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2008

## Nebraska Summary: S738 New Holland T5040

Nebraska Tractor Test Laboratory

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# SUMMARY OF OECD TESTS 2502 & 2504 — NEBRASKA SUMMARY 738

## NEW HOLLAND T5040 DIESEL

### 12 SPEED

#### POWER TAKE-OFF PERFORMANCE-2WD

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—566 rpm)</b>					
68.3 (50.9)	2300	4.81 (18.19)	0.493 (0.300)	14.21 (2.80)	
<b>Standard Power Take-off speed (540 rpm)</b>					
70.9 (52.9)	2195	4.69 (17.74)	0.464 (0.282)	15.13 (2.98)	
<b>Maximum Power (1 hour)</b>					
73.2 (54.6)	2000	4.42 (16.74)	0.424 (0.258)	16.55 (3.26)	

#### VARYING POWER AND FUEL CONSUMPTION

68.3 (50.9)	2300	4.81 (18.19)	0.493 (0.300)	14.21 (2.80)	Air temperature
61.8 (46.1)	2461	4.92 (18.63)	0.558 (0.339)	12.57 (2.48)	64°F (18°C)
47.1 (35.1)	2476	4.19 (15.85)	0.625 (0.380)	11.23 (2.21)	Relative humidity
31.3 (23.3)	2491	3.44 (13.01)	0.770 (0.468)	9.10 (1.79)	33%
15.8 (11.8)	2509	2.79 (10.55)	1.240 (0.754)	5.65 (1.11)	Barometer
--	2531	2.24 (8.49)	--	--	29.0" Hg (98.1 kPa)

Maximum torque -271.5 lb.-ft. (368.1 Nm) at 902 rpm  
 Maximum torque rise -74.3%  
 Torque rise at 1800 engine rpm -35%

#### POWER TAKE-OFF PERFORMANCE - FWA

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—566 rpm)</b>					
71.1 (53.0)	2300	4.85 (18.37)	0.478 (0.291)	14.67 (2.89)	
<b>Standard Power Take-off speed (540 rpm)</b>					
72.8 (54.3)	2196	4.73 (17.92)	0.455 (0.277)	15.38 (3.03)	
<b>Maximum Power (1 hour)</b>					
74.6 (55.6)	2000	4.45 (16.83)	0.418 (0.255)	16.75 (3.30)	

#### VARYING POWER AND FUEL CONSUMPTION

71.1 (53.0)	2300	4.85 (18.37)	0.478 (0.291)	14.67 (2.89)	Air temperature
64.0 (47.7)	2456	4.88 (18.46)	0.535 (0.325)	13.11 (2.58)	68°F (20°C)
48.5 (36.2)	2472	3.97 (15.04)	0.574 (0.349)	12.20 (2.40)	Relative humidity
32.7 (24.4)	2486	3.34 (12.64)	0.714 (0.434)	9.82 (1.93)	32%
16.2 (12.1)	2508	2.61 (9.88)	1.125 (0.684)	6.23 (1.23)	Barometer
--	2531	2.16 (8.17)	--	--	29.4" Hg (99.5 kPa)

Maximum torque -270.2 lb.-ft. (366.4 Nm) at 902 rpm  
 Maximum torque rise -66.5%  
 Torque rise at 1800 engine rpm -30%

**Location of tests:** Istituto per le Macchine e Movimento Terra 73, Strada delle Cacce, 10135 Torino, Italy

**Dates of tests:** January to March, 2009

**Manufacturer:** CNH Italia SpA, Via Leone XIII, 160035, Jesi, 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** CH-4 **Transmission and hydraulic lubricant** Akcela Nexplore fluid **Front axle lubricant** Akcela Nexplore fluid

**ENGINE:** Make CNH Diesel **Type** four cylinder vertical with turbocharger and air to air intercooler **Serial No.** 569738 **Crankshaft** lengthwise **Rated engine speed** 2300 **Bore and stroke** 4.094" x 5.197" (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 **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** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat

**CHASSIS:** **Type** 2WD and front wheel assist **Serial No.** Z8JH07090 **Tread width** rear 56.3" (1430 mm) to 90.4" (2295 mm), front 2WD - 55.4" (1407 mm) to 85.6" (2175 mm), FWA-60.1" (1526 mm) to 70.3" (1786 mm) **Wheel base** 2WD - 92.2" (2342 mm), FWA - 92.5" (2350 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph(km/h)** first 1.16 (1.87) second 1.69 (2.72) third 2.44 (3.92) fourth 2.72 (4.37) fifth 3.49 (5.61) sixth 3.95 (6.35) seventh 5.69 (9.15) eighth 6.39 (10.28) ninth 8.15 (13.11) tenth 9.28 (14.94) eleventh 13.38 (21.54) twelfth 19.17 (30.85) reverse 1.14 (1.83), 1.65 (2.66), 2.39 (3.84), 2.66 (4.28), 3.42 (5.50), 3.87 (6.22), 5.57 (8.97), 6.26 (10.08), 7.98 (12.84), 9.10 (14.64), 13.12 (21.11), 18.79 (30.24) **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 2261 engine rpm **Unladen tractor mass** 2WD - 8225 lbs (3730 kg), FWA - 9085 lb (4120 kg)

