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January 1995

Test 1703: Ford 4630 16x8 Diesel 16-Speed (Chassis S/N BD81699 and Higher)

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 1703—SUMMARY 191

FORD 4630 16 x 8 DIESEL

16 SPEED

(CHASSIS SERIAL NUMBERS BD81699 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
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—676 rpm)					
56.82 (42.37)	2200	3.74 (14.18)	0.463 (0.282)	15.17 (2.99)	
Standard Power Take-off speed (540 rpm)					
53.12 (39.61)	1757	3.24 (12.26)	0.428 (0.260)	16.41 (3.23)	
VARYING POWER AND FUEL CONSUMPTION					
56.82 (42.37)	2200	3.74 (14.18)	0.463 (0.282)	15.17 (2.99)	Air temperature
49.90 (37.21)	2270	3.46 (13.10)	0.487 (0.296)	14.42 (2.84)	75°F (24°C)
37.85 (28.23)	2294	2.90 (11.00)	0.539 (0.328)	13.03 (2.57)	Relative humidity
25.31 (18.87)	2300	2.35 (8.89)	0.652 (0.397)	10.77 (2.12)	69%
12.74 (9.50)	2317	1.84 (6.95)	1.012 (0.616)	6.94 (1.37)	Barometer
0.27 (0.20)	2342	1.28 (4.85)	32.825 (19.967)	0.21 (0.04)	29.10" Hg (98.54 kPa)

Maximum Torque 165 lb.-ft. (223 Nm) at 1397 rpm

Maximum Torque Rise 21.4%

Torque rise at 1758 engine rpm 18%

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)
Maximum Power—11th (6L) Gear									
48.54 (36.20)	2931 (13.04)	6.21 (9.99)	2204	5.08	0.542 (0.330)	12.95 (2.55)	195 (91)	57 (14)	28.44 (96.31)
75% of Pull at Maximum Power—11th (6L) Gear									
38.22 (28.49)	2204 (9.80)	6.50 (10.47)	2275	3.74	0.596 (0.363)	11.79 (2.32)	193 (89)	59 (15)	28.35 (96.00)
50% of Pull at Maximum Power—11th (6L) Gear									
25.78 (19.22)	1466 (6.52)	6.60 (10.61)	2281	2.49	0.705 (0.429)	9.96 (1.96)	190 (88)	59 (15)	28.35 (96.00)
75% of Pull at Reduced Engine Speed—12th (6H) Gear									
38.19 (28.48)	2210 (9.83)	6.48 (10.43)	1836	3.60	0.541 (0.329)	12.98 (2.56)	193 (89)	59 (15)	28.35 (96.00)
50% of Pull at Reduced Engine Speed—12th (6H) Gear									
25.81 (19.25)	1457 (6.48)	6.64 (10.69)	1861	2.56	0.625 (0.381)	11.23 (2.21)	188 (87)	59 (15)	28.35 (96.00)

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

Dates of Test: October 23-27, 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** 1.329 gal
(5.030 l) **Drained from motor** 1.150 gal (4.352 l)
Transmission and final drive lubricant Ford
M2C 134-D fluid **Front axle lubricant** Ford M2C
134-D fluid **Total time engine was operated**
19.0 hours.

ENGINE: Make Ford New Holland Diesel **Type**
three cylinder vertical with turbocharger **Serial No.**
JA537783 **Crankshaft** lengthwise **Rated rpm**
2200 **Bore and stroke** (as specified) 4.4" × 4.2"
(111.8 mm × 106.7 mm) **Compression ratio** 16.1 to
1 **Displacement** 192 cu in (3147 ml) **Starting**
system 12 volt **Lubrication** pressure **Air cleaner**
two paper elements **Oil filter** one full flow cartridge
Oil cooler engine coolant heat exchanger for crank-
case oil, radiator for transmission fluid, radiator for
hydraulic and rear axle fluid **Fuel filter** one paper
element and sediment bowl **Muffler** vertical **Cool-**
ing medium temperature control one thermo-
stat

ENGINE OPERATING PARAMETERS: Fuel
rate: 23.9-27.6 lb/h (10.8-12.5 kg/h) **High idle:**
2325-2375 rpm **Turbo boost** nominal 13.1 psi (90
kPa) as tested 12.0 psi (83 kPa)

