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Test in accordance with the OECD Restricted Standard Code for the Official Testing of Agricultural Tractors

Case International 385 and 3210 Two-Wheel Drive Tractors with 8 Speed Manual Transmission





Manufactured by:	J I Case (Europe) Limited Wheatley Hall Road Doncaster DN2 4PG
Submitted for test by:	The manufacturer
Report No:	767 (Original Report No 724)
Date:	October 1987 and April 1994

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R94/71924/OECD

STATEMENT REGARDING ALL MODELS AND NEW MODELS

The Case International Model 3210 Two-Wheel Drive is identical to the Model 385 Two-Wheel Drive except with regard to the metal work of the bonnet, lights, cab and the exhaust system.

The new fuel injection system is a direct replacement for the old models and obtains the same delivery characteristics, therefore the original power take-off test is deemed to still be valid.

The results contained in this report are those obtained during tests on the Model 385 Two-Wheel Drive.

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Tractor manufacturer's name and address:	J I Case (Europe) Limited Wheatley Hall Road Doncaster DN2 4PG
Location of tractor assembly:	Doncaster
Submitted for test by:	The manufacturer
Selected for test by:	The manufacturer with the agreement of the testing station
Place of running in:	Doncaster
Duration of running in:	50 hours
Location of test:	Silsoe Research Institute (AFRC)

I. SPECIFICATION OF TRACTOR

TRACTOR	Original Test	[New Model]
Make:	Case International	
Model:	385	[3210]
Type:	Four wheel drive unit construction	
Serial No:		
1st Serial No:	B470002B018682 B4700--B018001	[3210 - JJE0900001]
ENGINE		
Make:	J I Case Company, Neuss, Germany	
Model:	D155	
Type:	4-stroke, naturally aspirated direct injection diesel	
Serial No:	55012D353610	
Ist Serial No:		
Cylinders		
Number/disposition:	3, vertical, in-line	
Bore/stroke:	98.4 mm x 111.1 mm	
Capacity:	2535 cm^3	
Compression ratio:	16 : 1	
Arrangement of valves:	Overhead	
Cylinder liners:	Replaceable, wet	

Fuel system	Original Test	[New Model]
Fuel feed system:	Feed pump incorporated in injection pump	
Make, type and model of fuel filter:	Bosch double fuel filter with replaceable elements and water traps	
Capacity of fuel tank:	77 litres	[3210ALP - 112 litres]
Make, type and model of injection pump:	Bosch CR distributor type - EP/VA3/10/H 1100 CR 9	[VE3/10F 1100 R276/1 Case part 1329101 C91]
Serial No:		
Manufacturer's production setting of injection pump:		
. Flow rate	9.3 l/h to 10.1 l/h at 2000 rev/min and full load at 38° fuel temperature	[49.0 +/- 2 mm^3 per stroke at 1100 rpm pump speed for fuel 0.835/0.845 sg at 15°C]
. Timing	8° before T.D.C	[10° before T.D.C]
Make, type and model of injectors:	Bosch DLLA 150 S 836	
Injection pressure:	22.5 MPa	
Governor		
Make:	Bosch	
Model:	Incorporated in injection pump	
Type:	Mechanical	
Governed range of engine speed:	650 to 2430 rev/min	
Rated engine speed:	2200 rev/min	
Air cleaner		
Pre-cleaner:		
. Make	Coopers	
. Type	Centrifugal	
. Model	In main cleaner body	
. Location of air intake		
Main cleaner:		
. Make	Coopers	
. Type	Dry paper element	
. Model	Case part 3125198 R94	
. Location of air intake	Under bonnnet forward of engine	
Maintenance indicator:	Warning light on instrument panel	

Lubrication system	Original Test	[New Model]
Type of feed pump:	Forced feed from gear pump	
Type of filter:	Mann spin-on full flow with replaceable cartridge and metal strainer sump	
Number:	1	
Cooling system		
Type of coolant:	Water and antifreeze solution	
Type of pump:	Impeller	
Specification of fan:	Belt driven puller	
Number of fan blades:	5	
Fan diameter:	457 mm dia. (18")	
Coolant capacity:	11.4 l	
Type of temperature control:	Thermostat	
System pressure:	70 kPa	
Starting system		
Make:	Bosch	[Magneti Marelli]
Model:	JF	[M127]
Type:	Electrical, pre-engaged, solenoid operated	
Starter motor power rating:	2.7 kW	[2.8 kW]
Cold starting aid:	Thermostart	
Safety device:	The clutch pedal must be fully depressed to actuate the safety start switch.	
Electrical system		
Voltage:	12	
Generator:		
. Make	Lucas	
. Model	A127	
. Type	Belt driven	
. Power	45A at 6,000 rev/min	
Batteries:		
. Rating	1, Chloride 90 Ah at 20-hour rating	

