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January 1978

Test 1287: White Field Boss 2-180 Diesel 18-Speed

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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NEBRASKA TRACTOR TEST 1287 — WHITE FIELD BOSS 2-180 DIESEL
ALSO WHITE FARM EQUIPMENT 2-180 DIESEL
18 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption			Temperature °F (°C)				Barometer inch Hg (kPa)
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling medium	Air wet bulb	Air dry bulb		
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed—Two Hours (PTO Speed—1000 rpm)									
181.89 (135.64)	2800	12.649 (47.882)	0.483 (0.294)	14.38 (2.833)	183 (83.8)	58 (14.3)	75 (24.0)	28.940 (97.726)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
158.62 (118.28)	2874	11.062 (41.874)	0.484 (0.294)	14.34 (2.825)	180 (82.5)	57 (13.9)	74 (23.3)	..... .....
0.00 (0.00)	3024	4.357 (16.494)	..... .....	..... .....	174 (78.6)	58 (14.2)	74 (23.6)	..... .....
81.95 (61.11)	2965	7.414 (28.063)	0.628 (0.382)	11.05 (2.177)	178 (81.1)	58 (14.4)	76 (24.2)	..... .....
182.98 (136.45)	2800	12.558 (47.536)	0.476 (0.290)	14.57 (2.870)	184 (84.2)	58 (14.4)	76 (24.7)	..... .....
41.21 (30.73)	2993	5.818 (22.025)	0.980 (0.596)	7.08 (1.395)	175 (79.4)	58 (14.4)	75 (23.9)	..... .....
121.05 (90.27)	2924	9.048 (34.249)	0.519 (0.316)	13.38 (2.636)	180 (81.9)	58 (14.4)	76 (24.2)	..... .....
Av Av	97.63 (72.81)	2930	8.376 (31.707)	0.595 (0.362)	11.66 (2.296)	178 (81.3)	58 (14.3)	75 (24.0)	28.973 (97.839)

DRAWBAR PERFORMANCE

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)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb		
Maximum Available Power—Two Hours 11th (4D) Gear												
158.97 (118.55)	9157 (40.73)	6.51 (10.48)	2799	5.39	12.374 (46.840)	0.540 (0.329)	12.85 (2.531)	182 (83.3)	56 (13.1)	72 (21.9)	29.265 (98.824)	
75% of Pull at Maximum Power—Ten Hours 11th (4D) Gear												
129.81 (96.80)	7083 (31.51)	6.87 (11.06)	2910	3.89	10.403 (39.381)	0.556 (0.338)	12.48 (2.458)	179 (81.4)	53 (11.4)	63 (17.3)	29.190 (98.570)	
50% of Pull at Maximum Power—Two Hours 11th (4D) Gear												
88.86 (66.26)	4712 (20.96)	7.07 (11.38)	2958	2.87	8.411 (31.841)	0.657 (0.400)	10.56 (2.081)	176 (80.0)	53 (11.4)	62 (16.4)	29.330 (99.043)	
50% of Pull at Reduced Engine Speed—Two Hours 15th (5O) Gear												
88.93 (66.31)	4722 (21.00)	7.06 (11.37)	1683	2.60	5.908 (22.363)	0.461 (0.280)	15.05 (2.965)	178 (81.1)	55 (12.8)	69 (20.6)	29.315 (98.992)	
MAXIMUM POWER IN SELECTED GEARS												
142.88 (106.54)	15499 (68.94)	3.46 (5.56)	2876	14.92	5th (2D) Gear			178 (81.1)	47 (8.3)	52 (11.1)	29.180 (98.536)	
148.25 (110.55)	14893 (66.25)	3.73 (6.01)	2798	14.23	6th (3U) Gear			181 (82.5)	49 (9.4)	55 (12.8)	29.300 (98.942)	
154.07 (114.89)	13681 (60.86)	4.22 (6.80)	2796	10.54	7th (2O) Gear			181 (82.8)	50 (10.0)	56 (13.3)	29.060 (98.131)	
160.45 (119.64)	12466 (55.45)	4.83 (7.77)	2800	8.53	8th (3D) Gear			182 (83.1)	51 (10.6)	57 (13.9)	29.070 (98.165)	
160.34 (119.57)	11396 (50.69)	5.28 (8.49)	2799	7.17	9th (4U) Gear			181 (82.8)	51 (10.6)	57 (13.9)	29.070 (98.165)	
158.43 (118.14)	10041 (44.67)	5.92 (9.52)	2799	6.02	10th (3O) Gear			181 (82.8)	52 (11.1)	58 (14.4)	29.080 (98.199)	
163.64 (122.03)	9439 (41.99)	6.50 (10.46)	2799	5.43	11th (4D) Gear			181 (82.8)	51 (10.6)	57 (13.9)	29.070 (98.165)	
160.31 (119.55)	7644 (34.00)	7.86 (12.66)	2800	4.32	12th (4O) Gear			181 (82.8)	51 (10.6)	57 (13.9)	29.070 (98.165)	
163.59 (121.99)	7665 (34.09)	8.00 (12.88)	2800	4.23	13th (5U) Gear			181 (82.8)	51 (10.6)	57 (13.9)	29.070 (98.165)	

