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University of Nebraska - Lincoln

*Year 2007*

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Test 1910A: New Holland TJ480 Diesel  
16-Speed

Tractor Museum  
University of Nebraska-Lincoln, [TractorMuseumArchives@unl.edu](mailto:TractorMuseumArchives@unl.edu)

# NEBRASKA OECD TRACTOR TEST 1910A - SUMMARY 583

## NEW HOLLAND TJ 480 DIESEL

### 16 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft 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—1000 rpm)</b>					
429.00 (319.91)	1998	25.28 (95.70)	0.413 (0.251)	16.97 (3.34)	
<b>Maximum Power (1 Hour)</b>					
483.15 (360.28)	1799	26.85 (101.66)	0.389 (0.237)	17.99 (3.54)	
<b>VARYING POWER AND FUEL CONSUMPTION</b>					
429.00 (319.91)	1998	25.28 (95.70)	0.413 (0.251)	16.97 (3.34)	Air temperature
					80°F (27°C)
85% load level not run due to vibration					Relative humidity
3/4 of 85% load level not run due to vibration					29%
1/2 of 85% load level not run due to vibration					Barometer
97.18 (72.47)	2138	10.57 (40.02)	0.761 (0.463)	9.19 (1.81)	
2.17 (1.62)	2166	5.00 (18.93)	16.136 (9.815)	0.43 (0.09)	29.05" Hg (98.37 kPa)
Maximum torque -1629 lb.-ft. (2208 Nm) at 1305 rpm					
Maximum torque rise -44.2%					
Torque rise at 1601 engine rpm - 34%					
Power increase at 1799 engine rpm - 12.6%					

#### 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)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
<b>Maximum Power—4th Gear</b>									
391.15 (291.68)	35158 (156.39)	4.17 (6.71)	1996	4.6	0.451 (0.274)	15.54 (3.06)	193 (89)	49 (9)	29.05 (98.37)
<b>75% of Pull at Maximum Power—4th Gear</b>									
305.85 (228.07)	26418 (117.51)	4.34 (6.99)	2045	3.3	0.505 (0.307)	13.88 (2.73)	190 (88)	63 (17)	29.03 (98.31)
<b>50% of Pull at Maximum Power—4th Gear</b>									
209.29 (156.07)	17630 (78.42)	4.45 (7.16)	2074	2.1	0.593 (0.361)	11.82 (2.33)	186 (85)	64 (18)	29.03 (98.31)
<b>75% of Pull at Reduced Engine Speed—7th Gear</b>									
305.15 (227.55)	26381 (117.35)	4.34 (6.98)	1478	3.2	0.453 (0.276)	15.47 (3.05)	187 (86)	64 (18)	29.03 (98.31)
<b>50% of Pull at Reduced Engine Speed—7th Gear</b>									
209.55 (156.26)	17645 (78.49)	4.45 (7.17)	1500	2.0	0.486 (0.296)	14.44 (2.84)	184 (84)	65 (18)	29.03 (98.31)

**Location of tests:** Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832

**Dates of tests:** September 28 - October 24, 2007

**Manufacturer:** Case Corporation, 700 State Street Racine, Wi. 53404 USA.

**FUEL, OIL and TIME:** Fuel No. 2 Diesel Specific gravity converted to 60°/60° F (15°/15°C) 0.8407 Fuel weight 7.000 lbs/gal (0.839 kg/l) Oil SAE 15W40 API service classification CI-4 Transmission and hydraulic lubricant NH Ambra Hy-Tran Ultra fluid Front and rear axle lubricant NH Ambra Hy-Tran Ultra fluid Total time engine was operated 20.0 hours

**ENGINE:** Make Cummins Diesel Type six cylinder vertical with turbocharger and air to air aftercooler Serial No. 79234351 Crankshaft lengthwise Rated engine speed 2000 Bore and stroke 5.394" x 6.654" (137.0 mm x 169.0 mm) Compression ratio 17.0 to 1 Displacement 912 cu in (14945 ml) Starting system 24 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 transmission and hydraulic oil Fuel filter one paper element Fuel cooler radiator for returned fuel Muffler vertical Cooling medium temperature control one thermostat and variable speed fan

**ENGINE OPERATING PARAMETERS:** Fuel rate: 173.4 - 180.8 lb/h (78.7 - 82.0 kg/h) High idle: 2135 - 2175 rpm Turbo boost: nominal 22.5 - 25.4 psi (155 - 175 kPa) as measured 23.6 psi (163 kPa)

**CHASSIS:** Type four wheel drive with triples Serial No. \*Z7F105636\* Tread width rear 73.6" (1870 mm) to 187.6" (4766 mm) front 73.6" (1870 mm) to 187.6" (4766 mm) Wheelbase 154.0" (3911 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with full range operator controlled powershift Nominal travel speeds mph (km/h) first 2.54 (4.08) second 3.05 (4.91) third 3.68 (5.93) fourth 4.44 (7.14) fifth 5.10 (8.20) sixth 5.60 (9.01) seventh 6.14 (9.88) eighth 6.74 (10.85) ninth 7.41 (11.93) tenth 8.15 (13.11) eleventh 8.93 (14.37) twelfth 9.81 (15.79) thirteenth 11.27 (18.13) fourteenth 13.56 (21.83) fifteenth 16.39 (26.38) sixteenth 19.73 (31.75) reverse 3.84 (6.18), 8.48 (13.65) Clutch multiple wet disc electro-hydraulically operated by foot pedal Brakes single wet disc hydraulically actuated by foot pedal Steering hydrostatic and articulated Power take-off 1000 rpm at 1998 engine rpm Unladen tractor mass 44470 lb (20171 kg)

**DRAWBAR PERFORMANCE at 1800 engine rpm  
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. <sup>o</sup> F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
					<b>3rd Gear</b>				
381.43 (284.44)	44623 (198.49)	3.21 (5.16)	1966	10.4	0.477 (0.290)	14.70 (2.90)	194 (90)	52 (11)	29.05 (98.37)
					<b>4th Gear</b>				
419.00 (312.45)	43626 (194.06)	3.60 (5.80)	1799	8.6	0.443 (0.269)	15.85 (3.12)	188 (86)	51 (11)	29.05 (98.37)
					<b>5th Gear</b>				
432.87 (322.79)	37808 (168.18)	4.29 (6.91)	1802	5.7	0.431 (0.262)	16.29 (3.21)	192 (89)	49 (9)	29.06 (98.41)
					<b>6th Gear</b>				
435.62 (324.84)	34324 (152.68)	4.76 (7.66)	1798	4.5	0.422 (0.256)	16.63 (3.28)	192 (89)	49 (9)	29.06 (98.41)
					<b>7th Gear</b>				
434.14 (323.74)	31077 (138.24)	5.24 (8.43)	1799	4.1	0.424 (0.258)	16.53 (3.26)	192 (89)	61 (16)	29.04 (98.34)
					<b>8th Gear</b>				
431.97 (322.12)	27768 (123.52)	5.83 (9.39)	1812	3.5	0.434 (0.264)	16.17 (3.19)	192 (89)	62 (17)	29.04 (98.34)
					<b>9th Gear</b>				
431.59 (321.84)	25237 (112.26)	6.41 (10.32)	1806	3.2	0.435 (0.264)	16.13 (3.18)	191 (88)	63 (17)	29.03 (98.31)
					<b>10th Gear</b>				
437.22 (326.04)	23264 (103.48)	7.05 (11.34)	1800	2.8	0.426 (0.259)	16.44 (3.24)	190 (88)	64 (18)	29.03 (98.31)
					<b>11th Gear</b>				
433.93 (323.58)	20993 (93.38)	7.75 (12.47)	1801	2.4	0.429 (0.261)	16.34 (3.22)	190 (88)	64 (18)	29.03 (98.31)
					<b>12th Gear</b>				
437.62 (326.33)	19253 (85.64)	8.52 (13.72)	1800	2.3	0.428 (0.260)	16.39 (3.23)	190 (88)	64 (18)	29.03 (98.31)

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

**Note:** The test results on this Summary were obtained from tests carried out on the Case IH Steiger 480 Diesel.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. The pull in 3<sup>rd</sup> gear was limited to avoid excessive tractor bouncing. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 110°F (43°C). This tractor did not meet the manufacturer's claim of 75 dB(A) cab sound level. 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 and correct report of official Tractor Test No. **1910A**, Nebraska Summary 583, February 8, 2008.