Exhaust system	Original Test	[New Model]
Make:	Burgess	
Model:	Case part 83027C1	[Case part 139138 A1]
Type:	Reflex	
Location:	Vertical above bonnet on right-hand side	
Height of outlet above ground:	2565 mm	[2596]

TRANSMISSION TO WHEELS

Clutch

Make:	Laycock
Model:	Case part 92602 C92; or Heavy duty 485026 C3
Type:	Dry, for transmission only
Number of plates:	1
Diameter of plates:	279 mm;
Method of operation:	Hydraulically by foot pedal

Gear box

Make:	Case IH
Model:	Doncaster
Type:	Mechanical synchromesh
Number of gears:	8 forward + 4 reverse
Available options:	Change of gear ratios, 16 forward + 8 reverse, 8 forward + 8 reverse shuttle

Rear axle final drives

Make:	Case IH
Model:	Doncaster
Type:	Crown wheel and pinion, with differential and epicyclic reduction gear final drives

Differential lock:

. Type	Mechanical
. Method of engagement	Pedal operated
. Method of disengagement	Self-disengaging

Front axle and final drives

Make:	Case-IH
Model:	None
Type:	Non-driven, extendable

Differential lock:

. Type	None fitted

Total ratios and travelling speeds

Gear	Group No	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed:* 2200 rev/min km/h
Forward			
1	L1	170.10	3.12
2	L2	123.85	4.29
3	L3	86.30	6.15
4	L4	63.84	8.31
5	H1	52.42	10.13
6	H2	38.16	13.91
7	H3	26.59	19.96
8	H4	19.67	26.99
Reverse			
1	R	113.40	4.68
2	R	82.56	6.43
3	R	57.53	9.23
4	R	42.56	12.47

L = Low range H = High range

(*) Calculated with a tyre dynamic radius index of 640 mm (ISO 4251/1-1984)
Number of revolutions of front wheels for one revolution of rear wheels: Not applicable

POWER TAKE-OFF

Main power take-off

Type:	Independent
Method of engagement:	By hand lever lever
Number of shafts:	1
Method of changing power take-off speeds;	Manual, lever selection

Clutch

Make:	Case IH
Model:	Doncaster
Type:	Hydraulically engaging wet multi-plate clutch
Number of plates:	5
Diameter of plates:	125 mm

Power take-off proportional to engine speed

540 rev/min

Location:	At rear of tractor
Diameter of power take-off shaft:	34.9 mm
Number of splines:	6 to ISO 500
Height above ground:	642
Distance from the median plane of the tractor:	0
Distance behind rear wheel axis:	415 mm
Pto speed at rated engine speed:	614 rev/min
Engine speed at standard power take-off speed:	1935 rev/min
Ratio of rotation speeds:	3.584:1
Power restriction and maximum torque:	ISO recommendation, 48 kW
Direction of rotation (viewed from behind tractor):	Clockwise

1000 rev/min

Location:	Option - at rear of tractor
Diameter of power take-off shaft:	34.9 mm
Number of splines:	21 to ISO 500
Height above ground:	520 mm
Distance from the median plane of the tractor:	0
Distance behind rear-wheel axis:	415 mm
PTO speed at rated engine speed:	1005 re/min
Engine speed at standard power take-off speed:	2190 rev/min
Ratio of rotation speeds:	2.190 : 1
Direction of rotation (viewed from behind tractor):	Clockwise

