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## Tests 2160 & 2161: New Holland TN60DA Diesel

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# SUMMARY OF OECD TESTS 2160 and 2161—NEBRASKA SUMMARY 454 NEW HOLLAND TN60DA 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
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed (PTO speed—564 rpm)</b>					
47.6 (35.5)	2295	3.01 (11.40)	0.443 (0.269)	15.79 (3.11)	
<b>Maximum Power (2 hours)</b>					
48.3 (36.0)	2239	2.97 (11.25)	0.431 (0.262)	16.24 (3.20)	
<b>Standard Power Take-off speed (540 rpm)</b>					
47.7 (35.6)	2198	2.92 (11.05)	0.428 (0.260)	16.34 (3.22)	
<b>VARYING POWER AND FUEL CONSUMPTION</b>					
47.6 (35.5)	2295	3.01 (11.40)	0.443 (0.269)	15.79 (3.11)	Air temperature
42.0 (31.3)	2385	2.69 (10.17)	0.447 (0.272)	15.63 (3.08)	79°F (26°C)
31.8 (23.7)	2401	2.23 (8.45)	0.492 (0.299)	14.22 (2.80)	Relative humidity
21.3 (15.9)	2426	1.72 (6.52)	0.563 (0.343)	12.42 (2.45)	38%
10.7 (8.0)	2442	1.31 (4.94)	0.848 (0.516)	8.22 (1.62)	Barometer
--	2479	0.87 (3.29)	--	--	29.9" Hg (101.3 kPa)
Maximum Torque -146.8 lb.-ft. (199.1 Nm) at 1274 rpm Maximum Torque Rise -34.9% Torque rise at 1850 engine rpm -17%					

**Location of tests:** Alma Mater Studiorum, University Di Bologna, Via Gandolfi, 19-40057, Cadriano, Bologna, Italy

**Dates of tests:** March - May, 2004

**Manufacturer:** CNH America LLC, 700 State St. Racine, WI. 53404 USA

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.840 **Fuel weight** 6.99 lbs/gal (0.838 kg/l) **Oil SAE** 15W40 **API service classification** CF-4/SG **Oil consumption for 10 hours** 0.03 lb (15 gm) **Transmission and hydraulic lubricant** Ambra Multi G 15W40 **Front axle lubricant** Ambra Multi G

**ENGINE: Make** Iveco Diesel **Type** three cylinder vertical **Serial No.** 865369 **Crankshaft** lengthwise **Rated engine speed** 2300 **Bore and stroke** 4.094" x 4.528" (104.0 mm x 115.0 mm) **Compression ratio** 18.0 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** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

**CHASSIS: Type** 2WD and front wheel assist **Serial No.** HJE297149 **Tread width** rear 48.5" (1232 mm) to 76.7" (1949 mm) front: 2WD - 56.7" (1439 mm) to 63.3" (1607 mm), FWA - 48.7" (1236 mm) to 76.6" (1945 mm) **Wheel base** 2WD - 81.5" (2130 mm) FWA - 81.3" (2065 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds (30 km/h transmission) mph (km/h)** first 0.39 (0.63) second 0.58 (0.93) third 0.85 (1.37) fourth 1.26 (2.03) fifth 1.63 (2.63) sixth 2.00 (3.22) seventh 2.43 (3.91) eighth 2.98 (4.79) ninth 3.57 (5.75) tenth 4.37 (7.04) eleventh 5.30 (8.53) twelfth 5.77 (9.28) thirteenth 6.49 (10.44) fourteenth 8.60 (13.84) fifteenth 12.64 (20.34) sixteenth 18.72 (30.13) reverse 0.38 (0.61), 0.56 (0.90), 0.83 (1.33), 1.22 (1.97), 1.58 (2.54), 1.93 (3.11), 2.36 (3.79), 2.88 (4.64), 3.46 (5.57), 4.24 (6.82), 5.13 (8.26), 5.59 (8.99), 6.28 (10.11), 8.33 (13.40), 12.24 (19.70), 18.14 (29.19) **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 2196 engine rpm or 1000 rpm at 2260 engine rpm **Unladen tractor mass** 2WD - 5895 lb (2675 kg), FWA - 6450 lb (2925 kg)

