MINISTERO DELL'AGRICOLTURA E DELLE FORESTE
Direzione Generale Produzione Agricola

ISTITUTO SPERIMENTALE PER
LA MECCANIZZAZIONE AGRICOLA
SEZIONE DI TREVIGLIO
Via Milano, 43 - 24047 Treviglio (BG) ITALY
tel. 0363/49603

O.E.C.D. n. 930

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

Report on test of: SAME LASER 150 VDT



Submitted for test by: Same Trattori S.p.A.
V.le Cassani 15
24047 TREVIGLIO (BG)

Date of approval O.E.C.D.: 08/01/1986

Period of test: JAN-MAR. 1984

I.S.M.A. - TREVIGLIO
Via Milano, 43

TEST n.018

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All stated dimention referred to tyre sizes 16.9-30 at front and 20.8-38 at rear, as well as to track whiths 1920 mm at front and 1900 mm at rear.

Tractor manufacturer: SAME TRATTORI S.P.A. TREVIGLIO (BG) - ITALY;
Submitted for test by: manufacturer;
Selected by: the manufacturer with the agreement of ISMA;
Place of running-in: Treviglio;
Duration of running-in: 50 hours;

1 - SPECIFICATION OF TRACTOR

TRACTOR

- Make: SAME TRATTORI S.P.A.;
- Model: LASER 150 VDT;
- Type: 4WD;
- Serial n.: LS 50 VT 1006;
- 1 st serial n.: 1001;

ENGINE

- Make: SAME TRATTORI S.P.A.;
- Model: 1056 PS;
- Type: 4 strokes Diesel engine;
- Serial n.:10004;
- Cylinders: 6 cylinders, vertical, in line;
- Bore: 105 mm;
- Stroke: 120 mm;
- Capacity: 6231 cc;
- Pression ratio: 16/1;
- Valves: overhead;
- Cylinder liners: without liners;

FUEL SYSTEM

- Fuel feed system: AC CORONA fuel feed pump;
- Fuel filters: two CAV fiters with replaceable cartridge;
- Change period: 300 hrs;
- Fuel tanks: two fuel tanks 250 l capacity (130+120);
- Injection pump: two pumps, 1st Bosch in line PFR 3K 90A 459; snd Bosch in line PFR 3K 90A 459;

- Serial n.: whitout;
- Manufacturer's prod.setting of inj.pump flow rate: 80 +/-2 mmc/str;
  : injection timing 25+/-5 before TDC;
- Injectors: BOSCH multihole injection nozzles DLLA 150 - S - 8 30:
- Injection pressure: 196 bar;

'UPERCHARGING: turbine KKK - K 27 rotated by the exhaust gases from the engine;

GOVERNOR: SAME, centrifugal variable speed governor;
- Governor range: from 600 to 2376 rev/min;
- Rated engine speed:2180 rev/min;

AIR CLEANER: DONALDSON, dry paper element filter
- Pre-cleaner: air intake left front side above the main cleaner;
- Main cleaner: replaceable cartridge with electrical maintenance indicator;

LUBRICATION SYSTEM: forced feed from gear pump;
- Oil filter: n.1 - FIAMM FT 4927 IN, change filter 300 hrs;
- Total oil capacity: 16.21 including filter;
- Recomended oil: AGIP F1 - DIESEL SIGMA - SAE 30;
- Change period: 125 hrs;

COOLING SYSTEM: air forced 6 blades fan, 299 mm dia;
- Type of temperature control: electrical indicator;
- Diameter pulley conduct: 105 mm;
- Diameter pulley driver: 281 mm;

STARTING SYSTEM: BOSCH solenoid pre engaged-drive starting motor: JF 12 V - 3 kW;
- Starting at min.temperatures: mechanical, with overcharge of injection pump;
- Safety device: on-off electrical priventing engine start in gear;

ELECTRICAL SYSTEM: 12 V BOSCH alternator K 1/14 - V/53A/1;
- Battery: n.1 MARELLI 6 ATP 33 176 Ah at 20 hours rating;

EXAUST SILENCER: SAME, 5 chambers reflection absorption type, heigt above ground 2920 mm;
- Dimension: over all lenght 1461 mm;
- Position: on the right hand side of engine cowling;

TRANSMISSION

CLUTCH: own make, 360 mm dia, single plate dry clutch, hidraulic pedal system for travelling alone;

GEAR-BOX: own make, mechanical by 3 hand-lever, 4 gear siyncronized and one reversing gear ,with 3 range speed and 1 miniriductor group;

DRIVEN FOR AXLE: own make, composed by differential and epicyclic final drive;
- engageable and disengageable by hand lever;
- lock differential of front axle mechanical, engageable with pedal;

REAR AXLE AND FINAL DRIVE: own make, with bevel gear drive and epicyclic final drive;
- Lock differential of rear axle by pedal: mechanical;
- Final reduction ratio: 6.9321/1

TRANSMISSION LUBRICATION
- Gear box in common with rear axle differential, final drive, oil capacity: 101 l included oil necessary for power lift;
- Filter changing period: 3000 hrs without filter;
- Front axle differential, capacity: 20 l;
- Front epicyclic reductor box: 6 l;
- Oil changing interval: 3000 hrs;
- Recomended oil: AGIP F1 - ROTRA - MP/S - SAE 80 W API - GL 5;