POWER LIFT

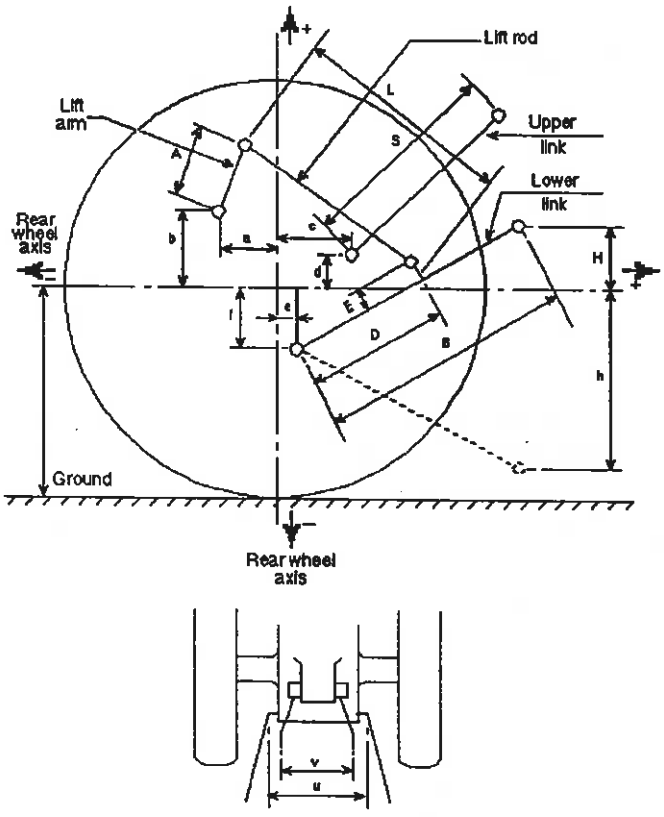
Make:	Case IH
Model:	Doncaster
Type:	Hydraulic
Type and number of cylinders:	One internal single acting
Type of linkage lock for transport:	Hydraulic
Relief valve pressure setting:	17.2 MPa - 18.0 MPa
Opening pressure of cylinder safety valve:	18.6 MPa
Lift pump type:	Plessey, fixed delivery gear
Transmission between pump and engine:	Forward end of pto shaft, independent of main and pto clutches
Type and number of filters:	1 full flow filter to main pump and fine screen to transfer pump
Site of oil reservoir:	Integral with transmission housing
Type, number and location of tapping points:	None
Maximum volume of oil available to external cylinders:	13.6 l, 40.9 l with overfill

AUXILIARY HYDRAULIC SYSTEM

Make:	
Model:	Case IH
Type:	Doncaster
Relief valve pressure setting:	17.2 MPa - 18.0 MPa
Lift pump type:	Plessey, fixed delivery gear
Transmission between pump and engine:	Forward end of pto shaft, independent of main and pto clutches
Type and number of filters:	1 full flow filter to main pump and fine screen to transfer pump
Site of oil reservoir:	Integral with transmission housing
Type and number of tapping points:	3 on double acting auxiliary control valve
Maximum volume of oil available to external cylinders:	13.6 l, 40.9 l with overfill

THREE-POINT LINKAGE

Category:	1 or 2 to ISO 730/1
Category adaptor:	By reversing lower links
Controls:	Draught and position control, floating position, top link sensing



LIFT TEST
Linkage geometry

Fig 2.1

Table 2.1

Dimensions of linkage when attached to the standard frame (ISO 730/3-1982 CAT 2)

			[New] Model Dimensions	Original Test
			Dimensions and range	Setting used on test
Length of lift arms:		(A)	298 mm	298 mm
Length of lower links:		(B)	718 mm	718 mm
Distance of lift arm pivot point from rear wheel centre line:	horizontally: vertically:	(a) (b)	66 mm 288 mm	66 mm 288 mm
Horizontal distance between the two lower link points:		(u)	518 mm	518 mm
Horizontal distance between the two lift arm end points:		(v)	445 mm	445 mm
Length of upper link:		(S)	[533-750] mm	620 mm
Distance of upper link pivot point from rear wheel centre line:	horizontally: vertically:	(c) (d)	279 mm 228 mm	279 mm 228 mm
Distance of lower link pivot point from rear wheel centre line:	horizontally: vertically:	(e) (f)	171 mm 171 mm	171 mm 171 mm
Distance of lower link points to lift rod pivot points on lower link centre line:	horizontally: vertically:	(D) (E)	359 mm on centre line	359 mm on centre line
Length of lift rods:		(L)	[499-613] mm	588 mm
Height of lower hitch points (*) relative to the rear wheel centre line, situated 640 mm above the ground level:				
- in low position		(h)	[210-545] mm	473 mm
- in high position		(H)	[225-390] mm	259 mm
Height of lower hitch points when locked in transport position (*):			Any height within lift range (Hydraulic Transport Lock)	

* Assuming r = tyre dynamic radius index of 640 mm ISO 4251/1-1984

SWINGING DRAWBAR	Drawbar as tested	Pick-up hitch
Type:	Clevis	Hook
Height above ground, maximum:	373 mm	307 mm
,minimum:	273 mm	
Type of adjustment:	Inverting drawbar	
Distance of hitch point from rear-wheel axis, horizontally:	760 mm	500 mm
Distance of hitch point form power take-off shaft ends:		
. Vertically: 540 rev/min shaft:	269 and 369 mm	335 mm
1000 rev/min shaft:	147 and 247 mm	213 mm
. Horizontally:	345 mm to rear	85 mm
Lateral adjustment (centre of clevis):		
. Right-hand:	305 mm	
. Left-hand:	305 mm	
Distance of pivot point from rear axles horizontally:	300 mm	
Vertical opening of clevis:	65 mm	
Diameter of drawbar pin hole:	26 mm	35 mm
Maximum vertical permissible load:	13.3 kN	13.3 kN
TRAILER HITCH		
Type:	None fitted	
LINKAGE DRAWBAR		
Type:	None fitted	
FRONT TOWING HITCH	None fitted	

STEERING

Make:	Case IH
Model:	Doncaster
Type:	Hydrostatic, steering wheel coupled to motor unit, power to unit from main hydraulic pump through priority valve/flow divider.
Method of operation:	
. Pump	Plessey, live
. Motor	Danfoss OSPC 100 OR
. Ram	Case double acting balanced
. Filter	As main hydraulics
Working pressure:	14.5 MPa

BRAKES

Service brake

Make:	Case IH
Model:	Doncaster
Type:	Oil immersed single disc, 1 per side
Method of operation:	Hydraulically actuated, independent or combined, pedal operated
Trailer braking take-off:	Optional

Parking brake

Type:	Mechanical via linkage	[Mechanical via linkage]
Method of operation:	Hand lever with ratchet	

WHEELS

Number:	4	
. Front	2 steering only	
. Rear	2 driving only	
Wheelbase:	2022 mm	

Track width adjustment:

	Minimum, mm	Maximum, mm	Adjustment method
Front	1320 [1320]	1830 [2032]	By reversing wheels and axle adjustment
Rear	1325 [1425]	1925 [1925]	By reversing wheels and offset lug rims

[ ] - New model

PROTECTIVE STRUCTURE

Make:	Case International	[Timmerman]
Model:	L (Low Profile) or C85 option	[LP (Low Profile) or C85 option]
Type:	Safety cab	[Safety cab]
Manufacturer's name and address:	Case IH, Croix, France	[Tim S.A., B.P. 49 F-59 380 Bergues, France]
Protective device:		
. Rollguard	Safety cab	
. Tiltable/Not tiltable	Non-tiltable	
OECD approval number:	CSD 0518/16-a(c), CSD 0074 or CSS 0195 (C85)	[CSS 0254]

DRIVER'S SEAT

Make/Model/Type:	Grammer S85/9, KAB XH2/TS3 or XH2/U1	[KAB XH2/TS3 or XH2/U1, Grammer DS 85 H/90A, 90AR, LS 95 H1/90AR, DS 44/2H]
Type of suspension:	Spring	
Type of damping:	Hydraulic	
Range of adjustment:		
. Longitudinal	215 mm	[140 mm]
. Vertical	70mm	[60 mm]

LIGHTING

Unrestricted beam angle of headlight in plan view: 115°

385	Height above ground to centre, mm	Size, mm	Distance from outside edge of tractor to centre, mm
Headlights	1112	150 x 90	762
Sidelights	1513	92 x 70	247
Rear lights	1420	65 x 70	306
Axle reflectors	--	--	--
Reflectors	1420	55 x 70	244

3210	Height above ground to centre, mm	Size, mm	Distance from outside edge to median plane of tractor, mm
Headlights	[1127]	[160 x 90]	[240]
Sidelights	[1468]	[43 x 85]	[742]
Rear lights	[1458]	[105 x 97]	[879]
Axle reflectors	[650]	[80 dia min]	[560]
Cab reflectors	[1328]	[47 x 91]	[879]

II. TEST CONDITIONS

Overall dimensions

Length, mm	Width		Height at top of	
	Minimum, mm	Maximum, mm	Protective structure, mm	Exhaust pipe, mm
3535 mm	1840	2300	2380 [2376]	2565 [2482]

Ground clearance (unballasted tractor) 215 mm

Clearance-limiting part: Drawbar clevis inverted

Tractor mass (with safety cab)

385	Unballasted		Ballasted	
	Without driver, kg	With driver, kg	Without driver, kg	With driver, kg
Front	866	881	--	--
Rear	1716	1776	--	--
Total	2582	2657	--	--

Weights and dimensions supplied by manufacturer for EEC type approvals

3210AL Cab	Unballasted		Ballasted	
	Without driver, kg	With driver, kg	Without driver, kg	With driver, kg
Front	965	980	--	--
Rear	1755	1815	--	--
Total	2720	2795	--	--

Tyres and track width specification

	Front	Rear
Tyres . dimensions . ply rating . type	6.00 x 16 6 Crossply	12.4 x 32 6 Radial
Maximum load (tyre manufacturer's), kg	560	1355
Maximum load (tractor manufacturer's), kg	560	1355
Inflation pressure (tyre manufacturer's), Bar	3.3	1.7
Dynamic radius index	342	640
Chosen track width (manufacturer's nominal)	1550	1530

Oils and lubrication

Capacity and change interval

	Capacity l	Oil change h	Filter change h
Engine	7.5	200	200
Front axle	--	--	None
Final drive (front)	--	--	None
Gearbox	34.0 [36.5]	800	200
Rear axle Hydraulic system) Final drives (rear)) Steering Brakes	Integral with gearbox		

Fuels and lubricants used in tests

Fuel

Drawbar Test	Type:	Diesel oil with cetane index of 53.5 and kinematic viscosity of 2.9 cSt at 40°C within the specification limits of Class D British Standard 2869/1970.
	Specific gravity:	0.8345 kg/l at 15°C.
PTO Test	Type:	Diesel oil with cetane index of 53.5 and kinematic viscosity of 2.9 cSt at 40°C within the specification limits of Class D British Standard 2869/1970.
	Specific gravity:	0.8384 kg/l at 15°C.

