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## Test 2241: New Holland TS100A Diesel

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# SUMMARY OF OECD TEST 2241-NEBRASKA SUMMARY 497

## NEW HOLLAND TS100A DIESEL

### 12 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
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed—(PTO speed—1038 rpm)</b>					
86.9 (64.8)	2200	5.84 (22.09)	0.474 (0.288)	14.87 (2.93)	
<b>Standard Power Take-off Speed (1001 rpm)</b>					
87.2 (65.0)	2121	5.70 (21.59)	0.462 (0.281)	15.28 (3.01)	
<b>Maximum Power (2 hours)</b>					
87.7 (65.4)	1937	5.51 (20.86)	0.444 (0.270)	15.90 (3.13)	

#### VARYING POWER AND FUEL CONSUMPTION

86.9 (64.8)	2200	5.84 (22.09)	0.474 (0.288)	14.87 (2.93)	Air temperature
79.4 (59.2)	2358	5.76 (21.80)	0.511 (0.311)	13.79 (2.72)	73°F (23°C)
59.4 (44.3)	2363	4.75 (17.97)	0.564 (0.343)	12.51 (2.47)	Relative humidity
40.0 (29.8)	2369	3.61 (13.66)	0.636 (0.387)	11.09 (2.19)	40%
19.9 (14.9)	2387	2.63 (9.96)	0.931 (0.567)	7.57 (1.49)	Barometer
--	2407	1.80 (6.82)	--	--	30.1" Hg (102.0 kPa)

Maximum Torque - 373.3 lb.-ft. (438.3 Nm) at 1252 rpm  
 Maximum Torque Rise - 55.8%  
 Torque rise at 1800 engine rpm - 23%

#### 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	Barom. inch Hg (kPa)
<b>Maximum Power—6th(2II) Gear</b>								
74.7 (55.7)	6200 (27.6)	4.52 (7.27)	2203	3.6	0.545 (0.332)	12.94 (2.55)	180 (82)	45 (7)
<b>75% of Pull at Maximum Power—6th(2II) Gear</b>								
60.7 (45.3)	4655 (20.7)	4.90 (7.88)	2373	3.0	0.629 (0.382)	11.22 (2.21)	180 (82)	46 (8)
<b>50% of Pull at Maximum Power—6th(2II) Gear</b>								
40.8 (30.4)	3105 (13.8)	4.92 (7.92)	2368	2.2	0.739 (0.450)	9.54 (1.88)	180 (82)	46 (8)
<b>75% of Pull at Reduced Engine Speed—7th(3II) Gear</b>								
60.9 (45.4)	4655 (20.7)	4.90 (7.89)	1665	2.9	0.530 (0.322)	13.31 (2.62)	174 (79)	50 (10)
<b>50% of Pull at Reduced Engine Speed—7th(3II) Gear</b>								
40.5 (30.2)	3095 (13.8)	4.91 (7.91)	1654	2.1	0.547 (0.333)	12.89 (2.54)	176 (80)	50 (10)

**Location of tests:** Silsoe Research Institute, Wrest Park, Silsoe, MK45 4HS, United Kingdom

**Dates of tests:** November 2004 to January 2005.

**Manufacturer:** CNH U.K. Ltd., Basildon, Essex, SS14 3AD, England

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.847 **Fuel weight** 7.04 lbs/gal (0.8453 kg/l) **Oil SAE** 10W30 **API service classification** CH-4 **Transmission and hydraulic lubricant** NH 410B **fluid Front axle lubricant** NH 410B fluid

**ENGINE: Make** CNH Diesel **Type** four cylinder vertical with turbocharger and air to air intercooler **Serial No.** 00087961 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.094" x 5.196" (104.0 mm x 132.0 mm) **Compression ratio** 17.0 to 1 **Displacement** 274 cu in (4485 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** thermostat and variable speed fan

