ISTITUTO SPERIMENTALE PER
LA MECCANIZZAZIONE AGRICOLA
SEZIONE DI TREVIGLIO

Report on test in accordance with the OECD Standard Code for the Official Testing of Agricultural Tractor Performance



LAMBORGHINI RUNNER 250 DT "4WD" OECD No. **1535/2** Full Code
HÜRLIMANN PRINCE 325 DT "4WD" OECD No. **1535/1** Full Code
SAME SOLARIS 25 DT "4WD" OECD No. **1535/3** Full Code

Manufactured by: S+L+H S.p.A.
V.le F. Cassani 15
24047 Treviglio BG
Italy

Date of OECD approval: 19 October 1994
Period of test: July 1994

ISMA Via Milano 43 24047 Treviglio BG Italy
Tel: (0363) 49603 Fax: (0363) 302007

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The Lamborghini Runner 250 DT (4WD), Hürlimann Prince 325 DT (4WD) and Same Solaris 25 DT (4WD) tractors are technically identical in all main respects except with regard to model designation and colour.
All tests were carried out on the Lamborghini Runner 250 DT (4WD).

All stated dimensions and tests refer to tyre size 7.00 - 12 at front and 11.2R 20 111 A8 at rear, as well as to track widths 1040 mm at front and 995 mm at rear.

Tractor manufacturer

- Name:	S+L+H S.p.A.;
- Address:	V.le F. 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:	ISMA, Via Milano 43, Treviglio BG, Italy.

SPECIFICATION OF TRACTOR

TRACTOR

- Make:	LAMBORGHINI;
- Model:	Runner 250 DT;
- Type:	wheeled tractor, unit construction, all wheels drive tractor;
- Number of driving wheels:	4;
- Serial number:	1054;
- First serial number:	1001.

ENGINE

- Make:	MITSUBISHI;
- Model:	K3F-D;
- Type:	water cooled 4-stroke diesel engine, direct injection, naturally aspirated;
- Serial number:	23646.

Cylinders

- Number and disposition:	3, vertical, in-line;
- Bore x stroke:	78 x 78 mm;
- Capacity:	1118 cm^3;
- Compression ratio:	18:1;
- Arrangement of valves:	overhead;
- Cylinder liners:	without liners.

Supercharging: none.

Fuel system

- Fuel feed system: MITSUBISHI electrical 12V;
- Make, model and type of fuel filter: FIAMM FNA 166/20;
- Capacity of fuel tank: 29 dm^3;
- Make, model and type of injection pump: NIPPON DENSO PFR3M65A1ND620, immersed pump, in line injection pump;
  . serial number: without serial number;
- Manufacturer's production setting of injection pump:
  . flow rate: 22 ± 2 mm^3/stroke at rated speed and full load corresponding 5.89 dm^3/h;
  . timing: 21° before TDC;
- Make, model and type of injectors: NIPPON DENSO DLLA 150 P 73 multihole injection nozzles;
- Injection pressure: 216 ± 5 MPa.

Governor

- Make: MITSUBISHI;
- Model: centrifugal;
- Type: mechanical;
- Governor range of engine speed: from 950 to 3195 rev/min;
- Rated engine speed: 3000 rev/min.

Air cleaner

- Main filter
  . make: DONALDSON;
  . model: FHG 05-2568;
  . type: dry paper element filter with replaceable cartridge;
  . location: on the right hand side of engine;
  . air intake location: below bonnet;
- 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 4763;
- Oil specifications: see page 19.

Cooling system

- Type and detail:	water cooling with impeller pump;
- Specification of fan:	propeller fan driven by engine shaft;
- Number of fan blades:	6;
- Fan diameter:	340 mm;
- Type of temperature control:	none.

Starting system

- Make:	ISKRA;
- Model:	AZJ 3155;
- Type:	electromagnetic engagement;
- Starter motor power rating:	1.4 kW;
- Safety device:	electrical lockout on clutch and PTO controls;
- Starting system for low temperatures:	none.

Electrical equipment

- Voltage:	12 V;
- Generator	
. make:	MITSUBISHI;
. model:	MM435081;
. type:	alternator;
. power:	400 W;
- Battery:	1 lead acid;
. capacity:	70 Ah at 20 hours rating.

Exhaust system

- Make:	S+L+H;
- Model:	DGM SA 2281;
- Type:	one reflection absorption chamber;
- Location:	on the left hand side of engine, horizontal position, under side bonnet;
- Height of outlet above ground:	730 mm.

TRANSMISSION

Clutch (utilized only for travelling of tractor)

- Make:	S+L+H;
- Model:	559.23;
- Type:	single disk dry clutch;
- Number of plates:	1;
- Plates diameter:	181.5 mm;
- Control system:	mechanical operated by pedal.

Gear box

- Make:	own make;
- Model:	559.31;
- Type:	mechanical syncromesh speed change gear;
- Arrangement:	four speeds forward, with three ranges of speeds, and one reverse group;
- Number of speeds:	12 forward and 12 reverse;
- Available options:	none.

Rear axle and final drives

- Make:	own make;
- Model:	559.44;
- Type:	bevel gear differential and side final drive.

Rear differential lock

- Make:	own make;
- Model:	559.47;
- Type:	mechanical;
- Control system:	engaged or disengaged by pedal.

Front axle and final drives

- Make:	own make;
- Model:	559.43;
- Type:	central shaft, bevel gear drive, differential final drives.

Front differential lock: optional not fitted on tested tractor.