Oils	Recommended	Used during test
Engine oil		
Type:	SAE 15W/40	As recommended
Viscosity:	54 cSt at 50°C	
Classification:	MIL-L-2104-C	
Transmission oils		
Type:	SAE 15W/30	As recommended
Viscosity:	54 cSt at 50°C	
Classification:	MIL-L-2104-C	
Rear final drives		
Type:	SAE 15W/30	As recommended
Viscosity:	54 cSt at 50°C	
Classification:	MIL-L-2104-C	
Hydraulic brakes		
Type:	SAE 15W/30	As recommended
Viscosity:	54 cSt at 50°C	
Classification:	MIL-L-2104-C	
Hydraulic fluid		
Type:	SAE 15W/30	As recommended
Viscosity:	54 cSt at 50°C	
Classification:	MIL-L-2104-C	
Steering oil		
Type:	SAE 15W/30	As recommended
Viscosity:	54 cSt at 50°C	
Classification:	MIL-L-2104-C	
Recommended grease:	Consistency 2 lithium	As recommended
Number of lubrication points:	8	

III. TEST RESULTS

A. COMPULSORY TEST RESULTS

1. MAIN POWER TAKE-OFF

Date and location of tests: 16 December 1986
Silsoe Research Institute (AFRC),
Wrest Park, Silsoe, Bedford

Type of dynamometer: Water brake, Heenan & Froude

Power kW	Speed		Fuel consumption			Specific energy kWh/l
	Engine rev/min	P.T.O. rev/min	Hourly kg/h	Hourly l/h	Specific g/kWh	
1.1 MAXIMUM POWER - TWO HOUR TEST						
27.0	2200	614	7.93	9.46	294	2.85
1.2 POWER AT RATED ENGINE SPEED						
27.0	2200	614	7.93	9.46	294	2.85
1.3 STANDARD POWER TAKE-OFF SPEED (540 ± 10 rev/min)						
25.9	1935	540	7.42	8.85	286	2.93
1.4 PART LOADS The torque corresponding to maximum power at rated engine speed						
27.0	2200	614	7.93	9.46	294	2.85
1.4.2 85% of the torque defined in 1.4.1						
23.4	2243	626	6.95	8.29	297	2.82
1.4.3 75% of the torque defined in 1.4.2						
17.8	2279	636	5.62	6.70	305	2.60
1.4.4 50% of the torque defined in 1.4.2						
11.9	3307	644	4.53	5.40	380	2.21
1.4.5 25% of the torque defined in 1.4.2						
6.1	2322	648	3.54	4.22	581	1.44
1.4.6 Unloaded						
0	2347	655	2.69	3.21	--	--

Power kW	Speed		Fuel consumption			Specific energy kWh/l
	Engine rev/min	P.T.O. rev/min	Hourly kg/h	l/h	Specific g/kWh	
1.5 PART LOADS AT STANDARD POWER TAKE-OFF SPEEDS (540 ± 10 rev/min) 1.5.1 The torque corresponding to maximum power						
25.9	1935	540	7.42	8.85	286	2.93
1.5.2 85% of the torque obtained in 1.5.1						
22.4	1971	550	6.33	7.55	283	2.96
1.5.3 75% of the torque obtained in 1.5.2						
17.2	2010	561	5.05	6.02	294	2.85
1.5.4 50% of the torque obtained in 1.5.2						
11.6	2046	571	3.96	4.72	341	2.46
1.5.5 25% of the torque obtained in 1.5.2						
5.9	2071	578	3.10	3.70	525	1.60
1.5.6 Unloaded						
0	2135	596	2.13	2.54	--	--

No load, maximum engine speed: 2347 rev/min

Torque (equivalent crankshaft) at maximum power: 117.3 Nm

Maximum torque (equivalent crankshaft) (engine speed 1400 rev/min): 135.2 Nm

Mean atmospheric conditions:

- Temperature 19°C
- Pressure 1008 m bar
- Relative humidity 48%

Maximum temperatures:

- Coolant 82°C
- Engine oil 87°C
- Fuel 40°C
- Engine air intake 14°C

2. HYDRAULIC POWER AND LIFTING FORCE

Date of tests: 30 September 1987

2.1 Hydraulic power test

Sustained pressure with relief valve open: 17.8 MPa

Pump delivery rate at minimum pressure: 38.5 l/min

	Flow rate l/min	Pressure MPa	Power kW
Flow rate corresponding to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting and corresponding hydraulic power	32.0	16.0	8.5
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	31.4	16.5	8.6

Tapping point used for test: Auxiliary service connection

Temperature of hydraulic fluid if different from 65 ± 5°C -- °C

Opening pressure of the unloading valve: -- MPa

Closing pressure of the unloading valve: -- MPa

2.2 Power lift test - (To ISO 730/1)

	At the hitch point	On the frame
Height of lower hitch points above ground in down position	167 mm	167 mm
Vertical movement	732 mm	953 mm
Maximum corrected force exerted through full range	11.5 kN	9.6 kN
Corresponding pressure of hydraulic fluid	16.0 MPa	16.0 MPa
Moment about rear-wheel axis	10.2 kNm	14.4 kNm
Maximum tilt angle of mast over range of lift		21 degrees

- Linkage settings for test - see Table 2.1 and Figure 2.1

Lifting heights relative to the horizontal plane including the lower link pivot points										
mm	--	-367	-302	-225	-125	0	125	300	410	533
Lifting forces (the values measured are corrected to correspond to a hydraulic pressure equivalent to 90% of the actual relief valve pressure delivered by the hydraulic system)										
at the hitch points kN	--	--	11.5	12.4	13.6	15.3	16.7	18.4	18.1	--
Corresponding pressure:	16.0 MPa									
at the frame kN	--	9.6	10.0	10.8	11.7	12.5	12.9	13.1	12.8	12.5
Corresponding pressure:	16.0 MPa									

Note: Test was not carried out to ISO 730-1:1990, but to original OECD rules which were in force at the time.

3. DRAWBAR POWER AND FUEL CONSUMPTION TEST (UNBALLASTED TRACTOR, 2 WHEEL DRIVE)

Date and location of tests: 14 September 1987
Silsoe Research Institute (AFRC)
Wrest Park
Silsoe

Type of track: Concrete

	Tyre inflation pressure (kPa)	
Height of drawbar above ground	Front	Rear
350 mm	179	83

Gear and Range	Power	Drawbar Pull	Speed	Engine Speed	Slip of wheels or track	Spec fuel cons	Spec energy	Temperature			Atmospheric conditions		
								Fuel	Coolant	Eng oil	Temp	Rel Humidity	Pressure
	kW	kN	km/h	rev/min	%	g/kwh	kWh/l	Deg.C	Deg.C	Deg.C	Deg.C	%	kPa
3.1 MAXIMUM POWER IN TESTED GEARS													
L1*	13.7	18.4	2.68	2272	15.0	407	2.05	36	80	79	21	51	101.3
L2*	18.5	18.4	3.62	2249	15.0	387	2.16	37	79	81	18	51	101.2
L3	22.9	15.1	5.46	2200	9.1	363	2.30	38	81	76	20	55	101.3
L4	23.1	10.9	7.63	2200	6.0	361	2.31	40	81	84	20	54	101.3
H1	23.0	8.8	9.41	2198	5.0	367	2.27	37	80	80	18	59	101.1
3.2 FUEL CONSUMPTION 3.2.1 In selected gear, at maximum power at rated speed													
L4	23.1	10.9	7.63	2200	6.0	361	2.31	40	81	84	20	54	101.3
3.2.1.1 75% of pull at maximum power at rated speed													
L4	18.0	8.2	7.90	2256	4.6	376	2.22	37	80	70	19	52	101.2
3.2.1.2 50% of pull at maximum power at rated speed													
L4	12.4	5.4	8.27	2288	3.2	439	1.90	37	79	73	19	51	101.2
3.2.1.3 Next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.1.1													
H1	18.0	8.2	7.90	1852	4.6	346	2.41	39	80	80	19	54	101.3
3.2.1.4 Next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.1.2													
H1	12.4	5.4	8.27	1879	3.2	376	2.22	36	80	75	19	50	101.3
3.2.2 In selected gear nearest to 7.5 km/h, at maximum power at rated engine speed													
L4	23.1	10.9	7.63	2200	6.0	361	2.31	40	81	84	20	54	101.3
3.2.2.1 75% of pull at maximum power at rated speed													
L4	18.0	8.2	7.90	2256	4.6	376	2.22	37	80	70	19	52	101.2
3.2.2.2 50% of pull at maximum power at rated speed													
L4	12.4	5.4	8.27	2288	3.2	439	1.90	37	79	73	19	51	101.2
3.2.2.3 Next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.2.1													
H1	18.0	8.2	7.90	1852	4.6	346	2.41	39	80	80	19	54	101.3
3.2.2.4 Next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.2.2													
H1	12.4	5.4	8.27	1879	3.2	376	2.22	36	80	75	19	50	101.3

* Maximum power limited by wheelslip

TEST RESULTS

B. SUPPLEMENTARY TEST RESULTS

1. MAIN POWER TAKE-OFF (Optional 1000 rev/min shaft)

Date and location of tests: 16 December 1986
Silsoe Research Institute,
Wrest Park, Silsoe, Bedford

Type of dynamometer: Water brake, Heenan & Froude

Power kW	Speed		Fuel consumption			Specific energy kWh/l
	Engine rev/min	P.T.O. rev/min	Hourly kg/h	Hourly l/h	Specific g/kWh	
1.1 MAXIMUM POWER						
28.0	2200	1005	7.99	9.53	285	2.94
1.2 POWER AT RATED ENGINE SPEED						
28.0	2200	1005	7.99	9.53	285	2.94
1.3 STANDARD POWER TAKE-OFF SPEED (1000 ± 10 rev/min)						
27.9	2190	1000	7.97	9.50	285	2.94

No load, maximum engine speed: 2347 rev/min

Torque (equivalent crankshaft) at maximum power: 121.5 Nm

Maximum torque (equivalent crankshaft)
(engine speed 1480 rev/min): 141.9 Nm

Repairs and adjustments during tests: None

Remarks: None

Test carried out at AFRC Engineering by: P.C. Seward, F. Thistlethwaite.

Officer in charge: P.C. Seward

Signed: D.W. Smith Head of Testing Group

R.M. Stayner for the Director

Date: 18th November 1987.

for the Director

P C Seward
Head of Test Engineering Group

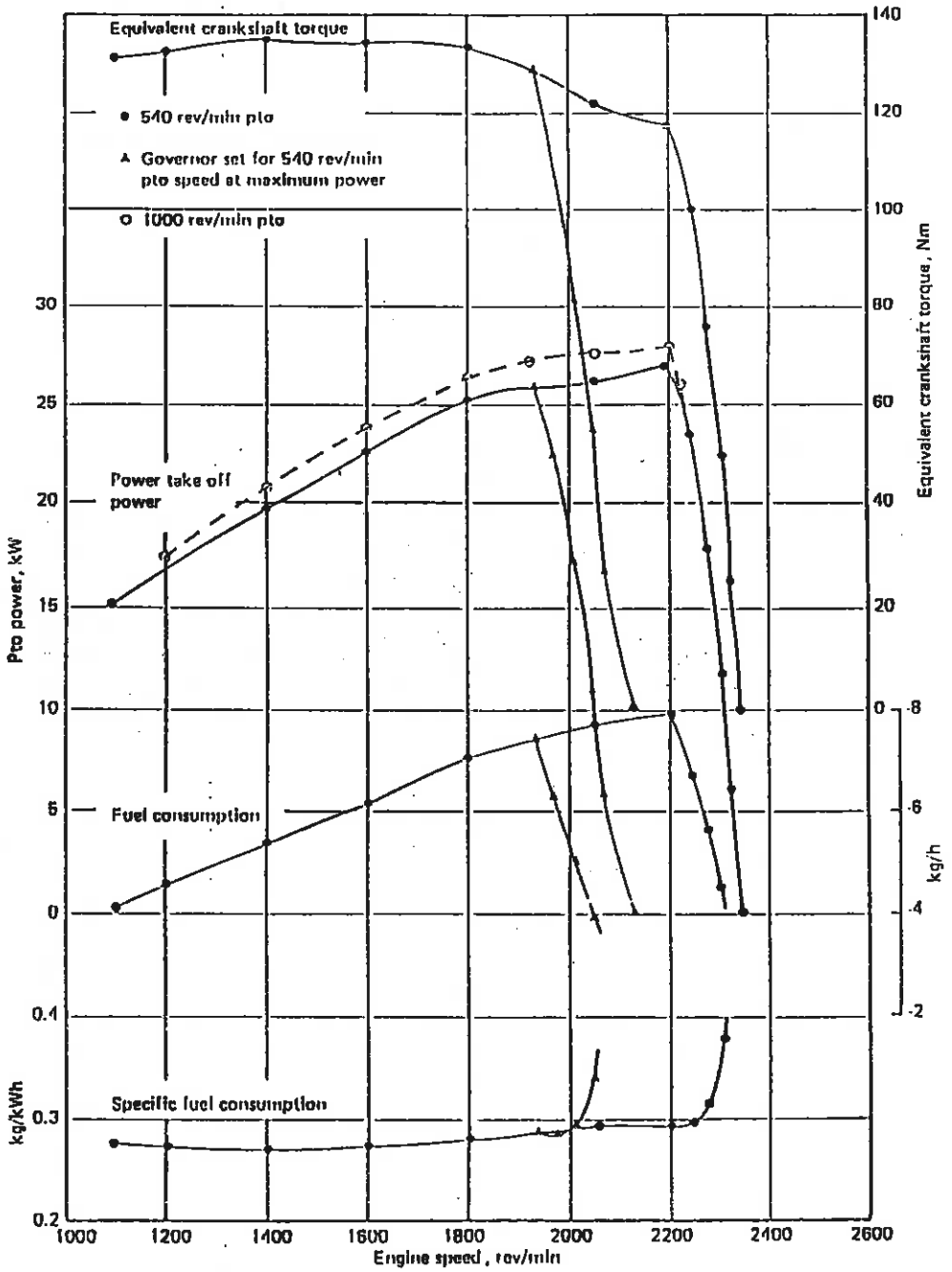
Date: 4/5/94

ANNEX I MAIN POWER TAKE OFF CURVES

PTO POWER TEST - CASE INTERNATION 385, 2 WHEEL DRIVE

Governor set for maximum power at rated speed •

Governor set for maximum power at PTO speed ▲



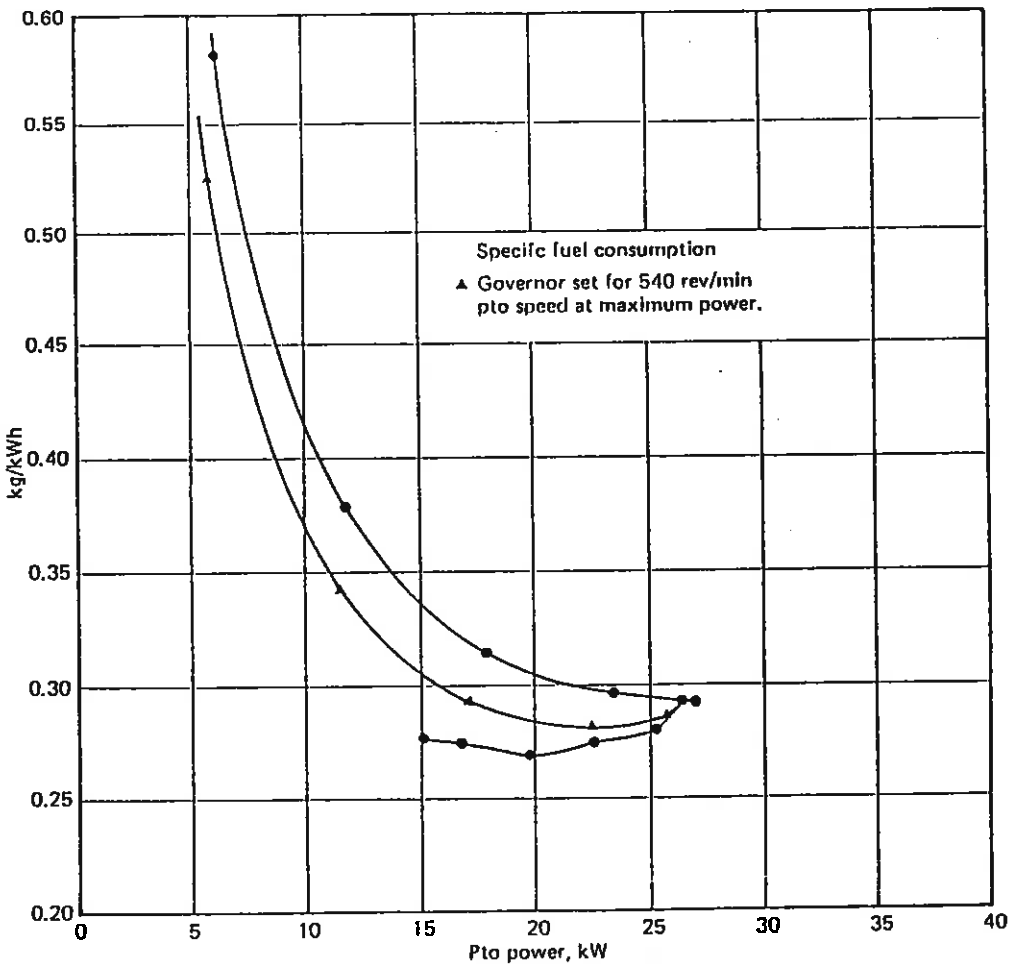
Power take-off test

ANNEX I MAIN POWER TAKE OFF CURVES

PTO POWER TEST - CASE INTERNATION 385, 2 WHEEL DRIVE

Governor set for maximum power at rated speed •

Governor set for maximum power at PTO speed ▲



Power take-off test.