Department of Agricultural Engineering

Dates of Test: September 15-23, 1978

Manufacturer: WHITE FARM EQUIPMENT
CO., 2625 Butterfield Road, Oak Brook, Illinois
60521

FUEL, OIL AND TIME: Fuel No. 2 Diesel
Cetane No. 50.4 (rating taken from oil company's
typical inspection data) Specific gravity converted
to 60°/60° (15°/15°) 0.8335 Fuel weight 6.940 lbs/
gal (0.832 kg/l) Oil SAE 30 API service classifi-
cation SB/SE-CA/CD To motor 3.184 gal
(12.051 l) Drained from motor 1.468 gal (5.556 l)
Transmission and final drive lubricant Universal
tractor hydraulic-transmission fluid Total time
engine was operated 35.5 hours

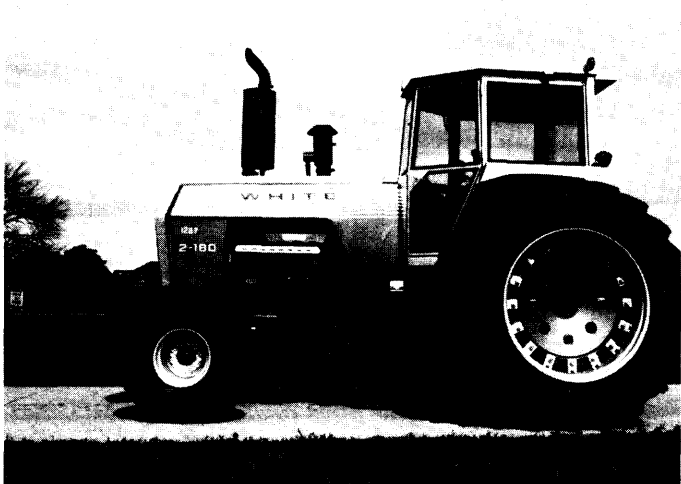
ENGINE Make Caterpillar Diesel Type 8 cyl-
inder vee Serial No. 90N 27936 Crankshaft
lengthwise Rated rpm 2800 Bore and stroke 4.5"
× 5.0" (114 mm × 127 mm) Compression ratio
16.5 to 1 Displacement 636 cu in (10424 ml)
Cranking system 12 volt Lubrication pressure
Air cleaner primary and safety paper elements
with aspirator Oil filter one full flow paper car-
tridge Oil cooler engine coolant heat exchanger
for crankcase oil, radiator for hydraulic and
transmission oil Fuel filter two paper elements
Muffler vertical Cooling medium temperature
control 2 thermostats.