Total ratios and speeds

Gear	Group	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 3000 rev/min (*), km/h
FORWARD			
1	S	772.63	0.68
2	S	476.78	1.10
1	N	306.30	1.72
3	S	287.86	1.83
4	S	223.20	2.36
2	N	189.01	2.78
3	N	114.11	4.61
4	N	88.47	5.94
1	F	75.67	6.95
2	F	46.70	11.26
3	F	28.20	18.65
4	F	21.86	24.06
REVERSE			
1	S	677.56	0.78
2	S	418.11	1.26
1	N	268.61	1.96
3	S	252.44	2.08
4	S	195.73	2.69
2	N	165.75	3.17
3	N	100.06	5.26
4	N	77.58	6.78
1	F	66.36	7.93
2	F	40.95	12.84
3	F	24.73	21.26
4	F	19.17	27.43

S =Slow; N =Normal; F =Fast.

(*) Calculated with a tyre dynamic radius index of 465 mm (ISO 4251/1-1992).
Number of revolutions of front wheels for one revolution of rear wheels: 1.4725

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 disk dry clutch (diameter 184 mm) independent of travel clutch;
- Number of shafts:	1;
- Method of changing power take-off shaft ends:	none;
- Method of changing speed:	by hand lever.
540 rev/min PTO:	35 mm diameter, 6 splines, in conformity with ISO 500-1991, type 1;
- PTO speed at rated engine speed:	612 rev/min;
- Engine speed at standard PTO speed:	2646 rev/min;
- Ratio of rotation speeds (engine speed/PTO speed):	4.9;
- Power restriction and maximum torque:	power and torque of the engine.
1000 rev/min PTO:	35 mm diameter, 6 splines, not in conformity with ISO 500-1991;
- PTO speed at rated engine speed:	1096 rev/min;
- Engine speed at standard PTO speed:	2736 rev/min;
- Ratio of rotation speeds (engine speed/PTO speed):	2.736.
- Power restriction and maximum torque:	power and torque of the engine.

Height above ground:	500	mm
Distance from the median plane of the tractor:	0	mm
Distance behind rear axle or forward from front axle:	385	mm
Direction of rotation (viewed facing driving end):	clockwise	

Power take-off proportional to ground speed

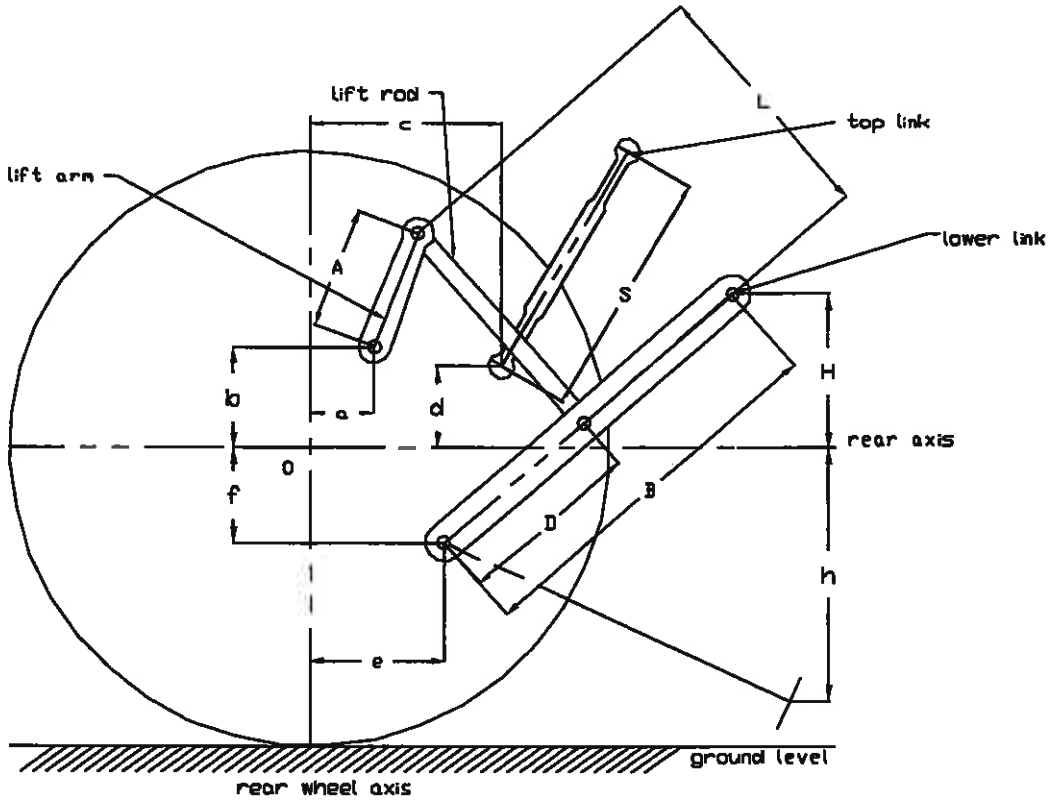
- Speed of shaft:	independent of 540/1000 rev/min;
- Location:	at rear of tractor, same shaft end as PTO proportional to engine speed;
- Direction of rotation with forward gear engaged:	clockwise;
- Travelling distance for one revolution of power take-off shaft:	0.41 m;
- Number of power take-off shaft revolutions for one revolution of rear driving wheels:	7.10.

