O.E.C.D. REPORT N° 585

TEST BULLETIN
TRACTOR

FORD 7700

MANUFACTURED BY : FORD MOTOR COMPANY LIMITED
BASILDON - ESSEX



DATE OF TESTS : MAY-OCTOBER 1977
DATE OF APPROVAL : 10TH MAY 1978

MINISTERE DE L'AGRICULTURE
STATION DE GENIE RURAL
CHAUSSÉE DE NAMUR, 146
B-5800 GEMBLOUX - BELGIQUE

STATION DE GENIE RURAL - GEMBLOUX	Tractor FORD 7700	O.E.C.D. Report N° 585

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Tractor manufacturer : FORD Motor Company Limited
Basildon - Essex (Great Britain)

Submitted for test by : The manufacturer

Selected by : The manufacturer with the agreement of the testing station

Place of running-in : Basildon

Duration of running-in : 153 hours

SPECIFICATION OF TRACTOR

Tractor :

Make : FORD
Model : 7700
Type : Four wheel, rear wheel driven, unit construction
Serial n° : B 294620

Engine :

Make : FORD
Model : 7700
Type : Turbocharged, 4-stroke, direct injection diesel
Serial n° : F-169520

Cylinders : 4 cylinders, vertical, in-line, bore : 111,8 mm (4,4 in), stroke : 106,7 mm (4,2 in), capacity : 4190 cm^3 (256 in^3), compression ratio : 15,6:1, monobloc construction, overhead valves

Fuel system :
SIMMS mechanical fuel feed pump
C.A.V. single paper element filters with sediment bowl and water trap
C.A.V. type P 5319/3B in-line injection pump
Manufacturer's production setting : maximum fuel delivery 17,9 kg/h (39,5 lb/h) at 2100 rev/min engine speed and fuel temperature 29,4-35°C (85-95°F) using fuel of 0,821-0,842 specif. gravity at 32°C (90°F)
C.A.V. injector nozzles type BDLL 150 S 6667
Injection pressure : 201-205 bar (218-223 atm)
Injection pump delivery starts 21° before T.D.C.
Main fuel tank : 115,4 litres (25,4 U.K. gal)
Auxiliary fuel tank : 72 litres (15,8 U.K. gal)

Governor : C.A.V. mechanical variable speed governor
Incorporated in fuel injection pump
Governed range of engine speed : 600 to 2375 rev/min
Rated engine speed : 2100 rev/min

Air cleaner :
AIR MAZE MODEL N° CDS 0817509, division of ROCKWELL INTERNATIONAL
Dry paper element, situated forward of radiator
Centrifugal pre-cleaner above bonnet

Turbocharger :
SCHWITZER 3 LDA 168
Exhaust driven

Lubrication system :
Forced feed from eccentric rotor pump
Metal strainer in sump
Full flow replaceable paper element filter - Change period : 100 hours
Water oil-cooler integral with radiator
Total oil capacity : 8,5 l (15,0 pt)
Recommanded oil : FORD, ESEN M 2 C 121 A (API : CD, viscosity appropriate to ambient :

Below - 12°C (10°F) :	SAE 5 W, Suppl. 1 SAE 5 W/20, Suppl. 1
- 12°C to 4°C (10°F to 40°F) :	SAE 10 W - Serie 3
0°C to 32°C (32°F to 90°F) :	SAE 20 - Serie 3
Above 24°C (75°F) :	SAE 30 - Serie 3

Change period : 100 hours

Cooling system :
Water cooled, pressurised at 0,45 bar (7 lb/in^2)
Impeller assisted with 432 mm (17,0 in) dia 7-blade fan
Thermostat for temperature control
Cooling water capacity : 18,0 l (31,7 pt)

Starting system :
Electrical, 12 V LUCAS M 50 G solenoid - engaged starter motor, operable only when clutch pedal is fully depressed
Excess fuel device on injection pump for cold starting

Electrical system :
Voltage : 12 V, negative earth
Generator : LUCAS, alternator type 18 ACR - 14 V - 450 W
Battery : FORD, lead acid, 120-128 Ah at 20-hour rating

Transmission :

Clutch : BORG and BECK, single plate, dry, pedal operated, 330 mm (13,0 in) diameter

Gearbox : FORD, constant mesh, 16 forward and 4 reverse speeds, comprising hydraulically operated dual power epicyclic gear and 4 forward and 1 reverse speed gearbox with high-low range selector

Rear axle and final drives :
FORD, crown wheel and pinion with differential and epicycl' gear final drives
Self-disengaging pedal-operated differential lock

Oil quality and capacity :
Gearbox, rear axle and final drive : 56,4 l (99,2 pt)
Recommended oil : Mild E.P. SAE 80
FORD ESEN M 2 C 134-A or API : GL 3
Change period : 1200 hours

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Total ratios and speeds :

