CRA
CONSIGLIO PER LA RICERCA
E LA SPERIMENTAZIONE
IN AGRICOLTURA

ISMA
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MECCANIZZAZIONE AGRICOLA

REPORT ON TEST IN ACCORDANCE WITH OECD STANDARD CODE FOR THE OFFICIAL TESTING OF AGRICULTURAL AND FORESTRY TRACTOR PERFORMANCE (CODE 2)

SAME EXPLORER 95 SPECIAL

20 forward and 20 reverse speeds
40 km/h
four-wheel drive agricultural tractor



LAMBORGHINI 874-95 N

20 forward and 20 reverse speeds
40 km/h
four-wheel drive agricultural tractor



Manufactured by:	SAME DEUTZ-FAHR ITALIA S.p.A Viale F. Cassani 15 24047 Treviglio BG Italy
OECD approval No.:	2/2 385
Date of approval:	20 September 2007
Period of test:	May - June 2007

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Notes

1) The information opposite each item has been validated by the Testing Station. An item marked C indicates to the test report user that the information declared by the manufacturer has been checked; an item marked D indicates that the manufacturer's declaration has been endorsed.

2) The Same Explorer 95 Special (4WD) and Lamborghini 874-95 N (4WD) tractors are technically identical in all main respects except with regard to model designation and colour.
Both the above mentioned tractors can be fitted with two different frame-type protective structures, respectively the T 45 and the T 62 B models and consequently, different rear mudguards and rear lights position.
All tests were carried out on the Same Explorer 95 Special (4WD) with the T 45 frame model.

C	- Tractor manufacturer's name and address:	SAME DEUTZ-FAHR ITALIA S.p.A.; V.le F. Cassani 15, 24047 Treviglio BG, Italy;
D	- Location of tractor assembly:	Treviglio BG, Italy;
D	- Submitted for test by:	the manufacturer;
C	- Selected for test by:	the manufacturer with the agreement of ISMA;
D	- Place of running-in:	Treviglio BG, Italy;
D	- Duration of running-in:	50 hours;
C	- Location of test:	ISMA, Via Milano 43, Treviglio BG, Italy.

1. SPECIFICATIONS OF TRACTOR

1.1 Identification

1.1.1 Denomination

C	- Make:	SAME;
C	- Model:	EXPLORER 95 SPECIAL;
C	- Type:	four-wheel drive, unit construction.

1.1.2 Numbers

D	- First serial number:	EXP95SVT20000;
C	- Serial number:	EXP95SVT20000.

1.1.3 Other specification

D	- Model for other countries:	SAME EXPLORER 90 SPECIAL and LAMBORGHINI 874-90 N;
C	- Speed version:	40 km/h.

1.2 Engine

C	- Make/Model/Type:	SAME DEUTZ-FAHR ITALIA / 1000.4 WT / water cooled 4-stroke diesel, direct injection, supercharged;
C	- Serial number:	36079.

1.2.1 Cylinders

C	- Number and disposition:	4 vertical in line;
D	- Bore x stroke:	105 x 115.5 mm;
D	- Capacity:	4000 cm^3;
D	- Compression ratio:	16:1;
D	- Arrangement of valves:	overhead valves, 2 per cylinder;
D	- Cylinder liners:	wet liners.

1.2.2 Supercharging

C	- Make/Model/Type:	SCHWITZER / S1B / exhaust driven supercharger;
C	- Pressure:	75 kPa.

1.2.3 Fuel system

C	- Fuel feed system:	AC corone fuel feed pump;
C	- Make/Model/Type of fuel filter:	FIAMM / FNA 255/00 / replaceable paper element filter;
D	- Capacity of fuel tank:	61 dm^3;
C	- Make/Model/Type of injection pump:	BOSCH / PFR 1 K-90A 555 / immersed, one per cylinder in line;
C	- Serial number:	without serial number;
	- Manufacturer's production setting of injection pump:	
C	. Flow rate:	63 ± 2 mm^3/stroke at rated speed and full load corresponding 19.0 dm^3/h;
D	. Timing:	13° before TDC;
D	- Make/Model/Type of injectors:	BOSCH / DLLA 155 S 1323 / multihole injection nozzles;
D	- Injection pressure:	18 ± 1 MPa.

1.2.4 Governor

C	- Make/Model/Type:	SAME DEUTZ-FAHR ITALIA / SAME 06516510 / mechanical;
C	- Governed range of engine speed:	from 650 to 2685 min^{-1};
C	- Rated engine speed:	2500 min^{-1}.

1.2.5 Air cleaner

	- Pre-cleaner:	
C	- Make/Model/Type:	DONALDSON / P01-6330 / cyclone;
C	- Location of air intake:	front of engine, above the bonnet;
	- Main cleaner	
C	- Make/Model/Type:	DONALDSON / FLG08-0524 / dry paper element filter with two replaceable cartridge elements;
C	- Maintenance indicator:	none.

1.2.6 Lubrication system

D	- Type of feed pump:	forced feed from gear pump;
C	- Type of filter:	FIAMM FT 4803 IN;
C	- Number of filters:	1.

1.2.7 Cooling system

C	- Type of coolant:	water cooling;
D	- Type of pump:	impeller pump;
	- Specification of fan	
C	- Number of fan blades:	10;
C	- Fan diameter:	480 mm;
D	- Coolant capacity:	11 dm^3;
C	- Type of temperature control:	electrical control;
D	- Superpressure system:	60 kPa.

1.2.8 Starting system

C	- Make/Model/Type:	BOSCH / 12V / JF12V / electromagnetic engagement;
D	- Starter motor power rating:	3 kW;
C	- Cold starting aid:	not fitted;
C	- Safety device:	gear lever shifted in neutral position; and pto disengaged at engine shut off.

1.2.9 Electrical system

C	- Voltage:	12 V;
	- Generator	
C	- Make/Model/Type:	ISKRA / 14V 65A / alternator;
D	- Power:	910 W;
	- Battery:	
C	- Number:	1 lead acid;
D	- Rating:	120 Ah at 20 hours.

1.2.10 Exhaust system

C	- Make/Model/Type:	SAME DEUTZ-FAHR ITALIA / DGM-SA 1327 / one reflection absorption chamber;
C	- Location:	on the left hand side of engine, vertical position above side bonnet.

1.3 Transmission

1.3.1 Clutch (utilized only for travelling of tractor)

D	- Make/Model/Type:	AP AUTOMOTIVE PRODUCTS ITALY / MCFK04011A / single disk dry clutch;
D	- Number of plates:	1;
D	- Diameter of plates:	305 mm;
C	- Method of operation:	hydraulic operated by pedal.

1.3.2 Gear box

D - Make/Model/Type: SAME DEUTZ-FAHR ITALIA / E85.31 / mechanical synchromesh;

- Description: 5 speeds forward with 4 ranges (C/S/N/F) and one reverser.

		Forward	Reverse
C	Number of gears	5	5
C	Number of ranges	4	4
C	Total of arrangements	20	20

D - Available option: 12 forward and 12 reverse,
16 forward and 16 reverse.
24 forward and 12 reverse

1.3.3 Rear axle and final drives

D - Make/Model/Type: SAME DEUTZ-FAHR ITALIA / E85.44 / bevel gear differential and epyciclic final drives.

- Differential lock

D - Type: mechanical;

C - Method of engagement: pedal operated;

C - Method of disengagement: pedal operated.

1.3.4 Front axle and final drives

D - Make/Model/Type: SAME DEUTZ-FAHR ITALIA / E85.43 / central shaft bevel gear drive, differential and epicyclic final drives.

- Differential lock

D . Type: mechanical;

C . Method of engagement: pedal operated;

C . Method of disengagement: pedal operated.

1.3.5 Total ratios and travelling speeds

	Gear	Range	Number of engine revolutions for one revolution of the driving wheels		Nominal travelling speed at rated engine speed of 2500 min^{-1} (*) km/h	
			FORWARD	REVERSE	FORWARD	REVERSE
C	1	Creeper	1749.46	1679.84	0.41	0.43
C	2	Creeper	1180.88	1133.89	0.61	0.64
C	3	Creeper	887.59	852.27	0.82	0.85
C	4	Creeper	672.87	646.08	1.08	1.12
C	5	Creeper	506.94	486.77	1.43	1.49
C	1	Slow	622.03	597.28	1.17	1.22
C	2	Slow	419.87	403.16	1.73	1.80
C	3	Slow	315.59	303.03	2.30	2.39
C	4	Slow	239.24	229.72	3.03	3.16
C	5	Slow	180.24	173.07	4.03	4.19
C	1	Normal	195.31	187.53	3.72	3.87
C	2	Normal	131.83	126.59	5.50	5.73
C	3	Normal	99.09	95.15	7.32	7.63
C	4	Normal	75.12	72.13	9.66	10.06
C	5	Normal	56.59	54.34	12.82	13.36
C	1	Fast	64.50	61.94	11.25	11.72
C	2	Fast	43.54	41.81	16.67	17.36
C	3	Fast	32.73	31.43	22.18	23.09
C	4	Fast	24.81	23.82	29.25	30.46
C	5	Fast	18.69	17.95	38.82	40.43

(*)Calculated with a tyre dynamic radius index of 770 mm (in conformity with ISO 4251-1:2005)

- Number of revolutions of front wheels for one revolution of rear wheels: 1.3071.

1.4 Power take-off

1.4.1 Main power take-off

C	- Type:	independent, at rear of tractor;
C	- Method of engagement:	engaged or disengaged by hand lever, driven by wet clutch independent of travel clutch;
C	- Number of shafts:	1;
C	- Method of changing power take-off shaft ends and speeds:	not changeable, speed shiftable by external hand lever.

1.4.1.1 Power take-off proportional to engine speed

Power take-off at 540 min^{-1}

C	- Location:	at rear of tractor;
C	- Diameter of power take-off shaft ends:	35 mm;
C	- Number of splines:	6, in conformity with 500-1:2005, type 1;
C	- Height above ground:	770 mm;
C	- Distance from the median plane of the tractor:	0 mm;
C	- Distance behind rear axle:	405 mm;
C	- PTO speed at rated engine speed:	614 min^{-1};
C	- Engine speed at standard power take-off speed:	2198 min^{-1};
C	- Ratio of rotation speeds (engine speed/p.t.o. speed):	4.071;
D	- Power restriction:	not specified;
D	- Maximum torque transmissible:	not specified;
C	- Direction of rotation (viewed from behind tractor):	clockwise.

Power take-off at 1000 min^{-1}

C	- Location:	at rear of tractor;
C	- Diameter of power take-off shaft ends:	35 mm;
C	- Number of splines:	6, in conformity with ISO 500-1:2005, type 1;
C	- Height above ground:	770 mm;
C	- Distance from the median plane of the tractor:	0 mm;
C	- Distance behind rear axle:	405 mm;
C	- PTO speed at rated engine speed:	1020 min^{-1};

Power take-off at 1000 min^{-1} (continued)

C	- Engine speed at standard power take-off speed:	2450 min^{-1};
C	- Ratio of rotation speeds (engine speed/p.t.o. speed):	2.450;
D	- Power restriction:	not specified;
D	- Maximum torque transmissible:	not specified;
C	- Direction of rotation (viewed from behind tractor):	clockwise.

1.4.1.2 Power take-off proportional to ground speed: not available.

1.4.2 Optional power take-off: none.

1.5 Hydraulic power lift

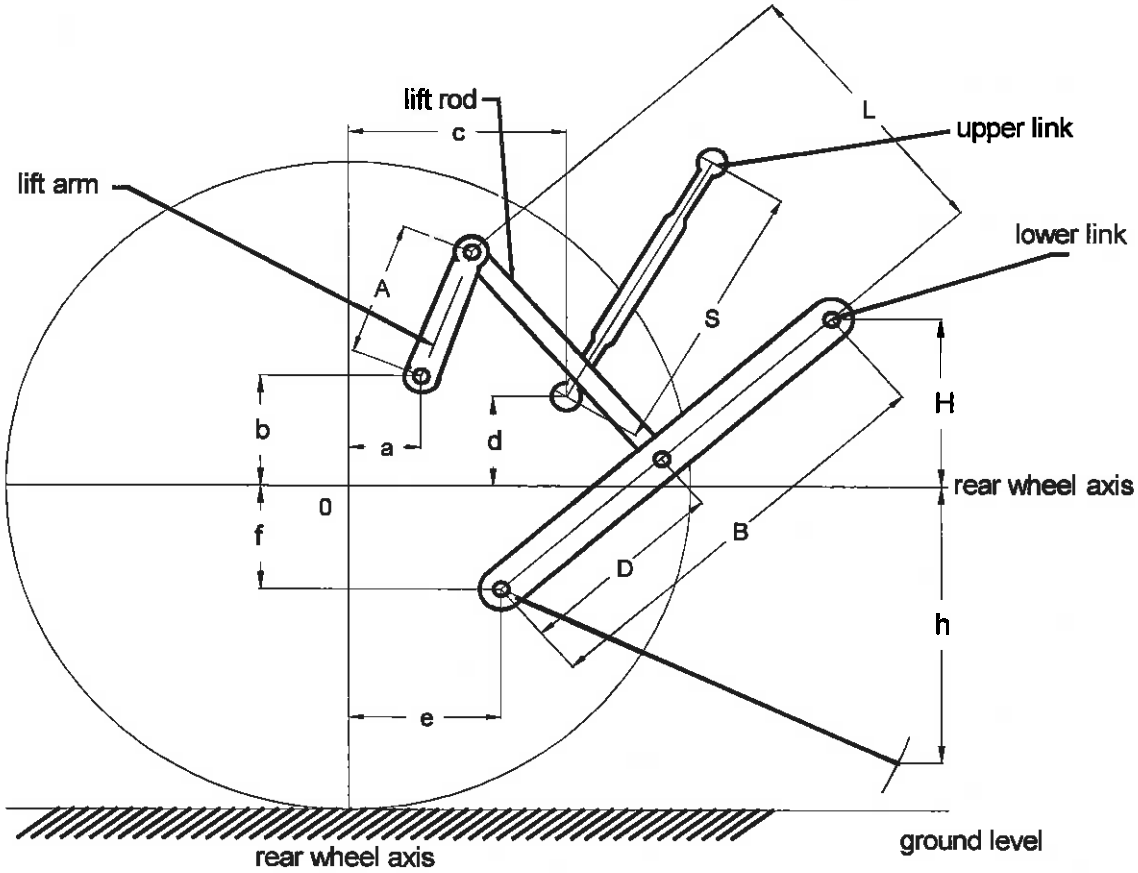
C	- Make/Model/Type:	SAME DEUTZ-FAHR ITALIA / - / open centre system, load sensing;
C	- Type and number of cylinders:	1 internal single acting;
C	- Type of linkage lock for transport:	not available;
D	- Relief valve pressure setting:	19.0 ± 0.5 MPa;
D	- Opening pressure of cylinder safety valve:	21.0 ± 0.5 MPa;
D	- Lift pump type:	hydraulic rotary pump, driven by engine shaft;
D	- Transmission between pump and engine:	mechanical;
C	- Type and number of filters:	1, replaceable paper cartridge;
C	- Site of oil reservoir:	gear box;
C	- Type, number and location of tapping points:	4, double acting, at rear of tractor;
D	- Maximum volume of oil available to external cylinders:	15 dm^3.

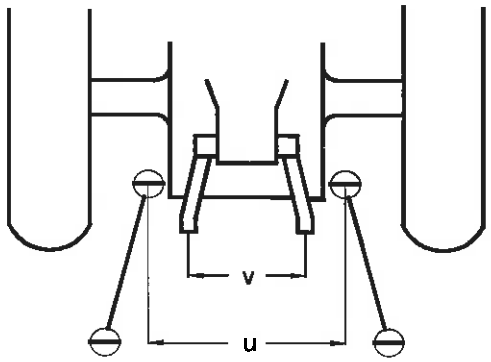
1.6 Three-point linkage

C - Category: 2, in conformity with category 2 of ISO 730-1:1994 + corrigendum 1:1995;

C - Category adapter: none.

Linkage geometry





Dimensions of linkage geometry when connected to the standard frame

			Dimension or range		Settings used in test
			mm		mm
C	Length of lift arms:	(A)	285		285
C	Length of lower links:	(B)	850		850
	Distance of lift arm pivot point from rear wheel axis (behind):				
C	- horizontally	(a)	95		95
C	- vertically	(b)	400		400
C	Horizontal distance between the 2 lower link points:	(u)	510		510
C	Horizontal distance between the 2 lift arm end points:	(v)	580		580
C	Length of upper link:	(S)	from 570 to 700		660
	Distance of upper link pivot point from rear wheel axis:				
C	- horizontally	(c)	347		347
C	- vertically	(d)	225-290-355		290
	Distance of lower link pivot point from rear wheel axis:				
C	- horizontally	(e)	145		145
C	- vertically	(f)	180		180
C	Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	420		420
C	Length of lift rods:	(L)	from 695 to 870		775
	Height of lower hitch points relative to the rear wheel axis:				
C	Length of lift rods:	(L)	695	870	775
C	Linkage distance of lift rods:	(D)	420		
C	Lowest position:	(h)	366	797	570
C	Highest position:	(H)	303	-81	122
C	Height above ground of lower hitch points when locked in transport position(*)		689	1073	892

(*) *Assuming a dynamic radius index of 770 mm (in conformity with ISO 4251-1:2005)*

1.7 Swinging drawbar

C	- Type:	adjustable in height and length;
	- Height above ground	
C	- Maximum:	615 mm;
C	- Minimum:	515 mm ;
C	- Type of adjustment:	inverting drawbar;
C	- Distance of hitch point from rear-wheel axis, horizontally:	770, 820 mm;
	- Distance of hitch point from power take-off shaft end	
C	- Vertically:	155, 255 mm;
C	- Horizontally:	365, 415 mm;
	- Lateral adjustment (centre of clevis)	
C	- Right/left hand side:	50, 100 mm;
C	- Distance of pivot point from rear-wheel axis, horizontally:	115 mm;
C	- Diameter of drawbar pinhole:	33 mm;
D	- Max. vertical permissible load:	10.8 kN.

1.8 Trailer hitch

C	- Type:	adjustable in height;
C	- Hole diameter:	28 mm;
C	- Height above ground:	centre of clevis adjustable in 4 steps to 705, 600, 540, 470 mm;
C	- Distance of hitch point from rear wheel axis	
	- Horizontally:	495 mm;
	- Distance of hitch point from power take-off shaft end	
C	- Vertically:	below 65, 170, 230, 300 mm; above, none;
C	- Horizontally:	90 mm;
D	- Maximum vertical permissible load:	15 kN.

1.9	**Holed drawbar**	(optional, not fitted on tested tractor)
D	- Number of holes:	9;
D	- Distance between holes:	100 mm;
D	- Hole diameter:	33 mm;
D	- Thickness x width of the drawbar:	30 x 80 mm;
	- Height above ground,	
D	- Min.:	- 27 mm;
D	- Max.:	1073 mm;
D	- Horizontal distance behind power take-off shaft end:	565 mm.
1.10	**Steering**	
D	- Make/Model/Type:	DANFOSS / OSPC 80 OR / hydrostatic steering, acting on front wheels.
	- Method of operation	
D	- Pump:	hydraulic gear pump;
D	- Rams:	2 simple acting directly on front axle;
D	- Working pressure:	15 MPa.
1.11	**Brakes**	
1.11.1	Service brake	
D	- Make/Model/Type:	SAME DEUTZ-FAHR ITALIA / E85.54 / oil-immersed disc, total 4 discs (one for wheel), mounted on front and rear differential half shafts before the final drive, disc 290 mm diameter;
C	- Method of operation:	hydraulically actuated with 2 pedals;
C	- Trailer braking take-off:	not available.
1.11.2	Parking brake	
D	- Type:	fully independent of service brake, 3 oil bath disc mounted on the pinion shaft in the gear box;
C	- Method of operation:	mechanical by hand lever.

1.12 Wheels

- Number

C - Front: 2, steering and driving;
C - Rear: 2, driving;
C - Wheelbase: 2297 mm.

-Track width adjustment:

	Minimum	Maximum	Adjustment method
	mm	mm	
D Front	1500	2000	changing the position of the rims with respect to the disc
D Rear	1500	2000	

1.13 Protective structure

C - Make/Model/Type: SAME DEUTZ-FAHR ITALIA / T 45 / frame;
C - Manufacturer's name and address: SAME DEUTZ-FAHR ITALIA S.p.A., Viale F. Cassani 15, 24047 Treviglio BG, Italy.

- Protective device

C - Cab/frame/rollguard/other: frame;
C - Tiltable/not tiltable: not tiltable.

- OECD approval

C	Model	T 45	T 62 B
C	Approval number	CSD 0914/30	CSS 0367/33
C	Date of approval	20 February 1991	8 March 1996
C	No. of minor modification certificate	IIA 774 MI 2006	IIA 776 MI 2006

1.14 Seat

1.14.1 Driver's seat

C - Make/Model/Type: KAB / P2 XL2 / upholstered seat with back rest;
C - Seat and steering wheel reversible: no;
C - Type of suspension: adjustable spring;
C - Type of damping: shock absorber;

- Range of adjustment

C - Longitudinally 150 mm;
C - Vertically not adjustable;
C - Safety belt: yes;
Type : manually adjusting lap belt only.

1.14.2 Optional driver's seats

D	- Make/Model/Type:	KAB / P2 XH2 / upholstered seat with back rest.
D	- Seat and steering wheel reversible:	no;
D	- Type of suspension:	adjustable spring;
D	- Type of damping:	shock absorber;
	- Range of adjustment	
D	- Longitudinally	150 mm;
D	- Vertically	60 mm;
D	- Safety belt:	yes;
	Type :	manually adjusting lap belt only.

1.14.3 Passenger's seat: none.

1.15 Lighting

		Height above ground of centre	Size	Distance from out side edge of lights to median plane of tractor
		mm	mm	mm
C	Headlights	1355	140 x 85	195
C	Side lights	1635	90 x 45	830
C	Rear lights	1590	180 x 35	830
C	Reflectors	1535	100 x 53	770
		820	∅ 80	445

2. TEST CONDITIONS

2.1 Overall dimensions

	Length	Width		Height at top of	
		minimum	maximum	protective structure	exhaust pipe
	mm	mm	mm	mm	mm
Ballasted	4410	1960	2460	2440	2700
Unballasted	4080	1960	2460	2440	2700

2.2 Ground clearance: 500 mm (unballasted tractor);
Clearance-limiting part: gear box.

2.3 Tractor mass (with full fuel tank, frame).

	Ballasted		Unballasted	
	Without driver	With driver	Without driver	With driver
	kg	kg	kg	kg
Front	1630	1655	1380	1405
Rear	1915	1965	1800	1850
Total	3545	3620	3180	3255

2.4 Ballast

	Weights		Water
	Number	Total mass	
		kg	kg
Front	5	165	-
Rear wheels	2 + 2	200	-

2.5 Track specifications Not applicable.

2.6 Tyres and track width specifications

	Front	Rear
Tyres		
- make	CONTINENTAL	CONTINENTAL
- model	CONTRACT AC85	CONTRACT AC85
- dimensions	16.9R24	18.4R34
- ply rating	-	-
- load index/speed index	137 A8	147 A8
- type	radial	radial
- maximum load (tyre manufacturer's)	20.79 kN	30.16 kN
- maximum load (tractor manufacturer's)	22.60 kN	33.83 kN
- inflation pressure (tyre manufacturer's)	160 kPa	160 kPa
- dynamic radius index	620 mm	770 mm
Chosen track width	1735 mm	1700 mm

2.7 Fuel

- Type: AGIP DIESEL, DIN 51601;
(in accordance with the national standard)
- Density at 15 °C: 0.833 g/cm^3.

2.8 Oils and lubricants

2.8.1 Capacity and change interval

	Capacity	Oil change	Filter change
	dm^3	h	h
Engine	9.2	150	300
Gear box with rear axle and final drives, hydraulic system, steering	45	1200	2400(*)
Front axle/final drives	6/3	1200	-
Brakes	max level	1200	2400

(*) Or when the warning lamp is lighted

2.8.2 Specifications

	Recommended	Used during test
Engine oil		
Type	AKROS TURBO	AKROS TURBO
Viscosity	12.5 cSt	12.5 cSt
Classification	API CE MIL	API CE MIL
Transmission oil used in gear box, front/rear axle, final drives and steering		
Type	AKROS MULTI FCT	AKROS MULTI FCT
Viscosity	11.5 cSt	11.5 cSt
Classification	API GL 4	API GL 4
Hydraulic fluid		
Type	AKROS MULTI FCT	AKROS MULTI FCT
Viscosity	11.5 cSt	11.5 cSt
Classification	API GL 4	API GL 4
Braking oil		
Type	AKROS MATIC	AKROS MATIC
Viscosity	6.7 cSt	6.7 cSt
Classification	API GL 4	API GL 4

2.8.3 Grease

- Type: AKROS GREASE T2;
- Number of lubrication points: 18.

3. TESTS RESULTS

3.1 Main power take-off

- Date and location of tests: 23 May 2007, ISMA, Treviglio BG, Italy;
- Type of dynamometer bench: eddy-current, ZÖLLNER B500.

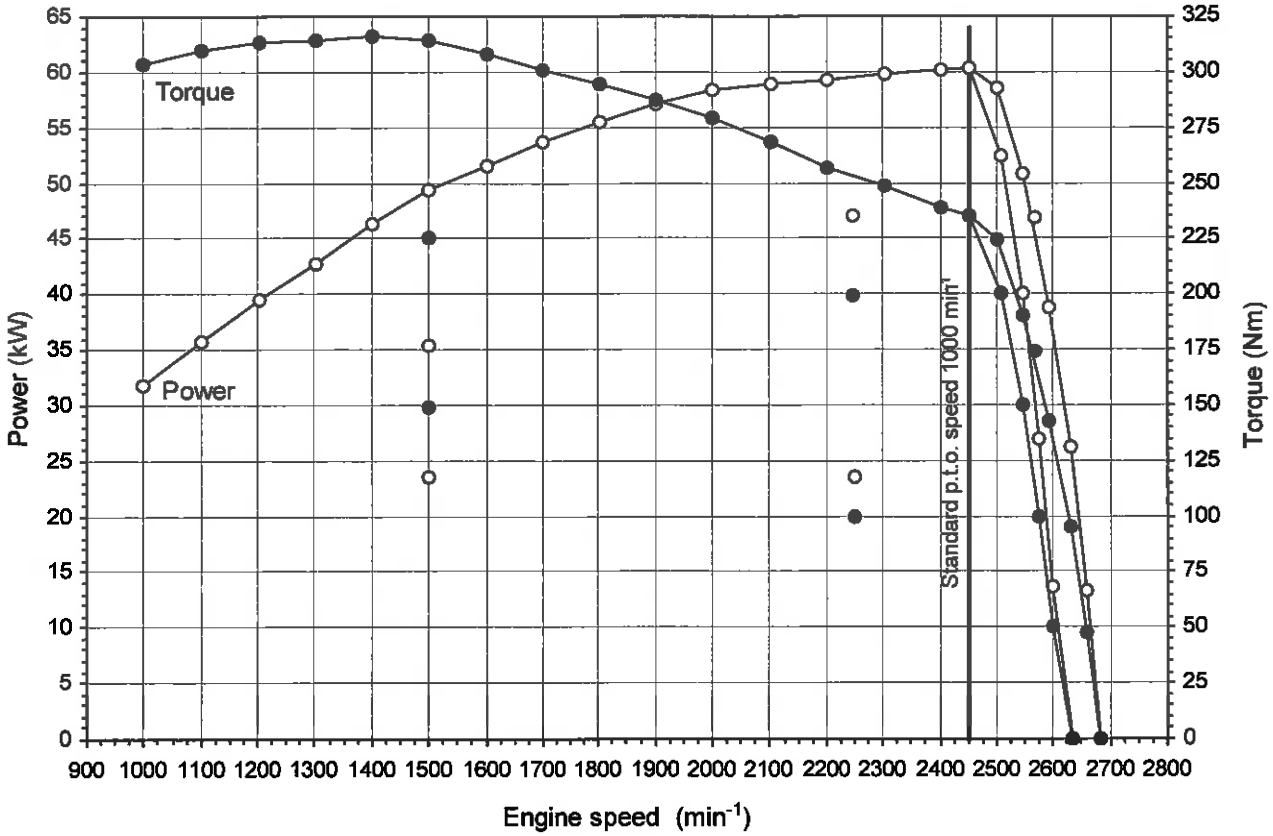
Power	Speed			Fuel consumption			Specific energy
	Engine	P.T.O.	Fan	Hourly		Specific	
kW	min^{-1}			kg/h	l/h	g/kWh	kWh/l
3.1.1 MAXIMUM POWER - ONE-HOUR TEST							
60.3	2450	1000	3332	15.69	18.84	260	3.20
3.1.2 POWER AT RATED ENGINE SPEED							
58.6	2500	1020	3400	15.80	18.97	270	3.09
3.1.3 STANDARD POWER TAKE-OFF SPEED (1000 ± 25 min^{-1})							
60.3	2450	1000	3332	15.69	18.84	260	3.20
3.1.4 PART LOADS							
3.1.4.1 The torque corresponding to maximum power at rated engine speed							
58.6	2500	1020	3400	15.80	18.97	270	3.09
3.1.4.2 85% of torque obtained in 3.1.4.1							
50.8	2547	1040	3464	13.89	16.67	273	3.05
3.1.4.3 75% of torque defined in 3.1.4.2							
38.8	2591	1058	3524	11.54	13.85	297	2.80
3.1.4.4 5 % of torque defined in 3.1.4.2							
26.2	2631	1074	3578	9.13	10.96	348	2.39
3.1.4.5 25% of torque defined in 3.1.4.2							
13.3	2659	1085	3617	6.80	8.16	511	1.63
3.1.4.6 unloaded							
0	2682	1095	3648	4.82	5.79	-	-

