

January 1999

Test 1900 & 1901: New Holland TN 55D/New Holland TN 55S Diesel

Follow this and additional works at: <http://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Applied Mechanics Commons](#)

"Test 1900 & 1901: New Holland TN 55D/New Holland TN 55S Diesel" (1999). *Nebraska Tractor Tests*. 290.
<http://digitalcommons.unl.edu/tractormuseumlit/290>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

SUMMARY OF OECD TESTS 1900 and 1901—NEBRASKA SUMMARY 330

NEW HOLLAND TN 55D DIESEL

ALSO NEW HOLLAND TN 55S DIESEL

8 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 565 rpm)					
43.0 (32.1)	2300	2.71 (10.26)	0.441 (0.268)	15.89 (3.13)	
Standard Power Take-off speed (541 rpm)					
42.6 (31.8)	2202	2.65 (10.05)	0.436 (0.265)	16.09 (3.17)	

VARYING POWER AND FUEL CONSUMPTION					
43.0 (32.1)	2300	2.71 (10.26)	0.441 (0.268)	15.89 (3.13)	Air temperature
38.3 (28.5)	2401	2.35 (8.89)	0.431 (0.262)	16.29 (3.21)	64°F (18°C)
28.8 (21.5)	2414	2.02 (7.64)	0.492 (0.299)	14.26 (2.81)	Relative humidity
19.5 (14.6)	2450	1.57 (5.94)	0.564 (0.343)	12.44 (2.45)	60%
9.8 (7.3)	2475	1.21 (4.57)	0.861 (0.524)	8.12 (1.60)	Barometer
--	2491	0.89 (3.36)	--	--	29.1" Hg (98.6 kPa)

Maximum Torque -136.3 lb.-ft. (184.8 Nm) at 1099 rpm
 Maximum Torque Rise -38.5%
 Torque rise at 1800 engine rpm -17%

DRAWBAR PERFORMANCE

BALLASTED - 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)
75% of Pull at Maximum Power Five Hours 4th (4S) Gear									
27.8 (20.7)	2235 (9.94)	4.67 (7.51)	2385	3.3	0.580 (0.353)	12.08 (2.38)	178 (81)	75 (24)	28.7 (97.3)

MAXIMUM POWER IN SELECTED GEARS

2nd (2S) Gear									
31.9 (23.8)	6375 (28.35)	1.88 (3.02)	2373	15.0	0.580 (0.353)	12.08 (2.38)	180 (82)	79 (26)	29.4 (99.7)
3rd (3S) Gear									
35.1 (26.2)	4475 (19.91)	2.95 (4.74)	2300	6.6	0.552 (0.336)	12.69 (2.50)	178 (81)	79 (26)	29.4 (99.7)
4th (4S) Gear									
35.3 (26.3)	2975 (13.24)	4.44 (7.15)	2300	4.4	0.539 (0.328)	12.99 (2.56)	180 (82)	79 (26)	29.4 (99.7)
5th (1F) Gear									
34.9 (26.0)	2415 (10.74)	5.42 (8.72)	2300	3.5	0.547 (0.333)	12.79 (2.52)	178 (81)	79 (26)	29.4 (99.7)
6th (2F) Gear									
31.4 (23.4)	1435 (6.38)	8.22 (13.23)	2300	2.0	0.598 (0.364)	11.73 (2.31)	178 (81)	79 (26)	29.4 (99.7)

Location of Test: Istituto Per La Meccanizzazione Agricola (IMA) Strada delle Cacce, 73-10135 Torino, Italy

Dates of Test: April - November, 1999

Manufacturer: New Holland Italia S.p.A., Viale delle Nazioni, 55-41100, Modena, Italy

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F (15°/15°C)** 0.842 **Fuel weight** 7.01 lbs/gal (0.840 kg/l) **Oil** SAE 15W40 **API service classification** SE/CD **Oil consumption for 10 hours** 0.01 lb (6.5 gm) **Transmission and hydraulic lubricant** SAE 80W90 GL-4 **Front axle lubricant** SAE 80W90 GL-4

ENGINE: Make New Holland Diesel **Type** three cylinder vertical **Serial No.** 529-481556 **Crankshaft** lengthwise **Rated Engine speed** 2300 **Bore and stroke** 4.094" x 4.528" (104 mm x 115 mm) **Compression ratio** 18 to 1 **Displacement** 179 cu in (2930 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 **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** thermostat