Roger M. Hoy  
Director

M.F. Kocher  
R.E. Yoder  
J.A. Smith  
Board of Tractor Test Engineers

**TRACTOR SOUND LEVEL WITH DELUXE CAB dB(A)**

At no load in 4th gear	75.2
Bystander in 16th gear	91.2

**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**

Six 520/85R42;\*\*,14(95)  
Six 520/85R42;\*\*,15(105)  
21.0 in (535 mm)  
18840 lb (8546 kg)  
25805 lb (11705 kg)  
44645 lb (20251 kg)

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

CATEGORY: IVN

Quick Attach: yes

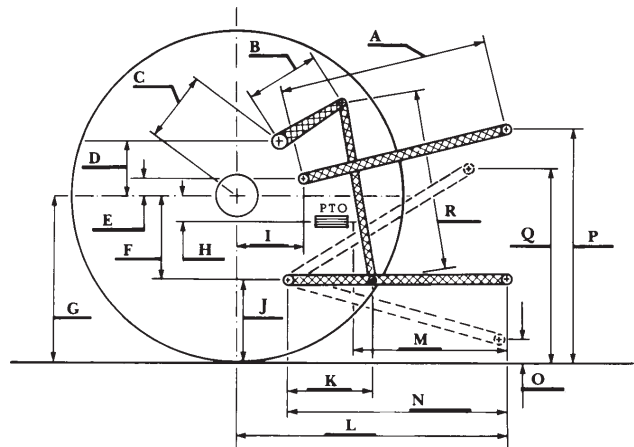
Maximum force exerted through whole range:	19620 lbs (87.3 kN)	
	<u>Standard pump</u>	<u>High flow pump</u>
i) Sustained pressure of the open relief valve:	2880 psi (199 bar)	2990 psi (206 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	40.6 GPM (153.7 l/min)	55.8 GPM (211.2 l/min)
iii) Pump delivery rate at maximum hydraulic power:	37.7 GPM (142.7 l/min)	54.3 GPM (205.5 l/min)
Delivery pressure:	2805 psi (193 bar)	2604 psi (180 bar)
Power:	61.7 HP (46.0 kW)	82.5 Hp (61.5 kW)

### TwinFlow system

	<u>Main pump</u>	<u>TwinFlow pump</u>
i) Sustained pressure at compensator cutoff:	3026 psi (208 bar)	3041 psi (210 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	56.6 GPM (214.2 l/min)	37.7 GPM (142.6 l/min)
Combined flow:	94.3 GPM (356.8 l/min)	
iii) Pump delivery rate at maximum hydraulic power:	55.4 GPM (209.5 l/min)	35.9 GPM (135.9 l/min)
Delivery pressure:	2430 psi (167 bar)	2861 psi (197 bar)
Power:	78.5 HP (58.5 kW)	59.9 Hp (44.7 kW)

### HITCH DIMENSIONS AS TESTED - NO LOAD

	inch	mm
A	32.6	827
B	29.9	760
C	23.2	590
D	22.0	558
E	13.5	342
F	13.4	340
G	38.2	970
H	6.4	162
I	22.8	578
J	24.8	630
K	29.0	736
L	56.3	1431
*L'	63.6	1615
M	34.3	871
N	46.5	1181
O	7.9	200
P	48.6	1234
Q	42.2	1072
R	39.8	1010



**New Holland TJ 480 Diesel**

Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln