ISTITUTO SPERIMENTALE PER
LA MECCANIZZAZIONE AGRICOLA
SEZIONE DI TREVIGLIO

CASE INTERNATIONAL 2140 V "2WD"
TEST no. 050.

O.E.C.D. no. 1279

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



Report test of: CASE INTERNATIONAL 2140 V "2WD"

Submitted for test by: JI CASE GmbH
Industriestr. 39-40, 4040 Neuss
GERMANY

Date of O.E.C.D. approval: 11.09.1990
Period of test: March 1990

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

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All stated dimensions and tests referred to tyre sizes 6.50/16 (6 ply) at front and 13.6/28 (6 ply) at rear, as well as to track widths 980 mm at front and 848 mm at rear.

- Tractor manufacturer
. Name: JI CASE GmbH;
. Address: Industriestr. 39-40, 4040 Neuss GERMANY;
- Location of tractor assembly: CARRARO S.p.A. ROVIGO ITALY;
- Submitted for test by: the manufacturer;
- Selected by: the manufacturer with the agreement of ISMA;
- Place of running in: Campodarsego (PD) - ITALY;
- Duration of running: 50 hours.
- Location of test: I.S.M.A. Via Milano, 43 - Treviglio (BG) ITALY

I - SPECIFICATION OF TRACTOR

TRACTOR

- Make: CASE INTERNATIONAL;
- Model: 2140 V "2WD";
- Type: Wheeled tractor, unit construction, rear whells drive tractor;
- Number of driving wheels: 2;
- Serial number: CGC 58302527, Code: 583 ABAGAE;
- First serial number: CGC 58300001, Code: 583 ABAGAE.

ENGINE

- Make: SAME;
- Model: 1000.4A/65;
- Type: aircooled 4 stroke diesel engine direct injection;
- Serial number: 18707.

Cylinders

- Number/disposition: 4, vertical in line;
- Bore/stroke: 105/115,5 mm;
- Capacity: 4000 cm^3;
- Compression ratio: 17.1 / 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 160/00;
- Capacity of fuel tank: 60 dm^3 ;
- Make, model and type of injection pump: BOSCH PFR 1K 90A 503, immersed pump, one per cylinder, without serial number, in line injection pump;
- Manufacturer's production setting of injection pump:
  .flow rate: 45+/-2 mm^3/stroke at rated speed and full load corresponding to 12.81 dm^3/h;
  .timing: 18+/-0.5 before TDC;
- Make, model and type of injectors: BOSCH KBE 58 S 4/4;
- Injectors pressure: 18 +/-1 MPa.

Governor

- Make: SAME;
- Model: 065.1652.4;
- Type: mechanical variable speed;
- Governor range of engine speed: from 675 to 2523 rev/min.;
- Rated engine speed: 2350 rev/min.

Air cleaner

- Main filter
  . make: VF VIRGIS;
  . model: 1967771C1;
  . type: dry paper element filter;
  . location: behind of engine;
- Maintenance indicator: with the warning lamp on the dashboard.

Lubrication system

- Type of feed pump: forced feed from gear pump;
- Total oil capacity including filter: 9.2 dm^3 ;
- Oil change period: 150 hrs;
- Type of filter: FIAMM FT 4803 IN;
- Number: 1;
- Filter change period: 300 hrs;
- Oil specifications: see page 18.

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: 250 mm;
- Type of temperature control: none.
- Warming indicator: with the warning lamp on the dashboard.

Starting system

- Make: BOSCH;
- Model: JF R 12 V;
- Type: electromagnetic engagement;
- Starter motor power rating: 3 kW;
- Safety device: preventig engine from starting in gear;
- Starting system for low temperatures: none.

Electrical equipement

- Voltage: 12 V;
- Generator:
  . make: BOSCH;
  . model: K1 R 14V 55A;
  . type: alternator;
  .power: 630 W;
- Battery: 1 lead acid;
  .capacity: 100 Ah at 20 hours.

Exhaust system

- Make: IMA SAF;
- Model: 1967894C1;
- Type: at chamber reflection absorption;
- Location: on the left hand side of engine cowling, horizontal position;
- Height of outlet above ground: 500 mm.

TRANSMISSION

Clutch: utilized only for travelling of tractor.

- Make: OMG;
- Model: 121947;
- Type: double disk dry clutch;
- Number of plates: 2;
- Plates diameter: 280 mm;
- Control system: by pedal for transmission, by lever for p.t.o..

Gear box

- Make: CARRARO;
- Model: 121947;
- Type: mechanical no-syncromesh speed change gear;
- Arrangement: four speeds forward with three ranges of speed and one reverse group;
- Number of speeds : 12 forward and 12 reverse;
- Available options: 8 forward and 8 reverse.

Rear axle and final drives

- Make: CARRARO;
- Model: 120698/1;
- Type: bevel gear differential and epicyclic reduction final drives.

Differential lock

- Make: CARRARO;
- Model: 120698/1;
- Type: mechanical;
- Control system: engaged or disengaged by pedal.

Front axle and final drives

- Make: CARRARO;
- Model: 124605;
- Type: not propelled;

Differential lock

- none.

Transmission lubrication

- Gear box, rear axle, final drives, power lift and hydraulic system (in common);
  . total capacity including filter: 36 dm³;
  . change period: 1000 hrs;
  . filter change period: 1000 hrs;

- Recommended oil: see page 18.

Total rations and speeds

Gear	Group	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at a rated engine speed of 2350 rev/min (*) (km/h)
	FORWARD		
1	S	1140.223	0.57
2	S	769.196	0.70
3	S	526.198	1.03
4	S	374.442	1.44
1	N	244.283	2.21
2	N	164.982	3.27
3	N	112.753	4.79
4	N	80.238	6.73
1	F	56.375	9.58
2	F	38.071	14.19
3	F	26.019	20.76
4	F	18.516	29.18
	REVERSE		
1	S	1359.167	0.40
2	S	917.696	0.59
3	S	627.336	0.86
4	S	446.429	1.21
1	N	291.274	1.85
2	N	196.702	2.75
3	N	134.432	4.02
4	N	95.668	5.65
1	F	67.216	8.04
2	F	45.393	11.90
3	F	31.023	17.42
4	F	22.077	24.47

(*) Calculated with a tyre dynamic radius index of 610 mm.
ISO 4251/1 - 1984)

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 multiplate wet clutch independent from travel clutch; ISO Standard 500-1979;
- Number of shafts: 1;
- Method of changing of speed: speed selection by external hand lever;
- Location : at rear of tractor;

	P.T.O.
- Height above ground (with tyre size 13.6/28) ..	610 mm
- Distance from the median plane of the tractor ..	0 mm
- Distance behind rear axle.....	387 mm
- Direction of rotation (viewed facing driving end):	clockwise

1) 540 rev/min

- Dimension: ISO Standard 500-1979 type 1 (35 mm - 6 splines);
- PTO speed at rated engine speed .....: 600 rev/min;
- Engine speed at standard power take-off speed: 2115 rev/min;
- Ratio of rotation speeds
  (engine speed/pto speed): 3.916666;
- Maximum power and torque transmissible: 55 kW and 97 daNm.

2) 1000 rev/min

- Dimension: ISO Standard 500-1979 type 2 (35 mm - 21 splines);
- PTO speed at rated engine speed .....: 1116 rev/min;
- Engine speed at standard power take-off speed: 2105 rev/min;
- Ratio of rotation speeds
  (engine speed/pto speed): 2.105734;
- Maximum power and torque transmissible: 55 kW and 52 daNm.