CHASSIS: Type front wheel assist **Serial No.**
BE04206 **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 with partial (2) range opera-
tor controlled powershift **Nominal travel speeds**
mph (km/h) first 1.21 (1.94) second 1.50 (2.41)
third 1.79 (2.88) fourth 2.21 (3.56) fifth 2.73 (4.40)
sixth 3.38 (5.43) seventh 4.02 (6.46) eighth 4.27
(6.89) ninth 4.96 (7.97) tenth 5.27 (8.48) eleventh
6.32 (10.17) twelfth 7.81 (12.56) thirteenth 9.63
(15.50) fourteenth 11.89 (19.14) fifteenth 14.15 (22.77)
sixteenth 17.46 (28.11), reverse 1.49 (2.40), 2.20
(3.54), 3.36 (5.40), 4.92 (7.93), 5.24 (8.43), 7.76
(12.50), 11.83 (19.04), 17.38 (27.65) **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 1756 engine rpm **Unladen tractor mass**
5680 lb (2577 kg)

**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)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
5th (3L) Gear									
37.11 (27.67)	5672 (25.23)	2.45 (3.94)	2249	14.89	0.629 (0.383)	11.16 (2.20)	190 (88)	51 (11)	28.48 (96.45)
6th (3H) Gear									
44.09 (32.89)	5470 (24.33)	3.02 (4.86)	2203	13.31	0.597 (0.363)	11.76 (2.32)	192 (89)	52 (11)	28.47 (96.41)
7th (4L) Gear									
46.54 (34.70)	4650 (20.68)	3.75 (6.04)	2199	9.32	0.565 (0.344)	12.42 (2.45)	192 (89)	50 (10)	28.49 (96.48)
8th (5L) Gear									
48.35 (36.05)	4506 (20.04)	4.02 (6.48)	2207	8.90	0.544 (0.331)	12.90 (2.54)	191 (88)	49 (10)	28.50 (96.51)
9th (4H) Gear									
45.22 (33.72)	3552 (15.80)	4.78 (7.68)	2198	6.58	0.583 (0.355)	12.05 (2.37)	196 (91)	57 (14)	28.45 (96.34)
10th (5H) Gear									
47.19 (35.19)	3462 (15.40)	5.11 (8.23)	2205	6.26	0.560 (0.341)	12.53 (2.47)	196 (91)	57 (14)	28.44 (96.31)
11th (6L) Gear									
48.54 (36.20)	2931 (13.04)	6.21 (9.99)	2204	5.08	0.542 (0.330)	12.95 (2.55)	195 (91)	57 (14)	28.44 (96.31)
12th (6H) Gear									
46.20 (34.45)	2233 (9.93)	7.76 (12.49)	2200	3.80	0.568 (0.346)	12.36 (2.43)	195 (91)	57 (14)	28.43 (96.28)

**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—11th (6L) Gear									
48.86 (36.43)	3053 (13.58)	6.00 (9.66)	2197	7.63	0.540 (0.329)	13.00 (2.56)	195 (91)	57 (14)	28.44 (96.31)
75% of Pull at Maximum Power—11th (6L) Gear									
39.07 (29.13)	2301 (10.24)	6.37 (10.24)	2279	5.33	0.587 (0.357)	11.96 (2.36)	193 (89)	58 (14)	28.38 (96.11)
50% of Pull at Maximum Power—11th (6L) Gear									
26.46 (19.73)	1528 (6.80)	6.49 (10.45)	2283	3.66	0.689 (0.419)	10.19 (2.01)	190 (88)	58 (14)	28.38 (96.11)
75% of Pull at Reduced Engine Speed—12th (6H) Gear									
39.05 (29.12)	2302 (10.24)	6.36 (10.24)	1844	5.33	0.531 (0.322)	13.23 (2.61)	192 (89)	58 (14)	28.38 (96.11)
50% of Pull at Reduced Engine Speed—12th (6H) Gear									
26.43 (19.70)	1525 (6.78)	6.50 (10.46)	1850	3.59	0.605 (0.368)	11.60 (2.29)	188 (86)	58 (14)	28.38 (96.11)
MAXIMUM POWER IN SELECTED GEARS									
8th (5L) Gear									
44.88 (33.47)	4396 (19.55)	3.83 (6.16)	2247	14.50	0.585 (0.355)	12.01 (2.37)	190 (88)	49 (10)	28.50 (96.51)
9th (4H) Gear									
44.71 (33.34)	3647 (16.22)	4.60 (7.40)	2207	9.88	0.591 (0.360)	11.88 (2.34)	193 (89)	56 (13)	28.46 (96.38)
10th (5H) Gear									
46.79 (34.89)	3582 (15.93)	4.90 (7.88)	2203	9.53	0.563 (0.342)	12.48 (2.46)	195 (91)	57 (14)	28.45 (96.34)
11th (6L) Gear									
48.86 (36.43)	3053 (13.58)	6.00 (9.66)	2197	7.63	0.540 (0.329)	13.00 (2.56)	195 (91)	57 (14)	28.44 (96.31)
12th (6H) Gear									
46.92 (34.99)	2317 (10.31)	7.59 (12.22)	2202	5.39	0.561 (0.342)	12.51 (2.46)	195 (91)	57 (14)	28.43 (96.28)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

NOTE: The performance figures on this report apply to chassis serial numbers *BD81699* and higher and to models 4630 equipped with the 8x8 shuttle transmission.

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 149° F (65°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. **1703**, Summary 191, 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 11th (6L) Gear	95.0	95.0
Bystander in 16th (8H) Gear	86.5	—

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 16.9-30; 6; 12 (85)

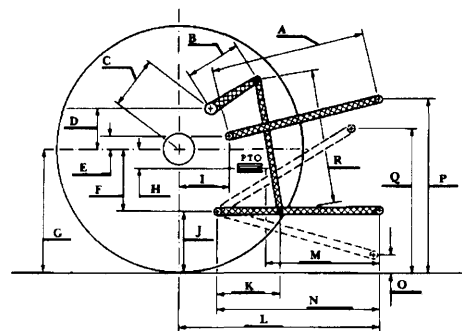
Two 11.2-24; 8; 12 (85)

19.0 in (485 mm)

3538 lb (1605 kg)

2308 lb (1047 kg)

5846 lb (2652 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:	2560 psi	(176 bar)
ii) Pump delivery rate at minimum pressure:	9.2 GPM	(34.8 l/min)
iii) Pump delivery rate at maximum		
hydraulic power:	7.9 GPM	(29.9 l/min)
Delivery pressure:	2200 psi	(152 bar)
Power:	10.1 HP	(7.6 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

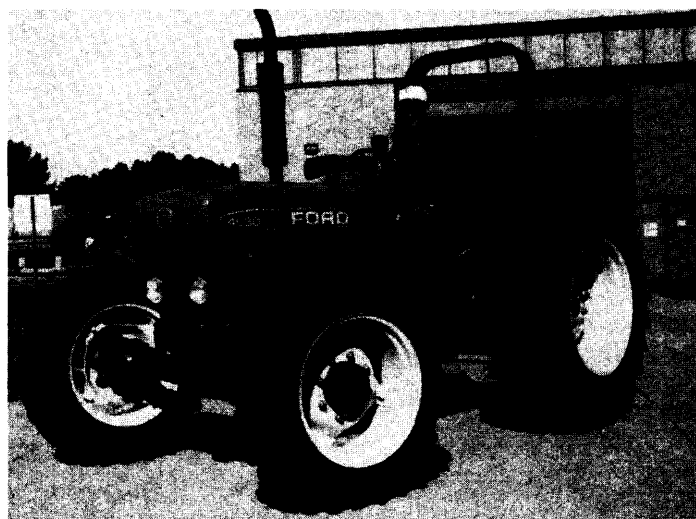
Hitch point distance to ground level in. (mm)	8.3 (211)	13.0 (330)	17.7 (450)	22.4 (569)	27.2 (691)	32.1 (815)
Lift force on frame lb	3056	3353	3524	3542	3434	3245
Lift force on frame (kN)	(13.6)	(14.9)	(15.7)	(15.8)	(15.3)	(14.4)

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 4630 16 X 8 DIESEL

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