**DRAWBAR PERFORMANCE(40 km/h trans.)**

**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)	Temp.°F (°C) cool- ing med	Barom. inch Hg (kPa)		
<b>75% of Pull at Maximum Power—Five Hours 10th (3MHi) Gear</b>									
29.2 (21.8)	1980 (8.82)	5.53 (8.90)	2368	3.4	0.633 (0.385)	11.06 (2.18)	183 (84)	77 (25)	30.1 (101.8)
<b>MAXIMUM POWER IN SELECTED GEARS</b>									
<b>5th(1M Lo) Gear</b>									
32.1 (23.9)	6590 (29.31)	1.83 (2.94)	2377	15.0	0.586 (0.357)	11.93 (2.35)	180 (82)	73 (23)	30.2 (102.2)
<b>6th (1M Hi) Gear</b>									
36.5 (27.2)	6335 (28.18)	2.16 (3.47)	2257	13.4	0.560 (0.341)	12.49 (2.46)	183 (84)	73 (23)	30.2 (102.2)
<b>7th (2M Lo) Gear</b>									
36.3 (27.1)	4865 (21.64)	2.80 (4.51)	2254	7.9	0.574 (0.349)	12.18 (2.40)	183 (84)	75 (24)	30.2 (102.2)
<b>8th(2M Hi) Gear</b>									
38.1 (28.4)	4100 (18.23)	3.48 (5.60)	2241	6.0	0.534 (0.325)	13.10 (2.58)	183 (84)	75 (24)	30.2 (102.2)
<b>9th (3M Lo) Gear</b>									
38.3 (28.6)	3345 (14.88)	4.29 (6.91)	2256	4.5	0.542 (0.330)	12.89 (2.54)	181 (83)	73 (23)	30.2 (102.2)
<b>10th (3M Hi) Gear</b>									
37.0 (27.6)	2635 (11.72)	5.27 (8.48)	2247	3.7	0.553 (0.337)	12.64 (2.49)	183 (84)	75 (24)	30.2 (102.2)
<b>11th(4M Lo) Gear</b>									
36.4 (27.1)	2150 (9.56)	6.35 (10.22)	2232	3.1	0.562 (0.342)	12.44 (2.45)	181 (83)	73 (23)	30.2 (102.2)
<b>12th (1 Hi) Gear</b>									
36.6 (27.3)	1945 (8.65)	7.06 (11.36)	2263	2.8	0.558 (0.339)	12.54 (2.47)	183 (84)	72 (22)	30.2 (102.2)
<b>13th (4 M Hi) Gear</b>									
33.3 (24.8)	1595 (7.09)	7.82 (12.58)	2226	2.3	0.621 (0.377)	11.27 (2.22)	183 (84)	75 (24)	30.2 (102.2)
<b>14th (2 Hi) Gear</b>									
32.2 (24.0)	1140 (5.07)	10.59 (17.05)	2267	1.8	0.635 (0.387)	11.00 (2.17)	181 (83)	73 (23)	30.2 (102.2)

**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 claim of 5258 lbs (2385 kg) 3 point lift capacity. 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. **2160** and **2161**, Nebraska Summary 454, August 29, 2005.

Leonard L. Bashford  
Director

M.F. Kocher  
V.I. Adamchuk  
W.P. Campbell  
Board of Tractor Test Engineers

**TN60DA-FWA(40 km/h transmission)**

<b>TIRES, BALLAST AND WEIGHT</b>	<b>With Ballast</b>	<b>Without Ballast</b>
<b>Rear Tires</b>	-No., size, ply & psi (kPa) Two 16.9R30; **,19 (130)	Two 16.9R30; **,19 (130)
<b>Ballast</b>	-Liquid (total) None	None
	-Cast Iron (total) 440 lb (200 kg)	None
<b>Front Tires</b>	-No., size, ply & psi (kPa) Two 11.2R24; **,19 (130)	Two 11.2R24; **,19 (130)
<b>Ballast</b>	-Liquid (total) None	None
	-Cast Iron (total) 640 lb (290 kg)	None
<b>Height of Drawbar</b>	19.7 in (500 mm)	19.7 in (500 mm)
<b>Static Weight with Operator - Rear</b>	4595 lb (2085 kg)	4300 lb (1950 kg)
- Front	3100 lb (1405 kg)	2315 lb (1050 kg)
- Total	7695 lb (3490 kg)	6615 lb (3000 kg)

## DRAWBAR PERFORMANCE(30 km/h trans.)

### 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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
<b>75% of Pull at Maximum Power—Five Hours 10th (3 MHi) Gear</b>									
31.3 (23.3)	2710 (12.05)	4.33 (6.97)	2394	6.2	0.510 (0.310)	13.70 (2.70)	189 (87)	59 (15)	30.1 (102.0)
<b>MAXIMUM POWER IN SELECTED GEARS</b>									
7th (2 M Lo) Gear									
29.5 (22.0)	5065 (22.52)	2.19 (3.52)	2405	15.1	0.536 (0.326)	13.05 (2.57)	189 (87)	59 (15)	30.0 (101.7)
8th (2 M Hi) Gear									
34.7 (25.9)	4940 (21.98)	2.63 (4.24)	2350	14.4	0.526 (0.320)	13.30 (2.62)	189 (87)	57 (14)	30.0 (101.7)
9th (3 M Lo) Gear									
37.0 (27.6)	4435 (19.72)	3.13 (5.03)	2288	12.8	0.535 (0.325)	13.07 (2.57)	187 (86)	55 (13)	30.0 (101.7)
10th (3 M Hi) Gear									
38.4 (28.6)	3605 (16.03)	3.99 (6.42)	2271	9.4	0.530 (0.322)	13.20 (2.60)	187 (86)	57 (14)	30.0 (101.7)
11th (4 M Lo) Gear									
38.9 (29.0)	2965 (13.18)	4.92 (7.91)	2264	6.7	0.522 (0.317)	13.40 (2.64)	185 (85)	59 (15)	30.0 (101.7)
12th (1 Hi) Gear									
37.9 (28.3)	2620 (11.65)	5.42 (8.73)	2261	6.0	0.533 (0.324)	13.11 (2.58)	187 (86)	57 (14)	30.0 (101.7)
13th (4 M Hi) Gear									
38.0 (28.4)	2325 (10.34)	6.13 (9.87)	2256	5.0	0.536 (0.326)	13.05 (2.57)	189 (87)	55 (13)	30.0 (101.7)
14th (2 Hi) Gear									
36.3 (27.1)	1660 (7.38)	8.21 (13.22)	2251	3.7	0.558 (0.339)	12.54 (2.47)	187 (86)	57 (14)	30.0 (101.7)

