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January 1998

Test 1801: New Holland TS100 Diesel

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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SUMMARY OF OECD TEST 1801 - NEBRASKA SUMMARY 295

NEW HOLLAND TS100 DIESEL

16 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1059 rpm)					
85.4 (63.7)	2170	5.15 (19.50)	0.421 (0.256)	16.58 (3.27)	
Maximum Power (2 hours)					
88.5 (66.0)	2050	5.11 (19.34)	0.403 (0.245)	17.31 (3.41)	
Standard Power Take-off Speed (1000 rpm)					
88.5 (66.0)	2050	5.11 (19.34)	0.403 (0.245)	17.31 (3.41)	

VARYING POWER AND FUEL CONSUMPTION

85.4 (63.7)	2170	5.15 (19.50)	0.421 (0.256)	16.58 (3.27)	Air temperature
75.2 (56.1)	2246	4.79 (18.12)	0.445 (0.271)	15.68 (3.09)	75°F (24°C)
57.0 (42.5)	2275	4.04 (15.31)	0.494 (0.301)	14.11 (2.78)	Relative humidity
38.5 (28.7)	2296	3.27 (12.39)	0.594 (0.362)	11.75 (2.31)	36%
19.4 (14.5)	2316	2.47 (9.35)	0.887 (0.539)	7.87 (1.55)	Barometer
--	2332	1.67 (6.31)	--	--	29.8" Hg (100.8 kPa)
--			--	--	

Maximum Torque - 276.4 lb.-ft. (374.7 Nm) at 1355 rpm

Maximum Torque Rise - 33.6%

Torque rise at 1800 engine rpm - 22%

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Engaged)

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—6th(6L) Gear									
71.6 (53.4)	6960 (31.0)	3.86 (6.21)	2167	5.7	0.496 (0.302)	14.06 (2.77)	182 (83)	72 (22)	29.5 (100.0)
75% of Pull at Maximum Power—6th(6L) Gear									
56.8 (42.4)	5210 (23.2)	4.09 (6.59)	2261	4.1	0.556 (0.339)	12.56 (2.48)	180 (82)	68 (20)	29.5 (100.0)
50% of Pull at Maximum Power—6th(6L) Gear									
38.9 (29.0)	3485 (15.5)	4.19 (6.74)	2284	2.7	0.665 (0.405)	10.50 (2.07)	182 (83)	66 (19)	29.5 (100.0)
75% of Pull at Reduced Engine Speed—7th(7L) Gear									
56.9 (42.4)	5215 (23.2)	4.09 (6.58)	1860	4.2	0.500 (0.304)	13.96 (2.75)	183 (84)	68 (20)	29.6 (100.2)
50% of Pull at Reduced Engine Speed—7th(7L) Gear									
38.8 (28.9)	3480 (15.5)	4.18 (6.73)	1875	2.9	0.578 (0.352)	12.09 (2.38)	182 (83)	68 (20)	29.6 (100.2)

Location of Test: Silsoe Research Institute, Wrest Park, Silsoe, United Kingdom

Dates of Test: July - September, 1998

Manufacturer: New Holland UK Ltd., Basildon, Essex, United Kingdom

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F (15°/15°C)** 0.839 **Fuel weight** 6.98 lbs/gal (0.837 kg/l) **Oil SAE** 10W30 **API service classification** CE/SF **Transmission and hydraulic lubricant** SAE 10W30 API GL4 **Front axle lubricant** SAE 10W30 API GL4

