2000

Nebraska Summary: S345 New Holland TM150

Nebraska Tractor Test Laboratory
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SUMMARY OF OECD TEST 1920 - NEBRASKA SUMMARY 345
NEW HOLLAND TM150 DIESEL
18 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 1038 rpm)					
124.0 *(92.5)*	2201	7.96 *(30.15)*	0.448 *(0.273)*	15.57 *(3.07)*	
Standard Power Take-off Speed (1000 rpm)					
126.7 *(94.5)*	2121	7.89 *(29.88)*	0.436 *(0.265)*	16.04 *(3.16)*	
Maximum Power (2 hours)					
130.9 *(97.6)*	1856	7.41 *(28.06)*	0.395 *(0.241)*	17.66 *(3.48)*	
VARYING POWER AND FUEL CONSUMPTION					
124.0 *(92.5)*	2201	7.96 *(30.15)*	0.449 *(0.273)*	15.57 *(3.07)*	Air temperature
108.1 *(80.6)*	2258	7.24 *(27.42)*	0.468 *(0.285)*	14.92 *(2.94)*	81°F *(27°C)*
82.1 *(61.2)*	2282	5.95 *(22.53)*	0.506 *(0.308)*	13.81 *(2.72)*	Relative humidity
54.8 *(40.9)*	2304	4.67 *(17.66)*	0.593 *(0.361)*	11.78 *(2.32)*	35%
27.8 *(20.7)*	2319	3.48 *(13.17)*	0.875 *(0.532)*	7.98 *(1.57)*	Barometer
-- --	2340	2.31 *(8.76)*	-- --	-- --	29.4" Hg *(99.4 kPa)*

Maximum Torque - 438.6 lb.-ft. *(594.7 Nm)* at 1398 rpm
Maximum Torque Rise - 48.2%
Torque rise at 1800 engine rpm - 28%

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)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power 8th(2B) Gear									
105.0 *(78.3)*	9555 *(42.5)*	4.12 *(6.63)*	2207	4.0	0.527 *(0.321)*	13.25 *(2.61)*	185 *(85)*	43 *(6)*	29.8 *(100.9)*
75% of Pull at Maximum Power 8th(2B) Gear									
81.9 *(61.1)*	7170 *(31.9)*	4.28 *(6.89)*	2270	3.0	0.577 *(0.351)*	12.14 *(2.39)*	185 *(85)*	43 *(6)*	29.8 *(100.9)*
50% of Pull at Maximum Power 8th(2B) Gear									
56.1 *(41.8)*	4795 *(21.3)*	4.38 *(7.05)*	2300	2.2	0.662 *(0.403)*	10.55 *(2.08)*	183 *(84)*	43 *(6)*	29.8 *(100.9)*
75% of Pull at Reduced Engine Speed 9th(3B) Gear									
81.8 *(61.0)*	7170 *(31.9)*	4.28 *(6.88)*	1890	3.2	0.496 *(0.302)*	14.06 *(2.77)*	181 *(83)*	45 *(7)*	29.8 *(100.9)*
50% of Pull at Reduced Engine Speed 9th(3B) Gear									
55.9 *(41.7)*	4790 *(21.3)*	4.38 *(7.05)*	1918	2.3	0.564 *(0.343)*	12.39 *(2.44)*	181 *(83)*	45 *(7)*	29.8 *(100.9)*

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

Dates of Test: February- April, 2000

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** CF-4 **Transmission and hydraulic lubricant** SAE 10W30 API GL4 **Front axle lubricant** SAE 10W30 API GL4

