ISTITUTO SPERIMENTALE PER
LA MECCANIZZAZIONE AGRICOLA
SEZIONE DI TREVIGLIO

Test in accordance with the O.E.C.D. Restricted Code for the official testing of agricultural tractors.

Agricultural tractor

LAMBORGHINI
660 F PLUS VDT
(4WD)

OECD No. **1415/1**
Restricted Code



Agricultural tractor

SAME
FRUTTETO 60 II VDT
(4WD)

OECD No. **1415/2**
Restricted Code



Submitted for test by: S+L+H S.p.A
V.le Cassani 15
24047 Treviglio (BG) (Italy)

Date of O.E.C.D. approval: 18.12.1992
Period of test: September 1992

ISMA - SOP Treviglio - Via Milano 43 - TREVIGLIO (BG) - ITALY

ISTITUTO SPERIMENTALE PER
LA MECCANIZZAZIONE AGRICOLA
SEZIONE DI TREVIGLIO

Test in accordance with the O.E.C.D. Restricted Code for the official testing of agricultural tractors.

Agricultural tractor

LAMBORGHINI
660 F PLUS VDT
(4WD)

OECD No. **1415/1**
Restricted Code



Agricultural tractor

SAME
FRUTTETO 60 II VDT
(4WD)

OECD No. **1415/2**
Restricted Code



Submitted for test by: S+L+H S.p.A
V.le Cassani 15
24047 Treviglio (BG) (Italy)

Date of O.E.C.D. approval: 18.12.1992
Period of test: September 1992

ISMA - SOP Treviglio - Via Milano 43 - TREVIGLIO (BG) - ITALY

The tractors Lamborghini 660 F Plus VDT and Same Frutteto 60 II VDT are technically identical in all main respects except colour and side bonnets design.
All tests were carried out on the Lamborghini 660 F Plus VDT.

TABLE OF CONTENTS

- Specification of tractor page 3
- Power take-off performance page 18
- Power lift and hydraulic power test page 22
- Drawbar performance page 24

APPENDIX

- Measurement of noise in the protective structure page 25

All stated dimensions and tests refer to tyre size 7.50R20 (6 ply) at front and 13.6R28 (123A8) at rear, as well as to track widths 1090 mm at front and 1080 mm at rear.

- Tractor manufacturer

. Name: S+L+H S.p.A.;
. Address: V. Cassani 15 - 24047 Treviglio (BG) - ITALY;
- Location of tractor assembly: Treviglio (BG) - ITALY;
- Submitted for test by: the manufacturer;
- Selected by: the manufacturer with the agreement of ISMA;
- Place of running in: Treviglio (BG) - ITALY;
- Duration of running in: 50 hours.
- Location of test: I.S.M.A. - Via Milano 43 - Treviglio (BG) - ITALY

I - SPECIFICATION OF TRACTOR

TRACTOR

- Make: LAMBORGHINI;
- Model: 660 F PLUS VDT "4WD";
- Type: Wheeled tractor, unit construction, all wheels drive tractor;
- Number of driving wheels: 4;
- Serial number: 1075;
- First serial number: 1001.

ENGINE

- Make: S+L+H;
- Model: 1000.3A2;
- Type: air cooled 4-stroke diesel engine, direct injection, naturally aspirated;
- Serial number: 13960.

Cylinders

- Number/disposition: 3, vertical, in-line;
- Bore/stroke: 105 x 115.5 mm;
- Capacity: 3000 cm^3;
- Compression ratio: 17/1;
- Arrangement of valves: overhead;
- Cylinder liners: without liners.

Supercharging: none.

Fuel system

- Fuel feed system: AC corone fuel feed pump;
- Make, model and type of fuel filter: FIAMM FNA 166/20;
- Capacity of fuel tank: 48 dm^3;
- Make, model and type of injection pump: OMAP OPFR 1K 90 286, immersed pump, one per cylinder, without serial number, in line injection pump;
- Manufacturer's production setting of injection pump:
.flow rate: 57 +/-2 mm^3 /stroke at rated speed and full load corresponding 12.07 dm^3/h;
.timing: 16 +/- 0.5° before TDC;
- Make, model and type of injectors: OMAP OKLL 100S 11560 multihole injecton nozzles;
- Injection pressure: 18 +/- 1 MPa.

Governor

- Make: S+L+H;
- Model: 085.1650.4;
- Type: mechanical;
- Governor range of engine speed: from 650 to 2550 rev/min.;
- Rated engine speed: 2350 rev/min.

Air cleaner

- Main filter
. make: DONALDSON;
. model: FKG 06-5402;
. type: dry paper element filter;
. location: front of engine ;
- Maintenance indicator: with the warning lamp on the dashboard.

Lubrication system

- Type of feed pump: forced feed from gear pump;
- Type of filter: FIAMM FT 48 03;
- Oil specifications: see page 16-17.

Cooling system

- Type and detail: air cooling with axial blower;
- Specification of fan: propeller fan driven by engine shaft;
- Number of fan blades: 13;
- Fan diameter: 220 mm;
- Type of temperature control: none.

Starting system

- Make: BOSCH;
- Mode: JF 12 V;
- Type: electromagnetic engagement;
- Starter motor power rating: 2.4 kW;
- Safety device: preventig engine start in gear;
- Starting system for low temperatures: none.