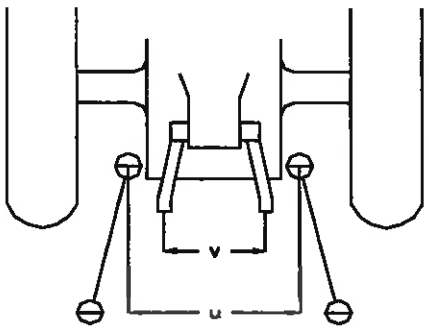
POWER LIFT

- Make:	MITA;
- Model:	008.7542.4;
- Type:	load sensing;
- Type of hydraulic system:	open centre system;
- Number and type of cylinders:	1 internal single-acting;
- Type of lock for transport:	mechanical, with screwed tie rods that lock the lower links;
- Relief valves pressure setting:	18.0 ± 0.5 MPa at cylinder of power lift; 9.0 ± 0.5 MPa at tapping point;
- Opening pressure of anti-shock valve:	20.0 ± 0.5 MPa;
- Lift pump	
. make:	KTB;
. type:	hydraulic rotary pumps, driven by engine shaft;
- Transmission between pump and engine:	mechanical;
- Number and type of filters:	1, replaceable paper cartridge;
- Oil capacity:	21 dm^3;
- Site of oil reservoir:	gear box;
- Number, type and location of tapping points:	1 sigle-acting at rear of tractor;
- Maximum volume of oil available to external cylinders:	5 dm^3.
- Recommended oil:	see page 19.

Three-point linkage

- Category (ISO 730/1-1990): 1;
- Category adapter: none.





POWER LIFT (continued)

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

		Dimension or range mm	Settings used in test mm
Length of lift arms	(A)	230	230
Length of lower links	(B)	635	635
Distance of lift arm pivot point from rear wheel axis (behind)			
- horizontally	(a)	50	50
- vertically	(b)	246	246
Horizontal distance between the 2 lower link points	(u)	230	230
Horizontal distance between the 2 lift arm end points	(v)	350	350
Length of upper link	(S)	from 470 to 570	512
Distance of upper link pivot point from rear wheel axis			
- horizontally	(c)	254	254
- vertically	(d)	222 - 251	251
Distance of lower link pivot point from rear wheel axis			
- horizontally	(e)	124	124
- vertically	(f)	127	127
Distance of lower link pivot point to lift rod pivot points on lower links	(D)	310 - 360	360
Length of lift rods	(L)	400	400

Height of lower hitch points relative to the rear wheel axis:

Length of lift rods	(L)	400	400
Linkage distance of lift rods	(D)	310	360
Lowest position	(h)	279	205
Highest position	(H)	283	270
Height above ground of lower hitch points when locked in transport position (*)		748	735

(*) *Assuming the dynamic radius index = 465 mm (ISO 4251/1-1992)*

SWINGING DRAWBAR: none.

HOLED DRAWBAR: optionally fitted on test tractor.

- Number of holes:	9;
- Distance between holes:	55 mm;
- Hole diameter:	22 mm;
- Thickness x width of the drawbar:	25 x 70 mm;
- Height above ground, (tyre size: 11.2R20)	
. min:	190 mm;
. max:	750 mm;
- Horizontal distance behind power take-off shaft end:	540 mm;
- Diameter of the pinhole:	22 mm.

TRAILER HITCH

- Type:	SAME DGM-GA 2108 B;
- Hole diameter:	28 mm;
- Height above ground	
. min:	340 mm;
. max:	450 mm;
- Distance of hitch point from rear wheel axis	
. horizontally:	305 mm;
- Distance of hitch point from power take-off shaft end	
. vertically:	160 mm below, 50 mm above;
. horizontally:	80 mm;
- Maximum vertical permissible load:	4.9 kN.

STEERING

- Specification:	hydrostatic steering with KTB hydraulic gear pump, one double acting ram acting directly on front axle.
- Make:	DANFOSS;
- Model:	OSPC LS 80;
- Type:	hydrostatic;
- Working pressure:	9 MPa;
- Recommended oil:	see page 19.

BRAKES

Service brake

- Make:	S+L+H;
- Model:	559.54;
- Type:	oil bath disc, total 4 discs, at rear (2 per wheel), mounted before the final drive;
. disc diameter:	143 mm,
. material:	FRENDO HDT 303 lining material;
- Method of operation:	mechanically actuated with 2 pedals;
- Trailer braking take-off:	none.

Parking brake

- Type:	mechanically acting on the service brake;
- Method of operation:	mechanical by hand lever.

Steering brake

- Metod of operation:	divided pedal of service brake, for normal use locked together.

STEERING WHEELS

- Number:	2;
- Location:	at front;
- Track widths	
. min:	820 mm:
. max:	1060 mm;
- Adjustment:	changing the position of the rims with respect to the disc.

DRIVING WHEELS

- Number:	4;
- Location:	two at front and two at rear;
- Rear track widths	
. min:	810 mm;
. max:	1010 mm;
- Adjustment:	changing the position of the rims with respect to the disc.

WHEELBASE: 1540 mm.

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PROTECTIVE STRUCTURE

Specifications

Tractors	OECD approval numbers
S+L+H LAMBORGHINI RUNNER 250 DT (4WD) with seat KAB P 1 XL 2	NT/ROPS/F-D 012/49
S+L+H HÜRLIMANN PRINCE 325 DT (4WD) with seat KAB P 1 XL 2	NT/ROPS/F-D 012/19
S+L+H SAME SOLARIS 25 DT (4WD) with seat KAB P 1 XL 2	NT/ROPS/F-D 012/79

- Date of approval: 9 December 1992;
- Location and country of test of protective structure: Istituto di Ingegneria Agraria, Università degli Studi di Milano, Italy;
- Reference mass and wheelbase used for calculating impact energies and crushing forces: 1300 kg and 1701 mm;
- Make: S+L+H;
- Model: T 61;
- Type: front roll guard,tiltable;
- Manufacturer's name: S+L+H S.p.A.;
  . address: V.le F. Cassani 15, 24047 Treviglio BG, Italy;
- Protective device: frame.

DRIVER'S SEAT

- Make: KAB;
- Model: P 1 XL 2;
- 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.