Gear		Number of engine revolutions for one revolution of driving wheel	Nominal travelling speed for 2100 rev/min rated speed of engine *]	
			km/h	mile/h
Forward				
Low	1 P**]	280,63	2,27	(1,41)
	2 P	224,85	2,83	(1,76)
	1	218,26	2,92	(1,81)
	2	174,88	3,64	(2,26)
	3 P	128,74	4,95	(3,08)
	3	100,13	6,36	(3,95)
	4 P	93,66	6,80	(4,23)
High	1 P	78,16	8,15	(5,07)
Low	4	72,85	8,75	(5,44)
High	2 P	62,62	10,18	(6,33)
	1	60,79	10,48	(6,51)
	2	48,71	13,08	(8,13)
	3 P	35,86	17,77	(11,04)
	3	27,89	22,85	(14,20)
	4 P	26,09	24,43	(15,18)
	4	20,29	31,41	(19,52)
Reverse				
	1 P	195,22	3,26	(2,03)
	1	151,83	4,20	(2,61)
	2 P	54,37	11,72	(7,28)
	2	42,29	15,07	(9,37)

*] Calculated with tyre rolling radius of 805 mm (31,7 in)

**] P : Dual Power in power position

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Power take-off :

At rear of tractor, in tractor's median plane
Height above ground : 749 mm (29,49 in)
34,9 mm (1⅜ in) dia
Engaged by hand lever, hydraulic clutch, independent of main clutch
Optional 6 or 21 spline stub shafts, to I.S.O. standard, when stub shaft is fitted in position the correct speed ratio is selected

540 rev/min p.t.o. :
6 spline shaft
596 rev/min at 2100 rev/min rated engine speed
Standard p.t.o. speed 540 rev/min at 1902 rev/min engine speed
Maximum permissible power at 540 rev/min : 50 kW (67,1 hp)
Maximum permissible torque at 540 rev/min : 884 Nm (651,7 lb ft)
Maximum permissible power at 596 rev/min : 52,2 kW (70,0 hp)

1000 rev/min p.t.o. :
21 spline shaft
1020 rev/min at 2100 rev/min rated engine speed
Standard p.t.o. speed 1000 rev/min at 2059 rev/min engine speed

Direction of rotation clockwise viewed from tractor rear

Power lift :

Hydraulic system
Make : FORD
Type : single acting ram
Draught or position control with auxiliary service control and flow control device, top-link sensing and Load Monitor
Pump : Plessey gear pump driven from power take-off shaft, independent of main and p.t.o. clutches - Working pressure : 172 bar
1 external assister ram : bore : 45 mm, stroke : 303 mm
Oil supplied from rear axle housing to ram cylinder, assister ram and external tappings
2 external oil tappings
Oil capacity : 56,4 l (99,2 pt) (Gearbox, rear axle and final drive)
Recommended oil : Mild E.P. SAE 80
FORD ESEN M 2 C 134-A or A.P.I. : GL 3
Oil changing period : 1200 hours
Implement linkage : three point linkage, category 2 to I.S.O. standard

Holed drawbar :

Fitted on the hitch points of the lower links
Type : bar with 12 holes of 20 mm dia, 51 mm distance each
Thickness of the bar : 32 mm - width : 79 mm
Length between the joint balls : 872 mm
Height above ground adjustable by power lift from 234 to 1018 mm, measured at the surface of the drawbar
With lower links in horizontal position :
distance of centre hole to rear axle centre : 1016 mm
distance of centre hole to p.t.o. shaft end : 565 mm

Drawbar :

Swinging drawbar
Vertical height to centre of clevis : 488 mm (19,2 in) and 586 mm (23,1 in) changed by inverting drawbar

Distance from rear axle centre : 864 mm (34,0 in), 813 mm (32,0 in) and 660 mm (26,0 in) to rear
Position relative to p.t.o. : 413 mm (16,3 in), 362 mm (14,3 in) and 210 mm (8,3 in) to rear
Total lateral adjustment : 508 mm (20,0 in), 483 mm (19,0 in) and 394 mm (15,5 in)
Pivot position in line with rear wheel centre
Drawbar pin hole : 27 mm (1,1 in) dia
Maximum static downward load :
At 413 mm (16,3 in) from end of p.t.o. shaft : 907 kg (2000 lb)
At 362 mm (14,3 in) from end of p.t.o. shaft : 1065 kg (2350 lb)
At 210 mm (8,3 in) from end of p.t.o. shaft : 1633 kg (3600 lb)

Steering :

Hydrostatic steering
Oil supplied from Plessey gear - driven pump
1 balanced double-acting ram : bore : 57 mm (2,25 in), stroke : 225 mm (8,87 in)
Maximum pressure : 107-114 bar (1550-1650 lb/in^2)
Pump delivery : 21,7 l/min (38,2 pt/min) at 2000 rev/min engine
Acting on front wheels, operated by hand wheel

