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## Test 1701: Ford 3930 8x2 Diesel 8-Speed (Chassis S/N BD81400 and Higher)

Nebraska Tractor Test Lab

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# NEBRASKA OECD TRACTOR TEST 1701—SUMMARY 189

## FORD 3930 8 x 2 DIESEL

### 8 SPEED

#### (CHASSIS SERIAL NUMBERS BD81400 AND HIGHER)

#### 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—660 rpm)</b>					
45.58 (33.99)	2200	3.01 (11.38)	0.463 (0.282)	15.16 (2.99)	
<b>Standard Power Take-off speed (540 rpm)</b>					
41.22 (30.74)	1801	2.58 (9.77)	0.440 (0.268)	15.97 (3.15)	

#### VARYING POWER AND FUEL CONSUMPTION

45.58 (33.99)	2200	3.01 (11.38)	0.463 (0.282)	15.16 (2.99)	Air temperature
39.58 (29.52)	2252	2.65 (10.03)	0.470 (0.286)	14.95 (2.94)	75°F (24°C)
30.04 (22.40)	2268	2.18 (8.25)	0.509 (0.310)	13.79 (2.72)	Relative humidity
20.09 (14.98)	2286	1.71 (6.47)	0.597 (0.363)	11.76 (2.32)	69%
10.25 (7.64)	2302	1.32 (5.01)	0.908 (0.552)	7.74 (1.52)	Barometer
0.26 (0.20)	2315	0.90 (3.40)	23.838 (14.500)	0.29 (0.06)	28.99" Hg (98.17 kPa)

Maximum Torque 133 lb.-ft. (180 Nm) at 1250 rpm  
Maximum Torque Rise 22.3%  
Torque rise at 1800 engine rpm 10%

#### DRAWBAR PERFORMANCE (UNBALLASTED—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)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
<b>Maximum Power—5th (H1) Gear</b>									
37.33 (27.84)	2890 (12.85)	4.84 (7.80)	2200	6.69	0.565 (0.344)	12.42 (2.45)	191 (88)	61 (16)	28.88 (97.80)
<b>75% of Pull at Maximum Power—5th (H1) Gear</b>									
29.28 (21.84)	2161 (9.61)	5.08 (8.18)	2260	4.81	0.586 (0.357)	11.98 (2.36)	187 (86)	66 (19)	28.85 (97.70)
<b>50% of Pull at Maximum Power—5th (H1) Gear</b>									
19.99 (14.90)	1440 (6.41)	5.20 (8.38)	2279	3.34	0.688 (0.418)	10.22 (2.01)	189 (87)	66 (19)	28.85 (97.70)
<b>75% of Pull at Reduced Engine Speed—6th (H2) Gear</b>									
29.28 (21.83)	2162 (9.61)	5.08 (8.17)	1809	4.81	0.529 (0.322)	13.26 (2.61)	189 (87)	66 (19)	28.85 (97.70)
<b>50% of Pull at Reduced Engine Speed—6th (H2) Gear</b>									
19.98 (14.90)	1440 (6.41)	5.20 (8.37)	1825	3.28	0.593 (0.360)	11.85 (2.33)	186 (86)	66 (19)	28.85 (97.70)

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

**Dates of Test:** October 17-27, 1995

**Manufacturer:** New Holland N.A., 500 Diller Av-  
enue, New Holland, PA 17557

**FUEL OIL and TIME:** Fuel No. 2 Diesel Ce-  
tane No. 50.6 Specific gravity converted to  
60°/60° F (15°/15°C) 0.8435 Fuel weight 7.023  
lbs/gal (0.842 kg/l) Oil SAE 15W-40 API service  
classification CG-4,SH To motor 1.698 gal  
(6.428 l) Drained from motor 1.454 gal (5.506 l)  
**Transmission and final drive lubricant** Ford  
M2C 134-D fluid **Front axle lubricant** Ford M2C  
134-D fluid **Total time engine was operated**  
13.5 hours.

**ENGINE:** Make Ford New Holland Diesel Type  
three cylinder vertical **Serial No.** \*003447B\* **Crank-**  
**shaft** lengthwise **Rated rpm** 2200 **Bore and**  
**stroke** (as specified) 4.4" x 4.2" (111.8 mm x 106.7  
mm) **Compression ratio** 16.3 to 1 **Displacement**  
192 cu in (3147 ml) **Starting system** 12 volt **Lubri-**  
**cation** pressure **Air cleaner** two paper elements  
**Oil filter** one full flow cartridge **Fuel filter** one  
paper element and sediment bowl **Muffler** vertical  
**Cooling medium temperature control** one ther-  
mostat

**ENGINE OPERATING PARAMETERS:** Fuel  
rate: 21.6-23.4 lb/h (9.8-10.6 kg/h) **High idle:**  
2325-2375 rpm

**CHASSIS:** Type front wheel assist **Serial No.**  
\*BB552882\* **Tread width** rear 59.6" (1515 mm) to  
79.8" (2026 mm) front 55.0" (1396 mm) to 73.0" (1855  
mm) **Wheel base** 84.1" (2136 mm) **Hydraulic con-**  
**trol system** direct engine drive **Transmission**  
selective gear fixed ratio **Nominal travel speeds**  
**mph (km/h)** first 1.45 (2.33) second 1.80 (2.90)  
third 3.17 (5.10) fourth 4.31 (6.94) fifth 5.16 (8.31)  
sixth 6.44 (10.37) seventh 11.31 (18.20) eighth 15.40  
(24.78), reverse 2.08 (3.34), 7.43 (11.95), **Clutch**  
single dry disc operated by foot pedal **Brakes** wet  
multiple disc operated by two foot pedals which can  
be locked together **Steering** hydrostatic **Power take-**  
**off** 540 rpm at 1800 engine rpm **Unladen tractor**  
**mass** 5380 lb (2440 kg)

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

**NOTE:** The performance figures on this report  
apply to chassis serial numbers \*BD81400\* and higher.

**DRAWBAR PERFORMANCE  
(UNBALLASTED—FRONT DRIVE ENGAGED)  
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. °F (°C) cool- ing med	Temp. °F (°C) Air dry bulb	Barom. inch Hg (kPa)	
2nd (L2) Gear									
21.23 (15.83)	5026 (22.36)	1.58 (2.55)	2254	14.80	0.679 (0.413)	10.34 (2.04)	184 (94)	57 (14)	28.90 (97.87)
3rd (L3) Gear									
35.69 (26.61)	4860 (21.62)	2.75 (4.43)	2202	13.58	0.594 (0.362)	11.81 (2.33)	189 (87)	54 (12)	28.91 (97.90)
4th (L4) Gear									
37.15 (27.70)	3503 (15.58)	3.98 (6.40)	2198	8.22	0.567 (0.345)	12.39 (2.44)	189 (87)	52 (11)	28.91 (97.90)
5th (H1) Gear									
37.33 (27.84)	2890 (12.85)	4.84 (7.80)	2200	6.69	0.565 (0.344)	12.42 (2.45)	191 (88)	61 (16)	28.88 (97.80)
6th (H2) Gear									
37.16 (27.71)	2267 (10.08)	6.15 (9.89)	2200	5.22	0.569 (0.346)	12.35 (2.43)	191 (88)	64 (18)	28.86 (97.73)

**DRAWBAR PERFORMANCE  
(UNBALLASTED—FRONT DRIVE DISENGAGED)  
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)
Maximum Power—5th (H1) Gear									
37.34 (27.84)	3057 (13.60)	4.58 (7.37)	2200	10.59	0.569 (0.346)	12.35 (2.43)	191 (88)	60 (16)	28.89 (97.83)
75% of Pull at Maximum Power—5th (H1) Gear									
29.80 (22.22)	2291 (10.19)	4.88 (7.85)	2258	7.18	0.575 (0.350)	12.22 (2.41)	190 (88)	66 (19)	28.85 (97.70)
50% of Pull at Maximum Power—5th (H1) Gear									
20.57 (15.34)	1525 (6.78)	5.06 (8.14)	2280	4.76	0.662 (0.403)	10.61 (2.09)	188 (87)	66 (19)	28.85 (97.70)
75% of Pull at Reduced Engine Speed—6th (H2) Gear									
29.80 (22.22)	2289 (10.18)	4.88 (7.86)	1811	7.18	0.521 (0.317)	13.49 (2.66)	189 (87)	66 (19)	28.85 (97.70)
50% of Pull at Reduced Engine Speed—6th (H2) Gear									
20.61 (15.37)	1529 (6.80)	5.06 (8.14)	1826	4.70	0.571 (0.347)	12.30 (2.42)	186 (86)	66 (19)	28.85 (97.70)

**MAXIMUM POWER IN SELECTED GEARS**

3rd (L3) Gear									
28.01 (20.89)	3829 (17.03)	2.74 (4.42)	2258	14.87 (0.380)	0.625 (0.380)	11.24 (2.21)	188 (86)	53 (12)	28.91 (97.90)
4th (L4) Gear									
36.39 (27.14)	3656 (16.26)	3.73 (6.01)	2203	12.78 (0.352)	0.579 (0.352)	12.13 (2.39)	187 (86)	50 (10)	28.91 (97.90)
5th (H1) Gear									
37.34 (27.84)	3057 (13.60)	4.58 (7.37)	2200	10.59 (0.346)	0.569 (0.346)	12.35 (2.43)	191 (88)	60 (16)	28.89 (97.83)
6th (H2) Gear									
37.61 (28.04)	2393 (10.64)	5.89 (9.48)	2200	7.80 (0.344)	0.565 (0.344)	12.43 (2.45)	191 (88)	63 (17)	28.87 (97.77)

**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 injection pump inlet was maintained at 133° F (56°C). The performance figures on this summary were taken from a test conducted under the OECD Code II Restricted Standard Test Code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1701**, Summary 189, November 29, 1995.

LOUIS I. LEVITICUS  
Engineer-in-Charge

L.L. BASHFORD  
R.D. GRISSO  
M.F. KOCHER  
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
At 75% load in 5th (H1) Gear	95.0	95.0
Bystander in 8th (H4) Gear	88.5	—

## TIRES, BALLAST 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 14.9-28; 6; 12 (85)

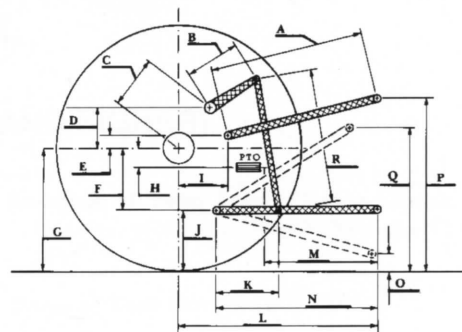
Two 8.3-24; 6; 20 (140)

16.0 in (405 mm)

3370 lb (1529 kg)

2174 lb (986 kg)

5544 lb (2515 kg)



## THREE POINT HITCH PERFORMANCE (OECD Static Test)

### CATEGORY: I

Quick Attach: none

Maximum Force Exerted Through Whole Range: 3056 lbs (13.6 kN)

i) Opening pressure of relief valve: NA

Sustained pressure of the open relief valve: 2510 psi (173 bar)

ii) Pump delivery rate at minimum pressure: 8.7 GPM (32.9 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 7.0 GPM (26.5 l/min)

Delivery pressure: 2320 psi (160 bar)

Power: 9.5 HP (7.1 kW)

## THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi. (bar)

2600 (179)

Location

remote outlet

Hydraulic oil temperature °F (°C)

169 (76)

Location

rear axle sump

Category

I

Quick attach

none

### As per current SAE test procedures

Hitch point distance

to ground level in. (mm) 8.3 (211) 13.0 (330) 17.7 (450) 22.4 (569) 27.2 (691) 32.1 (815)

Lift force on frame lb 3056 3353 3524 3542 3434 3245

Lift force on frame (kN) (13.6) (14.9) (15.7) (15.8) (15.3) (14.4)

### As per current ASAE test procedures

Hitch point distance

to ground level in. (mm) 8.3 (211) 13.0 (330) 17.7 (450) 22.4 (569) 27.2 (691) 32.1 (815)

Lift force on frame lb. 3271 3589 3772 3791 3676 3473

Lift force on frame (kN) (14.5) (16.0) (16.8) (16.9) (16.3) (15.4)

## HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	28.3	719
B	10.0	254
C	12.9	327
D	10.1	257
E	7.5	191
F	8.0	203
G	24.0	610
H	4.7	120
I	8.7	222
J	16.0	407
K	18.9	481
L	36.7	931
M	20.9	530
N	34.0	864
O	8.0	203
P	34.1	867
Q	33.1	841
R	29.1	740



FORD 3930 8 X 2 DIESEL

Agricultural Research Division  
Institute of Agriculture and Natural Resources  
University of Nebraska—Lincoln  
Darrell Nelson, Dean and Director