## TN60DA-2WD (30 km/h transmission)

<b>TIRES, BALLAST AND WEIGHT</b>		<b>With Ballast</b>	<b>Without Ballast</b>
<b>Rear Tires</b>	-No., size, ply & psi (kPa)	Two 16.9R30; **; 20 (135)	Two 16.9R30; **; 20 (135)
<b>Ballast</b>	-Liquid (total)	None	None
	-Cast Iron (total)	440 lb (200 kg)	None
<b>Front Tires</b>	-No., size, ply & psi (kPa)	Two 7.50-16; 8; 36 (250)	Two 7.50-16; 8; 36 (250)
<b>Ballast</b>	-Liquid (total)	None	None
	-Cast Iron (total)	640 lb (290 kg)	None
<b>Height of Drawbar</b>		26.4 in (670 mm)	26.4 in (670 mm)
<b>Static Weight with Operator</b>	-Rear	4345 lb (1970 kg)	4080 lb (1850 kg)
	-Front	2800 lb (1270 kg)	1985 lb (900 kg)
	-Total	7145 lb (3240 kg)	6065 lb (2750 kg)

TRACTOR SOUND LEVEL WITH CAB	FWA dB(A)	2WD dB(A)
At no load in 9th (3M Lo) gear	80.0	80.1
Bystander in 16th (4 Hi) gear	81.8	82.7

**CENTER OF GRAVITY - 2WD**

Horizontal distance forward from centerline of rear wheels	27.0" (697 mm)
Vertical distance above roadway	31.9" (810 mm)
Horizontal distance from center of rear wheel tread	0.4" (9 mm) to the left

**CENTER OF GRAVITY - FWA**

Horizontal distance forward from centerline of rear wheels	28.5" (723 mm)
Vertical distance above roadway	31.9" (810 mm)
Horizontal distance from center of rear wheel tread	0.5" (13 mm) to the left

**TURNING ON A CONCRETE SURFACE (2WD)**

Turning radius—without brake right 141" (3.58 m) left 139" (3.53 m)
Turning space radius—without brake right 145" (3.68 m) left 143" (3.63 m)

**TURNING ON A CONCRETE SURFACE (FWA)**

Turning radius—without brake right 141" (3.58 m) left 141" (3.58 m)
Turning space radius—without brake right 146" (3.72 m) left 146" (3.72 m)

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

CATEGORY: II

Quick Attach: None

Maximum force exerted through whole range:	3955 lbs (17.6 kN)	
i) Opening pressure of relief valve:	NA	
		<u>High flow option</u>
Sustained pressure with relief valve open:	3010 psi (207 bar)	2980 psi (205 bar)
ii) Pump delivery rate at minimum pressure:	13.7 GPM (52.0 l/min)	17.2 GPM (65.0 l/min)
iii) Pump delivery rate at maximum		
hydraulic power:	9.5 GPM (36.1 l/min)	15.7 GPM (59.5 l/min)
Delivery pressure:	2860 psi (197 bar)	2300 psi (158 bar)
Power:	15.9 HP (11.9 kW)	21.1 HP (15.7 kW)

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

Observed maximum pressure psi.(bar)	3010 (207)
Location:	hydraulic pump
Hydraulic oil temperature: °F(°C)	114 (45)
Location:	hydraulic sump
Category:	II
Quick attach:	none

System pressure 2710 psi (187 Bar)

Hitch point distance to ground level in. (mm)	14.6 (370)	19.4 (493)	24.2 (614)	29.0 (737)	33.7 (857)	38.6 (980)
Lift force on frame lb	4760	5245	5280	5045	4635	4320
" " " " " " (kN)	(21.2)	(23.3)	(23.5)	(22.4)	(20.6)	(19.2)

**HITCH DIMENSIONS AS TESTED—NO LOAD**

	SAE TEST		OECD TEST	
	inch	mm	inch	mm
A	27.2	690	27.3	694
B	10.0	255	10.0	255
C	12.3	312	12.3	312
D	10.9	276	10.9	276
E	14.2	361	12.1	308
F	7.5	189	7.5	189
G	27.2	690	27.4	695
H	1.2	30	1.2	30
I	13.4	340	13.6	345
J	19.7	501	19.9	506
K	20.6	523	20.6	523
L	40.7	1035	40.7	1035
M	21.7	550	21.7	550
N	34.6	880	34.6	880
O	14.6	370	14.7	373
P	38.7	984	43.9	1116
Q	39.8	1010	39.9	1012
R	22.4	570	22.6	574