Brakes :

Oil-immersed multi-plate disc brakes
Mechanicable acting of 4 discs on either side on the planetary shafts
Independent or combined pedal-operated
Brake disc dia : 224 mm o.d. (8,82 in)
188 mm i.d. (7,40 in)
Total friction area : 1768 cm^2 (274 in^2)

Parking brake : mechanically acting by footbrake linkage, hand-lever with ratchet

Wheels :

Steering wheels : Two at front
Tyres : MICHELIN
7,50x20, 6 ply rating, diagonal carcass
Maximum permissible mass on each tyre : 875 kg (1930 lb) at 2,8 bar (41 lb/in^2)
Track width : 1486 mm (58,5 in) by 102 mm (4,0 in) steps to 2098 mm (82,6 in) - changed by extending axle and reversing wheels
Rims : 5,50 F x 20

Driving wheels : Two at rear
Tyres : GOODYEAR Power Torque
16,9/14-38, 8 ply rating, diagonal carcass
Maximum permissible mass on each tyre : 2522 kg (5560 lb) at 1,1 bar (16 lb/in^2)
Track width : 1422 mm (56,0 in) by 102 mm (4,0 in) steps to 2034 mm (80,1 in)
Changed by reversing wheels and offset lug rims
Rims : DW 14x38

Wheelbase : 2581 mm (101,6 in)

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Lighting :

Unrestricted beam angle of headlights in plan view : 115° with front weights / 180° without front weights

	Height above ground of centre		Size		Distance from outside edge of tractor to centre at 1626 mm (64,0 in) track	
	mm	(in)	mm	(in)	mm	(in)
Headlights	990	(39,0)	120 Ø	(4,7 Ø)	560	(22,0)
Side lights	1265	(49,8)	70x70	(2,8x2,8)	270	(11,6)
Rear lights	1718	(67,6)	70x70	(2,8x2,8)	250	(9,8)
Reflectors	1174	(46,2)	83 Ø	(3,3 Ø)	132	(6,0)

Number of grease points :

Whole tractor : 13

CONDITIONS DURING TEST

Masses :

Tractor without driver but with tanks full and cab

	Front		Rear		Total	
	kg	(lb)	kg	(lb)	kg	(lb)
Without ballast	1209	(2665)	2558	(5639)	3767	(8304)
With ballast	1550	(3417)	3393	(7480)	4943	(10897)

Ballast :

	Number of weights	Total mass		Water	
		kg	(lb)	kg	(lb)
Front end	8	260	(573)	-	-
Rear wheels	6	306	(675)	610	(1345)

Track setting during tests :

Front : 1486 mm (58,5 in)
Rear : 1626 mm (64,0 in)

Overall dimensions :

Length : 4069 mm (160,2 in), without ballast (lower links - front wheels)
4123 mm (162,3 in), with ballast (lower links - front ballast)

Width : 2094 mm (82,4 in), with or without ballast and at 1626 mm track (tires at rear)

Height : 3104 mm (122,2 in), to top of exhaust pipe
2907 mm (114,5 in), to top of cab

Ground clearance :
Front : 551 mm (21,7 in)
Rear : 457 mm (18,0 in)

Seat :

BOSTROM Viking 301
Upholstered cushion and back rest, arm rests, torsion spring suspension with hydraulic damping
Adjustable for driver's weight
Range of adjustment : 150 mm (5,9 in) forwards and backwards

FUEL AND LUBRICANTS USED IN TESTS

Fuel :

During p.t.o. tests : TEXACO diesel fuel
Specific gravity at 15°C : 0,826 kg/l

During drawbar tests : FINA diesel fuel
Specific gravity at 15°C : 0,841 kg/l

Engine oil :

FORD, ESEN/M 2 C 121 A

Transmission oil :

FORD, ESEN/M 2 C 134 A

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COMPULSORY TESTS

I. MAIN POWER TAKE-OFF PERFORMANCE

Date of tests : 25th May 1977
Type of dynamometer : SCHENCK electrical dynamometer W 780

Horsepower	Speed		Fuel consumption		
	Engine	P.t.o.	Total	Specific	Specific energy
kW (hp)	rev/min	rev/min	l/h (UK gal/h)	g/kW h (lb/hp h)	kW h/l (hp h/UK gal)
Maximum power - 2 hour test					
62,8 (84,2)	2106	1023	21,294 (4,68)	280 (0,460)	2,95 (17,99)
At standard p.t.o. speed (1000 rev/min)					
62,2 (83,4)	2059	1000	21,074 (4,64)	280 (0,460)	2,95 (17,99)
At the speed recommended for drawbar work					
62,7 (84,1)	2100	1020	21,250 (4,67)	280 (0,460)	2,95 (17,99)
Part loads					
1) 85 % of torque at maximum power					
56,3 (75,5)	2232	1084	20,394 (4,49)	299 (0,491)	2,76 (16,82)
2) Unloaded					
-	2341	1137	6,983 (1,54)	-	-
3) 50 % of the load defined in (1)					
28,8 (38,6)	2283	1109	13,189 (2,90)	378 (0,621)	2,18 (13,31)
4) Maximum power					
62,8 (84,2)	2106	1023	21,294 (4,68)	280 (0,460)	2,95 (17,99)
5) 25 % of the load defined in (1)					
14,6 (19,6)	2306	1120	9,706 (2,14)	551 (0,906)	1,50 (9,16)
6) 75 % of the load defined in (1)					
42,9 (57,5)	2265	1100	16,508 (3,63)	318 (0,523)	2,60 (15,84)