ISTITUTO SPERIMENTALE PER
LA MECCANIZZAZIONE AGRICOLA
SEZIONE DI TREVIGLIO

TOTAL RATIO AND SPEEDS (Tyres 20.8-38) (*)

GROUP	GEAR	NUMBER OF ENG.REV FOR ONE REV.WHEEL	NOM.TRAV.SPEED km/h for 2180 rev/min rated eng. revolution
FORWARD	1 L Mr	557.840	1.260
	1 L	476.086	1.476
SLOW	2 L Mr	414.455	1.695
	2 L	353.715	1.986
	3 L Mr	319.284	2.200
	3 L	272.492	2.579
	4 L Mr	248.016	2.833
	4 L	211.667	3.320
	1 N Mr	185.948	3.780
	1 N	158.695	4.428
NORMAL	2 N Mr	138.151	5.086
	2 N	117.904	5.960
	3 N Mr	106.428	6.602
	3 N	90.831	7.736
	4 N Mr	82.673	8.500
	4 N	70.556	9.960
	1 V Mr	61.983	11.337
	1 V	52.898	13.284
FAST	2 V Mr	46.051	15.260
	2 V	39.301	17.880
	3 V Mr	35.475	19.808
	3 V	30.278	23.208
	4 V Mr	27.559	25.498
	4 V	23.519	29.878
REVERSE	1 L	546.619	1.285
SLOW	2 L	406.118	1.730
	3 L	312.861	2.246
	4 L	243.026	2.891
	1 N	182.206	3.856
NORMAL	2 N	135.372	5.191
	3 N	104.288	6.738
	4 N	81.010	8.674
	1 V	60.735	11.570
FAST	2 V	45.123	15.573
	3 V	34.763	20.214
	4 V	27.002	26.024

(*) Calc.with INDEX RADIUS 855 mm (E.T.R.T.O. NORM) pressure 1.3 bar

POWER TAKE OFF: two p.t.o. proportional at engine speed
- the first is 540 rev/min;
- the second is 1000 rev/min;
- the first and the second are indipendent of gear box, engaged and disengaged by hand lever hydraulically, oil bath multidisc clutch indipendent of travel clutch;
- the shaf ends (540 and 1000 rev/min) are in conformity with ISO recomandations;

POWER TAKE-OFF 1000 rev/min

- At rear of tractor, dimension 34.9 x 41 x 7.1 mm;
- With 21 splines and height above ground: 750 mm, in vertical median plane of tractor (tyre 20.8/38 rear and 16.9/30 front);
- Speed of rotation: 1020 rev/min at rated engine speed 2180 rev/min;
- Ratio (rpm engine/p.t.o). = 2.1364/1 - rotation clockwise;
- Distance behind rear axle: 450 mm, in conformity with ISO raccomandations;
- Engine speed at standard PTO speed: 2136;

POWER TAKE-OFF 540 rev/min

- At rear of tractor, dimension 44.5 x 54 x 8.7 mm;
- With 6 splines and height above ground: 910 mm, in median plane of tractor (tyres 20.8/38 rear and 16.9/30 front);
- Speed of rotation: 565 rev/min at rated engine speed 2180 rev/min;
- Ratio (rpm engine/p.t.o.) = 3.8571/1 - rotation clockwise;
- Distance behind rear axle: 450 mm in conformity with ISO raccomandations;
- Engine speed at standard PTO speed: 2082;
- Power restriction and maximum torque: 84.5 dN 48 kW;

ADDITIONAL OIL INTAKE

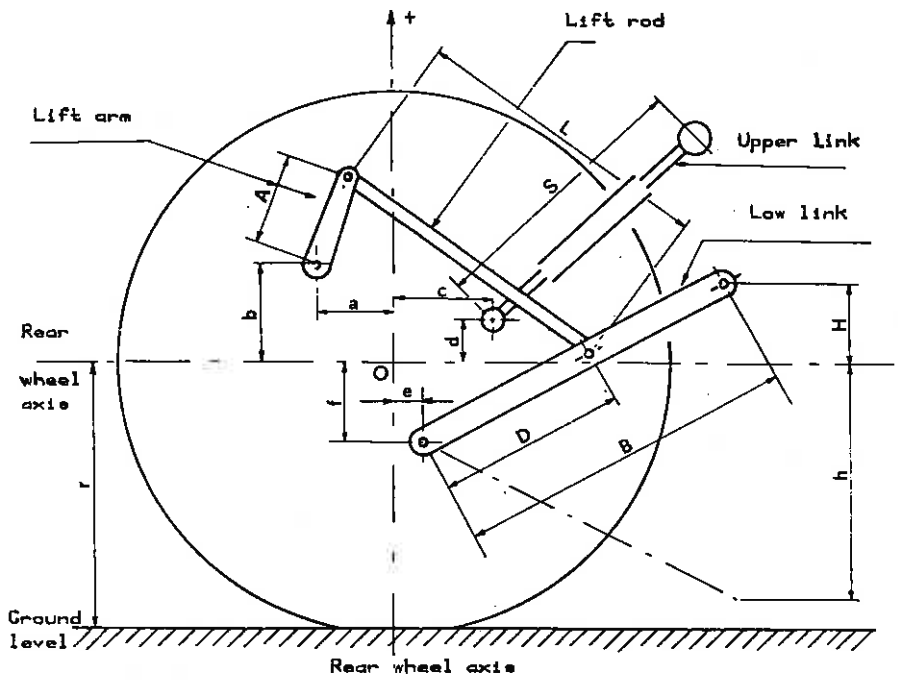
Double effect 6 way distributor, the gear pump is the SAME for power lift and additional oil intake;

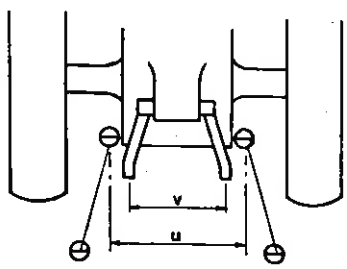
POWER LIFT

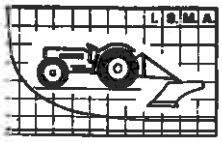
- Make: SAME TRATTORI S.P.A.
- Type:LOAD SENSING, open centre system;
- Type and n.of cylinders: 2 external and 1 internal hydraulic jacks at simple effect;
- Type of linkage lock for transport: mechanical;
- Relief valve pressure setting: 180 bar;
- Opening pressure of cylinder safety valve: 210 bar;
- Lift pump type: hydraulic rotary pump, driven from engine shaft;
- Transmission between pump and engine: mechanical;
- Type and number of filters: 2 replaceable paper cartridge;
- Time between oil change: 1200 hrs;
- Time between filter change: 2400 hrs or when the filter clogging lamp is lighted;
- Oil capacity: 101 l in common with gear-box;
- Site of oil reservoir: gear box;
- Type and number of tapping points: 6 way distr.at rear of tractor;
- Maximum volume of oil available to external cylinders: 20 l;
- Recomended oil (see end of chapter "Specifications");

THREE-POINT LINKAGE

- Category: second in conformity with ISO 730/I
- Category adapter: without;







ISTITUTO SPERIMENTALE PER
LA MECCANIZZAZIONE AGRICOLA
SEZIONE DI TREVIGLIO

SAME LASER 150 VDT TEST N.018 9

SPECIFY THE SETTING FOR THE LIFTING TEST				mm
Rear tyres (size 16.9/30) radius index			r	660
Front tyres (size 20.8/38) radius index			r	855
Length of lift arms			A	300
Length of lower links			B	930
Distance of lift arm pivot point from rear wheel centre line	horizontally vertically		a b	140 450
Horizontal distance between the 2 lower link points			u	550
Horizontal distance between the 2 lift arm end points			v	650
Length of upper link		S	from 560 to 800	
Distance of upper link pivot point from rear wheel centre line	horizontally vertically		c d	420 310
Distance of lower link pivot point from rear wheel centre	horizontally vertically		e f	164 195
Distance of lower link pivot points to lift rod pivot point on lower links		D	from 464 to 502	
Length of lift rods		L	from 765 to 810	
Height of lower hitch points: -in low position -in high position relative to the rear wheel centre line, situated 855 mm above the ground level		 h H	 from 520 to 575 from 175 to 205	
Height of lower hitch points when locked in transport position			from 330 to 1130 above ground	

TRAILER HITCH

For single axle-trailer

- Height above ground adjustable by shifting from 620 to 790 mm (tyre size 20.8/38 rear and 16.9/30 front);
- Distance from rear axle center horizontally: 660 mm;
- Distance from p.t.o. shaft end (540 rev/min) horizontally at rear: 170 mm vertically from 290 to 120 mm;
- Hitch bolt: 28 mm;
- Permissible vertical load: 1500 kg;

For two axis-trailer

Swinging drawbar, height above ground 480 mm (tyres 20.8/38 rear and 16.9/30 at front);
Distance of hitch hole centre:
- from rear axle 1020 mm;
- from 540 rev/min p.t.o. shaft end horizontally 350 mm; vertically 430 mm below;
- from 1000 rev/min p.t.o. shaft end horizontally 350 mm; vertically 270 mm below;
- vertical adjustment: no;
- Distance from rear axle horizontally: 1020 mm;
- Distance of pivot point from rear axle hor. at front: 100 mm;
- Lateral adjustment: 210 mm; Hitch bolt 28 mm;

STEERING: Zahnradfabrik Friedrichshafen Ag;
- Hydrostatic steering;
- Model Servostat 8494/955 own oil circuit, BOSCH hydraulic gear pump HY/ZFS - 11/11 - L - 201 driven from engine;
- Shaft delivery 31.2 l/min at rated engine speed;
- Working pressure: 120 bar;
- Oil capacity: 2 l;
- Type and viscosity of fluid: AGIP ATF DEXRON, 7,5 cSt;
- Filter: replaceable cartridge;
- Changing period 1200 hrs;
- Two rams acting directly on front axle;

BRAKES

Service brake: own make, hydraulically acting on 8 oil bath disc type brake, mounted before front and rear differential half shaft;
Hydraulically acting with 2 pedal indipendently or together on the front and rear wheels.

Parking brake: mechanically acting on separate disc 3 oil bath, disc mounted on the pinion shaft in the gear-box.

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

WHEELS

Steering wheel: 2 at front, 16.9/30 radial tyre, 6 ply rating maximum permissible weight on each tyre 1900 kg at 1.3 bar. Track width adjustable from 1800 mm to 2000 mm, four position changeable by turning wheels-rim size W15L 30

Driving wheel: at front and at rear, specification of driving front wheel (see at steering wheel) driving rear wheel: 20.8/38 radial tyre 8 ply rating.
Maximum permissible weight on each tyre 3090 kg at 1.3 bar.Track width: from 1700 to 2150 mm, four positions changeable by turning wheels-rim size W18L 38.

WHEEL BASE: 2860 mm;

LIGHTING

Lighting system in accordance with CEE 78/933;

	Height above ground of centre (1) mm	Dimensions mm	Distance from outside edge of trac.to centre at 1900mm track width. mm
1 Head lights	1170	110x110	870
2 Front park.lights	2028	110x35	245
3 Front finger-post	2066	110x35	245
4 Rear park.lights	1825	120x70	315
5 Rear finger post	1795	70x100	240
6 Stop	1795	70x100	435
7 Reflectors 1st pair	1763	110x35	320
8 Reflectors 2st pair	820	Φ 80	570

(1) Tyre size 20.8/38 rear, 16.9/30 front.

OVERHALL DIMENSION, with safety cab and vertical silencer and tyre dimension 20.8/38 rear, 16.9/30 front

	lenght (mm)	width max (mm)	width min	heigth (mm)
With ballast	5000	2340	2240	2780
Without ballast	4760	2340	2240	2785

- The max heigth is referred to tractor with cab;
- Max heigth to silencer: 2920 mm ballasted, 2925 unballasted;
- Ground clearance: 540 mm below swinging drawbar;
- Track setting: front 1920 mm, rear 1900 mm;

SEAT: BOSTROM XH type
- Upholstered seat with back-rest, adjustable spring with shock absorber;
- Heigth regulation: 60 mm;
- Longitudinal regulation: 150 mm;

CAB: SAME TRATTORI S.P.A. V.le Cassani, 15 Treviglio BG, safety cab model C 27 OECD tested, approval n°CSD/0760/2;

_ASTING WEIGHTS: tractor without driver but with tankfull; and with safety cab and front support for ballast.

	front (kg)	rear (kg)	total (kg)
unballasted	2280	3310	5590
ballasted	2560	3710	6270

Ballast: front axle, ballast of 40 kg each with suitable support weigth support 20 kg.
Rear axle, rings of 50 kg each, with 6 bolts.

	ballast (n)	total weight (kg)	water (kg)
front	7	280	-
ear	4 + 4	400	-
additional	-	-	-

FUEL AND LUBRICANTS RECOMMENDED AND USED IN TEST

Laboratory and track test:
- Fuel: diesel fuel, specific gravity at 15 °C 0.842 kg/dm3;
- Viscosity at 50 °C: 3.5 Cst;
- Cetane n.: 55 in according ASTM NORM;
- Engine oil: AGIP F1 Diesel - SIGMA SAE 30;
- Transmission and power lift oil: AGIP F1 ROTRA MP/S SAE 80 W API GL 5
- Steering oil: AGIP ATF DEXRON;
- Front axle differential oil and final drives at front and at rear: AGIP F1 ROTRA MP/S;
- Grease: AGIP GREASE 30;
- Grease points: n.20;

ISTITUTO SPERIMENTALE PER
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SEZIONE DI TREVIGLIO

2 - POWER TAKE-OFF PERFORMANCE

POWER	SPEED		FUEL CONSUMPTION		SPECIFIC
	ENGINE	P.T.O.	HOURLY	SPECIFIC	ENERGY
kW	rev/min		l/h	g/kWh	kWh/l
Maximun power - 2 hour test					
95.73	2181	1021	29.207	258.90	3.28
Speed recommanded by the manifacturer for drawbar work					
95.73	2181	1021	29.207	258.90	3.28
Standard speed of p.t.o. (1000 +/- 25 rev/min)					
95.20	2139	1001	28.598	252.96	3.329
PART LOADS - MAXIMUM POWER					
85% of the torque obtained at maximum power					
84.61	2268	1061	26.311	261.83	3.216 (1)
75% of the load defined (1)					
64.59	2309	1081	21.814	284.36	2.961 (2)
50% of the load defined in (1)					
43.61	2337	1094	17.137	330.86	2.545 (3)
25% of the load defined in (1)					
22.00	2358	1104	12.429	475.70	1.770 (4)
NO LOAD					
0.00	2376	1112	8.467	0.00	0.00

Date and location of test: 9/1/1984 Treviglio;
Type of dynamometer: Zöllner magnetoelectric dynamometer B 500;
Standard specific fuel consumption: 262/331/262/331;
No load maximum engine speed: 2376 rev/min;
Torque at max power: 41.937 dNm; torque max 48.74 dNm a 1450 rev/min;
Mean atmospheric condition: temperature 20°C;
pressure 1010 mmbar;
relative humidity 55%;

Maximum temperatures: coolant 102°C;
engine oil 141°C;
fuel 35°C
engine air intake 35°C.

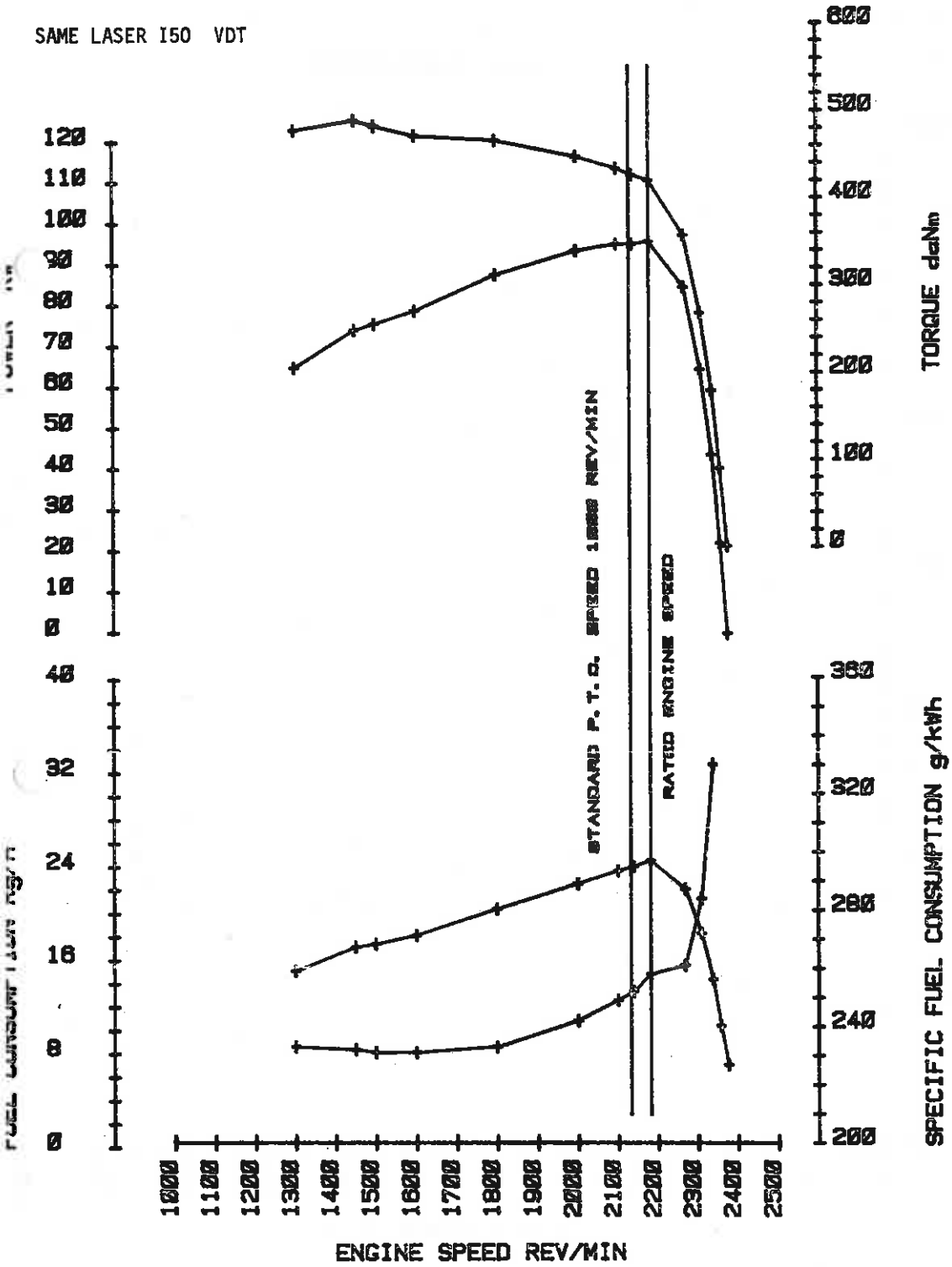
ISTITUTO SPERIMENTALE PER
LA MECCANIZZAZIONE AGRICOLA
SEZIONE DI TREVIGLIO

TEST N. 0I8

I5

p. t. o. PERFORMANCE

SAME LASER I50 VDT

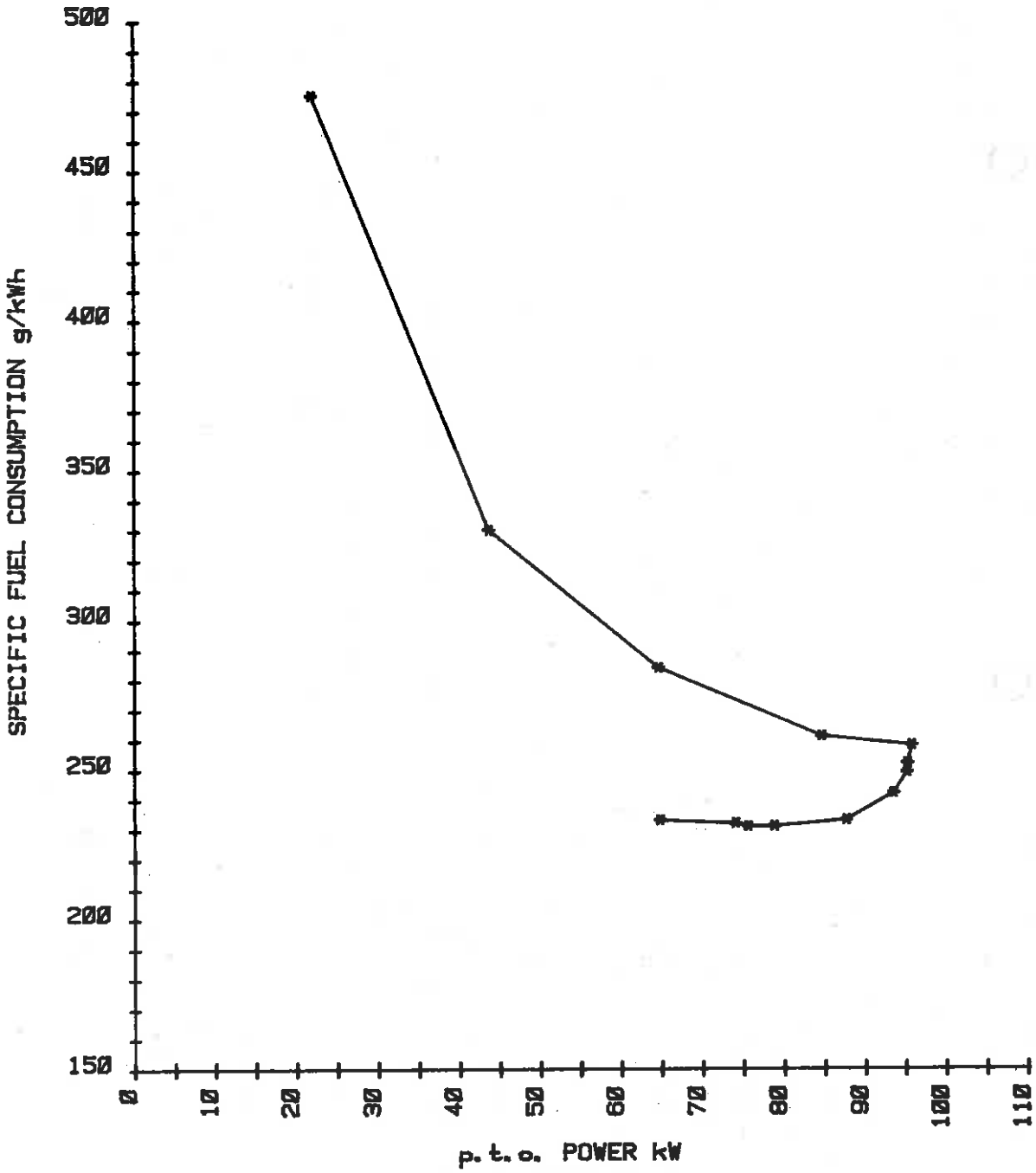


ISTITUTO SPERIMENTALE PER
LA MECCANIZZAZIONE AGRICOLA
SEZIONE DI TREVIGLIO

TEST N. I8 I6

SAME LASER I50 VDT

p. t. o. PERFORMANCE



ISTITUTO SPERIMENTALE PER
LA MECCANIZZAZIONE AGRICOLA
SEZIONE DI TREVIGLIO

- DRAWBAR PERFORMANCE

ate and location of test:4/1-3/3 1984, ISMA Treviglio;
ype of track: concrete;
yre size: 20.8/38 (8pr) rear, 16.9/30 (6pr) front;
yre pressure rea and front, ballasted and unballasted tractor: 1.3 bar
eight of drawbar above the ground: ballasted 790 mm ; unballasted 790 mm;
onsumption tyre before test: front 10% - rear 15%;
otal oil consumption in the first five hours: 0.850 kg;
l oil consumption in the second five hours: 0.900 kg;
ly consumption: 175 g/h;

ear	speed	draw. pull	power	engine speed	slip wheel	cons. ener.	spec.	temperatures fuel	cool.	oil	atm. tem.	condit hum	pr
	km/h	daN	kW	rev/min	%	kWh/l	g/kWh	°C	°C	°C	°C	%	mmba
				MAX POWER (TRACTOR UNBALLASTED)									
L	3.15	4025	35.21	2320	15	1.71	491	20	40	60	15	80	950
NMr	3.40	4040	38.14	2323	15	1.87	449	20	40	62	15	80	950
N	4.20	4070	47.47	2300	14	1.97	427	22	45	64	16	75	950
NMr	4.50	4275	53.42	2305	14	2.23	378	23	47	70	16	70	950
N	5.25	4295	62.62	2270	12.6	2.38	356	24	47	70	17	70	950
NMr	5.57	4300	66.51	2260	12.8	2.50	337	25	50	72	17	70	950
N	7.12	3800	75.13	2190	6.2	2.60	325	25	52	80	17	65	950
NMr	7.92	3530	77.63	2178	6.3	2.68	316	26	54	81	17	65	950
N	9.40	3000	78.31	2180	6.3	2.70	314	26	54	81	20	60	950
VMr	11.35	2540	80.05	2180	4.0	2.73	310	26	60	85	20	60	950
V	13.50	2100	78.73	2178	4.0	2.66	318	26	60	85	20	55	950
				MAX POWER (TRACTOR BALLASTED)									
LMr	1.14	4430	14.02	2353	15	0.95	882	17	35	40	12	85	980
L	1.35	4450	16.68	2350	15	1.15	732	18	40	50	14	82	980
LMr	1.57	4460	19.45	2348	15	1.28	661	19	40	50	14	80	985
L	1.83	4462	22.68	2351	15	1.56	539	19	40	50	14	80	980
L	2.00	4399	24.43	2351	15	1.68	500	19	41	57	14	80	980
L	2.35	4462	29.12	2345	14	1.82	463	19	44	60	15	75	980
LMr	2.68	4400	32.75	2334	12	1.91	441	20	44	70	16	70	980
L	3.12	4400	38.12	2330	12	2.00	421	22	46	70	16	70	980
NMr	3.50	4450	43.25	2320	12	2.08	404	22	48	70	16	70	980
N	4.15	4310	49.67	2300	12	2.15	392	24	48	70	17	65	980
NMr	4.55	4410	55.72	2280	12	2.18	388	24	50	70	17	65	980
N	5.40	4460	66.88	2285	12	2.62	323	24	51	75	18	65	980
NMr	5.87	4470	72.87	2187	10	2.52	336	24	53	75	18	60	980
N	7.10	3880	76.50	2180	7.5	2.59	327	24	53	80	19	60	980
NMr	7.90	3590	78.76	2177	6	2.71	312	23	56	80	19	60	980
N	9.50	3100	81.78	2178	5.3	2.82	300	24	56	82	20	55	980
VMr	11.22	2650	82.42	2180	2.5	2.89	293	26	60	82	21	55	980
V	13.25	2160	79.48	2178	2.5	2.47	309	26	61	84	21	55	980
				FIVE HOUR TEST 75% OF AT PULL									
NMr	6.25	3352	58.17	2269	6.0	2.20	387	32	60	90	20	70	999
				FIVE HOUR TEST AT PULL CORRESPONDING TO 15% WHEEL SLIP									
NMr	4.87	4450	60.18	2270	-	-	-	34	60	99	22	65	999

4 - TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 16.9/30 6 ply;
rear : 20.8/38 8 ply;

Track of wheels front: 1920 mm;
rear : 1900 mm;

	with brakes right (m)	with brakes left (m)	on four wheels right (m)	on four wheels left (m)	without brakes right (m)	without brakes left (m)
rad.turn. space	5.41	5.50	5.09	5.10	5.89	5.85
rad.turn. circle	5.30	5.25	4.84	4.85	5.64	5.60

5 - LOCATION OF CENTRE OF GRAVITY

Height above ground ..... 1030 mm
Distance forward from rear axle centre ..... 1149 mm
Distance from tractor's median plane ..... 0 mm

6 - BRAKING PERFORMANCE (**)

Date of test: 21 th February till 28 th February 1984;
Type of track: concrete;
Type of decelerometer: Peiseler;

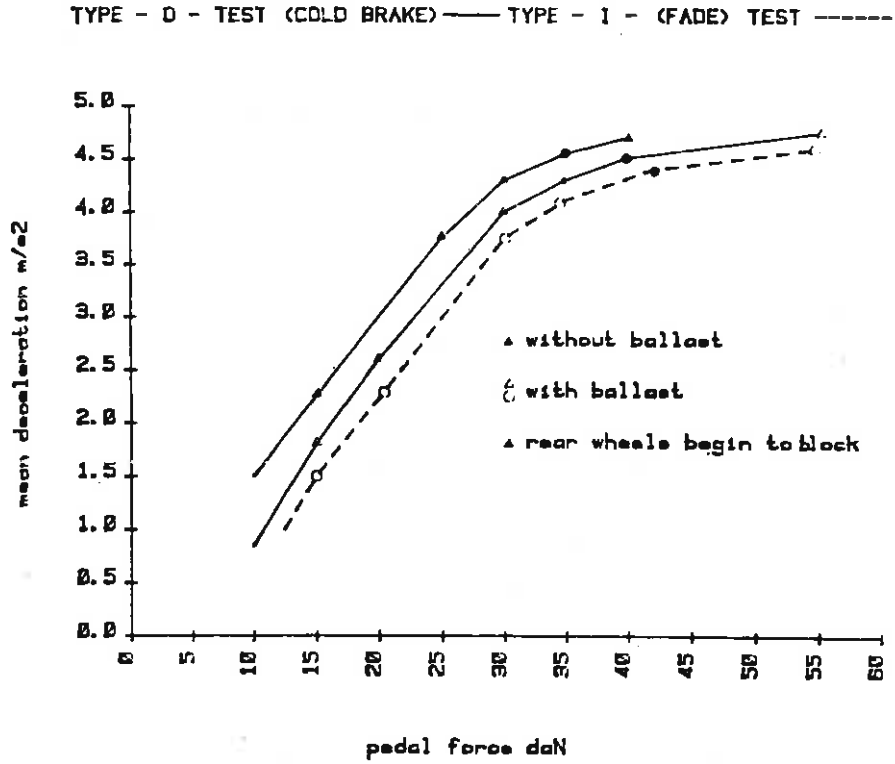
(**) Has been tested two performances of service brake because the tractor exist in two version with brakes on rear wheels and with brackes on all wheels.

Maximum weigth tecnically permissible of the tractor with ballast *

	front axle (kg)	rear axle (kg)	total (kg)
unballasted	2310	3460	5770
llasted	2700	5800	8500

* Tractor carry ing a driver,a responsable for monitoring and the decelerometer.

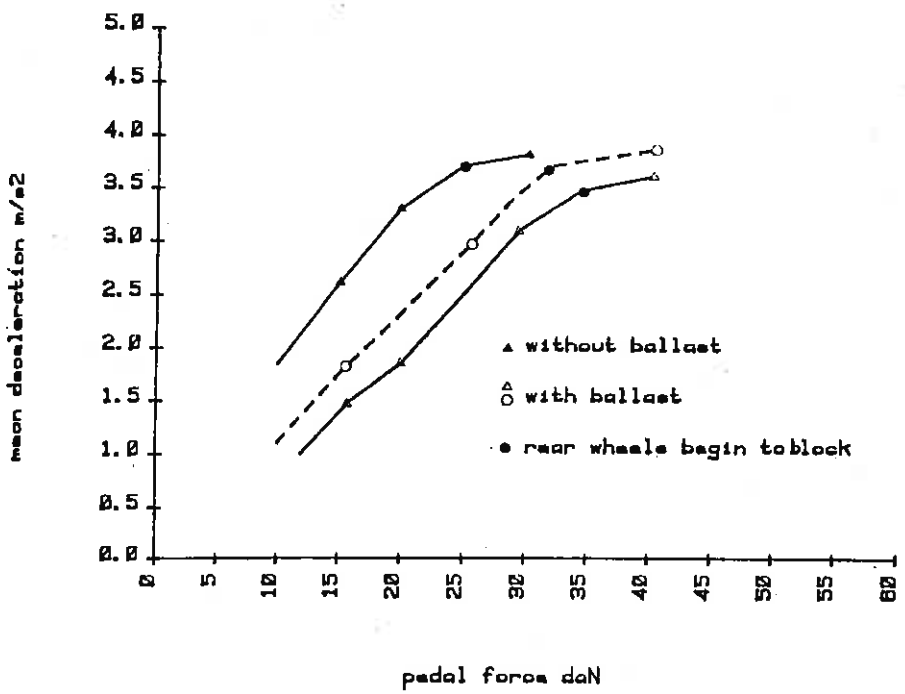
A1) SERVICE BRAKE (all wheels braked)
Type - 0 - test (cold brake) _____ type - I - (fade) test -----



Middle speed of beginning braking (unballasted tractor) = 32.8 km/h
Middle speed of beginning braking (ballasted tractor) = 31.5 km/h
The heating of brakes has been make to drag the tractor braking for one km.

Comments on deviation and vibration: none;
A2) SERVICE BRAKE (two wheels braked)

Type - 0 - (cold brake) _____ type - I - (fade) test -------



Middle speed of beginning braking - ballasted 31.5 km/h
unballasted 32.2 km/h
Comments on deviation and vibration: none

B) PARKING BRAKE

		ballasted tractor on 18% slope		unballasted tractor with trailer of 3000 kg on 12% slope	
		slope	descent	slope	descent
pull on handbrake	dN	25.5	21.6	10.8	8.8

7 - MESUREMENT OF EXTERNAL NOISE LEVEL

- Date of test: 6 th March 1984;
- Type of sound level meter: 2209 BRUEL & KJAER;
- Type of track: concrete.

Results of test

- N. gear used: 4 VMr;
- Travelling speed: 24.7 km/h;
- Sound level: 86.4 dB(A)

8 - NOISE MESUREMENT AT THE DRIVER'S EAR LEVEL

- Date of test: 6 th March 1984;
- Type of sound level meter: 2209 BRUEL & KJAER;
- Type of track: concrete;
- The tractor is fitted by safety cab.

gear n	drawbar pull at which the trac.develops the max. sound level	travelling speed km/h	sound level dB(A)	
3N	3200	7.4	82.5	(*)
3N	0	8.5	81.5	
3LMr	4100	2.4	84.0	
4LMr	4100	2.6	86.0	
1NMr	4000	3.3	85.0	
2NMr	3200	5.1	86.5	
3NMr	2800	6.9	87.0	(°)
4NMr	3000	8.0	86.5	
1VMr	1800	12.5	85.5	
2VMr	1200	16.6	85.5	
3VMr	1280	22.2	85.0	
4VMr	750	28.0	84.5	
4V	800	30.0	83.5	(#)
4V	0	32.0	81.5	

(*) Gear with nominal speed nearest 7.5 km/h
(°) Noisest gear
(#) Mae forward speed gear

9 - LIFTING FORCE AND HYDRAULIC POWER

- Date and location of tests: 13 February 1984 - ISMA Treviglio

HYDRAULIC FLUID

- Make and type: AGIP F1 ROTRA MP/S
- Viscosity: SAE 80 W API - GL 5
  Type of hydraulic system: open centre system
  Hydraulic fluid temperature at beginning of test 65 °C

POWER LIFT TEST

		at hitch points	on the frame
height of lower hitch point above ground in down pos.	mm	330	330
vertical movement	mm	725	668
maximum corrected force exerted through full range	dN	3354	4324
corresponding pressure of hydraulic fluid	bar	162	162
moment about rear axle	dNm	3669	7368
max.tilt angle of mast over range of lift	deg.	-	5°

Main linkage dimensions - see attached drawings and table in specifications chapter.

Lifting heights relative to the horizontal plane including the lower link pivot points.

mm	-395	-350	-300	-200	-100	0	+100	+200	+300	+318	+330

Lifting force at hitch points corresponding pressure 162 bar

dN	3441	----	3530	4166	4545	4783	4924	5040	5339	----	3354

Lifting force at test frame corresponding pressure 162 bar

dN	----	4850	4900	4960	4960	4960	4850	4730	4500	4324	---

HYDRAULIC POWER TEST

Sustained pressure with relief valve open: 180 bar;

Pump delivery rate at minimum pressure: 67 l/min

Flow rate corresponding to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting and corresponding hydraulic power: flow rate 60 l/min
pressure 162 bar
power 16.4 kW

Flow rate and hydraulic pressure corrisponding to maximum hydraulic power: flow rate 60 l/min
pressure 162 bar
power 16.4 kW

10 - REMARKS AND REPAIRS: none

TEST ENGINEER
(Ing.Giovanni Santoro)

THE DIRECTOR OF TESTING STATION
(Prof.Giuseppe Colzani)

HEAD OF ISMA - ROMA
(Prof.Alfio Cammilli)