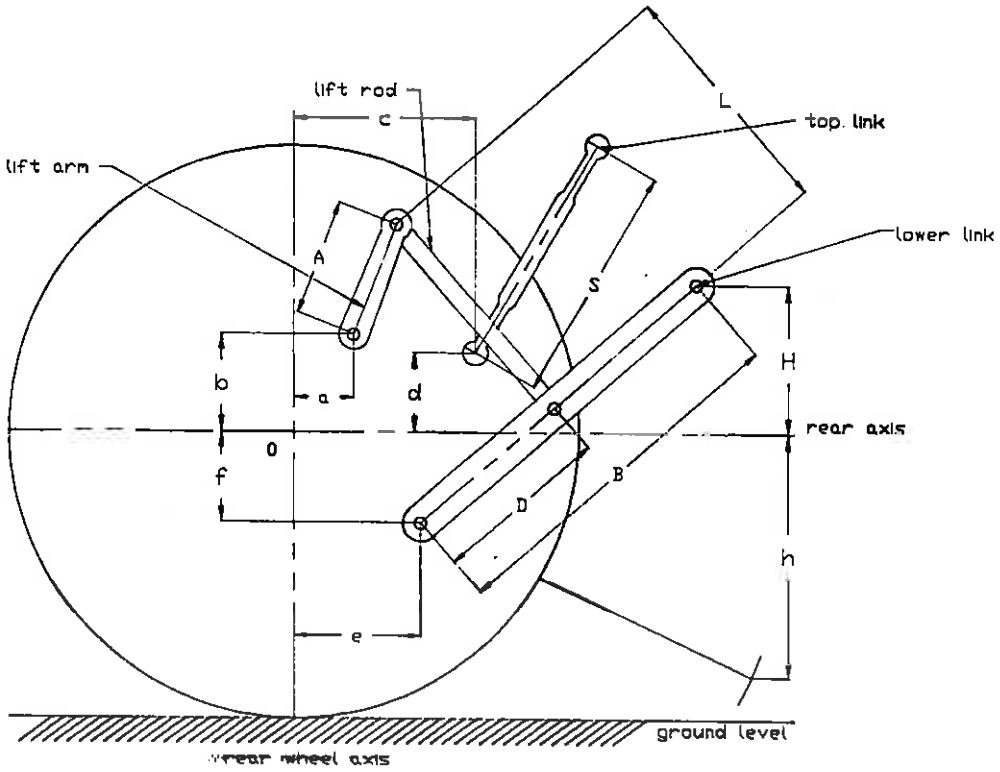
Power take-off proportional to ground speed : none.

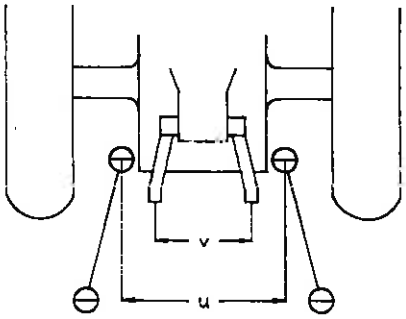
POWER LIFT

- Make: MITA;
- Model: M 60 SRF;
- Type: load sensing;
- Type of hydraulic system: open centre system;
- Type and number of cylinders: 1 internal hydraulic jack at single effect;
- Type of lock for transport: mechanical, with screwed tie rods that lock the lower links;
- Relief valve pressure setting: 18 +/- 1 MPa;
- Opening pressure of anti-shock valve: 20 MPa;
- Lift pump type: hydraulic rotary pump, driven by engine shaft;
- Transmission between pump and engine: mechanical;
- Type and number of filters: 1, repeaceable paper cartridge;
- Changing: when the filter clogging warning lamp is lighted;
- Oil capacity: 36 dm^3 in common with gear box;
- 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: 4 dm^3;
- Recommended oil: see page 18.

Three-point linkage

- Category: 1 in conformity with ISO 730/1 - 1977;
- Category adapter: none.


lift rod
c
L
top. link
lift arm
lower link
A
S
H
b
a
d
rear axis
0
f
B
D
h
e
ground level
rear wheel axis


v
u

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

		Dimension or range (mm)	Settings used in test (mm)
Length of lift arms	(A)	260	260
Length of lower links	(B)	820	820
Distance of lift arm :horizontally	(a)	25	25
Pivot point from rear :vertically	(b)	306	306
wheel axis (behind)			
Horizontal distance between the 2 lower link points	(u)	429	429
Horizontal distance between the 2 lift arm and points	(v)	345	345
Length of upper link	(S)	from 500 to 780	647
Distance of upper link :horizontally	(c)	244	244
pivot point from rear :vertically	(d)	243	243
wheel axis			
Distance of lower link :horizontally	(e)	72	72
pivot point from rear :vertically	(f)	192	192
wheel axis			
Distance of lower link pivot point to lift rod pivot points on lower links	(D)	490	490
Length of lift rods	(L)	from 500 to 670	610
Height of lower hitch points relative to the rear wheel axis			
- in Low position	(h)	from 178 to 541	410
- in High position	(H)	from 28 to 285	125
Height above ground of lower hitch points when locked in transport position (*)			735

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

SWINGING DRAWBAR : not fitted.

HOLED DRAWBAR : not fitted.

TRAILER HITCH

- Type: J.I CASE;
- Hole diameter: 28 mm;
- Height above ground: 372 min. - 732 max. mm;
- Distance of hitch point from rear wheel axis, horizontally: 515 mm;
- Distance of hitch point from power take-off shaft end
  . vertically :below 238 mm, above 122 mm;
  . horizontally : 130 mm;
- Maximum vertical permissible load: 1471 daN.

STEERING

- Specification: hydrostatic steering with SAVER SUNDESTRAND gear pump, one steering cylinder at double effect acting directly on front axle.
- Make: DANFOSS;
- Model: OSPC 80 LS with priority valve OLSA 40;
- Type: hydrostatic;
- Working pressure: 1.1 MPa;
- Oil capacity: 17 dm^3, in common with hydraulic system;
- Oil change period: 1000 hrs;
- Filter change period: 1000 hrs;
- Recommended oil: see page 18.

BRAKES

Service brake

- Make: SIRMAC;
- Model: 1967573C1;
- Type: oil immersed multiplate disc, 4 per side total 8 discs, mounted before each epicyclic reduction gear. SK Welman HDT 303 lining material, rear disc diameter 165,25 mm ;
- Method of operation: mechanical acting with 2 pedals;
- Trailer braking take-off: none.

Parking brake

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

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

STEERING WHEELS

- Number: 2;
- Location : at front;
- Track widths: 880 min. - 1280 max. mm;
- Regulation: track adjustable by extending telescopic half axles.

DRIVING WHEELS

- Number: 2;
- Location: at rear;
- Rear track widths: 848 min. 1248 max. mm;
- Regulation: changing the position of the rims with respect to the disc.

WHEELBASE: 2110 mm.

ROLL - BAR

Specifications

- NFU approval number: 013301;
- Make: CARRARO;
- Model: X 260-4;
- Type: tiltable;
- Manufacturer's name: CARRARO S.p.A.;
  . address: Via Olmo, 29 - Campodarsego (PD) ITALY;
- Protective device: roll-bar tiltable.

Materials used in the construction and dimensions

See N.F.U. (France) Test Report on Protective Structures.

DRIVER'S SEAT

- Make: SIFRA;
- Model: 15 M;
- Type: upholstered seat;
- Type of suspension: adjustable spring;
- Type of damping: shock absorber;
- Range of adjustment, longitudinal 210 mm;
  vertical ... 100 mm.

PASSENGER'S SEAT : none.

LIGHTING

Lighting system in accordance with E.E.C. 78/933

	Height above ground of centre with tyre (*) (mm)	Size (mm)	Distance from outside edge of tractor to centre at 800 mm track width (mm)
Headligths	1011	155*90	473
Front park. lights	1403	120*40	110.5
Front finger post	1443	120*40	110.5
Rear park. lights	1443	120*40	110.5
Rear finger post	1403	120*40	110.5
Stop	1443	120*40	110.5
Reflectors	1148	88*52	179.5

(*) Tyre size: 6.50/16 front - 13.6/28 rear.

TEST CONDITIONS

Overall dimensions with tyres 6.50/16 front and 13.6/28 rear

	Length (mm)	Width (mm) min	Width (mm) max	Height (mm) at top of protect. struc.
Without ballast	3580	1129	1627	2482

- Ground clearance (unballasted tractor): 345 mm;
- Clearance-limiting part: front axle.

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

	Units	Front	Rear	Total
Without driver				
Without ballast	kg	915	1180	2095
With ballast	kg	-	-	-
With driver				
Without ballast	kg	925	1245	2170
With ballast	kg	-	-	-

Ballast

	no. of weights	total weight (kg)	water (kg)
front	-	-	-
rear	-	-	-
additional	-	-	-

Tyres and track width specifications

	front	rear
- Tyres		
. dimensions	6.50/16	13.6/28
. ply rating	6	6
. type	cross-ply	radial
. maximum load (tyre manufacturer's) daN	603	1403
. maximum load (tractor manufact.) daN	603	1403
. inflation pressure (tyre manufact.)kPa	310	160
. dynamic radius index .....mm	350	610
- Chosen track width .....mm	980	848
- Tyres on request	-	pr
	-	pr
	-	pr

Oils, lubrication and fuel
Capacity and change interval

	capacity dm³	oil change h	filter change h
Engine	9.2	150	300
Gear box	36	1000	1000
Front axle and final drives ...	-	-	-
Rear axle and final drives	in common with gear box		
Hydraulic system	"	"	
Other (steering, etc.)	"	"	

Fuel and lubricants recommended and used in tests

Fuel
- Type: AGIP DIESEL, DIN 51601;
  (in accordance with the national standard)
- Specific gravity at 15° C: 0.832 g/cm³.

Engine oil
- Type: AGIP 15/W40 Super Diesel;
- Viscosity: 15.6 cSt;
- Classification: API SE-CD.

Transmission oil

	front axle and final drive	rear axle, final drive and gear box
-Type	--	ELF BF12
-Viscosity	--	10.50 cSt
-Viscosity index	--	146
-Classification		

Hydraulic fluid
- Type: ELF BF12;
- Viscosity: 10.50 cSt;
- Classification:

Steering oil
- Type: ELF BF12;
- Viscosity: 10.50 cSt;
- Classification:

Grease
- Type:ESSO BEACON 2;
- Number of lubrication points: 15.

II - TEST RESULTS

A. COMPULSORY TESTS RESULTS

(1) MAIN POWER TAKE-OFF PERFORMANCE

- Date and location of test: 16.03.1990 TREVIGLIO (BG) - I.S.M.A. ITALY
- Type of dynamometer: ZOELLNER 350 AC

Power	Speed		Fuel consumption			Specific
	Engine	P.T.O.	Hourly		Specific	Energy
kW	rev/min	rev/min	l/h	kg/h	g/kWh	kWh/l
MAXIMUM POWER - 2 HOUR TEST						
43.9	2352	1117	12.81	10.66	243	3.43
POWER AT RATED ENGINE SPEED						
43.9	2352	1117	12.81	10.66	243	3.43
STANDARD POWER TAKE-OFF SPEED (1000 +/- 25 rev/min)						
42.2	2109	1002	11.08	9.17	244	3.38
PART LOADS						
i) The torque corresponding to maximum power at rated engine speed						
43.9	2352	1117	12.81	10.66	243	3.43
ii) 85% of torque obtained in i)						
38.6	2433	1155	11.72	9.75	253	3.29
iii) 75% of torque defined in ii)						
29.3	2458	1167	9.69	8.06	275	3.02
iv) 50% of torque defined in ii)						
19.5	2479	1177	7.72	6.42	329	2.53
v) 25% of torque defined in ii)						
10.0	2505	1190	5.83	4.85	485	1.71
vi) unloaded						
0	2523	1198	3.92	3.26	-	-

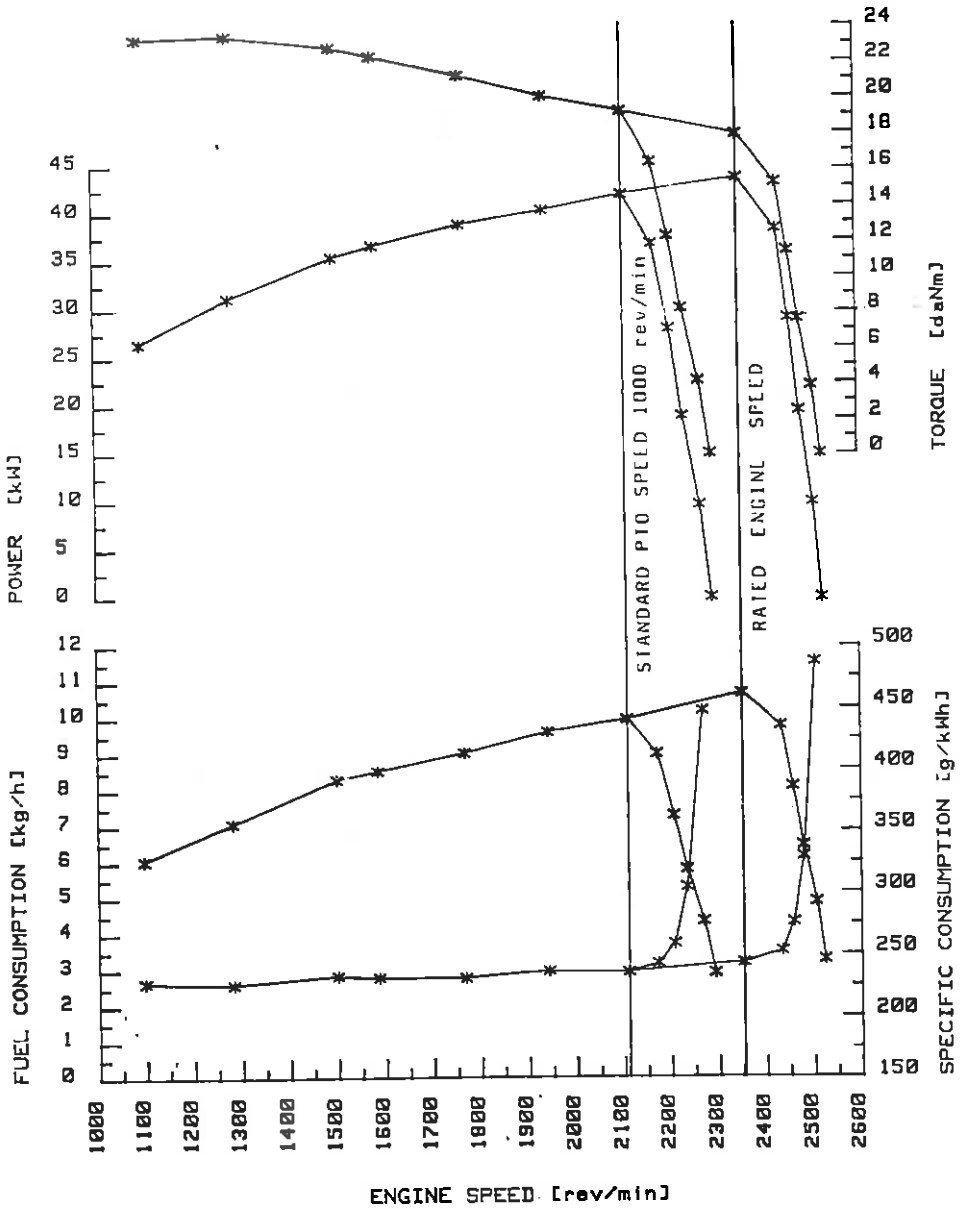
PART LOADS AT STANDARD POWER TAKE-OFF SPEED (1000 rev/min)

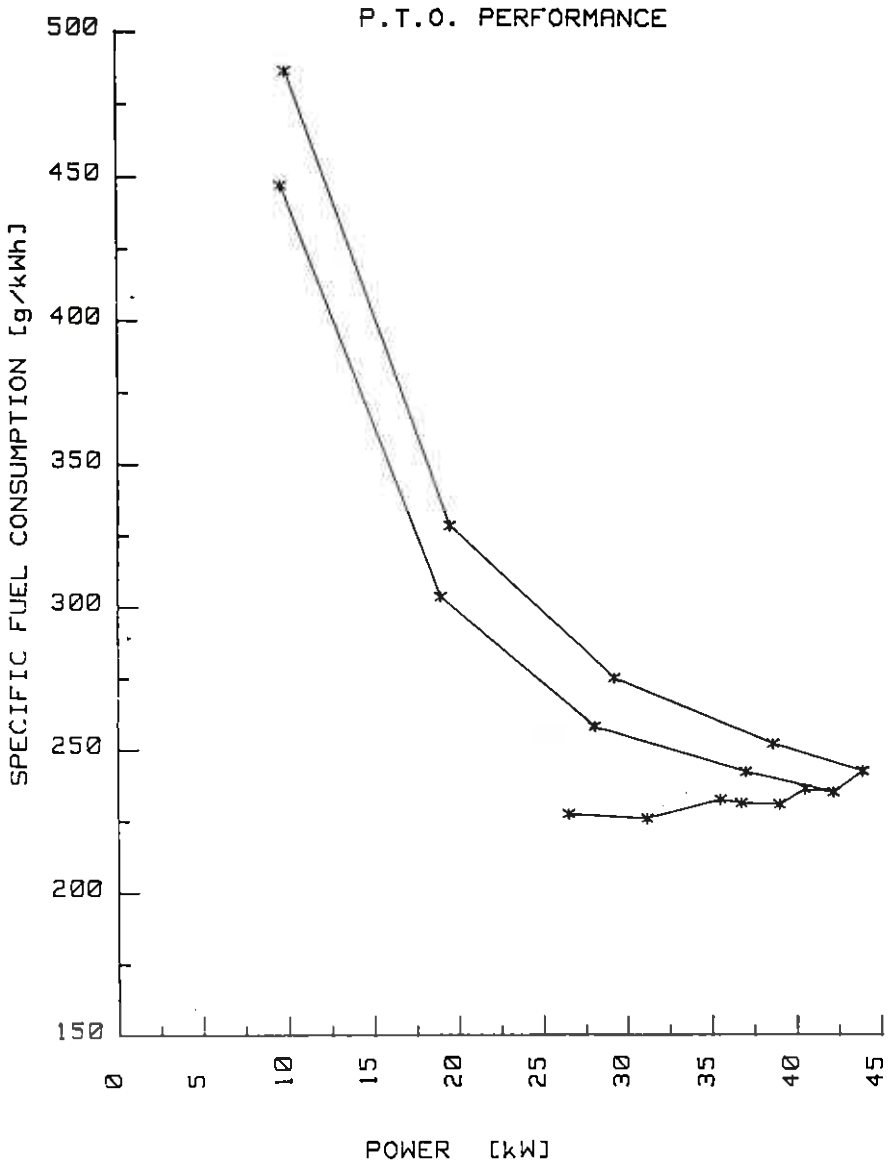
Power	Speed		Fuel consumption			Specific
	Engine	P.T.O.	Hourly		Specific	Energy
kW	rev/min	rev/min	l/h	kg/h	g/kWh	kWh/l
i) The torque corresponding to maximum power available						
42.2	2109	1002	11.93	9.93	235	3.54
ii) 85% of torque obtained at maximum power						
37.0	2172	1032	10.79	8.98	243	3.43
iii) 75% of torque defined in ii)						
28.1	2207	1048	8.73	7.26	258	3.22
iv) 50% of torque defined in ii)						
19.0	2234	1061	6.92	5.76	303	2.75
v) 25% of torque defined in ii)						
9.7	2268	1077	5.19	4.32	445	1.87
iv) unloaded						
0	2291	1088	3.47	2.89	-	-

STANDARD SPECIFIC FUEL CONSUMPTION: 253/229/243/303 g/kWh

- No load maximum engine speed: 2523 rev/min
- Torque (1) at maximum power: 17.84 daNm
- Maximum torque (1) (engine speed: 1281 rev/min) 23.29 daNm
- Mean atmospheric conditions: Temperature ..... 20 C°
  Pressure ..... 100.1 kPa
  Relat. humidity ... 81 %
- Maximum temperatures: Coolant ..... 91 C°
  Engine oil ..... 119 C°
  Fuel ..... 31 C°
  Engine air intake ..... 25 C°

(1) The torque is the equivalent crankshaft torque.


POWER [kW]
TORQUE [daNm]
FUEL CONSUMPTION [kg/h]
SPECIFIC CONSUMPTION [g/kWh]
STANDARD PTO SPEED 1000 rev/min
RATED ENGINE SPEED
ENGINE SPEED [rev/min]


P.T.O. PERFORMANCE
SPECIFIC FUEL CONSUMPTION [g/kWh]
500
450
400
350
300
250
200
150
0
5
10
15
20
25
30
35
40
45
POWER [kW]

2) POWER LIFT AND HYDRAULIC POWER TEST

- Date and location of tests: 16.03.1990 - 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	535	574
Maximum corrected force exerted trough full range	daN	2650	2060
Corresponding pressure of hydraulic fluid	MPa	17.5	17.5
Moment about rear axle	daNm	2364	3094
Maximum tilt angle of mast over range of lift	degress	--	4

Lifting heights relative to the horizontal lower links										
mm	-218	-200	-100	0	100	200	300	317	356	400	500
Lifting forces at hitch points											
daN	2938	2915	2856	2811	2786	2660	2656	2650	---	---	---
Lifting forces at test frame											
daN	2708	2699	2614	2531	2294	2131	2085	---	2060	---	---

2.2) HYDRAULIC POWER TEST

Sustained pressure with relief valve open: 18.0 MPa;
Pump delivery rate at min pressure: 40.0 l/min;

Hydraulic power	kW	flow rate l/min	pressure MPa	oil temp. °C
At 90% of the actual relief valve setting	8.5	32.4	16.0	65
Maximum	9.5	38.7	15.0	65

. opening pressure of the relief valve: 16.0 MPa

Tapping point used for test : at rear of tractor;
Hydraulic fluid: see page 18.