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N° load, maximum engine speed : 2341 rev/min

Equivalent crankshaft torque at maximum power : 285 Nm (210,1 lb ft)

Maximum equivalent crankshaft torque : 324 Nm (238,9 lb ft) at 1437 rev/min of the engine

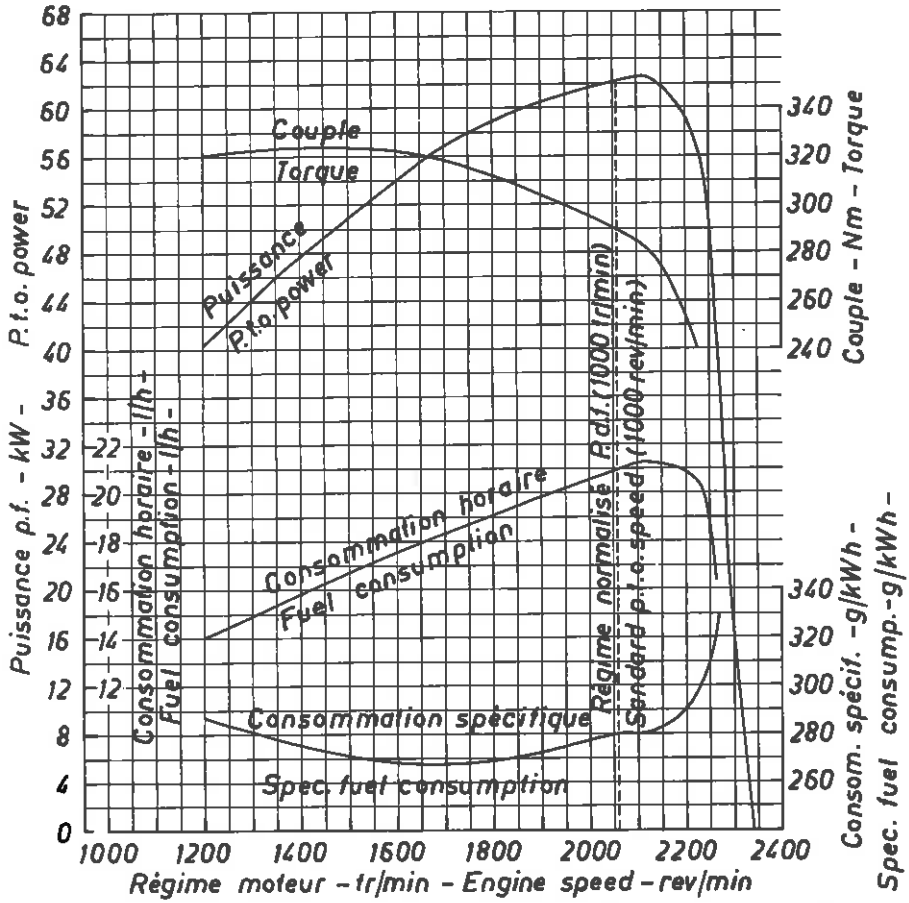
Mean atmospheric conditions :
- temperature : 20°C (68°F)
- pressure : 994 m bar (29,36 in Hg)
- relative humidity : 52 %

Maximum temperature :
- coolant : 89°C (192°F)
- engine oil : 102°C (216°F)
- fuel : 36°C (97°F)

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Essais au banc à la prise de force

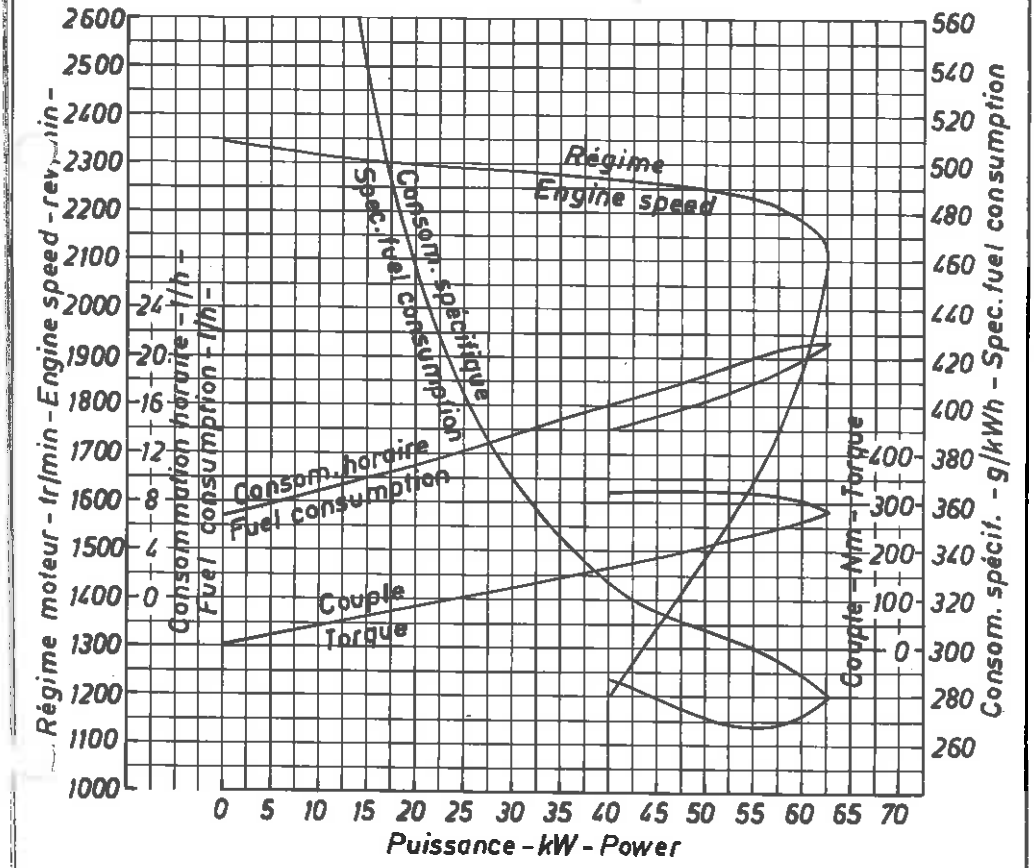
Power take – off test



Tracteur : FORD 7700	Accouplement : prise de force	Date épreuve : 25 - 5 - 1977
Moteur : n° F 169520	T° de l'air : 20°C	STATION DE GENIE RURAL C.E.M.A.G. - Gembloux
Combustible : dens.: 0,826 à 15° C	Pression barom. : 994 mbar	

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Essais au banc à la prise de force
Power take-off test



Tracteur : FORD 7700	Accouplement : prise de force	Date épreuve : 25 - 5 - 1977
Moteur : n° F 169520	T° de l'air : 20°C	STATION DE GENIE RURAL C.E.M.A.G. - Gembloux
Combustible : dens. : 0,826 à 15° C	Pression barom. : 994 mbar	

II. DRAWBAR PERFORMANCE ON A CONCRETE TRACK

Date of test : June and August 1977
Type of track : concrete
Height of drawbar above ground : 840 mm (tractor with ballast)
800 mm (tractor without ballast)
Tyres sizes : front : 7,50-20, 6 PR - Tyre inflation pressure : 2,8 bar
rear : 16,9/14-38, 8 PR - Tyre inflation pressure : 1,2 bar

Gear	Speed	Power	Drawbar pull	Engine speed	Wheelslip	Consumption		Temperatures			Atmospheric conditions		
						Specific work	Specific consumption	Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
	km/h (mile/h)	kW (hp)	N (lb)	rev/min	%	kW h/l (hp h/UK gal)	g/kW h (lb/hp h)	°C (°F)	°C (°F)	°C (°F)	°C (°F)	%	m bar (in Hg)
I. MAXIMUM POWER (ballasted)													
L1 P	2,06 (1,28)	21,3 (28,6)	37380 (8400)	2313	15,-	-	-	18 (64)	71 (160)	79 (174)	16 (61)	80	1000 (29,53)
L2 P	2,54 (1,58)	26,3 (35,3)	37380 (8400)	2312	15,-	1,77 (10,77)	476 (0,782)	18 (64)	71 (160)	79 (174)	16 (61)	80	1000 (29,53)
L1	2,62 (1,63)	27,2 (36,5)	37380 (8400)	2280	15,-	1,71 (10,44)	491 (0,807)	20 (68)	77 (171)	92 (198)	17 (63)	79	1002 (29,59)
L2	3,20 (1,99)	33,2 (44,5)	37380 (8400)	2254	15,-	1,94 (11,83)	434 (0,712)	20 (68)	77 (171)	92 (198)	17 (63)	79	1002 (29,59)
L3 P	4,37 (2,72)	45,3 (60,8)	37380 (8400)	2170	15,-	2,12 (12,90)	397 (0,653)	19 (66)	71 (160)	92 (198)	17 (63)	81	1000 (29,53)
L3	5,44 (3,38)	53,5 (71,7)	35410 (7960)	2121	12,-	2,38 (14,50)	354 (0,581)	20 (68)	77 (171)	92 (198)	17 (63)	79	1002 (29,59)
L4 P	5,83 (3,62)	54,8 (73,5)	33840 (7610)	2110	10,4	2,43 (14,82)	345 (0,569)	19 (66)	71 (160)	92 (198)	17 (63)	81	1001 (29,56)
H1 P	7,20 (4,47)	56,7 (76,0)	28350 (6370)	2104	7,5	2,57 (15,63)	328 (0,539)	19 (66)	71 (160)	92 (198)	17 (63)	81	1001 (29,56)
L4	7,84 (4,87)	57,3 (76,8)	26290 (5910)	2096	6,7	2,60 (15,86)	324 (0,531)	19 (66)	74 (165)	91 (196)	17 (63)	81	1002 (29,59)
H2 P	8,96 (5,57)	57,4 (76,9)	23050 (5180)	2107	5,7	2,54 (15,48)	330 (0,544)	19 (66)	71 (160)	92 (198)	17 (63)	81	1002 (29,59)

Gear	Speed	Power	Drawbar pull	Engine speed	Wheelslip	Consumption		Temperatures			Atmospheric conditions		
						Specific work	Specific consumption	Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
	km/h (mile/h)	kW (hp)	N (lb)	rev/min	%	kW h/l (hp h/UK gal)	g/kW h (lb/hp h)	°C (°F)	°C (°F)	°C (°F)	°C (°F)	%	m bar (in Hg)
H1	9,32 (5,79)	57,9 (77,6)	22370 (5030)	2111	5,6	2,57 (15,68)	326 (0,537)	19 (66)	74 (165)	91 (196)	17 (63)	81	1002 (29,59)
H2	12,07 (7,50)	57,9 (77,6)	17270 (3880)	2096	3,9	2,56 (15,62)	328 (0,539)	19 (66)	74 (165)	91 (196)	17 (63)	81	1002 (29,59)
H3 P	16,13 (10,02)	56,7 (76,0)	12660 (2840)	2100	2,6	2,55 (15,56)	329 (0,542)	19 (66)	71 (160)	92 (198)	17 (63)	81	1002 (29,59)
II. FIVE HOUR TEST at 75 % of pull at maximum power													
L4 P	6,37 (3,96)	44,9 (60,2)	25410	2202	6,9	2,26 (13,77)	373 (0,612)	20 (68)	84 (183)	104 (219)	18 (64)	85	980 (28,94)
III. FIVE HOUR TEST at pull corresponding to 15 % wheelslip in test (I)													
L3 P	-	-	37380	2175	-	-	-	19 (66)	88 (190)	106 (223)	14 (57)	96	991 (29,28)
IV. MAXIMUM POWER (unballasted)													
L1 P	2,04 (1,27)	17,4 (23,3)	30610 (6880)	2321	15,0	-	-	19 (66)	73 (163)	83 (181)	17 (63)	76	1008 (29,77)
L2 P	2,53 (1,57)	21,5 (28,8)	30610 (6880)	2317	15,0	-	-	18 (64)	71 (160)	82 (180)	16 (61)	90	1005 (29,68)
L1	2,63 (1,63)	22,4 (30,0)	30610 (6880)	2310	15,0	-	-	18 (64)	72 (162)	82 (180)	16 (61)	77	1006 (29,71)
L2	3,19 (1,98)	27,1 (36,4)	30610 (6880)	2285	15,0	-	-	18 (64)	77 (171)	88 (190)	16 (61)	77	1008 (29,77)
L3 P	4,27 (2,65)	36,3 (48,7)	30610 (6880)	2280	15,0	-	-	17 (63)	77 (171)	94 (201)	14 (57)	90	1006 (29,71)

Total oil consumption during ten hours of tests (II) and (III) : 20 g/h (0,044 lb/h)

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Gear	Speed	Power	Drawbar pull	Engine speed	Wheelslip	Consumption		Temperatures			Atmospheric conditions		
						Specific work	Specific consumption	Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
	km/h (mile/h)	kW (hp)	N (lb)	rev/min	%	kW h/l (hp h/UK gal)	g/kW h (lb/hp h)	°C (°F)	°C (°F)	°C (°F)	°C (°F)	%	m bar (in Hg)
L3	5,48 (3,41)	46,5 (62,4)	30610 (6880)	2248	15,0	-	-	18 (64)	77 (171)	88 (190)	16 (61)	77	1008 (29,77)
L4 P	5,83 (3,62)	49,6 (66,5)	30610 (6880)	2241	15,0	-	-	17 (63)	77 (171)	94 (201)	14 (57)	90	1006 (29,71)
H1 P	6,88 (4,28)	55,4 (74,3)	29040 (6530)	2156	13,0	-	-	17 (63)	76 (169)	92 (198)	14 (57)	84	1006 (29,71)
L4	7,88 (4,90)	55,8 (74,8)	25510 (5730)	2121	10,1	-	-	19 (66)	76 (169)	92 (198)	17 (63)	68	1008 (29,77)
H2 P	8,58 (5,33)	56,5 (75,9)	23740 (5340)	2106	9,0	-	-	18 (64)	76 (169)	92 (198)	14 (57)	84	1006 (29,71)
H1	9,61 (5,97)	57,6 (77,3)	21580 (4850)	2100	7,7	-	-	20 (68)	76 (169)	92 (198)	17 (63)	68	1008 (29,77)
H2	11,28 (7,01)	58,9 (79,0)	18840 (4230)	2096	5,7	-	-	20 (68)	76 (169)	92 (198)	17 (63)	68	1008 (29,77)
H3 P	16,78 (10,43)	58,5 (78,5)	12560 (2820)	2103	3,3	-	-	18 (64)	72 (162)	82 (180)	16 (61)	77	1006 (29,71)

III. TURNING SPACE AND TURNING CIRCLE

Details of wheel equipment : front : 7,50-20, 6 PR
rear : 16,9/14-38, 8 PR

Track of wheels : front : 1486 mm (58,5 in)
rear : 1626 mm (64,0 in)

	With brakes		Without brakes	
	Right-hand	Left-hand	Right-hand	Left-hand
	m (ft)	m (ft)	m (ft)	m (ft)
Radius of turning space	3,90 (12,80)	3,87 (12,70)	4,34 (14,24)	4,28 (14,04)
Radius of turning circle	3,79 (12,43)	3,76 (12,34)	4,23 (13,88)	4,17 (13,68)

IV. LOCATION OF CENTRE OF GRAVITY

Height above ground	976 mm (38,4 in)
Distance forward from the vertical plane containing the axis of the rear wheels	812 mm (32,0 in)
Distance from the the median of the tractor	15 mm to the left (0,6 in)

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V. BRAKE TESTS

Date of tests : 14th June and 31st August 1977
Type of track : Concrete
Type of decelerometer : Moto Meter, recording type
Masse of ballasted tractor : 4943 kg

COLD BRAKES

	With ballast		Without ballast	
Travelling speed of tractor - km/h (mile/h)	25,0	(15,5)	25,0	(15,5)
Deceleration - m/s^2 (ft/s^2)	5,2	(17,1)	5,6	(18,4)
Stopping distance - m (ft)	7,4	(24,3)	7,1	(23,3)
Force on peaal - N (lb)	559	(126)	471	(106)
Force exerted on pedal to achieve a deceleration of 2,5 m/s^2 (8,2 ft/s^2) - N (lb)	265	(50)	196	(44)

BRAKE FADE CHARACTERISTICS (hot tests)

	With ballast	Without ballast
Deceleration hot/cold - %	104	101
Stopping distance cold/hot - %	108	105
Force on pedal cold/hot - %	93	100

PARKING BRAKE

Tractor facing up slope (16 %) :
Pull on hand brake : 216 N (49 lb), tractor does not roll

Tractor facing down slope (16 %) :
Pull on hand brake : 245 N (55 lb), tractor does not roll

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VI. MEASUREMENT OF AMBIENT NOISE

Date of test : 6th June 1977
Type of track : Concrete
Type of sound level meter : BRÜEL & KJAER 2203

Results of test :

Gear : High 4
Travelling speed before acceleration : 26,37 km/h
Sound level : 88 dB(A)

VII. NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of tests : 6th June 1977
Type of sound level meter : BRÜEL & KJAER 2203
Type of octave filter : BRÜEL & KJAER 1613
Type of track : Concrete

The tractor was fitted with a cab

Gear	Travelling speed		dB(A)	Sones
	km/h	(mile/h)		
H 1 P *]	7,50	(4,77)	80	32
L 4	8,24	(5,12)	82	36
H 4 **]	32,15	(19,98)	75	26

*] Gear corresponding to the travelling speed nearest to 7,25 km/h (4,51 mile/h)

**] With light load

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VIII. POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date of tests : 17th and 18th October 1977
Hydraulic fluid : FORD, ESEN/2 M C 134 A - Mild E.P. SAE 80
Type of linkage lock for transport : hydraulic

HYDRAULIC PUMP

A. Principal circuit of power lift :

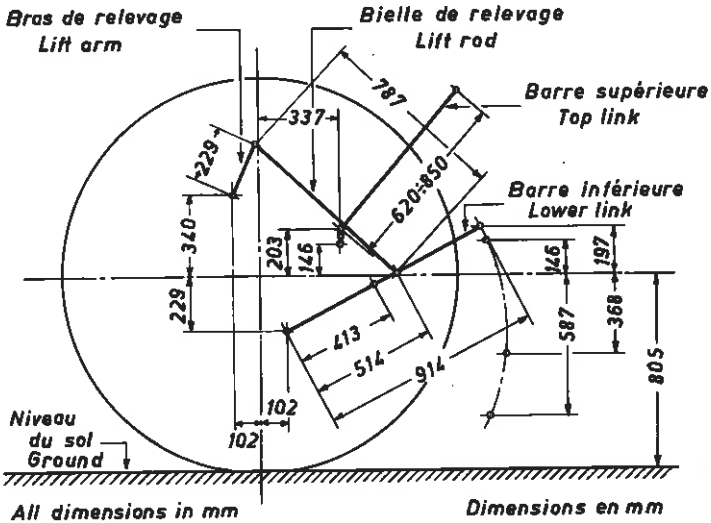
1) Opening pressure of relief valve : 163 bar (2318 lb/in^2)
   Sustained pressure by open relief valve : 180 bar (2560 lb/in^2)
2) Pump delivery at minimum pressure and maximum engine speed : 41 l/min (9,0 gal/min)
3) Pump delivery rate : 39 l/min (8,6 gal/min)
   Delivery pressure : 150 bar (2133 lb/in^2)
   Hydraulic power : 9,8 kW (13,1 hp)

B. Remote circuit :

Same characteristics as principal circuit

POWER LIFT

Dimensions of linkage geometry for the table on page 22.



LIFTING FORCES

Lifting height in relation to a horizontal line through the lower link pivoting point

mm (in)	-453 (-17,8)	-400 (-15,8)	-358 (-14,1)	-300 (-11,8)	-241 (-9,5)	-200 (-7,9)	-139 (-5,5)	-100 (-3,9)	0	+100 (+3,9)	+200 (+7,9)	+300 (+11,8)	+375 (+14,8)	+400 (+15,8)	+426 (+16,8)	+435 (+17,1)	+476 (+18,7)
Lifting forces at the hitch points *]																	
Maximum mechanical advantage																	
N (lb)							35320 (7937)	35610 (8003)	36300 (8158)	36200 (8135)	35410 (7958)	34430 (7737)		33160 (7452)	32960 (7407)		
Minimum mechanical advantage																	
N (lb)			26190 (5886)	26880 (6041)		27860 (6261)		28350 (6371)	28650 (6438)	28740 (6459)	28840 (6481)	29140 (6549)	29720 (6679)				

Max. force exerted throughout the whole range : 32960 N (7407 lb)
Force at which front of tractor is calculated to lift with maximum allowable front ballast is in excess of the measured values - Pressure : 150 bar (2133 lb/in²)

Lifting forces at the frame *]																	
Maximum mechanical advantage																	
N (lb)						31390 (7054)	30710 (6901)		29230 (6569)	27660 (6216)	26100 (5865)	24430 (5490)	22660 (5092)		20990 (4717)			19720 (4431)
Minimum mechanical advantage																	
N (lb)	27270 (6128)	26590 (5976)		25310 (5688)		24040 (5402)		22960 (5160)	22070 (4960)	21290 (4784)	20600 (4629)	19910 (4474)				19230 (4321)	

Max. force exerted throughout the whole range : 19720 N (4431 lb)
Force at which front of tractor is calculated to lift with maximum allowable front ballast : 27241 N (6124 lb) - Pressure : 150 bar (2133 lb/in²)

*] All values of forces for pressure at max. hydraulic power [150 bar (2133 lb/in²)] calculated from measurements at max. oil pressure [180 bar (2560 lb/in²)]

LINKAGE GEOMETRY WHEN CONNECTED TO THE STANDARD FRAME

	Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view :		
Lower links	914 mm (36,0 in)	914 mm (36,0 in)
Lift arms	229 mm (9,0 in)	229 mm (9,0 in)
Lift rods	787 mm (31,0 in)	787 mm (31,0 in)
Top link	680 mm (26,8 in)	684 mm (26,9 in)
Distance of lift rod connection point from pivot point of lower link	514 mm (20,2 in)	413 mm (16,3 in)
The following dimensions are given relative to rear axle centre line, situated 805 mm (31,7 in) above ground		
Lower link pivot point	102 mm (4,0 in) behind 229 mm (9,0 in) below	102 mm (4,0 in) behind 229 mm (9,0 in) below
Top link pivot point	337 mm (13,3 in) behind 203 mm (8,0 in) above	337 mm (13,3 in) behind 146 mm (5,7 in) above
Lift arm pivot point	102 mm (4,0 in) forward 340 mm (13,4 in) above	102 mm (4,0 in) forward 340 mm (13,4 in) above
Maximum and minimum height of lower link hitch points	197 mm (7,8 in) above 368 mm (14,5 in) below	146 mm (5,7 in) above 587 mm (23,1 in) below
Height of lower link hitch points when locked in highest transport position	Any height within lift range	Any height within lift range