ENGINE: Make New Holland Diesel **Type** four cylinder vertical with turbocharger **Serial No.** PF736350 **Crankshaft** lengthwise **Rated engine speed** 2170 **Bore and stroke** 4.40" x 5.00" (111.8 mm x 127.0 mm) **Compression ratio** 17.5 to 1 **Displacement** 304 cu in (4987 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper elements **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: **Type** front wheel assist **Serial No.** 086476B **Tread width** rear 60.2" (1528 mm) to 79.8" (2028 mm) front 55.2" (1403 mm) to 83.2" (2113 mm) **Wheelbase** 93.0" (2362 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.40 (2.25) second 1.72 (2.77) third 2.09 (3.37) fourth 2.57 (4.13) fifth 3.31 (5.32) sixth 4.06 (6.53) seventh 4.94 (7.95) eighth 5.75 (9.26) ninth 6.06 (9.76) tenth 7.07 (11.38) eleventh 8.61 (13.85) twelfth 10.56 (17.00) thirteenth 13.59 (21.87) fourteenth 16.69 (26.86) fifteenth 20.31 (32.69) sixteenth 24.94 (40.14) reverse 1.39 (2.23), 1.70 (2.74), 2.08 (3.34), 2.55 (4.10), 3.27 (5.27), 4.02 (6.47), 4.90 (7.88), 5.70 (9.18), 6.01 (9.67), 7.00 (11.27), 8.53 (13.72), 10.47 (16.85), 13.47 (21.68), 16.54 (26.62), 20.13 (32.40), 24.72 (39.78) **Clutch** multiple wet disc electro-hydraulically operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1890 engine rpm or 1000 rpm at 2049 engine rpm **Unladen tractor mass** 9480 lb (4299 kg)

DRAWBAR PERFORMANCE
(Unballasted - Front Drive Engaged)
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2nd(2L) Gear									
40.6 (30.3)	9780 (43.5)	1.56 (2.51)	2277	15.0	0.671 (0.408)	10.41 (2.05)	180 (82)	68 (20)	29.6 (100.2)
3rd(3L) Gear									
48.8 (36.4)	9465 (42.1)	1.93 (3.11)	2263	12.6	0.633 (0.385)	11.05 (2.18)	182 (83)	70 (21)	29.6 (100.1)
4th(4L) Gear									
58.9 (43.9)	9275 (41.3)	2.38 (3.85)	2237	11.4	0.569 (0.346)	12.28 (2.42)	182 (83)	70 (21)	29.6 (100.1)
5th(5L) Gear									
69.5 (51.8)	8745 (38.9)	2.98 (4.79)	2119	8.6	0.511 (0.311)	13.65 (2.69)	182 (83)	70 (21)	29.5 (100.0)
6th(6L) Gear									
72.9 (54.4)	7530 (33.5)	3.63 (5.85)	2056	6.4	0.481 (0.293)	14.52 (2.86)	182 (83)	72 (22)	29.5 (100.0)
7th(7L) Gear									
70.0 (52.2)	5825 (25.9)	4.51 (7.25)	2057	4.5	0.506 (0.308)	13.81 (2.72)	183 (84)	70 (21)	29.5 (100.0)
8th(1H) Gear									
72.1 (53.8)	5095 (22.7)	5.31 (8.55)	2054	4.0	0.495 (0.301)	14.11 (2.78)	182 (83)	68 (20)	29.5 (99.9)
9th(8L) Gear									
68.8 (51.3)	4640 (20.6)	5.56 (8.95)	2049	3.7	0.514 (0.313)	13.58 (2.68)	182 (83)	68 (20)	29.5 (99.9)
10th(2H) Gear									
71.3 (53.2)	4070 (18.1)	6.57 (10.58)	2055	3.4	0.497 (0.303)	14.04 (2.77)	182 (83)	68 (20)	29.5 (99.9)
11th(3H) Gear									
69.1 (51.5)	3240 (14.4)	8.00 (12.87)	2041	2.7	0.515 (0.313)	13.55 (2.67)	182 (83)	68 (20)	29.5 (99.9)
12th(4H) Gear									
67.2 (50.1)	2550 (11.3)	9.88 (15.91)	2045	2.2	0.524 (0.319)	13.33 (2.63)	182 (83)	68 (20)	29.5 (99.9)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The performance figures on this summary were taken from a test conducted under the OECD Code II test code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1801**, Nebraska Summary 295, January 13, 2000.

David L. Morgan
Assistant Director

L.L. Bashford
M.F. Kocher
R.D. Grisso, Jr.
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
Maximum Sound level in 7th (7L) gear	77.0	77.0
Bystander in 16th(8H) Gear	85.0	--

TIRES AND WEIGHT

Rear tires - No., size, ply & psi (kPa)
Front tires - No., size, ply & psi (kPa)
Height of Drawbar
Static Weight with operator - Rear
- Front
- Total

Tested Without Ballast

Two 16.9R38; **,13(90)
Two 13.6R28; **,13(90)
19.9 in (505 mm)
5910 lb (2682 kg)
3730 lb (1692 kg)
9640 lb (4374 kg)

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Disengaged)

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F cool- ing med	Temp. °C Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—8th (1H) Gear									
71.3 (53.2)	4885 (21.7)	5.47 (8.81)	2165	5.0	0.504 (0.307)	13.86 (2.73)	182 (83)	66 (19)	29.8 (100.9)
75% of Pull at Maximum Power—8th (1H) Gear									
56.6 (42.2)	3665 (16.3)	5.79 (9.31)	2258	3.7	0.557 (0.339)	12.54 (2.47)	182 (83)	66 (19)	29.8 (100.9)
50% of Pull at Maximum Power—8th (1H) Gear									
38.6 (28.8)	2450 (10.9)	5.91 (9.51)	2283	2.7	0.668 (0.406)	10.46 (2.06)	180 (82)	70 (21)	29.8 (100.8)
75% of Pull at Reduced Engine Speed—10th (2H) Gear									
56.1 (41.8)	3660 (16.3)	5.75 (9.25)	1832	4.0	0.481 (0.293)	14.52 (2.86)	180 (82)	75 (24)	29.7 (100.6)
50% of Pull at Reduced Engine Speed—10th (2H) Gear									
38.5 (28.7)	2455 (10.9)	5.88 (9.46)	1853	2.9	0.568 (0.346)	12.31 (2.43)	180 (82)	75 (24)	29.7 (100.6)
MAXIMUM POWER IN SELECTED GEARS									
2nd(2L) Gear									
30.2 (22.5)	7285 (32.4)	1.55 (2.50)	2293	15.0	0.780 (0.475)	8.96 (1.77)	180 (82)	75 (24)	29.7 (100.7)
3rd(3L) Gear									
37.5 (28.0)	7170 (31.9)	1.96 (3.16)	2280	10.9	0.705 (0.429)	9.90 (1.95)	180 (82)	72 (22)	29.7 (100.7)
4th(4L) Gear									
46.0 (34.3)	7195 (32.0)	2.40 (3.86)	2269	10.8	0.638 (0.389)	10.94 (2.16)	182 (83)	73 (23)	29.7 (100.7)
5th(5L) Gear									
57.4 (42.8)	7070 (31.4)	3.04 (4.90)	2243	10.6	0.573 (0.349)	12.18 (2.40)	180 (82)	72 (22)	29.7 (100.7)
6th(6L) Gear									
68.7 (51.2)	7025 (31.3)	3.67 (5.90)	2177	9.7	0.523 (0.318)	13.34 (2.63)	182 (83)	73 (23)	29.8 (100.8)
7th(7L) Gear									
69.3 (51.7)	5950 (26.5)	4.37 (7.03)	2052	6.2	0.510 (0.310)	13.71 (2.70)	182 (83)	64 (18)	29.8 (100.8)
8th(1H) Gear									
73.5 (54.8)	5345 (23.8)	5.16 (8.30)	2052	5.6	0.488 (0.297)	14.31 (2.82)	182 (83)	73 (23)	29.8 (100.8)
9th(8L) Gear									
70.0 (52.2)	4835 (21.5)	5.43 (8.74)	2049	4.9	0.504 (0.307)	13.86 (2.73)	182 (83)	70 (21)	29.8 (100.8)
10th(2H) Gear									
72.4 (54.0)	4215 (18.8)	6.44 (10.36)	2058	4.3	0.490 (0.298)	14.26 (2.81)	182 (83)	72 (22)	29.8 (100.8)
11th(3H) Gear									
70.1 (52.3)	3350 (14.9)	7.85 (12.64)	2045	3.4	0.499 (0.304)	13.99 (2.76)	183 (84)	72 (22)	29.8 (100.8)
12th(4H) Gear									
68.4 (51.0)	2645 (11.8)	9.69 (15.59)	2043	2.9	0.514 (0.313)	13.58 (2.68)	182 (83)	72 (22)	29.8 (100.8)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II		with (1)45 mm	with (2) 45mm	with (2)50 mm
Quick Attach: None		assist cylinder	assist cylinders	assist cylinders
Maximum Force Exerted Through Whole Range:	3415 lbs (15.2 kN)	4790 lbs (21.3 kN)	6410 lbs (28.5 kN)	6970 lbs (31.0 kN)
i) Opening pressure of relief valve:	NA			
Sustained pressure of the open relief valve:	2740 psi (189 bar)			
ii) Pump delivery rate at minimum pressure:	19.1 GPM (86.0 l/min)			
iii) Pump delivery rate at maximum				
hydraulic power:	19.8 GPM (74.8 l/min)			
Delivery pressure:	2205 psi (152 bar)			
Power:	25.4 HP (18.96 kW)			