**T5040 - 2WD**  
**DRAWBAR PERFORMANCE**  
**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)
<b>Maximum Power—7th(3 II)Gear</b>									
61.2 (45.6)	4110 (18.29)	5.58 (8.97)	2302	6.0	0.539 (0.328)	12.99 (2.56)	181 (83)	46 (8)	28.9 (97.8)
<b>75% of Pull at Maximum Power—7th(3 II)Gear</b>									
50.0 (37.3)	3075 (13.68)	6.10 (9.82)	2476	4.5	0.584 (0.355)	12.02 (2.37)	183 (84)	46 (8)	28.9 (97.8)
<b>50% of Pull at Maximum Power—7th(3 II)Gear</b>									
34.0 (25.3)	2065 (9.19)	6.17 (9.93)	2486	3.7	0.760 (0.463)	9.22 (1.82)	185 (85)	48 (9)	28.9 (97.8)
<b>75% of Pull at Reduced Engine Speed—8th(1 III) Gear</b>									
50.2 (37.5)	3085 (13.73)	6.10 (9.82)	2214	4.5	0.559 (0.340)	12.54 (2.47)	183 (84)	48 (9)	28.9 (97.8)
<b>50% of Pull at Reduced Engine Speed—8th(1 III) Gear</b>									
34.2 (25.5)	2080 (9.25)	6.17 (9.93)	2216	3.6	0.616 (0.374)	11.35 (2.24)	178 (81)	46 (8)	28.9 (97.8)

**MAXIMUM POWER IN SELECTED GEARS**

<b>4th(1 II) Gear</b>									
42.1 (31.4)	5980 (26.61)	2.64 (4.25)	2478	13.7	0.681 (0.414)	10.30 (2.03)	187 (86)	50 (10)	29.0 (98.3)
<b>5th(4 I) Gear</b>									
53.0 (39.5)	5775 (25.68)	3.44 (5.54)	2464	12.7	0.630 (0.383)	11.12 (2.19)	183 (84)	52 (11)	29.0 (98.3)
<b>6th(2 II) Gear</b>									
57.9 (43.2)	5730 (25.48)	3.79 (6.10)	2319	8.3	0.583 (0.355)	12.03 (2.37)	183 (84)	49 (9)	29.0 (98.3)
<b>7th(3 II) Gear</b>									
62.0 (46.2)	4545 (20.23)	5.12 (8.22)	2118	6.3	0.517 (0.315)	13.55 (2.67)	181 (83)	55 (13)	28.9 (97.9)
<b>8th(1 III) Gear</b>									
63.3 (47.2)	4255 (18.94)	5.58 (8.97)	2045	5.9	0.504 (0.307)	13.91 (2.74)	180 (82)	57 (14)	28.9 (97.9)
<b>9th(4 II) Gear</b>									
62.0 (46.2)	3340 (14.85)	6.96 (11.20)	1991	4.8	0.496 (0.302)	14.11 (2.78)	180 (82)	57 (14)	28.9 (97.9)

**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 manufacturer's optional three point lift claim of 6805 lbs (3086 kg) was not verified. The performance results on this summary were taken from OECD tests conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Reports No. **2502** and **2504**, Nebraska summary 738, October 5, 2010.

Roger M. Hoy  
 Director

M.F. Kocher  
 D.R. Keshwani  
 J.A. Smith  
 Board of Tractor Test Engineers

**New Holland T5040 - 2WD**

**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 600/65R34; \*\*; 12 (80)  
 Two 10:00-16; 8; 45 (310)  
 19.1 in (486 mm)  
 5445 lb (2470 kg)  
 2945 lb (1335 kg)  
 8390 lb (3805 kg)

**T5040 - FRONT WHEEL ASSIST**  
**unballasted - front drive engaged**  
**DRAWBAR PERFORMANCE**  
**FUEL CONSUMPTION CHARACTERISTICS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption		Temp. °F cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
<b>Maximum Power—6th (2 II) Gear</b>									
57.3 (42.7)	5600 (24.90)	3.84 (6.17)	2297	5.1	0.585 (0.356)	11.98 (2.36)	183 (84)	69 (20)	28.9 (97.9)
<b>75% of Pull at Maximum Power—6th (2 II) Gear</b>									
46.9 (35.0)	4205 (18.70)	4.18 (6.74)	2460	3.8	0.694 (0.422)	10.10 (1.99)	183 (84)	61 (16)	28.9 (97.9)
<b>50% of Pull at Maximum Power—6th (2 II) Gear</b>									
31.4 (23.4)	2790 (12.40)	4.22 (6.79)	2478	2.8	0.822 (0.500)	8.53 (1.68)	183 (84)	61 (16)	28.9 (97.9)
<b>75% of Pull at Reduced Engine Speed—7th (3 II) Gear</b>									
46.8 (34.9)	4205 (18.70)	4.17 (6.72)	1702	3.7	0.511 (0.311)	13.71 (2.70)	176 (80)	59 (15)	28.9 (97.9)
<b>50% of Pull at Reduced Engine Speed—7th (3 II) Gear</b>									
31.4 (23.4)	2765 (12.30)	4.26 (6.85)	1711	2.7	0.575 (0.350)	12.18 (2.40)	177 (81)	61 (16)	28.9 (97.9)

**MAXIMUM POWER IN SELECTED GEARS**

35.7 (26.6)	8415 (37.43)	1.59 (2.56)	2475	15.4	2nd(2 I) Gear 0.753 (0.458)		9.30 (1.83)	189 (87)	57 (14)	29.1 (98.4)
51.2 (38.2)	8260 (36.73)	2.32 (3.74)	2457	13.8	3rd(3 I) Gear 0.664 (0.404)		10.56 (2.08)	189 (87)	55 (13)	29.1 (98.4)
55.8 (41.6)	8125 (36.15)	2.58 (4.14)	2377	11.4	4th(1 II) Gear 0.611 (0.372)		11.47 (2.26)	187 (86)	55 (13)	29.1 (98.4)
59.7 (44.5)	7320 (32.56)	3.06 (4.92)	2111	7.9	5th(4 I) Gear 0.546 (0.332)		12.84 (2.53)	181 (83)	63 (17)	29.1 (98.4)
60.3 (45.0)	6590 (29.32)	3.43 (5.53)	2057	6.5	6th(2 II) Gear 0.517 (0.315)		13.55 (2.67)	183 (84)	59 (15)	29.1 (98.4)
61.6 (45.9)	4565 (20.31)	5.06 (8.14)	2044	4.0	7th(3 II) Gear 0.506 (0.308)		13.86 (2.73)	178 (81)	64 (18)	29.1 (98.4)
62.8 (46.8)	4225 (18.79)	5.57 (8.97)	1998	3.7	8th(1 III) Gear 0.496 (0.302)		14.14 (2.79)	178 (81)	61 (16)	29.1 (98.4)
61.0 (45.5)	3360 (14.95)	6.81 (10.95)	1902	3.1	9th(4 II) Gear 0.501 (0.305)		14.00 (2.76)	180 (82)	59 (15)	29.1 (98.4)
58.6 (43.7)	2890 (12.85)	7.61 (12.25)	1858	2.7	10th(2 III) Gear 0.507 (0.308)		13.82 (2.72)	180 (82)	59 (15)	29.1 (98.4)

**New Holland T5040 - Front Wheel Assist**

**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 600/65R34; \*\*, 12 (80)  
 Two 480/65R24; \*\*, 12 (80)  
 19.5 in (495 mm)  
 5510 lb (2500 kg)  
 3735 lb (1695 kg)  
 9245 lb (4195 kg)

TRACTOR SOUND LEVEL WITH CAB	FWA dB(A)	2WD dB(A)
At no load in 6th (2 II) gear	80.2	80.2
Bystander	--	--

### HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

Maximum force exerted through whole range:	4180 lbs (18.6 kN)	
		<u>Combined flow</u>
i) Sustained pressure with relief valve open:	2785 psi (192 bar)	2685 psi (185 bar)
ii) Pump delivery rate at minimum pressure:	17.4 GPM (66.0 l/min)	21.3 GPM (80.8 l/min)
iii) Pump delivery rate at maximum		
hydraulic power:	16.0 GPM (60.7 l/min)	19.7 GPM (74.7 GPM)
Delivery pressure:	2320 psi (160 bar)	2030 psi (140 bar)
Power:	21.7 hp (16.2 kW)	23.3 hp (17.4 kW)

### HITCH DIMENSIONS AS TESTED—NO LOAD

	SAE TEST		OECD TEST	
	inch	mm	inch	mm
A	26.1	664	26.5	674
B	10.0	255	10.0	255
C	13.9	352	13.9	352
D	11.7	296	11.7	296
E	13.3	337	10.1	257
F	8.1	205	8.1	205
G	30.5	775	30.5	775
H	0.6	16	0.6	16
I	15.7	400	15.7	400
J	22.4	570	22.4	570
K	20.7	526	17.7	450
L	42.1	1070	42.1	1070
M	21.6	548	21.6	548
N	37.0	940	37.0	940
O	9.6	245	7.9	200
P	41.5	1053	46.5	1180
Q	42.1	1069	36.2	920
R	25.2	640	24.4	620

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

Observed maximum pressure psi. (bar)	2785 (192)				
Location:	remote outlets				
Hydraulic oil temperature: °F (°C)	131 (55)				
Location:	hydraulic sump				
Category:	II				
Quick attach:	none				
System pressure 2610 psi (180 Bar)					
Hitch point distance to ground level in. (mm)	9.7 (246)	16.5 (420)	22.4 (570)	28.3 (720)	36.2 (920)
Lift force on frame lb	9260	7935	7285	7170	6295
" " " " " " (kN)	(41.2)	(35.3)	(32.4)	(31.9)	(28.0)