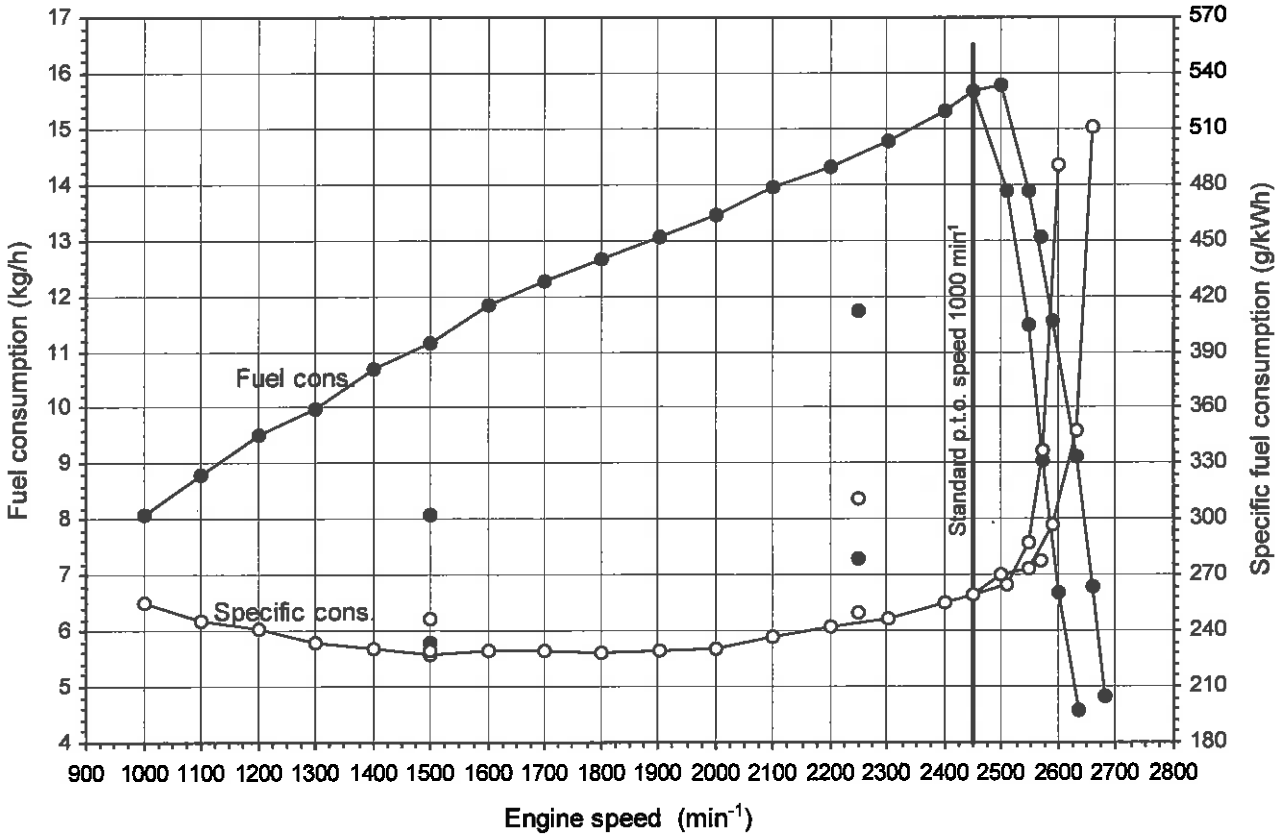
Power	Speed			Fuel consumption			Specific energy
	Engine	P.T.O.	Fan	Hourly		Specific	
kW	min^{-1}			kg/h	l/h	g/kWh	kWh/l
3.1.5 PART LOADS AT STANDARD POWER TAKE-OFF SPEED (1000 ± 25 min^{-1}) 3.1.5.1 The torque corresponding to maximum power available							
60.3	2450	1000	3332	15.69	18.84	260	3.20
3.1.5.2 85% of torque obtained in 3.1.5.1							
52.4	2507	1023	3410	13.88	16.66	265	3.15
3.1.5.3 75% of torque defined in 3.1.5.2							
40.0	2547	1040	3464	11.48	13.78	287	2.90
3.1.5.4 50% of torque defined in 3.1.5.2							
26.9	2574	1050	3500	9.06	10.88	337	2.47
3.1.5.5 25% of torque defined in 3.1.5.2							
13.6	2599	1061	3534	6.68	8.02	491	1.70
3.1.5.6 unloaded							
0	2635	1076	3584	4.57	5.49	-	-

