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2014

## Test 2097: New Holland T9.565

Nebraska Tractor Test Lab

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

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# NEBRASKA OECD TRACTOR TEST 2017 - SUMMARY 962

## NEW HOLLAND T9.565 DIESEL

### 16 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1160 rpm)						
449.14 (334.92)	2101	25.28 (95.71)	0.395 (0.240)	17.76 (3.50)	2.09 (7.89)	
Maximum Power (1 hour)						
504.56 (376.25)	1902	26.92 (101.88)	0.375 (0.228)	18.75 (3.69)	2.18 (8.26)	
Standard Power Take-off Speed (1000 rpm)						
496.01 (369.87)	1811	26.10 (98.79)	0.369 (0.225)	19.01 (3.74)	2.06 (7.81)	

#### VARYING POWER AND FUEL CONSUMPTION

449.14 (334.92)	2101	25.28 (95.71)	0.395 (0.240)	17.76 (3.50)	2.09 (7.89)	Air temperature
389.44 (290.40)	2144	22.83 (86.44)	0.412 (0.250)	17.05 (3.36)	1.69 (6.38)	74°F (24°C)
293.57 (218.92)	2153	18.11 (68.54)	0.433 (0.263)	16.21 (3.19)	1.25 (4.74)	Relative humidity
196.48 (146.52)	2162	13.66 (51.70)	0.488 (0.297)	14.39 (2.83)	0.87 (3.28)	60%
98.73 (73.62)	2175	9.39 (35.53)	0.668 (0.406)	10.52 (2.07)	0.53 (2.02)	Barometer
1.25 (0.93)	2186	5.32 (20.13)	29.813 (18.135)	0.24 (0.05)	0.23 (0.86)	28.69" Hg (97.16 kPa)

Maximum torque - 1633 lb.-ft. (2215 Nm) at 1400 rpm

Maximum torque rise - 45.5%

Torque rise at 1681 engine rpm - 35%

Power increase at 1902 engine rpm - 12.3%

#### 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)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
Maximum Power—6th Gear										
417.77 (311.53)	27928 (124.23)	5.61 (9.03)	2100	2.2	0.425 (0.259)	16.52 (3.25)	0.043 (0.026)	212 (100)	69 (21)	28.66 (97.05)
75% of Pull at Maximum Power—6th Gear										
321.81 (239.97)	20934 (93.12)	5.77 (9.28)	2150	1.8	0.447 (0.272)	15.71 (3.10)	0.046 (0.028)	204 (95)	74 (23)	29.00 (98.21)
50% of Pull at Maximum Power—6th Gear										
216.78 (161.65)	13968 (62.13)	5.82 (9.37)	2159	1.3	0.488 (0.297)	14.39 (2.83)	0.048 (0.029)	210 (99)	74 (23)	29.00 (98.21)
75% of Pull at Reduced Engine Speed—10th Gear										
321.63 (239.84)	20949 (93.18)	5.76 (9.27)	1475	1.8	0.383 (0.233)	18.33 (3.61)	0.046 (0.028)	212 (100)	74 (23)	29.00 (98.21)
50% of Pull at Reduced Engine Speed—10th Gear										
217.24 (162.00)	13909 (61.87)	5.86 (9.43)	1493	1.3	0.414 (0.252)	16.95 (3.34)	0.032 (0.019)	197 (92)	74 (23)	28.99 (98.17)

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

**Dates of tests:** September 17 - 24, 2014

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

**CONSUMABLE Fluids, OIL and TIME: Fuel** No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8434 **Fuel weight** 7.022 lbs/gal (0.842 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil SAE 10W40 API service classification** CJ-4 **Transmission lubricant** New Holland Mastertran Ultrraction fluid **Hydraulic and axle lubricant** New Holland Mastertran Ultrraction fluid **Total time engine was operated:** 22.0 hours

**ENGINE: Make** FPT Industrial Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** 000000874 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 5.315" x 5.906" (135.0 mm x 150.0 mm) **Compression ratio** 16.5 to 1 **Displacement** 786 cu in (12880 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, separate radiators for hydraulic and transmission oil **Fuel filter** two paper elements **Exhaust** DOC (diesel oxidation catalyst) and SCR (selective catalyst reduction) with a vertical muffler **Cooling medium** temperature control thermostat and variable speed fan

**ENGINE OPERATING PARAMETERS: Fuel rate:** 170.2 - 180.6 lb/h (77.2 - 81.9 kg/h) **High idle:** 2175 - 2225 rpm **Turbo boost:** nominal 23.2 - 26.1 psi (160 - 180 kPa) as measured 24.7 psi (170 kPa)

**CHASSIS: Type** four wheel drive with triples **Serial No.** \*ZCF218180\* **Tread width** rear 73.6" (1870 mm) to 187.6" (4766 mm) front 73.6" (1870 mm) to 187.6" (4766 mm) **Wheelbase** 148.0" (3759 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 2.65 (4.26) second 3.19 (5.13) third 3.85 (6.20) fourth 4.63 (7.46) fifth 5.33 (8.57) sixth 5.85 (9.42) seventh 6.41 (10.32) eighth 7.05 (11.35) ninth 7.75 (12.47) tenth 8.51 (13.70) eleventh 9.33 (15.02) twelfth 10.25 (16.50) thirteenth 11.78 (18.95) fourteenth 14.18 (22.82) fifteenth 17.13 (27.56) sixteenth 20.63 (33.20) reverse 4.01 (6.45), 8.07 (12.99) **Clutch** multiple wet disc electrohydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated

## DRAWBAR PERFORMANCE AT 2100 ENGINE RPM

### DRAWBAR 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)	D.E.F Consumption lb/hp.hr (kg/kW.h)	Temp.°F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2nd Gear										
338.42 (252.36)	46053 (204.85)	2.76 (4.44)	2143	14.3	0.487 (0.296)	14.42 (2.84)	0.049 (0.030)	194 (90)	53 (12)	29.03 (98.31)
3rd Gear										
402.62 (300.23)	43070 (191.58)	3.51 (5.64)	2100	7.2	0.440 (0.268)	15.96 (3.14)	0.048 (0.029)	204 (96)	58 (15)	29.04 (98.34)
4th Gear										
414.45 (309.05)	35298 (157.01)	4.40 (7.08)	2099	3.0	0.428 (0.260)	16.40 (3.23)	0.043 (0.026)	207 (97)	73 (23)	28.66 (97.05)
5th Gear										
416.77 (310.78)	30722 (136.66)	5.09 (8.18)	2099	2.6	0.425 (0.259)	16.52 (3.25)	0.043 (0.026)	213 (101)	72 (22)	28.66 (97.05)
6th Gear										
417.77 (311.53)	27928 (124.23)	5.61 (9.03)	2100	2.2	0.425 (0.259)	16.52 (3.25)	0.043 (0.026)	212 (100)	69 (21)	28.66 (97.05)
7th Gear										
414.10 (308.79)	25184 (112.02)	6.17 (9.93)	2101	2.0	0.429 (0.261)	16.37 (3.23)	0.043 (0.026)	213 (101)	70 (21)	28.66 (97.05)
8th Gear										
415.96 (310.18)	22990 (102.26)	6.79 (10.92)	2100	1.8	0.427 (0.260)	16.44 (3.24)	0.043 (0.026)	211 (99)	75 (24)	28.64 (96.99)
9th Gear										
412.80 (307.82)	20729 (92.21)	7.47 (12.02)	2099	1.6	0.429 (0.261)	16.36 (3.22)	0.042 (0.026)	212 (100)	78 (26)	28.63 (96.95)

**Power take-off** MY 2014 - 1000 rpm at 1998 engine rpm, MY 2015 - 1000 rpm at 1811 engine rpm **Unladen tractor mass** 47155 lb (21389 kg)

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

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the primary fuel filter was maintained at 110°F (43°C). The performance figures on this Summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2097**, Nebraska Summary 962, December 19, 2014.

Roger M. Hoy  
Director

M.F. Kocher  
J.D. Luck  
P.J. Jasa  
Board of Tractor Test Engineers

### TRACTOR SOUND LEVEL WITH CAB

	dB(A)
At no load in 4th gear	73.6
Bystander in 16th gear	88.2

### 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;\*\*\*,9(60)  
Six 520/85R42;\*\*\*,10(70)  
20.5 in (520 mm)  
22155 lb(10049 kg)  
25175 lb(11419 kg)  
47330 lb(21468 kg)