ENGINE: Make New Holland Diesel **Type** six cylinder vertical with turbocharger **Serial No.** WV8278121 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.40" x 5.00" *(111.8 mm x 127.0 mm)* **Compression ratio** 17.5 to 1 **Displacement** 456 cu in *(7480 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** two paper elements **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** 122128B **Tread width** rear 60.2" *(1530 mm)* to 87.9" *(2232 mm)* front 60.3" *(1532 mm)* to 88.1" *(2238 mm)* **Wheelbase** 93.0" *(2723 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (6) range operator controlled powershift **Nominal travel speeds mph *(km/h)*** first 1.53 *(2.46)* second 1.84 *(2.96)* third 2.21 *(3.56)* fourth 2.66 *(4.28)* fifth 3.20 *(5.15)* sixth 3.55 *(5.72)* seventh 3.85 *(6.19)* eighth 4.28 *(6.88)* ninth 5.14 *(8.27)* tenth 6.18 *(9.94)* eleventh 7.43 *(11.96)* twelfth 8.94 *(14.38)* thirteenth 10.09 *(16.24)* fourteenth 12.14 *(19.53)* fifteenth 14.57 *(23.45)* sixteenth 17.52 *(28.20)* seventeenth 21.08 *(33.92)* eighteenth 25.35 *(40.79)* reverse 2.99 *(4.81)*, 3.59 *(5.78)*, 4.32 *(6.95)*, 5.19 *(8.35)*, 6.24 *(10.05)*, 7.51 *(12.08)* **Clutch** multiple wet disc electro-hydraulically operated by foot pedal **Brakes** single wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1971 engine rpm or 1000 rpm at 2121 engine rpm **Unladen tractor mass** 13960 lb *(6333 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)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
				1st(1A) Gear					
52.8	14430	1.37	2304	14.7	0.706	9.90	183	45	29.9
(39.4)	*(64.2)*	*(2.21)*			*(0.429)*	*(1.95)*	*(84)*	*(7)*	*(100.9)*
				2nd(2A) Gear					
63.7	14185	1.68	2291	12.2	0.658	10.61	183	45	29.9
(47.5)	*(63.1)*	*(2.71)*			*(0.401)*	*(2.09)*	*(84)*	*(7)*	*(100.9)*
				3rd(3A) Gear					
76.6	13985	2.05	2275	10.5	0.613	11.40	185	45	29.9
(57.1)	*(62.2)*	*(3.30)*			*(0.373)*	*(2.25)*	*(85)*	*(7)*	*(100.9)*
				4th(4A) Gear					
90.7	13600	2.50	2262	8.7	0.573	12.18	183	45	29.9
(67.6)	*(60.5)*	*(4.02)*			*(0.349)*	*(2.40)*	*(84)*	*(7)*	*(100.9)*
				5th(5A) Gear					
102.9	13310	2.90	2160	7.7	0.533	13.10	185	45	29.9
(76.7)	*(59.2)*	*(4.67)*			*(0.324)*	*(2.58)*	*(85)*	*(7)*	*(100.9)*
				6th(1B) Gear					
107.7	13130	3.08	2053	7.4	0.495	14.11	183	45	29.9
(80.3)	*(58.4)*	*(4.95)*			*(0.301)*	*(2.78)*	*(84)*	*(7)*	*(100.9)*
				7th(6A) Gear					
104.6	13015	3.01	1855	7.1	0.495	14.11	185	43	29.9
(78.0)	*(57.9)*	*(4.85)*			*(0.301)*	*(2.78)*	*(85)*	*(6)*	*(100.9)*
				8th(2B) Gear					
110.4	12185	3.40	1855	5.7	0.465	15.02	183	43	29.9
(82.3)	*(54.2)*	*(5.47)*			*(0.283)*	*(2.96)*	*(84)*	*(6)*	*(100.9)*
				9th(3B) Gear					
111.6	10095	4.15	1855	4.3	0.466	14.97	185	43	29.9
(83.2)	*(44.9)*	*(6.67)*			*(0.284)*	*(2.95)*	*(85)*	*(6)*	*(100.9)*
				10th(4B) Gear					
109.4	8135	5.04	1859	3.3	0.471	14.82	185	43	29.9
(81.6)	*(36.2)*	*(8.12)*			*(0.287)*	*(2.92)*	*(85)*	*(6)*	*(100.9)*
				11th(5B) Gear					
108.8	6690	6.10	1856	2.8	0.473	14.77	185	43	29.9
(81.1)	*(29.8)*	*(9.81)*			*(0.288)*	*(2.91)*	*(85)*	*(6)*	*(100.9)*
				12th(6B) Gear					
106.2	5425	7.34	1850	2.4	0.492	14.21	185	43	29.9
(79.2)	*(24.1)*	*(11.81)*			*(0.299)*	*(2.80)*	*(85)*	*(6)*	*(100.9)*
				13th(1C) Gear					
111.0	5010	8.31	1853	2.3	0.474	14.72	185	43	29.9
(82.8)	*(22.3)*	*(13.37)*			*(0.289)*	*(2.90)*	*(85)*	*(6)*	*(100.9)*

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
Maximum Sound level in 6th (1B) gear	76.0	76.0
At no load in 8th (2B) gear	73.0	73.0
Bystander in 18th (6C) gear	--	82.0

TIRES AND WEIGHT	Tested Without Ballast
Rear tires - No.,size, ply & psi *(kPa)*	Two 20.8R38; **;12*(83)*
Front tires - No.,size, ply & psi *(kPa)*	Two 16.9R28; **;12*(83)*
Height of Drawbar	18.5 in *(470 mm)*
Static Weight with operator - Rear	8885 lb *(4030 kg)*
- Front	5245 lb *(2378 kg)*
- Total	14130 lb *(6408 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

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 3 point lift capacity claim of 12190 lb *(5530 kg)* with 1 lift assist cylinder. 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. **1920**, Nebraska Summary 345, January 4, 2001.

Brent T. Sampson
Test Engineer

L.L. Bashford
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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 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 8th(2B) Gear									
101.1 *(75.4)*	9530 *(42.4)*	3.98 *(6.40)*	2200	7.6	0.547 *(0.333)*	12.77 *(2.52)*	185 *(85)*	68 *(20)*	29.6 *(100.4)*
75% of Pull at Maximum Power 8th(2B) Gear									
80.9 *(60.3)*	7150 *(31.8)*	4.24 *(6.83)*	2268	4.4	0.588 *(0.358)*	11.88 *(2.34)*	185 *(85)*	70 *(21)*	29.6 *(100.3)*
50% of Pull at Maximum Power 8th(2B) Gear									
55.5 *(41.4)*	4765 *(21.2)*	4.37 *(7.03)*	2297	2.8	0.702 *(0.427)*	9.95 *(1.96)*	183 *(84)*	70 *(21)*	29.6 *(100.3)*
75% of Pull at Reduced Engine Speed 9th(3B) Gear									
80.7 *(60.2)*	7145 *(31.8)*	4.24 *(6.82)*	1887	4.6	0.508 *(0.309)*	13.76 *(2.71)*	183 *(84)*	73 *(23)*	29.6 *(100.2)*
50% of Pull at Reduced Engine Speed 9th(3B) Gear									
55.7 *(41.5)*	4780 *(21.3)*	4.37 *(7.03)*	1912	2.8	0.553 *(0.337)*	12.63 *(2.49)*	183 *(84)*	73 *(23)*	29.6 *(100.2)*

MAXIMUM POWER IN SELECTED GEARS

1st(1A) Gear									
37.3 *(27.8)*	10275 *(45.7)*	1.36 *(2.19)*	2301	15.0	0.842 *(0.512)*	8.30 *(1.63)*	183 *(84)*	68 *(20)*	29.6 *(100.4)*
2nd(2A) Gear									
44.8 *(33.4)*	10085 *(44.9)*	1.67 *(2.68)*	2294	14.0	0.764 *(0.465)*	9.14 *(1.80)*	183 *(84)*	70 *(21)*	29.6 *(100.4)*
3rd(3A) Gear									
53.8 *(40.1)*	9935 *(44.2)*	2.03 *(3.26)*	2293	12.9	0.694 *(0.422)*	10.06 *(1.98)*	183 *(84)*	73 *(23)*	29.6 *(100.2)*
4th(4A) Gear									
64.0 *(47.7)*	9765 *(43.4)*	2.46 *(3.95)*	2281	11.6	0.634 *(0.385)*	11.03 *(2.17)*	181 *(83)*	73 *(23)*	29.6 *(100.2)*
5th(5A) Gear									
76.4 *(57.0)*	9735 *(43.3)*	2.94 *(4.73)*	2258	11.1	0.591 *(0.360)*	11.82 *(2.33)*	183 *(84)*	72 *(22)*	29.6 *(100.3)*
6th(1B) Gear									
85.7 *(63.9)*	9800 *(43.6)*	3.28 *(5.28)*	2257	10.7	0.590 *(0.359)*	11.82 *(2.33)*	187 *(86)*	70 *(21)*	29.6 *(100.3)*
7th(6A) Gear									
91.7 *(68.4)*	9655 *(43.0)*	3.56 *(5.74)*	2230	9.3	0.578 *(0.351)*	12.09 *(2.38)*	185 *(85)*	72 *(22)*	29.6 *(100.3)*
8th(2B) Gear									
101.1 *(75.4)*	9530 *(42.4)*	3.98 *(6.40)*	2200	7.6	0.547 *(0.333)*	12.77 *(2.52)*	185 *(85)*	68 *(20)*	29.9 *(100.4)*
9th(3B) Gear									
105.0 *(78.3)*	9185 *(40.9)*	4.29 *(6.90)*	1954	6.6	0.500 *(0.304)*	13.96 *(2.75)*	185 *(85)*	68 *(20)*	29.6 *(100.4)*
10th(4B) Gear									
106.2 *(79.2)*	7980 *(35.5)*	4.99 *(8.03)*	1859	5.0	0.481 *(0.293)*	14.52 *(2.86)*	183 *(84)*	68 *(20)*	29.6 *(100.4)*
11th(5B) Gear									
104.6 *(78.0)*	6425 *(28.6)*	6.11 *(9.83)*	1865	3.7	0.486 *(0.296)*	14.37 *(2.83)*	185 *(85)*	68 *(20)*	29.6 *(100.4)*
12th(6B) Gear									
101.8 *(75.9)*	5190 *(23.1)*	7.36 *(11.84)*	1854	3.0	0.492 *(0.299)*	14.21 *(2.80)*	187 *(86)*	68 *(20)*	29.6 *(100.4)*
13th(1C) Gear									
106.1 *(79.1)*	4760 *(21.2)*	8.36 *(13.45)*	1863	2.9	0.471 *(0.286)*	14.83 *(2.92)*	185 *(85)*	73 *(23)*	29.6 *(100.2)*

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II
Quick Attach: None

Maximum Force Exerted Through Whole Range:	7125 lbs	*(31.7 kN)*(with 1 lift assist cylinder)
	8320 lbs	*(37.0 kN)*(with 2 lift assist cylinders)
i) Opening pressure of relief valve:	NA	
Sustained pressure of the open relief valve:	2990 psi	*(206 bar)*
ii) Pump delivery rate at minimum pressure:	31.2 GPM	*(118.2 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	26.8 GPM	*(101.4 l/min)*
Delivery pressure:	2540 psi	*(175 bar)*
Power:	39.7 HP	*(29.6 kW)*

SAE Static Test System pressure 2440 psi *(168 Bar)*
(with (1) lift assist cylinder

Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	15.9 *(405)*	23.8 *(605)*	31.7 *(805)*	36.5 *(928)*
Lift force on frame lb	11960	11575	11395	11150	10500
" " " " " " *(kN)*	*(53.2)*	*(51.5)*	*(50.7)*	*(49.6)*	*(46.7)*

SAE Static Test System pressure 2440 psi *(168 Bar)*
(with (2) lift assist cylinders)

Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	15.9 *(405)*	23.8 *(605)*	31.7 *(805)*	36.9 *(937)*
Lift force on frame lb	15065	14390	14520	14590	14075
" " " " " " *(kN)*	*(67.0)*	*(64.0)*	*(64.6)*	*(64.9)*	*(62.6)*

ASAE Static Test System pressure 2715 psi *(187 Bar)*
(with (1) lift assist cylinder)

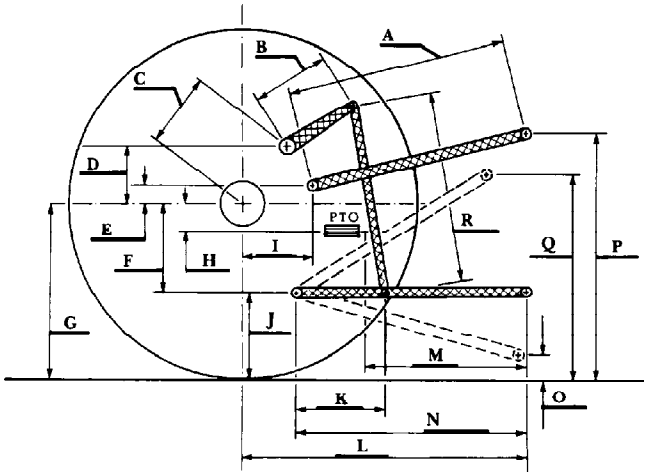
Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	15.9 *(405)*	23.8 *(605)*	31.7 *(805)*	36.5 *(928)*
Lift force on frame lb	13310	12880	12700	12410	11690
" " " " " " *(kN)*	*(59.2)*	*(57.3)*	*(56.5)*	*(55.2)*	*(52.0)*

ASAE Static Test System pressure 2715 psi *(187 Bar)*
(with (2) lift assist cylinders)

Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	15.9 *(405)*	23.8 *(605)*	31.7 *(805)*	36.9 *(937)*
Lift force on frame lb	16770	16005	16165	16255	15670
" " " " " " *(kN)*	*(74.6)*	*(71.2)*	*(71.9)*	*(72.3)*	*(69.7)*

HITCH DIMENSIONS AS TESTED NO LOAD

	OECD test		SAE test	
	inch	*mm*	inch	*mm*
A	29.7	*754*	30.2	*768*
B	9.1	*230*	9.1	*230*
C	15.6	*395*	15.6	*395*
D	14.3	*363*	14.3	*363*
E	8.2	*208*	10.8	*275*
F	9.8	*250*	9.8	*250*
G	33.6	*855*	33.6	*855*
H	0.7	*17*	0.7	*17*
I	17.9	*455*	16.9	*430*
J	23.8	*605*	23.8	*605*
K	17.1	*435*	17.1	*435*
L	47.0	*1194*	47.0	*1194*
M	23.3	*592*	23.3	*592*
N	38.3	*974*	38.3	*974*
O	7.8	*198*	8.0	*203*
P	47.8	*1215*	42.8	*1088*
Q	35.4	*900*	34.3	*870*
R	29.3	*745*	30.5	*775*



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