LIGHTING

Lighting system in accordance with EEC 78/933

	Height above ground of centre with tyre	Size	Distance from outside edge of tractor to centre at 995 mm track width
	mm	mm	mm
Headligths	910	145 x 85	510
Front parking lights	835	110 x 35	225
Front direction indicators	870	110 x 35	225
Rear parking lights	1140	100 x 60	400
Rear direction indicators	1140	180 x 60	260
Brake lights	1140	100 x 60	400
Reflectors	1020	dia 80	200

TEST CONDITIONS

OVERALL DIMENSIONS

	Length	Width		Height at top of protective structure
		min	max	
	mm	mm	mm	mm
Unballasted	2690	1120	1280	1960
Ballasted	2690	1120	1280	1960

- Ground clearance: 190 mm (final drive case);
320 mm (differential case).

TRACTOR MASS (with full fuel tanks, roll-bar and no water in tyres)

	Front kg	Rear kg	Total kg
Without driver			
Unballasted	495	565	1060
Ballasted	540	660	1200
With driver			
Unballasted	515	620	1135
Ballasted	560	715	1275

BALLAST

	Weights no.	Total weight kg	Water kg
Front	3	50	-
Rear	1 + 1	90	-

TYRES AND TRACK WIDTH SPECIFICATIONS

		Front	Rear
- Tyres			
. dimensions		7.00-12	11.2R20
. ply rating		4	-
. load index/speed index		-	111 A8
. type		diagonal	radial
. maximum load (tyre manufacturer's)	daN	390	1121
. inflation pressure (tyre manufact.'s)	kPa	175	160
. dynamic radius index	mm	305	465
- Chosen track width	mm	1040	995
- Technically permissible axle load	daN	780	1200
- Other tyres available		23X8.50-12 6.5/80-12	33X12.50-15 250/80-18

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OILS AND LUBRICATION

Capacity and change interval

	Capacity dm^3	Oil change h	Filter change h
Engine	3.6	100	400
Gear box	21.0	1200	2400 (*)
Front axle and final drives	4.8	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: 0.839 g/cm^3.

Engine oil
- Type: AKROS TURBO 15W40;
- Viscosity: 12.50 cSt;
- Classification: API SE - CD.

Transmission (front and rear axle, final drives and gear box), hydraulic system and steering oil
- Type: AGIP ROTRA THT;
- Viscosity: 11.50 cSt;
- Viscosity index: 95;
- Classification: API GL 4.

Grease
- Type: GREASE 30;
- Number of lubrication points: 3.

TEST RESULTS

COMPULSORY TESTS RESULTS

1. MAIN POWER TAKE-OFF PERFORMANCE

- Date and location of test: 17 July 1994, ISMA, Treviglio BG, Italy

- Type of dynamometer: ZÖLLNER 350 AC

Power	Speed		Fuel consumption			Specific energy
	Engine	PTO	Hourly		Specific	
kW	rev/min	rev/min	l/h	kg/h	g/kWh	kWh/l
1.1 MAXIMUM POWER - 2 HOUR TEST						
16.8	3000	612	5.89	4.94	294	2.85
1.2 POWER AT RATED ENGINE SPEED						
16.8	3000	612	5.89	4.94	294	2.85
1.3 STANDARD POWER TAKE-OFF SPEED (540 rev/min)						
15.8	2651	541	5.39	4.52	285	2.94
1.4 PART LOADS						
1.4.1 The torque corresponding to maximum power at rated engine speed						
16.8	3000	612	5.89	4.94	294	2.85
1.4.2 85% of torque obtained in 1.4.1						
14.8	3116	636	5.35	4.49	304	2.76
1.4.3 75% of torque defined in 1.4.2						
11.1	3141	641	4.46	3.74	336	2.50
1.4.4 50% of torque defined in 1.4.2						
7.4	3151	643	3.50	2.94	398	2.11
1.4.5 25% of torque defined in 1.4.2						
3.7	3161	645	2.61	2.19	590	1.42
1.4.6 unloaded						
0	3195	652	1.93	1.62	-	-

Power	Speed		Fuel consumption			Specific energy
	Engine	PTO	Hourly		Specific	
kW	rev/min	rev/min	l/h	kg/h	g/kWh	kWh/l
1.5 PART LOADS AT STANDARD POWER TAKE-OFF SPEED (540 rev/min)						
1.5.1 The torque corresponding to maximum power available						
15.8	2651	541	5.39	4.52	285	2.94
1.5.2 85% of torque obtained in 1.5.1						
13.9	2724	556	4.52	3.79	272	3.08
1.5.3 75% of torque defined in 1.5.2						
10.5	2759	563	3.80	3.19	305	2.75
1.5.4 50% of torque defined in 1.5.2						
7.0	2778	567	2.84	2.38	341	2.46
1.5.5 25% of torque defined in 1.5.2						
3.5	2803	572	2.37	1.99	574	1.46
1.5.6 unloaded						
0	2852	582	1.49	1.25	-	-

- No load maximum engine speed: 3195 rev/min;
- Torque (1) at maximum power at rated engine speed: 5.35 daNm;
- Maximum torque (1) (engine speed: 1798 rev/min): 5.98 daNm.

