

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F.
Larsen

January 2000

Test 1942: New Holland 9684 Quadrasync Diesel

Follow this and additional works at: <http://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Applied Mechanics Commons](#)

"Test 1942: New Holland 9684 Quadrasync Diesel" (2000). *Nebraska Tractor Tests*. 262.
<http://digitalcommons.unl.edu/tractormuseumlit/262>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

SUMMARY OF OECD TEST 1942—NEBRASKA SUMMARY 351

NEW HOLLAND 9684 QUADRASYNC DIESEL

12 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-997 rpm)					
301.3 (224.7)	2100	17.84 (67.53)	0.419 (0.255)	16.90 (3.33)	
Maximum Power (2 hours)					
349.1 (260.3)	1800	18.49 (69.99)	0.375 (0.228)	18.88 (3.72)	

VARYING POWER AND FUEL CONSUMPTION

301.3 (224.7)	2100	17.84 (67.53)	0.419 (0.255)	16.90 (3.33)	Air temperature
260.4 (194.2)	2134	16.17 (61.22)	0.439 (0.267)	16.10 (3.17)	72°F (22°C)
197.3 (147.1)	2159	13.48 (51.01)	0.483 (0.294)	14.64 (2.88)	Relative humidity
133.3 (99.4)	2184	10.61 (40.17)	0.564 (0.343)	12.54 (2.47)	63%
67.5 (50.3)	2211	7.82 (29.62)	0.821 (0.500)	8.63 (1.70)	Barometer
11.8 (8.8)	2225	5.70 (21.56)	3.421 (2.081)	2.07 (0.41)	29.5" Hg (99.89 kPa)

Maximum Torque - 1099 lb.-ft. (1490 Nm) at 1400 rpm
 Maximum Torque Rise - 45.7%
 Torque rise at 1700 engine rpm - 39%

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 (°C)		Barom. inch Hg (kPa)
						cool- ing med	Air dry bulb		
Maximum Power 4th (L4) Gear									
277.2 (206.7)	22420 (99.73)	4.64 (7.46)	2100	2.6	0.453 (0.276)	15.53 (3.06)	175 (79)	59 (15)	29.2 (98.9)
75% of Pull at Maximum Power 4th (L4) Gear									
214.2 (159.7)	16810 (74.78)	4.78 (7.69)	2153	2.1	0.493 (0.300)	14.26 (2.81)	176 (80)	62 (17)	29.2 (99.0)
50% of Pull at Maximum Power 4th (L4) Gear									
146.0 (108.9)	11215 (49.88)	4.88 (7.86)	2183	1.4	0.578 (0.352)	12.14 (2.40)	175 (79)	62 (17)	29.2 (99.0)
75% of Pull at Reduced Engine Speed 5th (M1) Gear									
214.0 (159.6)	16820 (74.82)	4.77 (7.68)	1879	1.9	0.454 (0.276)	15.50 (3.05)	176 (80)	64 (18)	29.2 (99.0)
50% of Pull at Reduced Engine Speed 5th (M1) Gear									
145.8 (108.7)	11200 (49.83)	4.88 (7.85)	1906	1.2	0.522 (0.317)	13.50 (2.66)	175 (79)	64 (18)	29.2 (99.0)

Location of Test: Prairie Agricultural Machinery Institute(PAMI), Portage La Prairie, Manitoba, Canada R1N 3C5

Dates of Test: June-July, 2000

Manufacturer: New Holland Canada Ltd. Versatile Farm Equipment Operations, Box 7300, 1260 Clarence Ave., Winnipeg, Manitoba, Canada R3C 4E8

FUEL and OIL: Fuel No. 2 Diesel Specific gravity converted to 60°/60° F (15°/15°C) 0.846 Fuel weight 7.080 lbs/gal (0.848 kg/l) Oil SAE 15W-40 API service classification CF-4 Transmission and hydraulic lubricant Esso Hydraul 56 fluid Final Drive lubricant SAE 80W90 gear oil

ENGINE: Make Cummins Diesel Type six cylinder vertical with turbocharger and intercooler Serial No. 11999631 Crankshaft lengthwise Rated engine speed 2100 Bore and stroke 5.50" x 6.00" (139.7 mm x 152.4 mm) Compression ratio 18.5 to 1 Displacement 855 cu in (14039 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 one paper element Muffler vertical Cooling medium temperature control thermostat

CHASSIS: Type Four wheel drive with dual Serial No. D108303 Tread width rear 72.0" (1829 mm) and 129.2" (3282 mm) front 72.0" (1829 mm) and 129.2" (3282 mm) Wheel base 133.0"(3380 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio Nominal travel speeds mph (km/h) first 2.96 (4.77) second 3.47 (5.58) third 4.04 (6.51) fourth 4.71 (7.58) fifth 5.38 (8.66) sixth 6.30 (10.13) seventh 7.34 (11.81) eighth 8.55 (13.75) ninth 11.15 (17.95) tenth 13.04 (20.98) eleventh 15.21 (24.48) twelfth 17.70 (28.49) reverse 3.84 (6.18), 4.49 (7.23), 5.24 (8.43), 6.10 (9.82) Clutch multiple wet disc hydraulically operated by foot pedal Brakes caliper disc hydraulically operated by foot pedal Steering hydrostatic and articulated Power take-off 1000 rpm at 2106 engine rpm Unladen tractor mass 30630 lb (13893 kg)

**DRAWBAR PERFORMANCE
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.hr)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
2nd (L2) Gear									
270.6 (201.8)	31355 (139.47)	3.24 (5.21)	2079	6.9	0.473 (0.288)	14.87 (2.93)	172 (78)	59 (15)	29.2 (98.8)
3rd (L3) Gear									
296.0 (220.7)	31070 (138.20)	3.57 (5.75)	1960	6.5	0.441 (0.268)	15.96 (3.14)	174 (79)	59 (15)	29.2 (98.8)
4th (L4) Gear									
312.9 (233.3)	30360 (135.05)	3.86 (6.22)	1801	5.4	0.413 (0.251)	17.06 (3.36)	174 (79)	59 (15)	29.2 (98.8)
5th (M1) Gear									
317.2 (236.5)	26400 (117.44)	4.51 (7.25)	1799	3.3	0.410 (0.249)	17.17 (3.38)	174 (79)	59 (15)	29.2 (98.8)
6th (M2) Gear									
319.2 (238.0)	22505 (100.11)	5.32 (8.56)	1800	2.5	0.404 (0.246)	17.41 (3.43)	176 (80)	60 (16)	29.2 (98.9)
7th (M3) Gear									
320.1 (238.7)	19260 (85.68)	6.23 (10.03)	1801	2.0	0.406 (0.247)	17.36 (3.42)	176 (80)	61 (16)	29.2 (99.0)
8th (M4) Gear									
321.4 (239.7)	16580 (73.75)	7.27 (11.70)	1800	1.7	0.404 (0.246)	17.41 (3.43)	178 (81)	61 (16)	29.2 (99.0)
9th (H1) Gear									
316.2 (235.8)	12430 (55.29)	9.54 (15.35)	1801	1.2	0.408 (0.248)	17.26 (3.40)	178 (81)	61 (16)	29.2 (99.0)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

NOTE: This tractor was not equipped with a 3 point hitch when tested. The 3 point hitch performance data shown on this report is from a test series done on the New Holland 9282 Diesel.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturers claim of 50 gal/min (189.3 l/min) hydraulic flow. The pull in 2nd (L2) gear was limited due to tire hop. The performance results on this summary were taken from OECD tests conducted under the Code II Test Code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1942**, Nebraska Summary 351, February 5, 2001.

Brent T. Sampson
Test Engineer

L.L. Bashford
M.F. Kocher
R.D. Grisso, Jr.
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB

dB(A)

At 75% Load in 5th(M1) Gear	77.9
Bystander	--

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

Four 20.8R42; **, 8 (55)
 Four 20.8R42; **, 12 (83)
 21.9 in (555 mm)
 11670 lb (5293 kg)
 19125 lb (8675 kg)
 30795 lb (13968 kg)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: IVN

Quick Attach: none

Maximum Force Exerted Through Whole Range: 15285 lb (68.0 kN)

- i) Opening pressure of relief valve: NA
- Sustained pressure of the open relief valve: 2895 psi (199 bar)
- ii) Pump delivery rate at minimum pressure: 49.0 GPM (185.5 l/min)
- iii) Pump delivery rate at maximum
 - hydraulic power: 44.3 GPM (167.5 l/min)
 - Delivery pressure: 2175 psi (150 bar)
 - Power: 56.2 HP (41.9 kW)

THREE POINT HITCH PERFORMANCE (SAE Static Test)

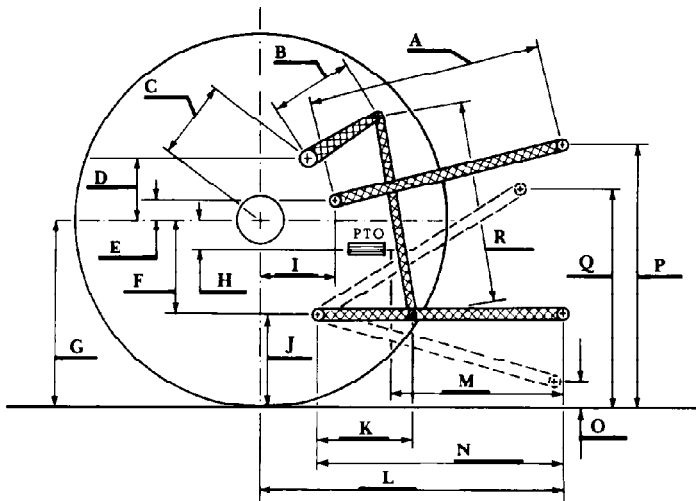
Observed Maximum Pressure psi(bar) 2800(193)
 Location lift cylinder
 Hydraulic oil Temperature °F(°C) 150 (65)
 Location Hydraulic sump
 Category IVN
 Quick Attach None

System Pressure - 2600 psi (179 bar)

Hitch point distance	8.0 (203)	19.4 (492)	27.2 (692)	35.1 (892)	44.1 (1120)
to ground level in. (mm)	8.0 (203)	19.4 (492)	27.2 (692)	35.1 (892)	44.1 (1120)
Lift force on frame lb.	25955	22535	20220	17905	13430
" " " " " (kN)	(115.4)	(100.2)	(89.9)	(79.6)	(59.7)

ASAE Test - System Pressure - 2800 psi (193 bar)

Hitch point distance	8.0 (203)	19.4 (492)	27.2 (692)	35.1 (892)	44.1 (1120)
to ground level in. (mm)	8.0 (203)	19.4 (492)	27.2 (692)	35.1 (892)	44.1 (1120)
Lift force on frame lb.	28025	24315	21820	19325	14465
" " " " " (kN)	(124.7)	(108.2)	(97.1)	(86.0)	(64.4)



HITCH DIMENSIONS AS TESTED NO LOAD

	inch	mm
A	27.8	705
B	18.6	472
C	27.0	685
D	19.0	483
E	13.4	341
F	10.4	263
G	33.7	855
H	1.7	43
I	25.3	642
J	23.3	592
K	18.0	457
L	53.4	1356
M	25.3	718
N	43.0	1092
O	9.1	230
P	50.3	1277
Q	41.3	1050
R	33.1	842