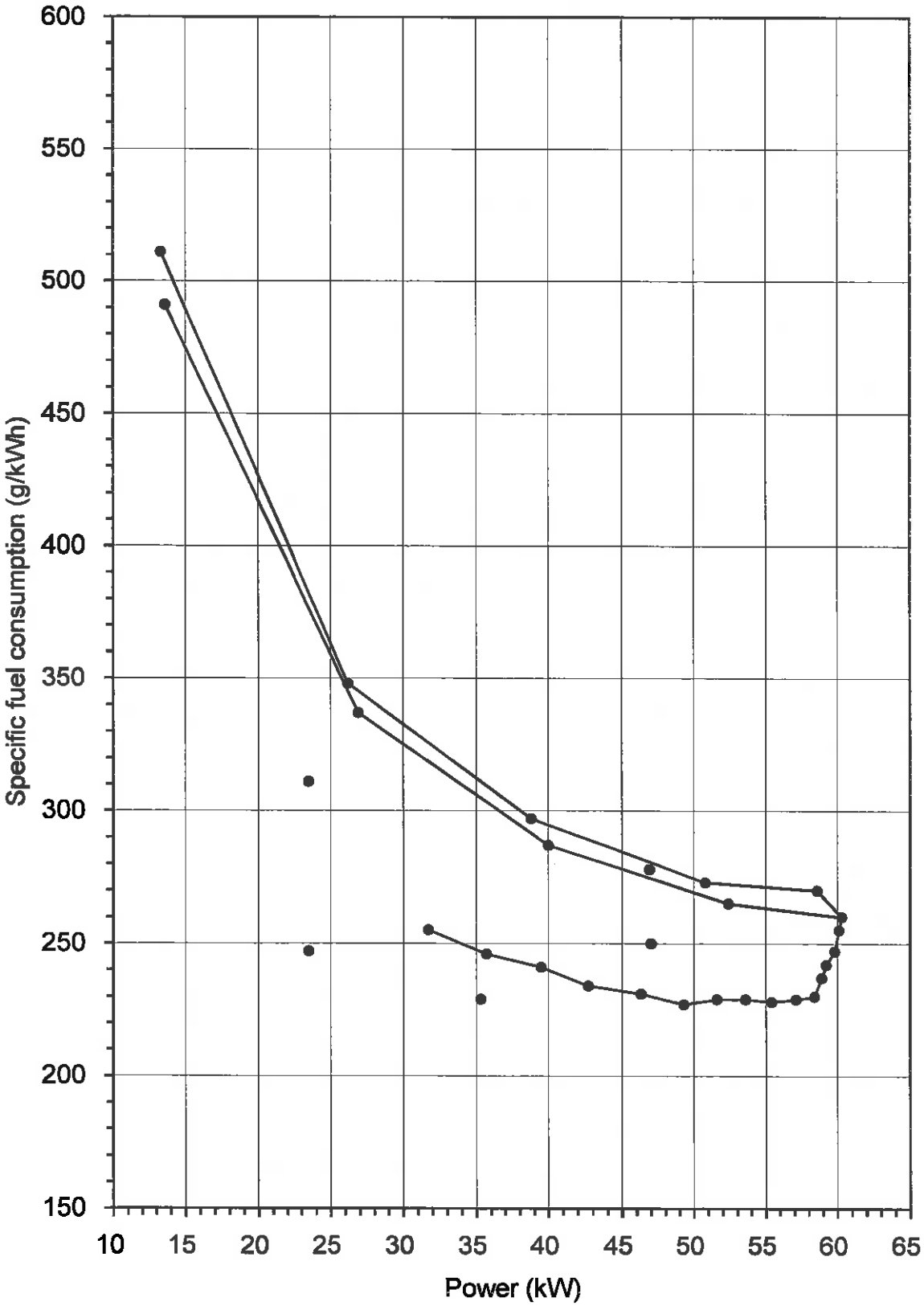
Power	Speed			Fuel consumption			Specific energy
	Engine	P.T.O.	Fan	Hourly		Specific	
kW	min^{-1}			kg/h	l/h	g/kWh	kWh/l
3.1.6 PART LOADS AT DIFFERENT ENGINE SPEED							
3.1.6.1 maximum power at rated engine speed							
58.6	2500	1020	3400	15.80	18.97	270	3.09
3.1.6.2 80% of power obtained in 3.1.6.1 at maximum speed setting							
46.9	2568	1048	3492	13.05	15.67	278	2.99
3.1.6.3 80% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
47.0	2248	918	3057	11.73	14.08	250	3.34
3.1.6.4 40% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
23.5	2251	919	3061	7.31	8.78	311	2.68
3.1.6.5 60% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
35.3	1500	612	2040	8.10	9.72	229	3.63
3.1.6.6 40% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
23.5	1501	613	2041	5.80	6.96	247	3.38

- No load maximum engine speed: 2682 min^{-1};
- Equivalent flywheel torque at rated engine speed: 224.14 Nm;
- Equivalent flywheel torque at 1-hour test: 235.10 Nm;
- Maximum equivalent flywheel torque: 315.93 Nm at 1401 min^{-1} of the engine.

Mean atmospheric conditions:	
Temperature	26 °C
Pressure	100.1 kPa
Relative humidity	66 %
Maximum temperatures:	
Coolant	85 °C
Engine oil	118 °C
Fuel	28 °C
Engine air intake	29 °C


Torque
Power
Standard p.t.o. speed 1000 min¹
Power (kW)
Torque (Nm)
Engine speed (min⁻¹)


Fuel cons.
Specific cons.
Standard p.t.o. speed 1000 min¹
Fuel consumption (kg/h)
Specific fuel consumption (g/kWh)
Engine speed (min⁻¹)


Specific fuel consumption (g/kWh)
600
550
500
450
400
350
300
250
200
150
10
15
20
25
30
35
40
45
50
55
60
65
Power (kW)

3.2 Hydraulic power and lifting force

- Date of tests: 24 May 2007.

3.2.1 *Hydraulic power test*

3.2.1.1 Hydraulic fluid data

- Hydraulic fluid type: AKROS MULTI FCT;
- Viscosity index (ISO 3448:1992): 160;
- Viscosity at 65°C: 29 mm^2/s.

3.2.1.2 Test results

	Pressure	Reservoir oil Temperature		Engine Speed	Flow rate	Power
		Min.	Max.			
	MPa	°C	°C	min^{-1}	l/min	kW
Rated engine speed				-		
3.2.1.2.1 Maximum pressure with relief valve open as measured at the coupler Pump stalled: No	18.0	63	65	2679		
3.2.1.2.2 Flow rate corresponding to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting and corresponding hydraulic power	16.2	64		2676	28.9	7.80
3.2.1.2.3 Maximum available flow and maximum power from one coupler pair	1.2 14.8	63 62		2678 2676	44.2 41.1	- 10.11
3.2.1.2.4 Maximum available flow and maximum power from coupler pairs operating simultaneously	Simultaneous operation not available					

3.2.2 *Power lift test*

Linkage setting for test - see paragraph 1.6

		At the hitch point	On the frame
Height of lower hitch point above ground in down position	mm	200	138
Vertical movement			
without lifting forces	mm	692	850
with lifting forces	mm	646	774
Maximum corrected force exerted through full range	kN	20.84	18.40
Corresponding pressure of hydraulic fluid	MPa	16.2	16.2
Moment about rear-wheel axis	kNm	20.63	29.44
Maximum tilt angle of mast from vertical	degrees	-	9 (*)

Lifting heights relative to the horizontal plane including the lower link pivot points (mm)											
	-462	-400	-300	-200	-100	0	+100	+200	+246	+300	+312
Lifting forces (the values of force measured shall be corrected to correspond to a hydraulic pressure equivalent to 90% of the actual relief valve setting of the hydraulic lift system):											
at the hitch points (kN), corrected to 16.2 MPa											
	-	20.84	23.09	25.24	26.51	27.21	28.02	29.30	28.92	-	-
at the frame (kN), corrected to 16.2 MPa											
	18.40	19.25	20.57	21.46	21.65	21.34	20.98	20.75	-	20.29	20.25

(*) value obtained choosing the middle pivot point position for the (d) setting as reported in the table of paragraph 1.6; a value of 12° can be reached selecting the lowest pivot point among the three available.

3.3 Drawbar power and fuel consumption

- Date of tests: 28, 29, 30, and 31 May 2007;
- Type of track: concrete.

	Height of drawbar above ground mm	Tyre inflation pressure	
		Front kPa	Rear kPa
Unballasted	539	160	160
Ballasted	537	160	160

Gear and range	Power	Drawbar pull	Speed	Engine speed	Fan speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperatures			Atmospheric conditions		
									Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
	kW	kN	km/h	min^{-1}	min^{-1}	%	g/kWh	kWh/l	°C	°C	°C	°C	%	kPa
3.3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor)														
5C	10.6	28.79	1.33	2661	3619	15.1	633	1.32	28	84	104	25	67	100.3
2S	13.0	28.88	1.62	2653	3608	14.7	569	1.46	28	84	104	25	67	100.3
3S	16.3	27.51	2.14	2644	3596	14.9	497	1.68	28	84	104	25	67	100.3
4S	20.0	25.71	2.80	2636	3585	15.2	439	1.90	28	84	106	26	67	100.3
1N	23.6	24.76	3.43	2626	3571	14.9	403	2.07	26	84	106	26	66	100.3
5S	25.1	24.34	3.71	2622	3566	14.9	387	2.15	26	83	106	26	66	100.2
2N	32.7	23.45	5.02	2599	3535	15.1	340	2.45	27	83	107	26	66	100.3
3N	43.0	22.76	6.81	2541	3456	11.5*	326	2.55	27	83	107	26	66	100.3
4N	52.5	20.38	9.27	2450	3332	5.4	301	2.77	27	84	107	27	66	100.3
1F	53.2	17.43	11.00	2450	3332	4.2	297	2.81	27	84	108	27	65	100.2
5N	52.4	14.96	12.61	2452	3335	3.3	301	2.76	27	84	109	27	66	100.3
2F	52.1	11.33	16.57	2450	3332	2.0	302	2.76	27	84	109	27	65	100.2
3F	50.9	8.23	22.28	2448	3329	1.1	309	2.69	27	84	110	27	65	100.2

* Not possible to achieve steady condition at 15% slip

Gear and range	Power	Drawbar pull	Speed	Engine speed	Fan speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperatures			Atmospheric conditions		
									Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
	kW	kN	km/h	min^{-1}	min^{-1}	%	g/kWh	kWh/l	°C	°C	°C	°C	%	kPa
3.3.2 FUEL CONSUMPTION 3.3.2.1 In selected gear nearest to 7.5 km/h, at rated engine speed														
3N	43.0	22.76	6.81	2541*	3456	11.5	326	2.55	28	84	109	27	65	100.2
3.3.2.1.1 75% of pull corresponding to maximum power at rated engine speed														
3N	35.8	17.11	7.53	2595	3529	4.2	317	2.63	28	81	105	27	65	100.2
3.3.2.1.2 50% of pull corresponding to maximum power at rated engine speed														
3N	24.6	11.41	7.78	2631	3578	2.3	373	2.24	27	80	105	27	65	100.2
3.3.2.1.3. Highest gear setting at reduced engine speed able to achieve both 3.3.2.1.1 and 3.3.2.1.2 ; same pull and travelling speed as in 3.3.2.1.1														
4N	36.1	17.10	7.60	1987	2702	4.2	274	3.04	27	80	104	27	65	100.3
3.3.2.1.4. Same gear selection as 3.3.2.1.3 at reduced engine speed; same pull and travelling speed as in 3.3.2.1.2														
4N	24.7	11.42	7.77	1989	2705	2.4	324	2.57	28	80	105	27	65	100.3
3.3.2.2 In selected gear setting nearest between 7 km/h and 10 km/h at rated engine speed														
1F	52.5	16.91	11.19	2500	3400	3.9	293	2.85	29	82	109	27	65	100.2
3.3.2.2.1 75% of pull corresponding to maximum power at rated engine speed														
1F	41.3	12.67	11.73	2585	3516	2.5	288	2.89	29	81	109	27	65	100.3
3.3.2.2.2 50% of pull corresponding to maximum power at rated engine speed														
1F	28.3	8.44	12.05	2626	3571	1.4	336	2.48	28	82	110	27	66	100.3
3.3.2.2.3. Highest gear setting at reduced engine speed able to achieve both 3.3.2.2.1 and 3.3.2.2.2 ; same pull and travelling speed as in 3.3.2.2.1														
5N	41.1	12.65	11.7	2247	3056	2.6	259	3.21	28	82	111	27	65	100.3
3.3.2.2.4. Same gear selection as 3.3.2.1.3 at reduced engine speed; same pull and travelling speed as in 3.3.2.2.2														
5N	28.2	8.46	12.02	2296	3123	1.5	292	2.85	29	82	111	27	65	100.3

* At the wheels slip limit the rated engine speed is not achievable; the data reported are the nearest to that target.

Gear and range	Power	Drawbar pull	Speed	Engine speed	Fan speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperatures			Atmospheric conditions		
									Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
	kW	kN	km/h	min^{-1}	min^{-1}	%	g/kWh	kWh/l	°C	°C	°C	°C	%	kPa
3.3.3 OPTIONAL MAXIMUM POWER IN TESTED GEARS (ballasted tractor)														
1C	3.6	33.20	0.39	2676	3639	15.0	1481	0.56	26	83	109	26	64	100.2
2C	5.0	31.08	0.58	2673	3635	15.0	1138	0.73	27	83	109	26	64	100.2
3C	6.7	30.74	0.79	2666	3626	14.9	932	0.89	27	83	109	27	64	100.2
4C	8.8	31.08	1.02	2661	3619	15.0	761	1.09	27	83	109	27	64	100.2
1S	9.0	29.80	1.09	2660	3618	15.0	756	1.10	27	83	110	27	63	100.2
5C	10.8	29.22	1.33	2656	3612	14.9	659	1.26	27	82	110	27	63	100.2
2S	13.1	29.50	1.60	2651	3605	15.0	574	1.45	27	82	110	27	63	100.2
3S	16.5	27.95	2.13	2643	3594	14.8	495	1.68	28	83	110	27	63	100.2
4S	20.4	26.13	2.81	2636	3585	15.0	430	1.94	28	83	111	27	63	100.2
1N	24.3	25.28	3.46	2626	3571	14.4	389	2.14	28	83	111	27	63	100.2
5S	26.0	25.28	3.71	2620	3563	15.0	376	2.21	28	84	111	27	63	100.2
2N	32.1	22.02	5.25	2598	3533	12.0*	347	2.40	27	83	112	26	63	100.1
3N	42.8	22.45	6.87	2541	3456	11.5*	332	2.51	27	83	112	27	63	100.1
4N	52.3	20.15	9.35	2455	3339	4.9	302	2.76	27	83	112	26	63	100.2
1F	53.3	17.46	11.00	2452	3335	3.8	296	2.81	27	83	111	26	63	100.2
5N	52.6	15.00	12.62	2448	3329	2.9	300	2.78	27	83	111	26	63	100.2
3.3.4 FIVE HOUR TESTS														
3.3.4.1 FIVE HOUR TEST at 75% of pull at maximum power														
3N	36.1	16.84	7.72	2602	3539	2.7	303	2.75	27	84	113	27	62	100.3
3.3.4.2 FIVE HOUR TEST at pull corresponding to 15% wheelslip. with additional ballast 80 kg														
1F	53.9	17.46	11.11	2448	3329	3.2	293	2.84	27	85	113	27	62	100.1