- Mean atmospheric conditions

. temperature: 28 °C
. pressure: 98.8 kPa
. relative humidity: 52 %

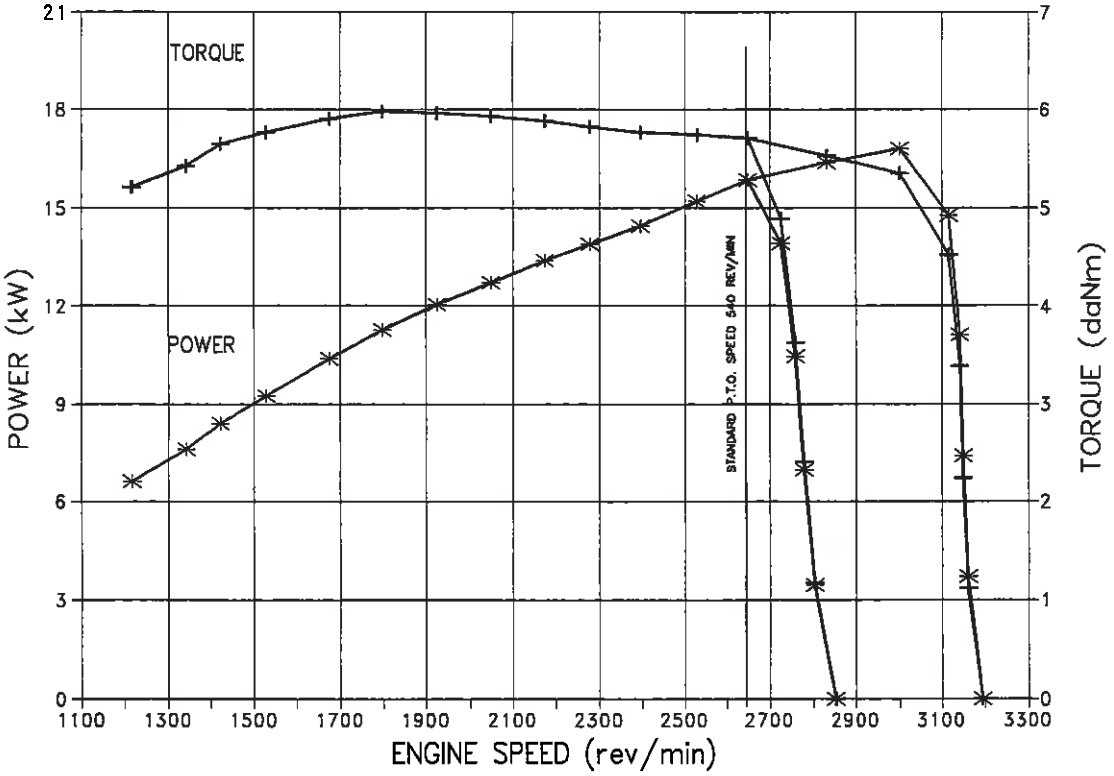
- Maximum temperatures

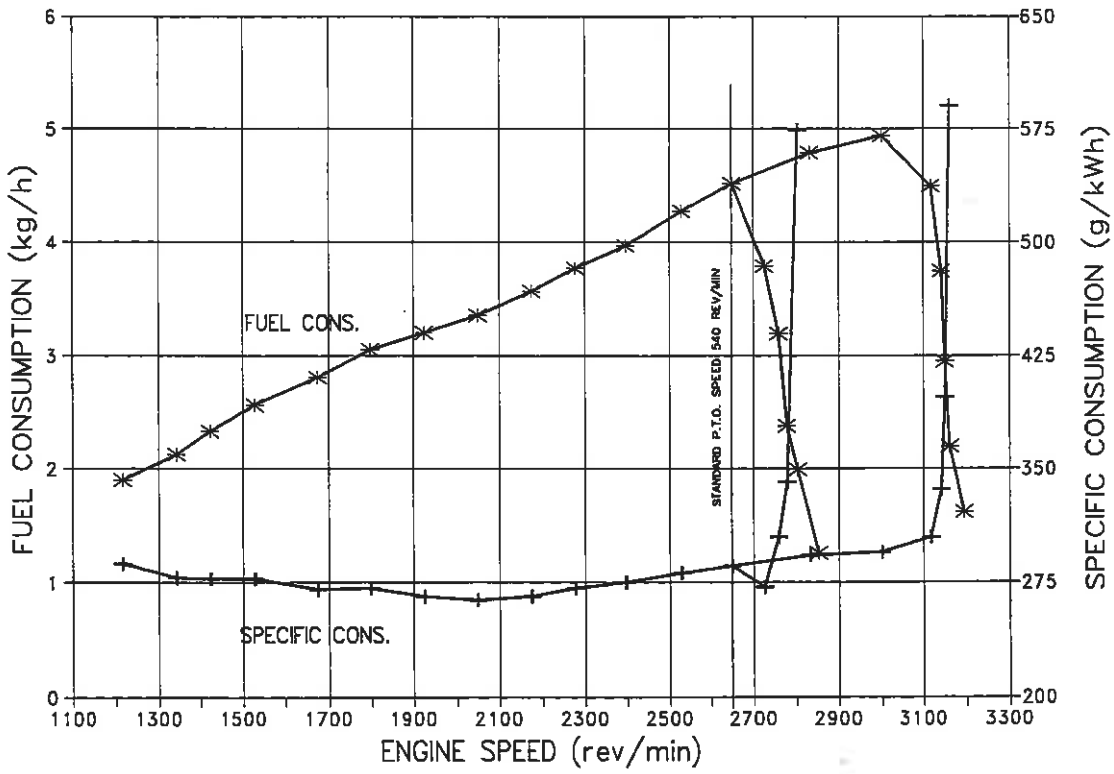
. coolant: - °C
. engine oil: 105 °C
. fuel: 33 °C
. engine air intake: 32 °C

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

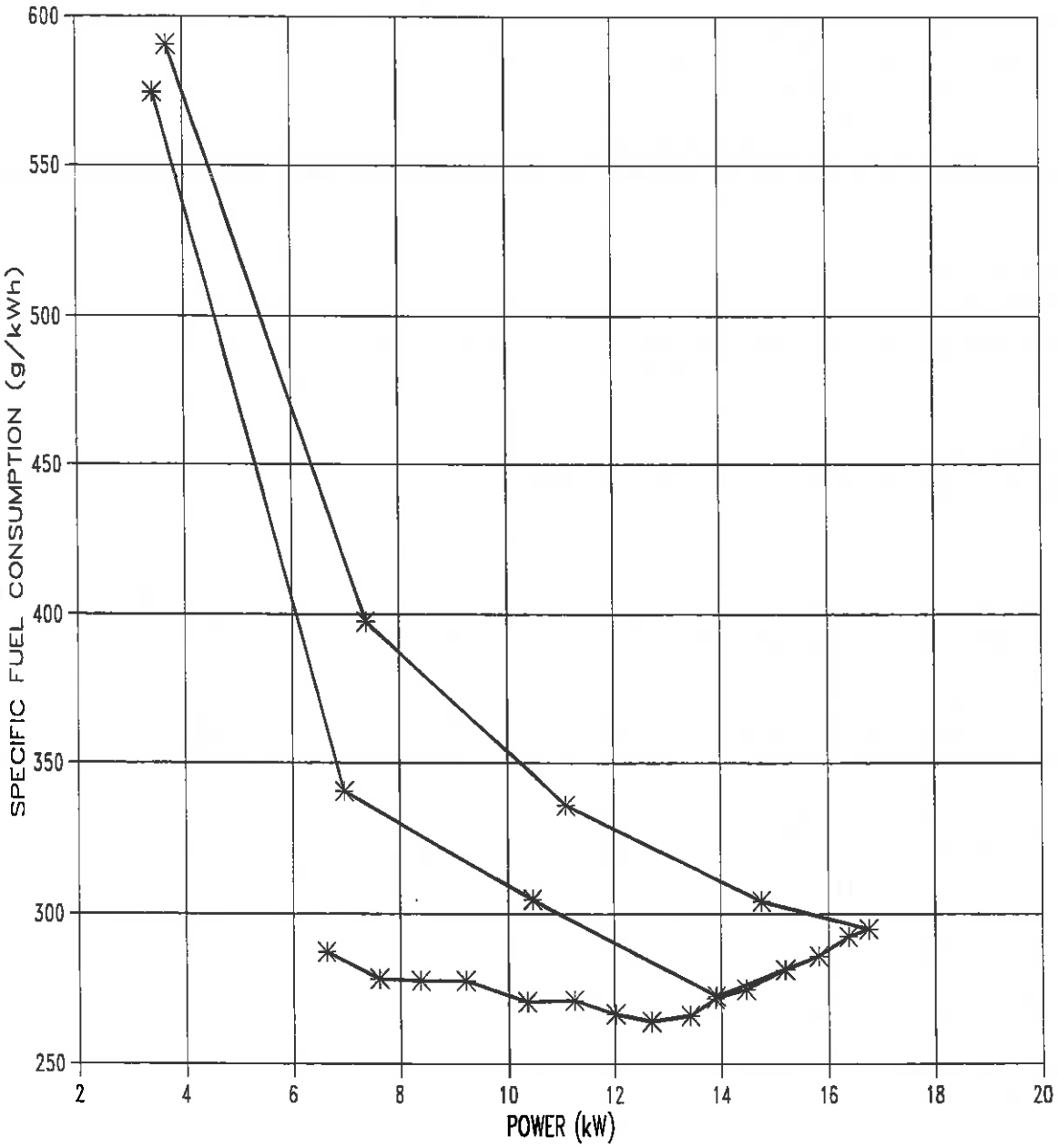
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PTO test





PTO test


SPECIFIC FUEL CONSUMPTION (g/kWh)
600
550
500
450
400
350
300
250
2
4
6
8
10
12
14
16
18
20
POWER (kW)

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2. HYDRAULIC POWER AND LIFTING FORCE

- Date and location of tests: 13 July 1994, ISMA, Treviglio BG, Italy.

2.1 HYDRAULIC POWER TEST

- Sustained pressure with relief valve open: 10.5 MPa;
- Pump delivery rate at minimum pressure: 8.3 l/min;

	Hydraulic power kW	Flow rate l/min	Pressure MPa	Oil temp. °C
At 90% of the actual relief valve setting	1.12	7.1	95.0	64
Maximum	1.19	8.0	89.0	64

- Tapping point used for test: at rear of tractor.