Electrical equipment

- Voltage: 12 V;
- Generator:
 .make: BOSCH ;
 .model: 14 V 55 A;
 .type: alternator:
 .power: 14 V, 55 A, 770 W;
- Battery: 1 lead acid;
 .capacity: 120 Ah at 20 hours rating.

Exhaust system

- Make: S+L+H;
- Model: 7.1418.2 - DGM SA 1856;
- Type: one reflection absorption chamber;
- Location: on the left hand side of engine, under the bonnet cowling, horizontal position;
- Height of outlet above ground: 480 mm.

TRANSMISSION

Clutch: utilized only for travelling of tractor

- Make: own make;
- Model: 566.23;
- Type: single disk dry clutch;
- Number of plates: 1;
- Plates diameter: 280 mm;
- Control system: mechanical operated by pedal.

Gear box

- Make: own make;
- Model: 566.31;
- Type: mechanical synchromesh speed change gear;
- Arrangement: four speeds forward, with four ranges of speeds, and one reverse group;
- Number of speeds : 16 forward and 16 reverse;

- Available options: four speeds forward, with three ranges of speeds, and one reverse group;
number of speeds: 12 forward and 12 reverse;
or:
four speeds forward, with three ranges of speeds, one electro-hydraulically shifted reduction gear (hi/lo) and one reverse group;
number of speeds: 24 forward and 24 reverse;

Rear axle and final drives

- Make: own make;
- Model: 566.44;
- Type: bevel gear differential and epicyclic final drive;

Differential lock

- Make: own make;
- Model: 566.68;
- Type: mechanical;
- Control system: engaging or disengaging with pedal.

Front axle and final drives

- Make: own make;
- Model: 566.43;
- Type: original S+L+H system with central shaft, bevel gear drive, differential and epicyclic final drives;

Differential lock

- Make: own make;
- Model: 566.46;
- Type: mechanical;
- Control system: in common with rear differential lock system.

Total ratios and speeds **FORWARD**

Gear	Group	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2350 rev/min (*) km/h
1	R	1395.71	0.39
2	R	901.39	0.60
3	R	598.56	0.90
1	S	465.02	1.16
4	R	396.96	1.36
2	S	301.54	1.79
3	S	199.45	2.71
1	N	155.08	3.48
4	S	132.25	4.09
2	N	100.37	5.38
3	N	66.34	8.15
1	F	51.69	10.45
4	N	43.94	12.30
2	F	33.38	16.19
3	F	22.18	24.36
4	F	14.70	36.76
		REVERSE	
1	R	1426.94	0.38
2	R	924.87	0.58
3	R	611.91	0.88
1	S	475.57	1.14
4	R	406.00	1.33
2	S	308.22	1.75
3	S	203.97	2.65
1	N	158.52	3.41
4	S	135.26	3.99
2	N	102.74	5.26
3	N	67.85	7.96
1	F	52.77	10.24
4	N	45.02	12.00
2	F	34.25	15.78
3	F	22.62	23.89
4	F	14.86	36.36

(*) *Calculated with a tyre dynamic radius index of 610 mm. (ISO 4251/1 -1984)- Number of rev. of front wheels for one rev. of rear wheels: 1.4794.*

POWER TAKE-OFF

Power take-off proportional to engine speed

- Type: independent, at rear of tractor, in tractor's median plane, engaged or disengaged by hand lever. Driven by single disc dry clutch independent of travel clutch; ISO Standard 500-1979.
- Number of shafts: 1;
- Method of changing power take-off shaft ends: none:
- Method of changing speed: by hand lever.

1) 540 rev/min
- Dimension ISO Standard 500-1979 type 1 (35 mm - 6 splines);
- PTO speed at rated engine speed: 616 rev/min;
- Engine speed at standard power take-off speed: 2059 rev/min;
- Ratio of rotation speeds (engine speed/pto speed): 3.8125;
- Power restriction and maximum torque: power and torque of the engine.

2) 750 rev/min
- Dimension ISO Standard 500-1979 type 2 (35 mm - 6 splines);
- PTO speed at rated engine speed: 740 rev/min;
- Engine speed at standard power take-off speed: 2382 rev/min;
- Ratio of rotation speeds (engine speed/pto speed): 3.1764.
- Power restriction and maximum torque: power and torque of the engine

- Height above ground:	605	mm
- Distance from the median plane of the tractor:	0	mm
- Distance behind rear axle:	395	mm
- Direction of rotation (viewed facing driving end):	clockwise	

Power take-off proportional to ground speed

- Speed of shaft: 540 rev/min;
- Travelling distance for one revolution of power take-off shaft: 0.40 m;
- Number of power take-off shaft revolutions for one revolution of rear driving wheels: 9.41;
- Direction of rotation with forward gear engaged (viewed facing driving end): clockwise.

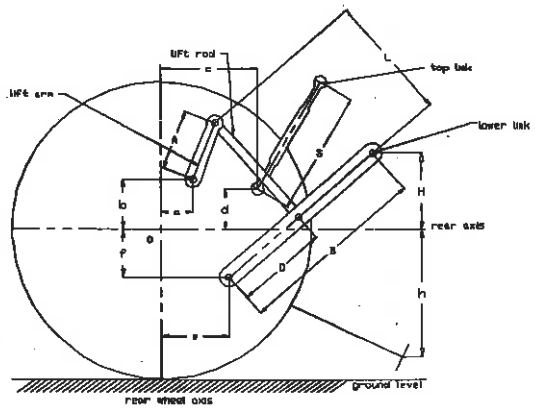
POWER LIFT

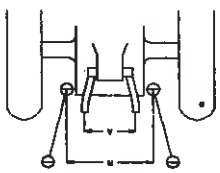
- Make: MITA;
- Model: 566.39;
- Type: load sensing;
- Type of hydraulic system: open centre system;
- Type and number of cylinders: 1 internal single acting;
  Type of lock for transport: mechanical, with screwed tie rods that lock the lower links;
- Relief valve pressure setting: 18.0 +/- 0.5 MPa;
- Opening pressure of anti-shock valve: 21.0 MPa;
- Lift pump type: hydraulic rotary pump, driven by engine shaft,
- pump make: BOSCH A 510 241 101;
- Trasmission between pump and engine: mechanical;
- Type and number of filters: 1, repeceable paper cartridge;
- Oil capacity: 28 dm^3;
- Site of oil reservoir: gear box;
- Position, type and No. of additional oil plugs: 4 ways distributor at rear of tractor;
- Maximum volume of oil available to external cylinders: 10 dm^3;

- Recommended oil: see page 16-17.

Three-point linkage

- Category: 2 in conformity with ISO 730/1 - 1990;
- Category adapter: none .





POWER LIFT

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

		Dimension or range (mm)	Settings used in test (mm)
Length of lift arms	(A)	280	280
Length of lower links	(B)	740	740
Distance of lift arm :horizontally	(a)	216	216
pivot point from rear :vertically	(b)	332	332
wheel axis (behind)			
Horizontal distance between the 2 lower link points	(u)	400	400
Horizontal distance between the 2 lift arm end points	(v)	500	500
Length of upper link	(S)	from 420 to 640	468
Distance of upper link :horizontally	(c)	450-431-450	450
pivot point from rear :vertically	(d)	285-317-355	285
wheel axis			
Distance of lower link :horizontally	(e)	183	183
pivot point from rear :vertically	(f)	154	154
wheel axis			
Distance of lower link pivot point to lift rod pivot points on lower links	(D)	360-410	410
Length of lift rods	(L)	from 480 to 570	520
Height of lower hitch points relative to the rear wheel axis			
- in Low position	(h)	from 334 to 509	410
- in High position	(H)	from 86 to 235	170
Height above ground of lower hitch points when locked in transport position (*)			780

(*) *Assuming the dynamic radius index = 610 mm (ISO 4251/1- 1984)*

SWINGING DRAWBAR

Optional, not fitted on tractor tested;
- Type: 9.56631.35.0;
- Height above ground (tyre size: 13.6R28): max 420 mm
  min 320 mm;
- Type of adjustment: reversible;
- Distance of hitch point from rear wheel axis;
  .horizontally: 795 mm;
- Distance of hitch point from power take-off shaft end;
  .vertically: 290 - 190 mm below;
  .horizontally: 406 mm behind;
- Lateral adjustment (centre of clevis);
  .right hand: 170 mm;
  .left hand: 170 mm;
- Distance of pivot point from rear wheel axis;
  .horizontally: 166 mm behind;
- Diameter of drawbar pin hole: 28 mm;
- Maximum vertical permissible load: not specified.

HOLED DRAWBAR

- Number of holes: 9;
- Distance between holes: 55 mm;
- Hole diameter: 22 mm;
- Thickness/width of the drawbar:30-80 mm;
- Height above ground,(tyre size: 13.6R28) min 200 mm;
  max 800 mm;
- Horizontal distance behind power take-off shaft end: 560 mm;
- Diameter of the pinhole: 28 mm.

TRAILER HITCH

- Type: CRAMER KU 8140/876LS;
- Hole diameter: 32 mm;
- Height above ground: 410 min. 795 max. mm;
- Distance of hitch point from rear wheel axis,
  .horizontally: 590 mm;
- Distance of hitch point from power take-off shaft end;
  .vertically : 200 mm below, 190 mm above;
  .horizontally : 195 mm;
- Maximum vertical permissible load: 14.7 kN.

STEERING

- Specification: hydrostatic steering with BOSCH hydraulic gear pump, one double acting ram acting directly on front axle.
- Make: DANFOSS;
- Model: ORBITROL OSPC 80 LS DYN;
- Type: hydrostatic;
- Working pressure: 9 MPa;
- Recommended oil: see page 16-17.

BRAKES

Service brake

- Make: S+L+H;
- Model: 566.54;
- Type: oil bath disc, total 4 discs, 2 at front (1 for wheel) and 2 at rear (1 for wheel), all mounted before the final drive. front disc dia = 178 mm , rear disc dia = 224 mm, FRENDO HDT 303 lining material;
- Method of operation: hydraulically actuated with 2 pedals;
- Trailer braking take-off: none.

Parking brake

- Type: fully independent of service brake, 1 oil bath disc mounted on the pinion shaft in the gear box, FRENDO HDT 303 lining material;
- Method of operation: mechanical by hand lever.

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

STEERING WHEELS

- Number: 2 ;
- Location : at front ;
- Track widths: 1090 min. - 1430 max. mm;
- Adjustment: changing the position of the rims in respect to the disc.

DRIVING WHEELS

- Number: 4 ;
- Location : two at front and two at rear;
- Track widths: 1080 min. - 1430 max. mm;
- Adjustment: changing the position of the rims in respect to the disc.

WHEELBASE: 1952 mm.

PROTECTIVE STRUCTURE

Specifications

- OECD approval number: NT/ROPS/R/D 014/15;
- date of approval: 17.12.1991;
- location and country of test of protective structure: I.I.A.
  Università degli studi di Milano - ITALY;
- the reference mass and wheelbase used for calculating impact
  energies and crushing forces were: 2600 kg 2082 mm;
- Make: S+L+H;
- Model: C 34;
- Type: cab, not tiltable;
- Manufacturer's name: S+L+H S.p.A.
  . address: V.le F. Cassani 15 - 24047 Treviglio (BG) - ITALY;
- Protective device: cab.

Materials used in the construction and dimensions

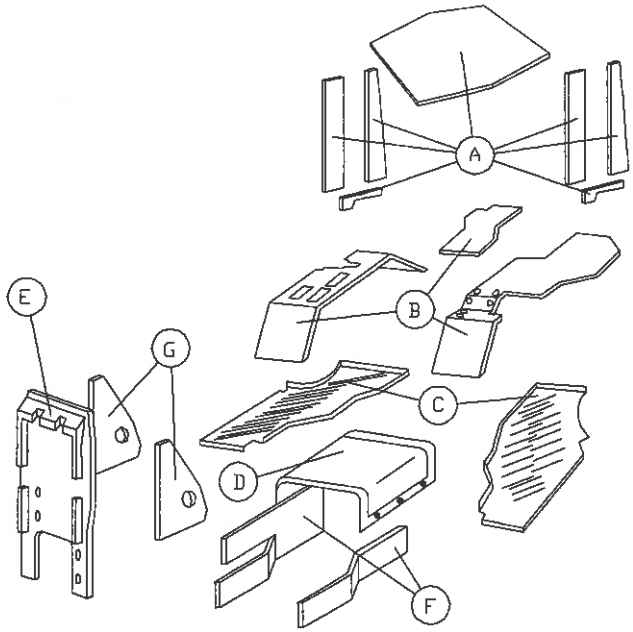
- Interior padding: see the next page;
- Glass: security glass, tickness 5 and 6 mm;
  doors: 43 R - 002943;
  windscreen: 43 R - 002943;
  windows: 43 R - 002943;
- Windscreen wipers: OSLV, parallelogram type;
- Direction indicators: COBO E3;
- Heaters and ventilators: BORLETTI;
- Draught proofing: rubber GMTA 20 - 70 P, SP 550 and PEC 75.

DRIVER'S SEAT

- Make: KAB;
- Model: P1 XH2;
- Type: upholstered seat with back rest ;
- Type of suspension: adjustable spring ;
- Type of damping: shock absorber ;
- Range of adjustment, longitudinal 150 mm; vertical 60 mm.

PASSENGER'S SEAT : none.

Interior padding specification



A) Polyurethan foam + texil fiber, thickness 40 mm.

B) PVC, thickness 3 mm.

C) PVC, thickness 3 mm + polyurethan foam + polytene sheet, total thickness 20 mm, density 50 kg/m^3.

D) Polyurethan PSP, thickness 2.5 mm, density 500 kg/m^3 + polyurethan thickness 10 mm.

E) Polyurethan thickness 25 mm, density 500 kg/m^3.

F) Septum (bitumen), thickness 3 mm + melammine, thickness 7 mm + aluminium sheet.

G) Acousticell BS, thickness 25 mm.

LIGHTING

Lighting system in accordance with E.E.C. 78/933 (all data referred to both models unless otherwise indicated)

	Height above ground of centre with tyre (1) (mm)	Size (mm)	Distance from out side edge of tractor to centre at 1080 mm trak width mm
Headligths	1020 940 (2)	180 x 85	580
Front park. lights	1100	110 x 35	255
Front finger post	1355	110 x 35	255
Rear park. lights	1325	50 x 60	205
Rear finger post	1325	50 x 60	155
Brake lights	1325	50 x 60	255
Reflectors	860	dia 80	185

(1) *Tyre size: 7.50R20 front - 13.6R28 rear.*
(2) *Same Frutteto 60 II VDT only.*

TEST CONDITIONS

Overall dimensions with tyres 7.50R20 at front and 13.6R28 at rear

Length	Width		Height at top of protective structure
	min	max	
mm	mm	mm	mm
3670	1470	1770	2230

- Ground clearance: 290 mm;
- Clearance-limiting part: front axle.

Tractor mass (with tanks full, with cab, water in tyres none)

	Units	Front	Rear	Total
Without driver	kg	970	1380	2350
With driver	kg	990	1435	2425

Tyres and track width specifications:

- Tyres		front	rear
. dimensions		7.50R20	13.6R28
. ply rating		6	123A8
. type		radial	radial
. maximum load (tyre manufacturer's)	daN	686	1520
. maximum load (tractor manufact.)	daN	539	1274
. inflation pressure (tyre manufact.)	kPa	180	160
. dynamic radius index	mm	425	610
- Chosen track width	mm	1090	1080
- Tyres on request		250/80-16	360/70-24

Oils, and lubrication:

- Capacity and change interval

	capacity dm^3	oil change h	filter change h
Engine	6.7	150	300
Gear box	28	2400	2400 (*)
Front axle	6	1200	-
Final drives (front)	3	1200	-
Rear axle and final drives	in common with gear box		
Hydraulic system	in common with gear box		
Other (steering, etc.)	in common with gear box		

(*) *Or when the warning lamp is lighted*

Fuel and lubricants reccomended and used in tests:

Fuel

- Type: AGIP DIESEL, DIN 51601
  (in accordance with the national standard)
- Specific gravity at 15 °C: 0.836 g/cm^3.

Engine oil

- Type: AKROS TURBO 15 W/40;
- Viscosity: 12.50 cSt;
- Classification: API CE MIL-L-2104 E.

Transmission oil

	front axle and final drive	rear axle, final drive and gear box
-Type	AKROS MULTI	AKROS MULTI
-Viscosity	11.50 cSt	11.50 cSt
-Viscosity index	95	95
-Classification	API GL 4	API GL 4

Hydraulic fluid

- Type: AKROS MULTI;
- Viscosity: 11.50 cSt;
- Classification: API GL 4.

Steering oil

- Type: AKROS MULTI;
- Viscosity: 11.50 cSt;
- Classification: API GL 4.

Grease

- Type: GREASE 30;
- Number of lubrication points: 9.

II - TEST RESULTS

COMPULSORY TESTS RESULTS

(1) MAIN POWER TAKE-OFF PERFORMANCE

- Date and location of test: 11.09.1992 - I.S.M.A TREVIGLIO (BG) ITALY

- Type of dynamometer: ZÖELLNER 350 AC

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						
41.0	2347	616	12.07	10.09	246	3.40
POWER AT RATED ENGINE SPEED						
41.0	2347	616	12.07	10.09	246	3.40
STANDARD POWER TAKE-OFF SPEED (540 +/- 10 rev/min)						
38.4	2061	541	11.35	9.49	247	3.38
PART LOADS						
i) The torque corresponding to maximum power at rated engine speed						
41.0	2347	616	12.07	10.09	246	3.40
ii) 85% of torque obtained in i)						
35.1	2396	629	10.14	8.48	242	3.46
iii) 75% of torque defined in ii)						
26.8	2441	640	8.53	7.13	266	3.14
iv) 50% of torque defined in ii)						
18.2	2491	653	6.60	5.51	303	2.76
v) 25% of torque defined in ii)						
9.2	2511	659	4.79	4.00	435	1.91
vi) unloaded						
0	2550	669	3.09	2.58	-	-

PART LOADS AT STANDARD POWER TAKE-OFF SPEED (540 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
i) The torque corresponding to maximum power available						
38.4	2061	541	11.35	9.49	247	3.38
ii) 85% of torque obtained in i)						
33.3	2100	551	9.07	7.58	228	3.67
iii) 75% of torque defined in ii)						
25.5	2141	562	7.47	6.25	245	3.41
iv) 50% of torque defined in ii)						
17.4	2193	575	5.88	4.91	282	2.96
v) 25% of torque defined in ii)						
8.7	2209	579	3.96	3.31	380	2.20
vi) unloaded						
0	2262	593	2.54	2.12	-	-

STANDARD SPECIFIC FUEL CONSUMPTION: 242/303/228/282 g/kWh

- No load maximum engine speed: 2550 rev/min
- Torque (1) at maximum power at rated engine speed: 16.71 daNm
- Maximum torque (1) (engine speed: 1557 rev/min) 18.67 daNm

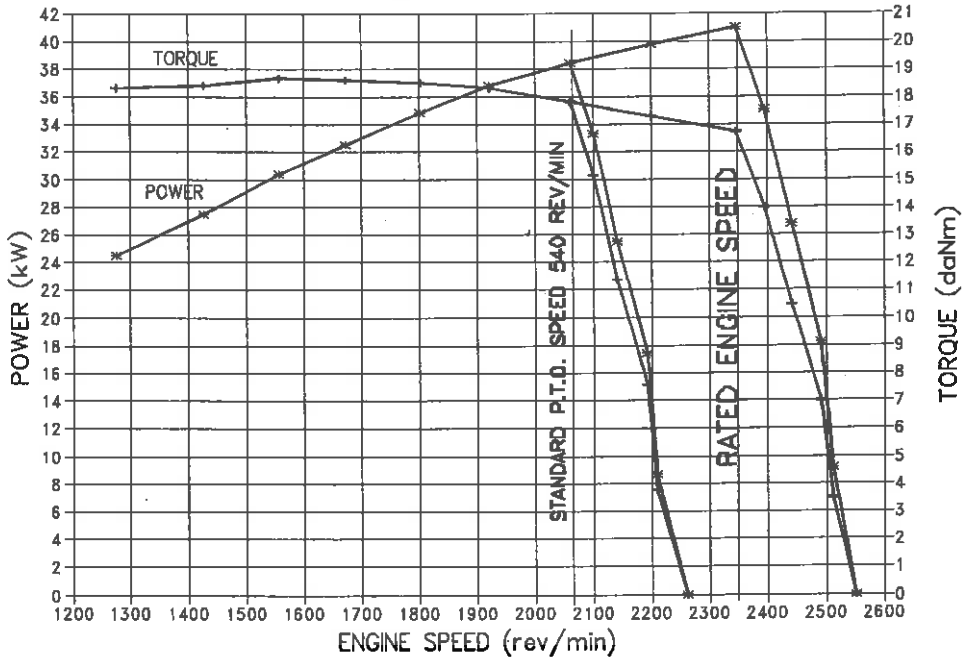
- Mean atmospheric conditions:

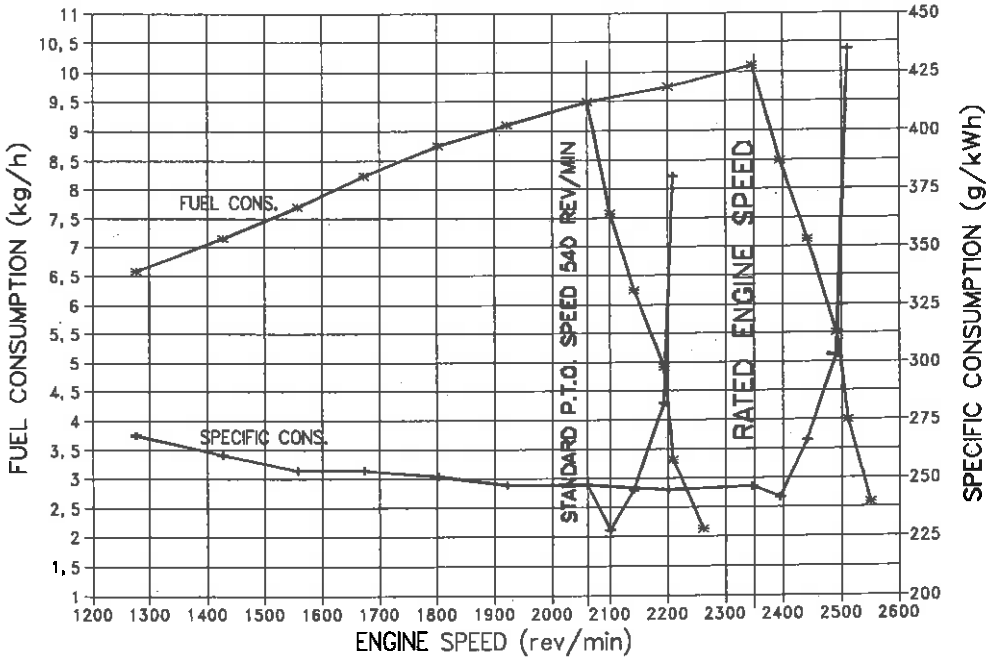
Temperature	24 °C
Pressure	99.9 kPa
Relat. humidity	64 %

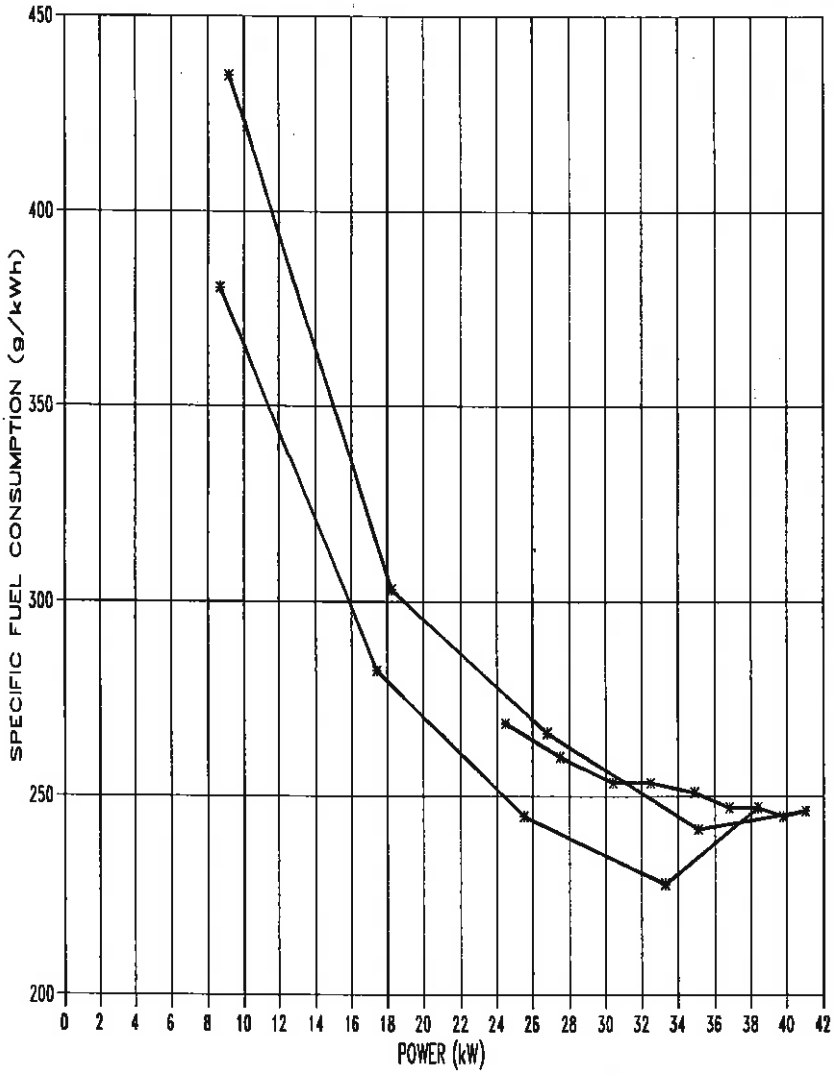
- Maximum temperatures:

Coolant	--- °C
Engine oil	130 °C
Fuel	45 °C
Engine air intake	29 °C

(1) *The torque is the equivalent crankshaft torque.*


TORQUE
POWER
STANDARD P.T.O. SPEED 540 REV/MIN
RATED ENGINE SPEED
POWER (kW)
TORQUE (daNm)
ENGINE SPEED (rev/min)


FUEL CONS.
SPECIFIC CONS.
STANDARD P.T.O. SPEED 540 REV/MIN
RATED ENGINE SPEED
FUEL CONSUMPTION (kg/h)
SPECIFIC CONSUMPTION (g/kWh)
ENGINE SPEED (rev/min)


SPECIFIC FUEL CONSUMPTION (g/kWh)
450
400
350
300
250
200
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42
POWER (kW)

2) POWER LIFT AND HYDRAULIC POWER TEST

- Date and location of tests: 14.09.92 - ISMA Treviglio (BG)

2.1 POWER LIFT

		at hitch point	on the frame
Height of lower hitch point above ground in down position	mm	200	200
vertical movement	mm	580	728
Maximum corrected force exerted through full range	daN	1962	1525
Corresponding pressure of hydraulic fluid	MPa	18.0	18.0
Moment about rear axle	daNm	1811	2338
Maximum tilt angle of mast over range of lift	degrees	--	14

Lifting heights relative to the horizontal lower links										
mm	-256	-200	-100	0	+100	+200	+300	+324	+400	+472
Lifting forces at hitch points										
daN	1962	1990	2166	2283	2369	2446	2530	2565	----	----
Lifting forces at test frame										
daN	2107	2046	1998	1925	1822	1712	1594	----	1530	1525

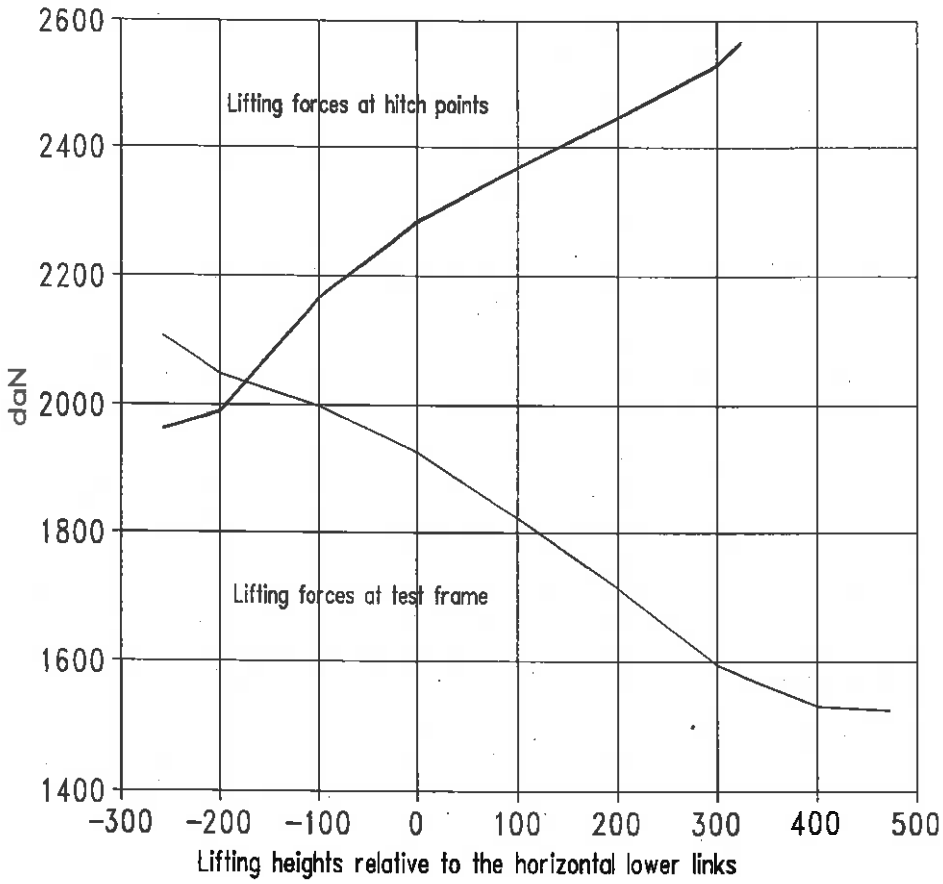
2.2) HYDRAULIC POWER TEST

Sustained pressure with relief valve open: 18.0 MPa;
Pump delivery rate at min pressure: 41.5 l/min;

	Hydraulic power kW	flow rate l/min	pressure MPa	oil temp. °C
At 90% of the actual relief valve setting	8.37	31.0	16.2	66
Maximum	9.00	36.0	15.0	64

Tapping point used for test : at rear of tractor;
Hydraulic fluid: see page 17.

Performance of power lift:



3) DRAWBAR PERFORMANCE (unballasted tractor)

- Date of test: 15.09.92;
- Type of track: concrete;
- Type and size of tyres: front: 7.50R20 - 6 ply, rear: 13.6R28 - 123A8;
- Height of drawbar above ground: 395 mm;
- Tyre inflation pressure: .front: 180 kPa, rear: 160 kPa.

3.1) MAXIMUM POWER IN TESTED GEARS

Gear	Power	Draw. pull	Speed	Eng. speed	Slip of wheel	Specific ener.	Specific cons.	Temperatures fuel	col.	eng.	Atm. conditions temp.	hum.	press.
	kW	daN	km/h	rev/min	%	kWh/l	g/kWh	°C	°C	°C	°C	%	kPa
1 R	1.91	1963	0.35	2513	15	0.420	1990	36	--	99	22	66	99.9
2 R	2.96	1971	0.54	2511	15	0.626	1334	36	--	100	22	66	99.9
3 R	4.55	2000	0.82	2506	15	0.874	956	37	--	100	22	66	99.8
1 S	5.77	1997	1.04	2498	15	1.005	832	36	--	99	23	66	99.9
4 R	6.85	2022	1.22	2493	15	1.080	774	36	--	99	23	64	99.8
2 S	9.36	2106	1.60	2477	15	1.283	652	35	--	98	24	64	99.7
3 S	13.21	1991	2.39	2460	15	1.699	492	35	--	98	23	63	99.7
1 N	17.50	2066	3.05	2445	15	2.004	417	34	--	99	23	63	99.7
4 S	20.21	2045	3.56	2430	15	2.194	381	34	--	99	23	63	99.7
2 N	25.76	2025	4.58	2379	15	2.341	357	33	--	100	23	62	99.7
3 N	28.15	1368	7.41	2352	8	2.330	359	34	--	99	25	63	99.7
1 F	32.62	1221	9.62	2349	7	2.687	311	33	--	99	25	63	99.6
4 N	30.82	971	11.43	2351	6	2.551	328	33	--	100	24	63	99.7
2 F	28.23	661	15.38	2353	4	2.348	356	33	--	100	25	63	99.7

3.2) TRANSMISSION AND FUEL CONSUMPTION CHARACTERISTICS

3.2.1) Selected gear, at maximum power at rated speed													
1 F	32.62	1221	9.62	2349	7	2.687	311	33	--	99	25	63	99.6
3.2.1.1) 75% of pull at maximum power at rated speed													
1 F	26.01	912	10.27	2408	3	2.558	327	34	--	98	26	62	99.7
3.2.1.2) 50% of pull at maximum power at rated speed													
1 F	17.65	603	10.54	2441	2	2.021	414	33	--	98	26	62	99.8
3.2.1.3) next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.1.1													
4 N	26.15	917	10.27	2046	3	2.634	317	33	--	96	25	63	99.8
3.2.1.4) next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.1.2													
4 N	18.04	610	10.65	2101	2	2.154	388	32	--	96	25	63	99.8

3) DRAWBAR PERFORMANCE (unballasted tractor) continued

Gear	Power	Draw. pull	Speed	Eng. speed	Slip of wheel	Specific ener.	Specific cons.	Temperatures fuel	Temperatures col.	Temperatures eng.	Atm. conditions temp.	Atm. conditions hum.	Atm. conditions press.
	kW	daN	km/h	rev/min	%	kWh/l	g/kWh	°C	°C	°C	°C	%	kPa
3.2.2) Selected gear nearest to 7.5 km/h at rated speed													
3 N	28.15	1368	7.41	2352	8	2.330	359	34	--	99	25	63	99.7
3.2.2.1) 75% of pull at maximum power at rated speed													
3 N	22.23	1025	7.81	2426	6	2.414	346	33	--	97	25	63	99.8
3.2.2.2) 50% of pull at maximum power at rated speed													
3 N	15.84	691	8.25	2453	2	1.919	436	34	--	98	25	62	99.8
3.2.2.3) next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.2.1													
1 F	22.47	1039	7.94	1861	3	2.684	312	34	--	98	25	62	99.8
3.2.2.4) next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.2.2													
1 F	15.50	682	8.19	1900	2	2.314	361	32	--	97	24	63	99.7

APPENDIX

MEASUREMENT OF NOISE IN THE PROTECTIVE STRUCTURE

Results of OECD test no. NT/ROPS/R/D/ 014/15/NM 0992 (*)
Date of test: 07.05.1992
Location: ISMA - SOP TREVIGLIO (BG) - Via Milano 43 - ITALY
Type of sound level meter
. make: BRÜEL & KJAER;
. model: 2231;
. type: impulse precision sound level meter;
Type of track: concrete.

TABLE FOR NOISE LEVELS AT DRIVER'S EAR POSITION - O.E.C.D. code V

gear	brake-load kN	trav.speed km/h	sound level dB(A) a	sound level dB(A) b	driving wheels
Unloaded test in the gear giving the speed nearest to 7.5 km/h					
3 N	0	7.7	81.5	90.8	4
Unloaded test in the gear giving the maximum speed					
4 F	0	36.2	83.5	93.2	4
Loaded test with nominal travelling speed nearest to 7.5 km/h					
3 N	17.7	6.7	83.4	93.2	4
Loaded test by which the tractor develops maximum sound in the gears in which the sound level is at least 1 dB(A) over the mentioned maximum					
--	---	---	---	---	-

a - *all openings closed;*
b - *doors and rear windows open .*
(*) *tractor fitted with 12 forward + 12 reverse speed gear box.*

REPAIRS AND REMARKS: none.

TEST CARRIED OUT BY
(P.a. Giovanni LAMORATTA)

THE DIRECTOR OF TESTING STATION
(Prof. Giuseppe COLZANI)

HEAD OF ISMA - ROMA
(Ing. Giovanni SANTORO)

Text and graphics processed by: P.a. Gianluigi ROZZONI