CHASSIS: Type 2WD and front wheel assist **Serial No.** 001152084 **Tread width** rear 48.1" (1222 mm) to 75.8" (1925 mm) front: 2WD - 53.1" (1349 mm) to 77.0" (1957 mm), FWA - 50.3" (1278 mm) to 77.0" (1957 mm) **Wheel base** 2WD - 83.9" (2130 mm), FWA - 81.3" (2065 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.43 (2.30) second 2.13 (3.42) third 3.13 (5.03) fourth 4.63 (7.45) fifth 5.59 (8.99) sixth 8.33 (13.40) seventh 12.24 (19.70) eighth 18.14 (29.19) reverse 1.38 (2.22), 2.06 (3.32), 3.03 (4.87), 4.49 (7.22), 5.41 (8.71), 8.07 (12.99), 11.86 (19.09), 17.88 (28.78) **Clutch** dual dry disc operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2198 engine rpm or 1000 rpm at 2144 engine rpm **Unladen tractor mass** 2WD - 5535 lb (2510 kg), FWA - 6395 lb (2900 kg)

DRAWBAR PERFORMANCE
BALLASTED - 2WD
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)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
75% of Pull at Maximum Power Five Hours 4th (4S) Gear									
27.5 (20.5)	2215 (9.86)	4.65 (7.48)	2389	3.0	0.600 (0.365)	11.67 (2.30)	179 (82)	72 (22)	28.6 (96.9)
MAXIMUM POWER IN SELECTED GEARS									
2nd (2S) Gear									
25.2 (18.8)	5030 (22.37)	1.88 (3.03)	2405	15.0	0.620 (0.377)	11.32 (2.23)	178 (81)	73 (23)	29.4 (99.6)
3rd (3S) Gear									
33.5 (25.0)	4565 (20.31)	2.75 (4.43)	2300	11.4	0.564 (0.343)	12.44 (2.45)	178 (81)	73 (23)	29.4 (99.6)
4th (4S) Gear									
34.0 (25.4)	2955 (13.15)	4.31 (6.94)	2300	6.2	0.554 (0.337)	12.64 (2.49)	176 (80)	72 (22)	29.4 (99.6)
5th (1F) Gear									
33.7 (25.1)	2425 (10.79)	5.21 (8.38)	2300	5.1	0.559 (0.340)	12.54 (2.47)	176 (80)	72 (22)	29.4 (99.6)
6th (2F) Gear									
31.0 (23.1)	1455 (6.47)	7.99 (12.86)	2300	3.1	0.612 (0.372)	11.47 (2.26)	176 (80)	72 (22)	29.4 (99.6)

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 results on this summary were taken from OECD tests conducted under the Code I Test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Reports No. **1900** and **1901**, Nebraska Summary 330, December 13, 2000.

Brent T. Sampson
 Test Engineer

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

TN 55D-2WD

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	-No., size, ply & psi (kPa)	Two 14.9R28; **,23 (160)	Two 14.9R28; **,23 (160)
Ballast	-Liquid (total)	None	None
	-Cast Iron (total)	440 lb (200 kg)	None
Front Tires	-No., size, ply & psi (kPa)	Two 7.50-16; 8; 54 (370)	Two 7.50-16; 8; 54 (370)
Ballast	-Liquid (total)	None	None
	-Cast Iron (total)	660 lb (300 kg)	None
Height of Drawbar		27.4 in (695 mm)	27.6 in (700 mm)
Static Weight with Operator	-Rear	4100 lb (1860 kg)	3705 lb (1680 kg)
	-Front	2700 lb (1225 kg)	1995 lb (905 kg)
	-Total	6800 lb (3085 kg)	5700 lb (2585 kg)