3) DRAWBAR PERFORMANCE

- Date of test: 21.03.1990
- Type of track: concrete
- Type and size of tyres front: 6.50/16 - 6 ply
  rear : 13.6/28 - 6 ply

Height of drawbar above ground: 445 mm (unballasted)

Tyre inflation pressure: unballasted .front: 310 kPa .rear: 160 kPa

3.1) MAXIMUM POWER IN TESTED GEARS (unballasted tractor)

Gear	Power	Draw. pull	Speed	Eng. speed	Slip of whell	Specific ener.cons.	fuel	Temperatures cool.	eng.	Atm. cond. temp.	hum.	pres
	kW	daN	km/h	rev/min	%	kWh/l	g/kWh	°C	°C	°C	%	kPa
1S	1.3	1144	0.4	2525	15	0.250	3308	24	52	94	23	70	99.7
2S	1.9	1146	0.6	2521	15	0.358	2316	24	52	95	25	70	99.9
3S	2.9	1150	0.9	2517	15	0.518	1621	23	53	95	24	71	99.7
4S	4.2	1157	1.3	2512	15	0.712	1167	24	52	94	24	70	99.9
1N	6.6	1189	2.0	2508	15	1.031	803	24	53	95	24	69	100.1
2N	9.7	1163	3.0	2497	15	1.276	649	23	54	94	25	69	99.8
3N	14.3	1197	4.3	2476	15	1.682	496	23	54	94	24	72	100.3
4N	19.8	1186	6.0	2461	15	2.000	415	23	53	93	25	70	99.8
1F	27.2	1165	8.4	2441	15	2.193	379	24	52	93	27	69	99.8
2F	34.7	953	13.1	2349	7	2.533	328	23	53	93	27	68	99.9
3F	30.9	556	20.0	2352	3	2.289	362	23	53	92	27	68	99.9

4) TRANSMISSION AND FUEL CONSUMPTION CHARACTERISTICS

Gear	Power	Draw. pull	Speed	Eng. speed	Slip of wheel	Specific ener.cons.	fuel	Temperatures cool.	eng.	Atm. cond temp.	hum.	pres
	kW	daN	km/h	rev/min	%	kWh/l	g/kWh	°C	°C	°C	°C	%	KPa
4.1) Selected gear at maximum power													
2F	34.7	953	13.1	2349	7	2.533	328	23	53	93	27	68	99.9
4.1.1) 75% of pull at maximum power at rated speed													
2F	27.8	715	14.0	2439	4	2.242	370	22	52	94	27	66	99.9
4.1.2) 50% of pull at maximum power at rated speed													
2F	19.1	475	14.5	2460	2	1.872	445	24	53	94	27	66	100.0
4.1.3) next higher gear giving the same pull as in 4.1.1 red. eng. speed													
3F	27.8	715	14.0	1645	3	2.699	309	23	53	94	27	66	100.1
4.1.4) next higher gear giving the same pull as in 4.1.2. red. eng. speed													
3F	19.2	474	14.6	1700	2	2.259	370	22	52	93	27	66	100.0

Gear	Power	Draw. pull	Speed	Eng. speed	Slip of wheel	Specific ener.cons.	fuel	Temperatures cool.	eng.	temp.	hum.	Atm. cond pres
	kW	daN	km/h	rev/min	%	kWh/l	g/kWh	°C	°C	°C	%	KPa
4.2) Selected gear nearest to 7.5 Km/h												
4N	19.8	1186	6.0	2461	15	2.000	415	23	53	93	23	70	99.8
4.2.1) 75% of pull at maximum power at rated speed												
4N	16.1	890	6.5	2471	7	1.750	478	24	53	92	27	70	100.4
4.2.2) 50% of pull at maximum power at rated speed												
4N	11.3	590	6.9	2490	2	1.449	575	24	53	93	27	70	100.4
4.2.3) next higher gear giving the same pull as in 4.2.1 red. eng. speed												
1F	16.1	890	6.5	1755	8	2.205	379	23	52	92	26	70	100.3
4.2.4) next higher gear giving the same pull as in 4.2.2 red. eng. speed												
1F	11.5	590	7.0	1782	3	1.949	426	23	52	92	26	70	100

REPAIRS AND REMARKS: none.

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

THE DIRECTOR OF TESTING STATION
(Prof. Giuseppe COLZANI)

HEAD OF ISMA - ROMA
(Prof. Alfio CAMMILLI)

Text and graphics processed by: P.a. Gianluigi ROZZONI
Software written by: Ing. Giampaolo GIACOMETTI