SAE Static Test—System pressure 2425 psi (167 Bar)

Hitch point distance to ground level in. (mm)	7.8(197)	14.2(361)	20.1(511)	28.0(711)	36.3(921)
Lift force on frame lb	5915	5465	5215	4630	4225
" " " " " " (kN)	(26.3)	(24.3)	(23.2)	(20.6)	(18.8)

SAE Static Test—System pressure 2425 psi (167 Bar) (with(1) 45 mm lift assist cylinder)

Hitch point distance to ground level in. (mm)	7.8(197)	14.2(361)	20.1(511)	28.0(711)	36.3(921)
Lift force on frame lb	8050	7960	7465	6630	5780
" " " " " " (kN)	(35.8)	(35.4)	(33.2)	(29.5)	(25.7)

SAE Static Test—System pressure 2425 psi (167 Bar) (with(2) 45 mm lift assist cylinders)

Hitch point distance to ground level in. (mm)	7.8(197)	14.2(361)	20.1(511)	28.0(711)	36.3(921)
Lift force on frame lb	10745	10385	9870	8675	7420
" " " " " " (kN)	(47.8)	(46.2)	(43.9)	(38.6)	(33.0)

SAE Static Test—System pressure 2425 psi (167 Bar) (with(2) 50 mm lift assist cylinders)

Hitch point distance to ground level in. (mm)	7.8(197)	14.2(361)	20.1(511)	28.0(711)	36.3(921)
Lift force on frame lb	12230	11715	10970	9645	8520
" " " " " " (kN)	(54.4)	(52.1)	(48.8)	(42.9)	(37.9)

ASAE Static Test—System pressure 2700 psi (186 Bar)

Hitch point distance to ground level in. (mm)	7.8(197)	14.2(361)	20.1(511)	28.0(711)	36.3(921)
Lift force on frame lb	6585	6095	5810	5160	4750
" " " " " " (kN)	(29.3)	(27.1)	(25.9)	(23.0)	(20.9)

ASAE Static Test—System pressure 2700 psi (186 Bar) (with(1) 45 mm lift assist cylinder)

Hitch point distance to ground level in. (mm)	7.8(197)	14.2(361)	20.1(511)	28.0(711)	36.3(921)
Lift force on frame lb	8970	8860	8320	7385	6430
" " " " " " (kN)	(39.9)	(39.4)	(37.0)	(32.9)	(28.6)

ASAE Static Test—System pressure 2700 psi (186 Bar) (with(2) 45 mm lift assist cylinders)

Hitch point distance to ground level in. (mm)	7.8(197)	14.2(361)	20.1(511)	28.0(711)	36.3(921)
Lift force on frame lb	11960	11575	10995	9665	8270
" " " " " " (kN)	(53.2)	(51.1)	(48.9)	(43.0)	(36.8)

ASAE Static Test—System pressure 2700 psi (186 Bar) (with(2) 50 mm lift assist cylinders)

Hitch point distance to ground level in. (mm)	7.8(197)	14.2(361)	20.1(511)	28.0(711)	36.3(921)
Lift force on frame lb	13620	13040	12220	10740	9490
" " " " " " (kN)	(60.6)	(58.0)	(54.4)	(47.8)	(42.2)

HITCH DIMENSIONS AS TESTED—NO LOAD

	OECD Test		SAE/ASAE Test	
	inch	mm	inch	mm
A	28.3	720	26.6	675
B	10.0	254	10.0	254
C	14.0	356	14.0	356
D	13.4	341	13.4	341
E	5.9	149	8.1	205
F	9.0	229	9.0	229
G	31.3	795	29.1	740
H	1.8	46	1.8	46
I	12.8	325	12.8	325
J	22.3	566	20.1	511
K	18.3	466	20.5	520
L	40.0	1017	40.0	1017
M	22.0	560	22.0	560
N	36.0	915	36.0	915
O	7.6	194	7.8	197
P	46.3	1176	39.3	994
Q	33.3	846	31.9	811
R	31.9	810	30.5	775