**CHASSIS: Type** front wheel assist **Serial No.** 221337 **Tread width** rear 68.1" (1730 mm) to 83.9" (2130 mm) front 64.2" (1630 mm) to 81.9" (2080 mm) **Wheelbase** 95.0" (2412 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.25 (2.01) second 1.83 (2.94) third 2.61 (4.20) fourth 3.13 (5.04) fifth 3.80 (6.11) sixth 4.59 (7.39) seventh 6.56 (10.55) eighth 7.59 (12.21) ninth 9.54 (15.35) tenth 11.11 (17.88) eleventh 15.86 (25.53) twelfth 23.09 (37.16) reverse 1.28 (2.06), 1.88 (3.02), 2.68 (4.31), 3.24 (5.21), 3.90 (6.27), 4.70 (7.57), 6.72 (10.82), 7.78 (12.52), 9.78 (15.74), 11.40 (18.34) 16.27 (26.19), 23.68 (38.11) **Clutch** single dry disc hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1969 engine rpm or 1000 rpm at 2120 engine rpm **Unladen tractor mass** 11200 lb (5080 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)	Temp. °F(°C) cool- ing med	Barom. inch Hg (kPa)		
1st(II) Gear									
38.2 (28.5)	12050 (53.6)	1.19 (1.91)	2368	13.0	0.764 (0.464)	9.24 (1.82)	180 (82)	48 (9)	29.9 (101.1)
2nd(2I) Gear									
56.1 (41.8)	11940 (53.1)	1.76 (2.83)	2368	12.1	0.666 (0.405)	10.60 (2.09)	180 (82)	50 (10)	29.9 (101.1)
3rd(3I) Gear									
71.6 (53.4)	11420 (50.8)	2.35 (3.78)	2141	9.1	0.563 (0.342)	12.54 (2.47)	178 (81)	50 (10)	29.9 (101.1)
4th(III) Gear									
74.7 (55.7)	10295 (45.8)	2.72 (4.38)	1999	6.1	0.527 (0.321)	13.39 (2.64)	176 (80)	48 (9)	29.9 (101.1)
5th(4I) Gear									
76.2 (56.8)	9025 (40.2)	3.17 (5.10)	1898	5.1	0.501 (0.305)	14.06 (2.77)	180 (82)	50 (10)	29.9 (101.1)
6th(2II) Gear									
75.9 (56.6)	7260 (32.3)	3.92 (6.31)	1921	3.9	0.515 (0.313)	13.71 (2.70)	176 (80)	45 (7)	29.9 (101.1)
7th(3II) Gear									
74.0 (55.2)	4985 (22.2)	5.57 (8.96)	1891	3.1	0.522 (0.318)	13.50 (2.66)	176 (80)	48 (9)	29.9 (101.1)
8th(III) Gear									
73.4 (54.7)	4270 (19.0)	6.45 (10.38)	1887	2.7	0.526 (0.320)	13.40 (2.64)	176 (80)	48 (9)	29.9 (101.1)
9th(4II) Gear									
71.1 (53.0)	3225 (14.3)	8.27 (13.31)	1916	2.2	0.545 (0.332)	12.94 (2.55)	176 (80)	46 (8)	29.9 (101.1)

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
At no load in 6th (2II) gear	85.0	85.0
Bystander	--	--

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
At no load in 6th (2II) gear	74.0	74.0
Bystander	--	--

#### 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 600/65R38; \*\*,10 (70)

Two 480/65R28; \*\*,10 (70)

19.5 in (495 mm)

6930 lb (3144 kg)

4435 lb (2011 kg)

11365 lb (5155 kg)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**NOTE:** All results reported were for a tractor equipped with a cab unless noted otherwise.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's claims of 26.5 GPM (100 lpm) hydraulic flow with a variable displacement pump nor 3 point lift claims of 8250 lbs (3742 kg), with one 50 mm boost cylinder optionally 9285 lbs (4212 kg), with two 50 mm boost cylinders with mechanical lower links. The performance figures on this summary were taken from a test conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2241** Nebraska Summary 497, December 15, 2005.

Leonard L. Bashford  
Director

M.F. Kocher  
V.I. Adamchuk  
J.A. Smith  
Board of Tractor Test Engineers

**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 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)
<b>Maximum Power—6th(2II) Gear</b>									
75.6 (56.4)	6405 (28.5)	4.43 (7.13)	2202	3.5	0.547 (0.333)	12.89 (2.54)	178 (81)	41 (5)	30.2 (102.2)
<b>75% of Pull at Maximum Power—6th(2II) Gear</b>									
62.1 (46.3)	4815 (21.4)	4.84 (7.78)	2376	2.6	0.635 (0.386)	11.12 (2.19)	180 (82)	41 (5)	30.2 (102.2)
<b>50% of Pull at Maximum Power—6th(2II) Gear</b>									
41.3 (30.8)	3190 (14.2)	4.86 (7.82)	2372	1.9	0.720 (0.438)	9.80 (1.93)	180 (82)	41 (5)	30.2 (102.2)
<b>75% of Pull at Reduced Engine Speed—7th(3II) Gear</b>									
62.2 (46.4)	4820 (21.4)	4.84 (7.79)	1667	2.6	0.509 (0.310)	13.86 (2.73)	174 (79)	46 (8)	30.2 (102.2)
<b>50% of Pull at Reduced Engine Speed—7th(3II) Gear</b>									
41.3 (30.8)	3195 (14.2)	4.85 (7.81)	1660	1.9	0.541 (0.329)	13.05 (2.57)	174 (79)	46 (8)	30.2 (102.2)
<b>MAXIMUM POWER IN SELECTED GEARS</b>									
1st(1I) Gear									
29.4 (21.9)	9420 (41.9)	1.17 (1.88)	2376	13.1	0.848 (0.516)	8.31 (1.64)	181 (83)	45 (7)	30.2 (102.2)
2nd(2I) Gear									
42.5 (31.7)	9285 (41.3)	1.72 (2.76)	2367	12.8	0.731 (0.444)	9.65 (1.90)	181 (83)	45 (7)	30.2 (102.2)
3rd(3I) Gear									
61.0 (45.5)	9050 (40.3)	2.53 (4.07)	2370	10.1	0.653 (0.397)	10.81 (2.13)	181 (83)	46 (8)	30.2 (102.2)
4th(1II) Gear									
70.3 (52.4)	8495 (37.8)	3.10 (4.99)	2335	6.8	0.584 (0.355)	12.08 (2.38)	180 (82)	48 (9)	30.2 (102.2)
5th(4I) Gear									
75.0 (55.9)	8025 (35.7)	3.50 (5.64)	2150	5.5	0.538 (0.327)	13.11 (2.58)	178 (81)	48 (9)	30.2 (102.2)
6th(2II) Gear									
77.0 (57.4)	7575 (33.7)	3.81 (6.13)	1912	4.5	0.505 (0.307)	13.96 (2.75)	176 (80)	45 (7)	30.2 (102.2)
7th(3II) Gear									
75.8 (56.5)	5160 (22.9)	5.51 (8.86)	1899	2.8	0.509 (0.310)	13.86 (2.73)	176 (80)	41 (5)	30.2 (102.2)
8th(1III) Gear									
75.8 (56.5)	4440 (19.7)	6.40 (10.30)	1901	2.4	0.505 (0.307)	13.96 (2.75)	178 (81)	41 (5)	30.2 (102.2)
9th(4II) Gear									
73.9 (55.1)	3410 (15.2)	8.12 (13.07)	1911	2.0	0.524 (0.319)	13.45 (2.63)	176 (80)	41 (5)	30.2 (102.2)

### THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: No

Maximum Force Exerted Through Whole Range: 5485 lbs (24.4 kN) 1 x 50 mm boost cylinder  
 7330 lbs (32.6 kN) 2 x 50 mm boost cylinders  
 7825 lbs (34.8 kN) 2 x 80 mm external cylinders

i) Opening pressure of relief valve:	NA	NA
	<b>fixed disp. pump</b>	<b>variable disp. pump</b>
Sustained pressure at compensator cutoff:	2920 psi (201 bar)	3105 psi (214 bar)
ii) Pump delivery rate at minimum pressure:	22.0 GPM(83.3 l/min)	26.2 GPM(99.0 l/min)
iii) Pump delivery rate at maximum		
hydraulic power:	19.1 GPM(72.2 l/min)	25.0 GPM(94.5 l/min)
Delivery pressure:	2465 psi (170 bar)	2610 psi (180 bar)
Power:	27.5 HP (20.5 kW)	38.0 HP (28.3 kW)

### THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi.(bar)	2920(201)
Location:	lift cylinder
Hydraulic oil temperature: °F(°C)	150(65)
Location:	hydraulic sump
Category:	II
Quick attach:	none

#### Mechanical lower link

SAE Static Test—System pressure 2625 psi (181 Bar) (one 50 mm boost cylinder)

Hitch point distance to ground level in. (mm)	7.9(200)	16.3(415)	23.0(585)	28.3(720)	34.8(885)
Lift force on frame lb	10160	9620	9530	8990	7735
" " " " " " (kN)	(45.2)	(42.8)	(42.4)	(40.0)	(34.4)

#### Mechanical lower link

SAE Static Test—System pressure 2625 psi (181 Bar) (two 50 mm boost cylinders)

Hitch point distance to ground level in. (mm)	7.9(200)	16.3(415)	23.0(585)	28.5(723)	34.4(875)
Lift force on frame lb	13330	12565	11355	10185	8950
" " " " " " (kN)	(59.3)	(55.9)	(50.5)	(45.3)	(39.8)

#### Electronic draft control

SAE Static Test—System pressure 2815 psi (194 Bar) (two 80 mm external cylinders)

Hitch point distance to ground level in. (mm)	7.9(200)	15.7(400)	23.0(585)	30.3(770)	35.8(910)
Lift force on frame lb	12700	11575	11105	10520	9755
" " " " " " (kN)	(56.5)	(51.5)	(49.4)	(46.8)	(43.4)

### HITCH DIMENSIONS AS TESTED—NO LOAD

	OECD test		SAE test	
	inch	mm	inch	mm
A	27.6	700	28.0	710
B	12.2	310	12.2	310
C	15.6	395	15.6	395
D	14.6	370	14.6	370
E	8.2	208	10.8	275
F	9.3	235	9.3	235
G	32.3	820	32.3	820
H	1.1	28	1.1	28
I	17.9	455	16.9	430
J	23.0	585	23.0	585
K	19.8	505	23.0	585
L	44.0	1118	44.0	1118
M	22.2	563	22.2	563
N	37.4	950	37.4	950
O	7.7	196	7.9	200
P	47.0	1195	42.0	1068
Q	32.3	820	32.3	820
R	30.1	764	32.1	815