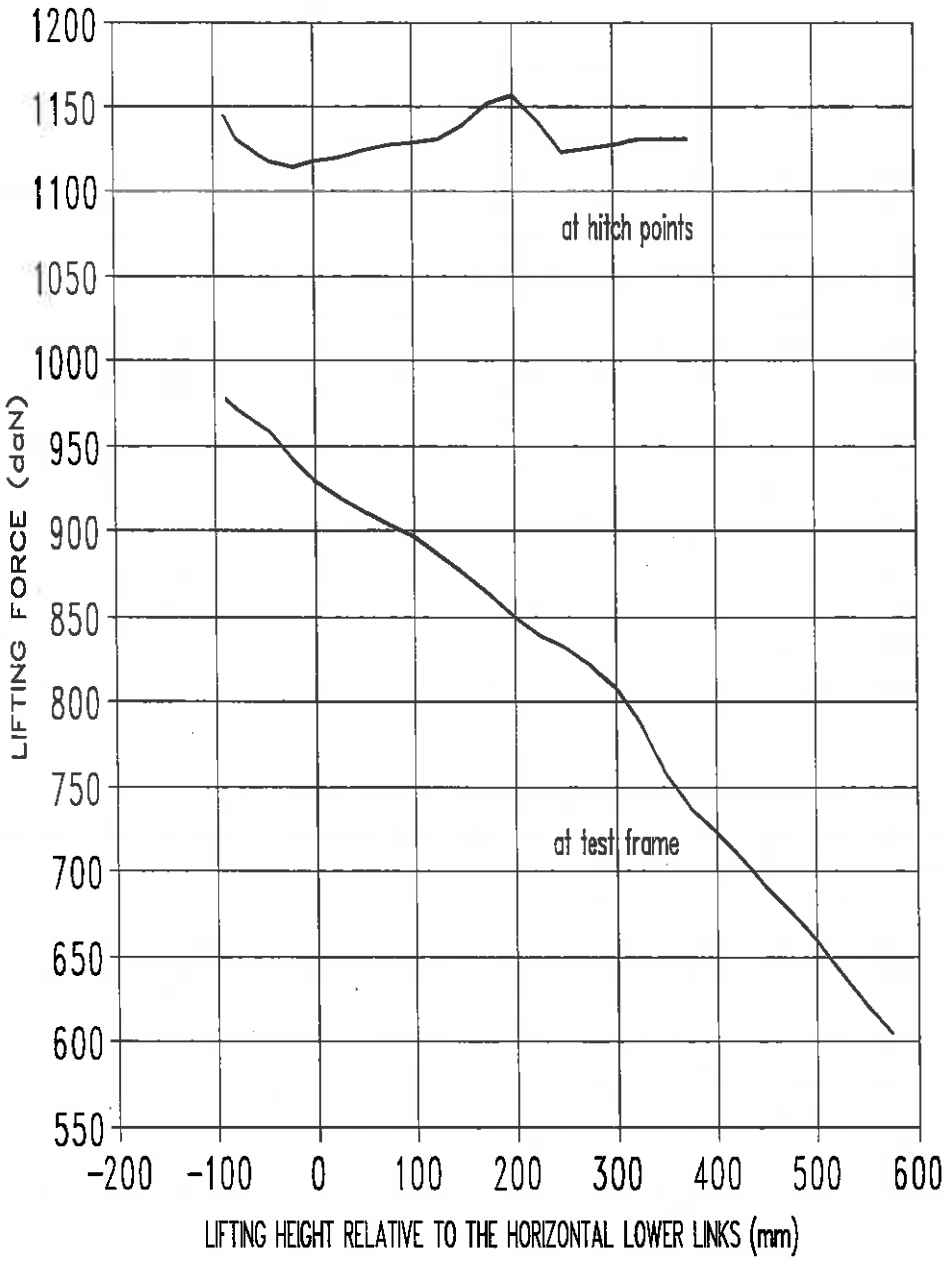
2.2 POWER LIFT

- Maximum pressure in the cylinder: 18.0 Mpa.

		At hitch point	On the frame
Height of lower hitch point above ground in down position	mm	260	249
Vertical movement			
without lifting forces	mm	475	664
with lifting forces	mm	460	639
Maximum corrected force exerted through full range	daN	1114	604
Corresponding pressure of hydraulic fluid	MPa	16.2	16.2
Moment about rear axle	daNm	846	827
Maximum tilt angle of mast over range of lift	degrees	-	16

Lifting heights relative to the horizontal lower links										
mm	-89	-78	0	100	200	300	382	400	500	550
Lifting forces at hitch points, corrected to 16.2 MPa										
daN	-	1144	1114	1127	1152	1126	1130	-	-	-
Lifting forces at test frame, corrected to 16.2 MPa										
daN	978	-	929	897	850	808	-	722	660	604

Performance of power lift



3. DRAWBAR PERFORMANCE

- Date of test: 15 to 19 July 1994
- Type of track: concrete

3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor)

- Height of drawbar above ground: 350 mm;
- Tyre inflation pressure: 175 kPa front, 160 kPa rear.

Gear and range	Power kW	Draw. pull daN	Speed km/h	Eng. speed rev/min	Slip of wheels %	Specific ener. kWh/l	Specific cons. g/kWh	Temperatures Fuel °C	Cool. °C	Eng. °C	Atm. conditions Temp. °C	Hum. %	Press. kPa
1 S	1.1	649	0.60	3133	15	0.23	3611	33	-	99	25	67	100.0
2 S	1.8	657	0.97	3127	15	0.36	2362	33	-	99	25	67	100.0
1 N	3.0	721	1.51	3111	15	0.55	1520	33	-	100	26	65	100.2
3 S	3.0	664	1.61	3109	15	0.55	1515	34	-	99	26	65	100.2
4 S	3.7	651	2.06	3102	15	0.68	1233	33	-	100	26	64	100.2
2 N	4.9	725	2.43	3092	15	0.89	941	34	-	100	27	63	100.1
3 N	8.0	726	3.99	3058	15	1.42	591	34	-	102	28	63	100.1
4 N	10.7	755	5.08	3004	15	1.82	460	34	-	102	28	61	100.1
1 F	11.1	648	6.15	3002	11	1.90	443	33	-	102	28	61	100.2
2 F	10.8	366	10.59	3001	5	1.82	460	34	-	103	29	60	100.2
3 F	8.2	161	18.38	3002	2	1.39	603	34	-	103	29	60	100.2

3.2 MAXIMUM POWER IN TESTED GEARS (ballasted tractor)

- Height of drawbar above ground: 350 mm;
- Tyre inflation pressure: 175 kPa front, 160 kPa rear.

Gear and range	Power kW	Draw. pull daN	Speed km/h	Eng. speed rev/min	Slip of wheels %	Specific ener. kWh/l	Specific cons. g/kWh	Temperatures Fuel °C	Cool. °C	Eng. °C	Atm. conditions Temp. °C	Hum. %	Press. kPa
1 S	1.2	746	0.60	3124	15	0.25	3387	34	-	102	31	51	100.1
2 S	2.0	761	0.97	3115	15	0.38	2195	34	-	102	31	51	100.2
1 N	3.3	781	1.50	3110	15	0.60	1391	34	-	103	31	52	100.2
3 S	3.6	814	1.59	3098	15	0.65	1281	33	-	102	30	52	100.2
4 S	4.6	809	2.05	3088	15	0.83	1011	34	-	102	30	52	100.1
2 N	5.4	796	2.42	3086	15	0.97	869	34	-	103	31	51	100.1
3 N	9.1	833	3.94	3030	15	1.59	529	34	-	103	31	51	100.1
4 N	11.0	737	5.36	3001	10	1.88	446	35	-	103	32	51	100.2
1 F	11.0	632	6.27	3000	9	1.87	448	34	-	103	32	51	100.1
2 F	10.9	363	10.81	3002	3	1.85	454	34	-	102	32	51	100.2
3 F	8.1	158	18.55	3000	1	1.38	606	34	-	102	32	50	100.2

S= Slow; N= Normal; F= Fast.

DRAWBAR PERFORMANCE (continued)

3.3 FIVE HOUR TESTS

Gear and range	Power kW	Draw. pull daN	Speed km/h	Eng. speed rev/min	Slip of wheels %	Specific ener. kWh/l	Specific cons. g/kWh	Temperatures Fuel °C	Cool. °C	Eng. °C	Atm. conditions Temp. °C	Hum. %	Press. kPa
3.3.1) FIVE HOUR TEST at 75% of pull at maximum power													
1 F	8.5	471	6.48	3034	7	1.48	5.68	34	-	105	27	64	100.0
3.3.2) FIVE HOUR TEST at pull corresponding to 15% wheelslip with additional ballast: 120 kg													
3 N	9.6	834	4.13	3045	(*)	(*)	(*)	35	-	104	27	61	100.2

S= Slow; N= Normal; F= Fast.
(*) *Having the test been carried out with additional ballast, these figures are irrelevant.*

Oil consumption during ten hours duration of tests 3.3.1 and 3.3.2: 5 g/h.

4. TURNING AREA AND TURNING CIRCLE

	With brakes		Without brakes	
	Right hand m	Left hand m	Right hand m	Left hand m
Radius of turning area	2.60	2.73	2.90	3.00
Radius of turning circle	2.52	2.64	2.81	2.91

5. LOCATION OF CENTRE OF GRAVITY

Height above ground	mm	579
Distance forward from rear axle centre	mm	699
Distance from tractor's median plane	mm	0

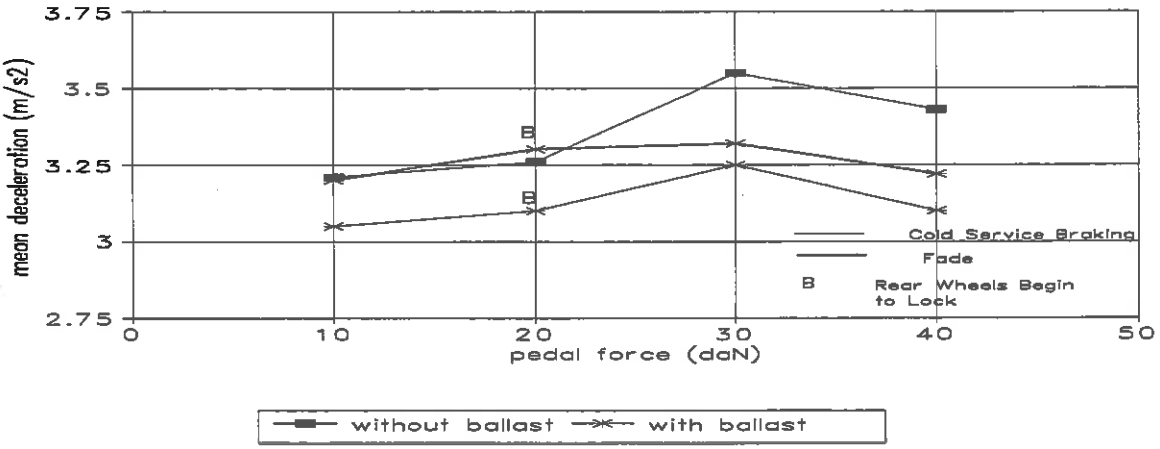
6. BRAKING PERFORMANCE

- Date of test: 14 July 1994;
- Type of track: asphalt;
- Type of decelerometer: PEISELER.

Tractor mass (with driver)

	Front axle kg	Rear axle kg	Total kg
Unballasted	515	620	1135
Ballasted	560	715	1275

6.1 SERVICE BRAKES



- Speed before application of brakes (unballasted tractor): 25.3 km/h.
- Speed before application of brakes (ballasted tractor): 25.4 km/h.

The tractor brakes were heated by towing of the tractor for 1 km.
No significant deviation of tractor from original course and no abnormal vibrations were observed.

6.2) PARKING BRAKE

Ballasted tractor on 18% slope

		Up	Down
Braking device control force	daN	18.5	19.0

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SEZIONE DI TREVIGLIO

7. MEASUREMENT OF EXTERNAL NOISE LEVEL

- Date of test: 20 July 1994;
- Type of track: concrete;
- Type of sound level meter: BRÜEL & KJÆR, model 2231.

Gear and group	Travelling speed before acceleration km/h	Sound level dB(A)
4 F	19.1	81.8

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8. REPAIRS AND REMARKS: none.

DIRECTOR OF TESTING STATION
(Prof. Giuseppe COLZANI)

HEAD OF ISMA
(Ing. Giovanni SANTORO)