# **DRAWBAR PERFORMANCE AT 1900 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)	Hp.hr/gal (kW.h/l)	D.E.F Consumption lb/hp.hr (kg/kW.h)	Temp.°F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2nd Gear										
338.62 (252.51)	46095 (205.04)	2.75 (4.43)	2143	14.5	0.490 (0.298)	14.33 (2.82)	0.050 (0.030)	192 (89)	52 (11)	29.03 (98.31)
3rd Gear										
405.35 (302.27)	45061 (200.44)	3.38 (5.43)	2075	9.6	0.444 (0.270)	15.80 (3.11)	0.051 (0.031)	208 (98)	61 (16)	29.04 (98.34)
4th Gear										
445.89 (332.50)	42803 (190.40)	3.91 (6.29)	1937	6.8	0.420 (0.255)	16.73 (3.29)	0.047 (0.028)	215 (102)	63 (17)	29.04 (98.34)
5th Gear										
459.03 (342.29)	37848 (168.35)	4.55 (7.32)	1900	3.7	0.412 (0.250)	17.06 (3.36)	0.041 (0.025)	213 (101)	74 (23)	28.65 (97.02)
6th Gear										
464.54 (346.41)	34603 (153.92)	5.03 (8.10)	1900	3.0	0.407 (0.247)	17.27 (3.40)	0.042 (0.025)	217 (103)	69 (21)	28.66 (97.05)
7th Gear										
462.53 (344.91)	31293 (139.20)	5.55 (8.92)	1899	2.6	0.409 (0.249)	17.15 (3.38)	0.042 (0.025)	216 (102)	70 (21)	28.66 (97.05)
8th Gear										
462.80 (345.11)	28415 (126.39)	6.11 (9.83)	1900	2.3	0.407 (0.248)	17.25 (3.40)	0.041 (0.025)	216 (102)	77 (25)	28.64 (96.99)
9th Gear										
462.63 (344.98)	25780 (114.68)	6.73 (10.83)	1900	2.0	0.408 (0.248)	17.21 (3.39)	0.041 (0.025)	218 (103)	78 (25)	28.64 (96.99)
10th Gear										
462.32 (344.75)	23402 (104.10)	7.41 (11.93)	1899	1.8	0.410 (0.249)	17.13 (3.38)	0.041 (0.025)	217 (103)	82 (28)	28.64 (96.99)

## HYDRAULIC PERFORMANCE

CATEGORY: IVN

Quick Attach: yes

OECD Static test

Maximum force exerted through whole range: 21903 lbs (97.4 kN)

### Three outlet sets combined

	Standard pump	High flow pump
i) Sustained pressure of the open relief valve:	2877 psi (198 bar)	3039 psi (210 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	43.8 GPM (165.8 l/min)	59.4 GPM (224.9 l/min)
iii) Pump delivery rate at maximum hydraulic power:	43.3 GPM (163.7 l/min)	56.0 GPM (211.9 l/min)
Delivery pressure:	2526 psi (174 bar)	2645 psi (182 bar)
Power:	63.7 HP (47.5 kW)	86.4 Hp (64.4 kW)

### Single outlet set

ii) Pump delivery rate at minimum pressure and rated engine speed:	42.8 GPM (162.2 l/min)	47.6 GPM (180.1 l/min)
iii) Pump delivery rate at maximum hydraulic power:	42.7 GPM (161.6 l/min)	43.0 GPM (162.6 l/min)
Delivery pressure:	2024 psi (139 bar)	2116 psi (146 bar)
Power:	50.4 HP (37.6 kW)	53.0 Hp (39.6 kW)

## MegaFlow system

### Two outlet sets combined

	Standard pump	MegaFlow pump
i) Sustained pressure at compensator cutoff:	2877 psi (198 bar)	2855 psi (197 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	43.8 GPM (165.8 l/min)	57.3 GPM (217.0 l/min)
Combined flow:	101.1 GPM (382.8 l/min)	
iii) Pump delivery rate at maximum hydraulic power:	43.3 GPM (163.7 l/min)	56.4 GPM (213.6 l/min)
Delivery pressure:	2526 psi (174 bar)	2479 psi (171 bar)
Power:	63.7 HP (47.5 kW)	81.6 Hp (60.9 kW)

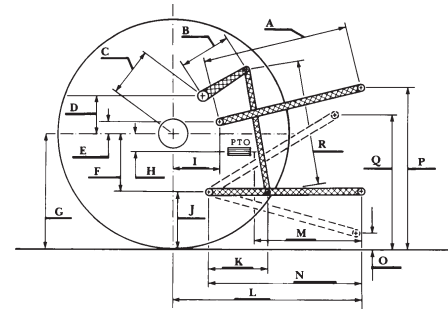
### Two outlet sets combined

	High flow pump	MegaFlow pump
i) Sustained pressure at compensator cutoff:	2993 psi (206 bar)	2855 psi (197 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	61.0 GPM (230.9 l/min)	57.3 GPM (217.0 l/min)
Combined flow:	118.3 GPM (447.9 l/min)	
iii) Pump delivery rate at maximum hydraulic power:	56.7 GPM (214.7 l/min)	56.4 GPM (213.6 l/min)
Delivery pressure:	2517 psi (174 bar)	2479 psi (171 bar)
Power:	83.3 HP (62.1 kW)	81.6 Hp (60.9 kW)

## HITCH DIMENSIONS AS TESTED - NO LOAD

	inch	mm
A	39.0	990
B	30.7	780
C	27.9	709
D	26.5	673
E	13.5	342
F	16.3	415
G	38.2	970
H	2.6	66
I	21.2	538
J	21.9	555
K	30.5	775
L	58.5	1487
*L'	65.8	1671
M	53.6	1361
N	43.0	1093
O	9.1	230
P	52.6	1335
Q	46.5	1181
R	39.4	1000

\*L' to Quick Attach ends



## NEW HOLLAND T9.565 Diesel

Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln