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Test 1643: Ford 3430 (8x2) Diesel 8-Speed

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 1643—SUMMARY 081

FORD 3430 8 x 2 DIESEL

8 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—600 rpm)					
38.48 (28.70)	2000	2.55 (9.64)	0.463 (0.282)	15.11 (2.98)	
Standard PTO Speed (PTO—540 RPM)					
36.92 (27.53)	1800	2.38 (9.00)	0.450 (0.274)	15.53 (3.06)	
VARYING POWER AND FUEL CONSUMPTION					
38.48 (28.70)	2000	2.55 (9.64)	0.463 (0.282)	15.11 (2.98)	Air temperature
					75°F (24°C)
33.85 (25.24)	2076	2.23 (8.44)	0.461 (0.280)	15.17 (2.99)	Relative humidity
					41%
25.87 (19.29)	2109	1.89 (7.15)	0.510 (0.310)	13.71 (2.70)	Barometer
17.36 (12.94)	2124	1.50 (5.68)	0.605 (0.368)	11.56 (2.28)	28.92" Hg (97.93 kPa)
8.83 (6.58)	2147	1.12 (4.22)	0.883 (0.537)	7.92 (1.56)	
0.12 (0.09)	2170	0.82 (3.09)	45.985 (27.972)	0.15 (0.03)	

Maximum Torque 121 lb.-ft (165 Nm) at 1152 rpm

Maximum Torque Rise 20.0%

DRAWBAR PERFORMANCE

FUEL CONSUMPTION CHARACTERISTICS

(Front Drive Engaged)

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 (1H) Gear									
31.66 (23.61)	1950 (8.67)	6.09 (9.80)	2001	4.65	0.558 (0.339)	12.54 (2.47)	183 (84)	53 (12)	28.78 (97.46)
75% of Pull at Maximum Power—5th (1H) Gear									
24.91 (18.57)	1463 (6.51)	6.38 (10.28)	2081	3.94	0.597 (0.363)	11.72 (2.31)	182 (83)	47 (8)	29.02 (98.27)
50% of Pull at Maximum Power—5th (1H) Gear									
16.90 (12.60)	973 (4.33)	6.51 (10.48)	2101	2.85	0.710 (0.432)	9.85 (1.94)	180 (82)	47 (8)	29.02 (98.27)
75% of Pull at Reduced Engine Speed—6th (2H) Gear									
24.92 (18.58)	1467 (6.53)	6.37 (10.25)	1664	3.94	0.548 (0.333)	12.76 (2.51)	180 (82)	47 (8)	29.02 (98.27)
50% of Pull at Reduced Engine Speed—6th (2H) Gear									
16.90 (12.60)	974 (4.33)	6.51 (10.47)	1682	3.03	0.626 (0.381)	11.17 (2.20)	177 (80)	47 (8)	29.02 (98.27)

Location of Test: Tractor Testing Laboratory,
University of Nebraska, Lincoln Nebraska 68583-
0832, U.S.A.

Dates of Test: April 16-25, 1991

Manufacturer: FORD NEW HOLLAND, 500
Diller Avenue, New Holland PA 17557

FUEL OIL and TIME: Fuel No. 2 Diesel Cetane
No. 53.9 Specific gravity converted to 60°/60°F
(15°/15°C) 0.8399 Fuel weight 6.993 lbs/gal (0.838
kg/l) Oil SAE 15W-40 API service classification
SG/CE To motor 1.164 gal (4.406 l) Drained from
motor 1.061 gal (4.015 l) Transmission and final
drive lubricant Ford M2C 134-D fluid Front axle
lubricant Ford M2C 134-D fluid Total time engine
was operated 15.0 hours.

ENGINE: Make Ford Diesel Type three cylin-
der vertical Serial No. *B293648* Crankshaft
lengthwise Rated rpm 2000 Bore and stroke (as
specified) 4.4" × 4.2" (111.8 mm × 106.7 mm)
Compression ratio 16.3 to 1 Displacement 192 cu
in (3142 ml) Starting system 12 volt Lubrication
pressure Air cleaner two paper elements Oil filter
one full flow cartridge Oil cooler radiator for power
steering fluid Fuel filter one paper element and
sediment bowl Muffler vertical Cooling medium
temperature control one thermostat.

ENGINE OPERATING PARAMETERS: Fuel
rate: 16.5-18.5 lb/hr (7.5-8.4 kg/hr) High idle: 2150-
2200 rpm.

CHASSIS: Type front wheel assist Serial No.
BC76438 Tread width rear 56.0" (1423 mm) to
79.8" (2026 mm) front 55.0" (1396 mm) to 73.0"
(1855 mm) Wheel base 84.1" (2136 mm) Hydraulic
control system direct engine drive Transmission
selective gear fixed ratio Nominal travel speeds
mph (km/h) first 1.73 (2.79) second 2.16 (3.48) third
3.79 (6.10) fourth 5.16 (8.30) fifth 6.18 (9.94) sixth
7.71 (12.41) seventh 13.52 (21.76) eighth 18.49
(29.75) reverse 2.49 (4.00), 8.89 (14.30) 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 5428 lb (2462 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.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2nd (2L) Gear									
24.14 (18.00)	4577 (20.36)	1.98 (3.18)	2082	14.85	0.624 (0.379)	11.21 (2.21)	181 (83)	46 (8)	28.97 (98.10)
3rd (3L) Gear									
30.85 (23.00)	3224 (14.34)	3.59 (5.77)	2003	8.39	0.572 (0.348)	12.23 (2.41)	183 (84)	52 (11)	28.78 (97.46)
4th (4L) Gear									
31.32 (23.36)	2333 (10.38)	5.03 (8.10)	2004	5.53	0.563 (0.342)	12.43 (2.45)	183 (84)	54 (12)	28.79 (97.49)
5th (1H) Gear									
31.66 (23.61)	1950 (8.67)	6.09 (9.80)	2001	4.65	0.558 (0.339)	12.54 (2.47)	183 (84)	53 (12)	28.78 (97.46)
6th (2H) Gear									
30.73 (22.91)	1501 (6.67)	7.68 (12.36)	2001	3.58	0.581 (0.353)	12.04 (2.37)	182 (83)	52 (11)	28.78 (97.46)

DRAWBAR PERFORMANCE FUEL CONSUMPTION CHARACTERISTICS (Front Drive Disengaged)

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 (1H) Gear									
31.59 (23.56)	2046 (9.10)	5.79 (9.32)	1996	8.36	0.556 (0.338)	12.57 (2.48)	183 (84)	53 (12)	28.79 (97.49)
75% of Pull at Maximum Power—5th (1H) Gear									
25.27 (18.84)	1535 (6.83)	6.17 (9.94)	2081	6.20	0.590 (0.359)	11.86 (2.34)	181 (83)	46 (8)	29.04 (98.34)
50% of Pull at Maximum Power—5th (1H) Gear									
17.28 (12.88)	1024 (4.55)	6.33 (10.19)	2099	4.83	0.694 (0.422)	10.07 (1.98)	181 (83)	46 (8)	29.04 (98.34)
75% of Pull at Reduced Engine Speed—6th (2H) Gear									
25.23 (18.82)	1534 (6.82)	6.17 (9.93)	1671	6.48	0.541 (0.329)	12.93 (2.55)	179 (82)	46 (8)	29.04 (98.34)
50% of Pull at Reduced Engine Speed—6th (2H) Gear									
17.30 (12.90)	1024 (4.55)	6.34 (10.20)	1685	4.83	0.613 (0.373)	11.41 (2.25)	176 (80)	46 (8)	29.04 (98.34)

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.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
3rd (3L) Gear									
27.51 (20.51)	3030 (13.48)	3.40 (5.48)	2061	14.92	0.604 (0.367)	11.58 (2.28)	181 (83)	47 (8)	28.99 (98.17)
4th (4L) Gear									
30.44 (22.70)	2416 (10.75)	4.73 (7.60)	2002	10.62	0.579 (0.352)	12.09 (2.38)	183 (84)	54 (12)	28.78 (97.46)
5th (1H) Gear									
31.59 (23.56)	2046 (9.10)	5.79 (9.32)	1996	8.36	0.556 (0.338)	12.57 (2.48)	183 (84)	53 (12)	28.79 (97.49)
6th (2H) Gear									
31.29 (23.34)	1582 (7.03)	7.42 (11.94)	2000	6.03	0.567 (0.345)	12.33 (2.43)	182 (83)	52 (11)	28.78 (97.46)

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

Two 13.6-28; 6; 14 (95)

Two 8.3-24; 4; 16 (110)

15.0 in (380 mm)

3364 lb (1526 kg)

2230 lb (1011 kg)

5594 lb (2537 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 injection pump was maintained at 146° F (63° 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. **1643**, Summary 081, July 15, 1991.

LOUIS I. LEVITICUS

Engineer-in-Charge

K. VON BARGEN

R. D. GRISSO

G. J. HOFFMAN

Board of Tractor Test Engineers

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					
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
" " " " " " (kN)	(14.5)	(16.0)	(16.8)	(16.9)	(16.3)	(15.4)

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: 2630 psi (181 bar)

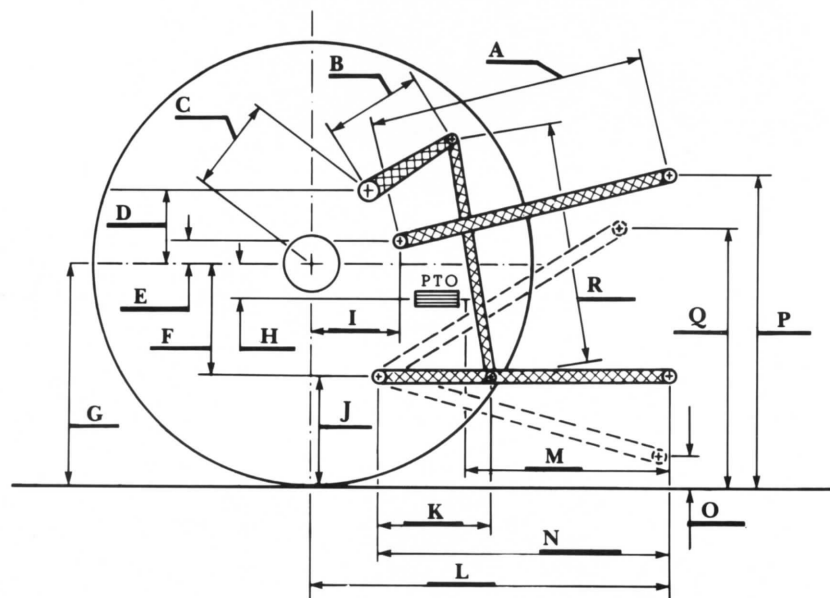
ii) Pump delivery rate at minimum pressure: 7.9 GPM (29.9 l/min)

iii) Pump delivery rate at maximum hydraulic power: 7.2 GPM (27.3 l/min)

Delivery pressure: 2100 psi (145 bar)

Power: 8.8 HP (6.6 kW)

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 3430 8 × 2 Diesel

Agricultural Research Division
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Darrell Nelson, Dean and Director