* Not possible to achieve steady condition at 15% slip

Oil consumption during ten hours duration of test 3.3.4.1 and 3.3.4.2: 43 g/h.

4. OPTIONAL TEST RESULTS

4.1 Turning area and turning circle

	Without brakes	
	Right-hand	Left-hand
	m	m
Radius of turning area	5.48	5.50
Radius of turning circle	5.25	5.27

4.2 Location of centre of gravity

Height above ground: 875 mm
Distance from the vertical plane containing the axis of the rear-wheels: 991 mm
Distance from the median longitudinal plane to the left of the tractor: 10 mm
Angle of suspension of the tractor: 20 °

4.3 Braking

Date of tests: 5 June 2007.

4.3.1 *Cold service braking device test*

	Speed before application of brakes	Braking device control force	Mean deceleration	Minimum stopping distance without locking the wheels
	km/h	kN	m/s^2	m
Ballasted tractor	42.8	0.10	1.21	58.4
	42.4	0.14	1.76	39.4
	42.0	0.19	2.43	28.0
	42.6	0.25	3.15	22.2
	42.4	0.27	3.37	20.6
Unballasted tractor	42.8	0.09	1.44	49.0
	42.8	0.15	2.14	33.0
	42.2	0.18	2.53	27.2
	42.8	0.24	3.19	22.2
	42.8	0.28	3.51	20.1

4.3.1 *Cold service braking device test* (continued)

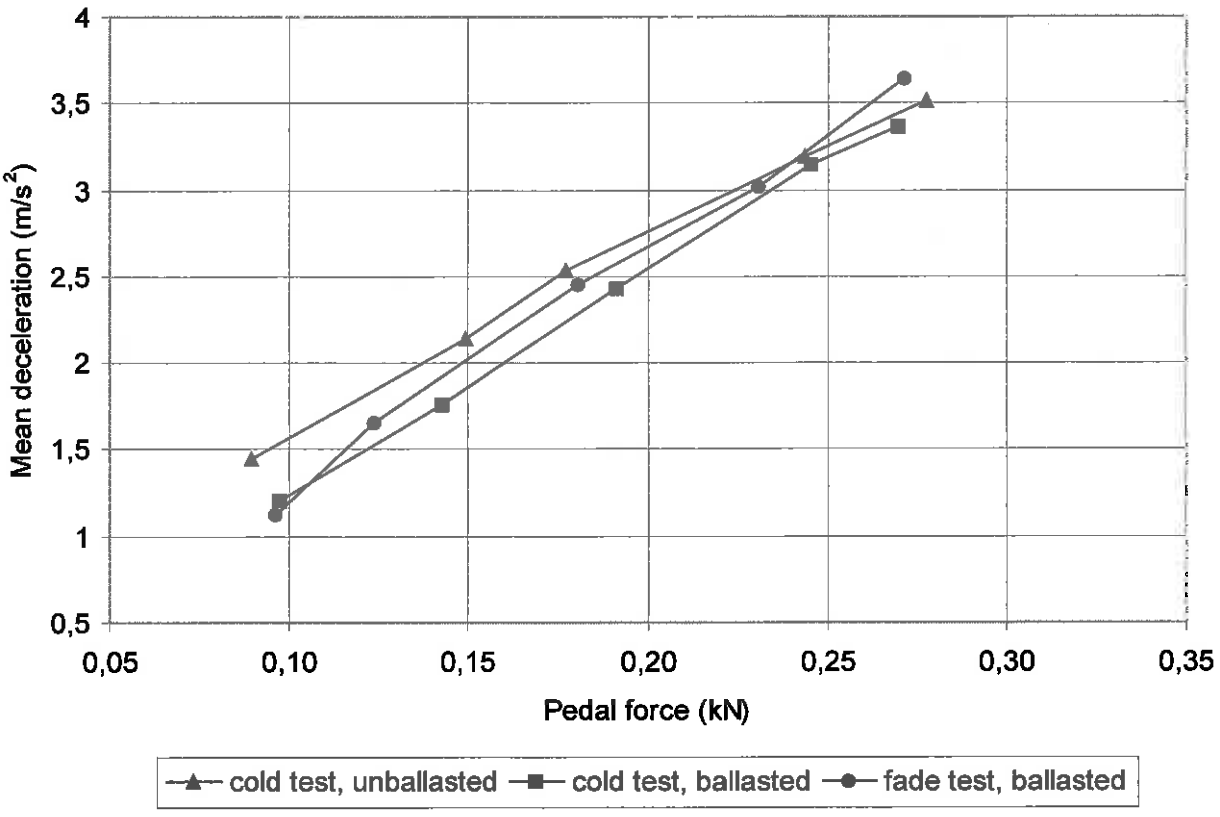
- Maximum deviation of tractor from its original course: none;
- Abnormal vibration: none;

4.3.2 *Fade test*

	Speed before application of brakes	Braking device control force	Mean deceleration	Minimum stopping distance without locking the wheels
	km/h	kN	m/s^2	m
Ballasted tractor	42.7	0.10	1.12	62.8
	42.8	0.12	1.66	42.6
	42.3	0.18	2.45	28.2
	43.1	0.23	3.02	23.7
	42.2	0.27	3.64	18.9

- Maximum deviation of tractor from its original course: none;
- Abnormal vibration: none;
- Brake heating method: heated by towing of the tractor for 1 km.

Service brake test



4.3.3 *Parking brake device test*

	Ballasted tractor on 18% slope	
	Uphill	Downhill
	kN	kN
Braking device control force	0.12	0.12

4.4 Measurement of external noise level

- Date of test: 5 June 2007;
- Type of sound level meter: BRÜEL & KJÆR model 2231;
- Type of track: concrete.

Gear	Travelling speed before acceleration	Sound level
	km/h	dB(A)
5F	32.2	85.8

5. REPAIRS: none.

6. REMARKS: none.

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