TN 55D- FWA

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	-No., size, ply & psi (kPa)	Two 14.9R28; **,23 (160)	Two 14.9R28; **,23 (160)
Ballast	-Liquid (total)	None	None
	-Cast Iron (total)	440 lb (200 kg)	None
Front Tires	-No., size, ply & psi (kPa)	Two 11.2R20; **,23 (160)	Two 11.2R20; **,23 (160)
Ballast	-Liquid (total)	None	None
	-Cast Iron (total)	660 lb (300 kg)	None
Height of Drawbar		17.9 in (455 mm)	18.1 in (460 mm)
Static Weight with Operator	-Rear	4620 lb (2095 kg)	4220 lb (1915 kg)
	-Front	3040 lb (1380 kg)	2340 lb (1060 kg)
	-Total	7660 lb (3475 kg)	6560 lb (2975 kg)

TRACTOR SOUND LEVEL WITH CAB	FWA dB(A)	2WD dB(A)
At no load in 4th(4S) gear	79.5	79.5
Bystander in 8th(4F) gear	85.5	85.3

CENTER OF GRAVITY - 2WD

Horizontal distance forward from centerline of rear wheels	29.3 in (745 mm)
Vertical distance above roadway	29.9 in (760 mm)
Horizontal distance from center of rear wheel tread	0.4 in (10 mm) to the left

CENTER OF GRAVITY - FWA

Horizontal distance forward from centerline of rear wheels	28.9 in (735 mm)
Vertical distance above roadway	29.1 in (740 mm)
Horizontal distance from center of rear wheel tread	0.4 in (10 mm) to the left

TURNING ON A CONCRETE SURFACE (2WD)

Turning radius with brake applied right 124" (3.15 m) left 124" (3.15 m)	
without brake right 142" (3.60 m) left 144" (3.65 m)	
Turning space radius with brake applied right 124" (3.15 m) left 126" (3.20 m)	
without brake right 142" (3.60 m) left 144" (3.65 m)	

TURNING ON A CONCRETE SURFACE (FWA)

Turning radius with brake applied right 141" (3.58 m) left 141" (3.58 m)	
without brake right 174" (4.42 m) left 177" (4.50 m)	
Turning space radius with brake applied right 144" (3.65 m) left 144" (3.65 m)	
without brake right 179" (4.55 m) left 180" (4.57 m)	

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

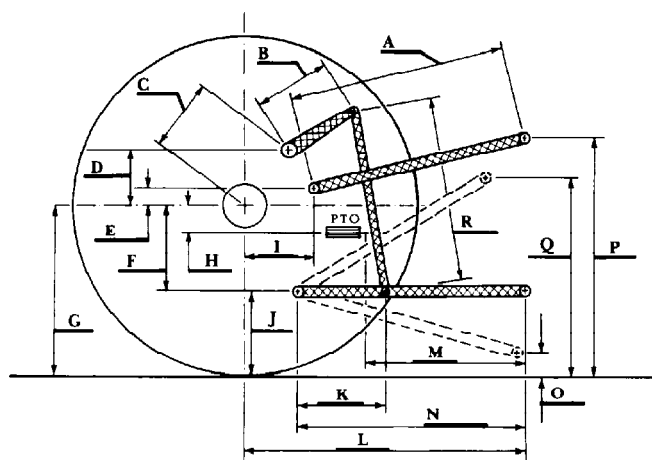
QuickAttach: None

Maximum Force Exerted Through Whole Range:

4045 lbs (18.0 kN) (at the frame)
4405 lbs (19.6 kN) (at lower link ends)

i) Opening pressure of relief valve:	NA	<u>High Flow Option</u>
Sustained pressure with relief valve open:	3020 psi (208 bar)	3020 psi (208 bar)
ii) Pump delivery rate at minimum pressure:	12.8 GPM (48.1 l/min)	17.1 GPM (64.9 l/min)
iii) Pump delivery rate at maximum hydraulic power:	11.3 GPM (42.8 l/min)	14.5 GPM (55.0 l/min)
Delivery pressure:	2540 psi (175 bar)	2410 psi (166 bar)
Power:	16.7 HP (12.5 kW)	20.4 HP (15.2 kW)

HITCH DIMENSIONS AS TESTED NO LOAD



	inch	mm
A	27.6	700
B	10.0	255
C	12.3	312
D	10.9	276
E	12.1	308
F	7.4	189
G	25.2	640
H	1.2	31
I	13.4	340
J	17.8	451
K	20.6	523
L	40.7	1035
M	21.7	550
N	34.6	880
O	7.9	200
P	41.8	1061
Q	29.3	745
R	26.0	660