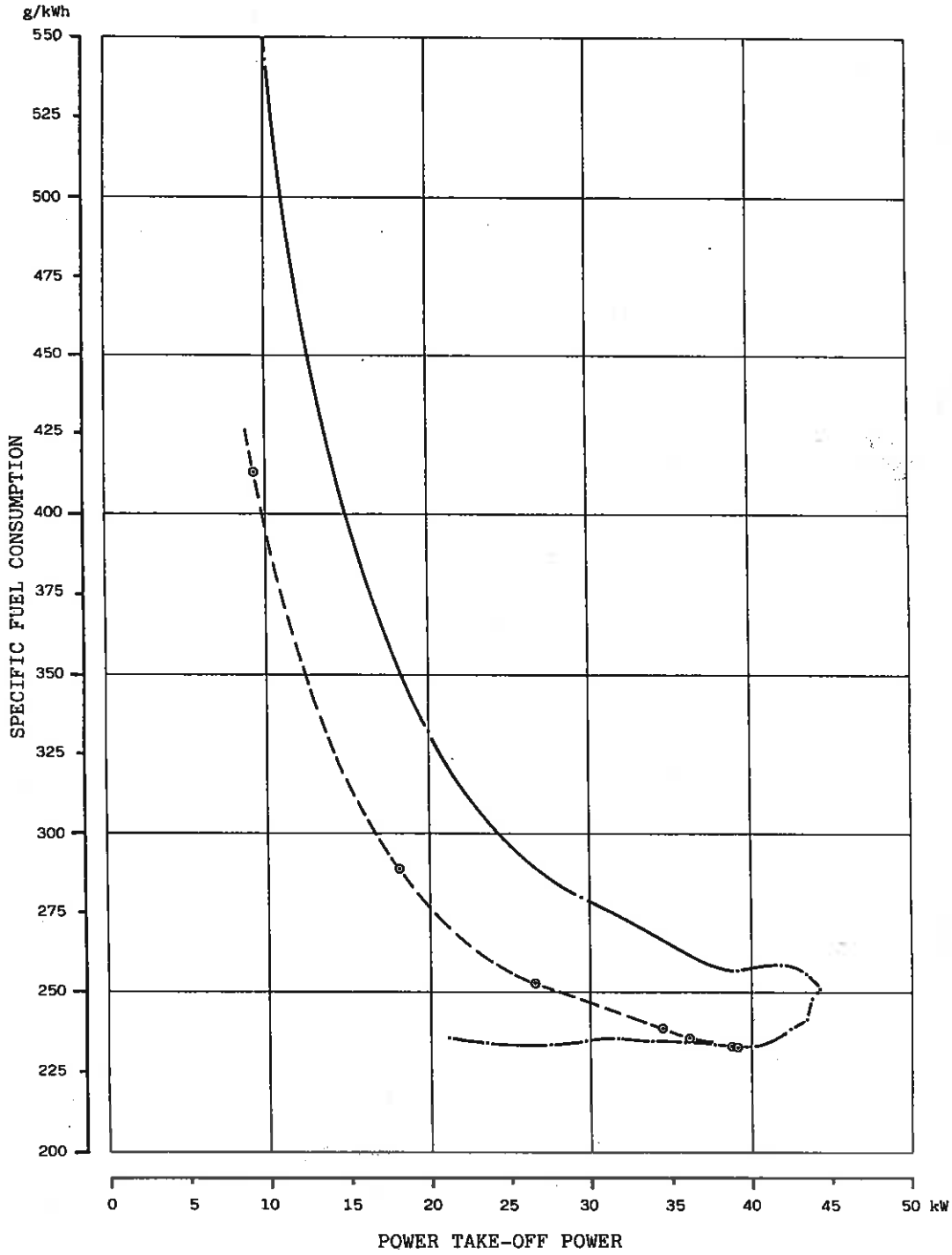


Fig. 2 - POWER TAKE-OFF TEST