CHASSIS: Type standard with duals Serial
No. 282706-417 Tread width rear 63" (1600 mm)
to 126" (3200 mm) front 61" (1549 mm) to 81" (2057
mm) Wheel base 112" (2845 mm) Center of grav-
ity (without operator or ballast, with minimum
tread, with fuel tank filled and tractor serviced for
operation) Horizontal distance forward from
center-line of rear wheels 33.9" (861 mm) Vertical
distance above roadway 44.7" (1135 mm) Horizontal
distance from center of rear wheel tread 0" (0
mm) to the right/left Hydraulic control system
direct engine drive Transmission selective gear
fixed ratio with partial (3) range operator control-
led power shift Advertised speeds mph (km/h)
first 2.4 (3.8) second 2.8 (4.5) third 3.2 (5.1) fourth
3.5 (5.6) fifth 3.8 (6.1) sixth 4.1 (6.6) seventh 4.5
(7.2) eighth 5.1 (8.2) ninth 5.5 (8.8) tenth 6.0 (9.7)
eleventh 6.6 (10.6) twelfth 7.8 (12.6) thirteenth 8.0
(12.9) fourteenth 9.7 (15.6) fifteenth 11.5 (18.5)
sixteenth 14.0 (22.5) seventeenth 16.8 (27.0)
eighteenth 20.1 (32.3) reverse 2.8 (4.5), 3.4 (5.5),
4.0 (6.4), 4.9 (7.9), 5.9 (9.5), 7.0 (11.3) Clutch 2
dry discs operated by foot pedal Brakes multiple
wet disc hydraulically power actuated and oper-
ated by two foot pedals which can be locked
together Steering hydrostatic Turning radius
(on concrete surface with brake applied) right
150" (3.81 m) left 153" (3.89 m) (on concrete sur-
face without brake) right 171" (4.34 m) left 174"
(4.42 m) Turning space diameter (on concrete
surface with brake applied) right 312" (7.93 m) left

LUGGING ABILITY IN 11th (4-D) GEAR							
Crankshaft Speed rpm	2799	2528	2246	1961	1679	1397	1111
Pull—lbs (<i>kN</i>)	9439 (41.99)	10225 (45.48)	11066 (49.22)	11736 (52.20)	12491 (55.56)	12963 (57.66)	12940 (57.56)
Increase in Pull %	0	8	17	24	32	37	37
Power—Hp (<i>kW</i>)	163.64 (122.03)	159.11 (118.65)	151.30 (112.82)	139.56 (104.07)	125.81 (93.81)	107.84 (80.41)	85.30 (63.61)
Speed—Mph (<i>km/h</i>)	6.50 (10.46)	5.84 (9.39)	5.13 (8.25)	4.46 (7.18)	3.78 (6.08)	3.12 (5.02)	2.47 (3.98)
Slip %	5.43	6.10	7.09	7.41	8.53	9.00	9.62

TRACTOR SOUND LEVEL WITH CAB		dB(A)
Maximum Available Power—Two Hours		81.0
75% of Pull at Maximum Power—Ten Hours		82.5
50% of Pull at Maximum Power—Two Hours		83.5
50% of Pull at Reduced Engine Speed—Two Hours		79.0
Bystander in 18th (6O) gear		93.5

TIRES, BALLAST AND WEIGHT		Tested Without Ballast
Rear Tires	—No., size, ply & psi (<i>kPa</i>)	Four 20.8-42; 10; 12 (85)
	—Liquid	None
	—Cast Iron (each)	None
Front Tires	—No., size, ply & psi (<i>kPa</i>)	Two 16.5L-16.1; 8; 32 (220)
	—Liquid	None
	—Cast Iron	None
Height of Drawbar		23.5 in (595 mm)
Static Weight with Operator—	Rear	13620 lb (6178 kg)
	Front	4660 lb (2114 kg)
	Total	18280 lb (8292 kg)



White Field Boss 2-180 Diesel

318" (8.08 m) (on concrete surface without brake) right 354" (8.99 m) left 360" (9.14 m) **Power take-off** 1000 rpm at 2800 engine rpm.

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code of official Nebraska test procedure. Temperature at injection pump was 164°F (73.5°C). Nine gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1287.**

LOUIS I. LEVITICUS
Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman
W. E. SPLINTER
K. VON BARGEN
Board of Tractor Test Engineers