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Test 1466: White Farm Equipment-Iseki 2-55 Diesel 16-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1466 WHITE FARM EQUIPMENT-ISEKI 2-55 DIESEL 16 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—656 rpm)									
53.32 (39.76)	2200	3.603 (13.639)	0.474 (0.288)	14.80 (2.915)	185 (85.1)	51 (10.4)	75 (24.0)	29.087 (98.221)	
Standard Power Take-off Speed (540 rpm)—One Hour									
45.74 (34.11)	1812	3.072 (11.629)	0.471 (0.286)	14.89 (2.933)	187 (85.9)	50 (10.3)	75 (24.0)	29.085 (98.216)	
VARYING POWER AND FUEL CONSUMPTION—Two Hours									
46.60 (34.75)	2261	3.134 (11.863)	0.471 (0.287)	14.87 (2.929)	182 (83.3)	53 (11.7)	78 (25.6)	..... .....
0.00 (0.00)	2403	1.074 (4.066)	..... .....	..... .....	175 (79.4)	52 (11.1)	76 (24.4)	..... .....
23.83 (17.77)	2313	2.021 (7.650)	0.594 (0.361)	11.80 (2.323)	178 (81.4)	52 (11.1)	76 (24.2)	..... .....
54.00 (40.27)	2200	3.583 (13.563)	0.465 (0.283)	15.07 (2.969)	184 (84.7)	51 (10.6)	74 (23.3)	..... .....
12.15 (9.06)	2360	1.533 (5.803)	0.884 (0.538)	7.93 (1.561)	176 (80.0)	52 (11.1)	76 (24.7)	..... .....
35.51 (26.48)	2300	2.551 (9.657)	0.504 (0.306)	13.92 (2.742)	181 (82.8)	52 (11.1)	76 (24.4)	..... .....
Av Av	28.68 (21.39)	2306	2.316 (8.767)	0.566 (0.344)	12.38 (2.440)	180 (81.9)	52 (11.1)	76 (24.4)	29.060 (98.131)

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

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 12th (HH1) Gear											
47.40 (35.34)	3650 (16.24)	4.87 (7.84)	2200	7.55	3.550 (13.436)	0.525 (0.319)	13.35 (2.630)	187 (85.8)	49 (9.2)	59 (14.7)	28.820 (97.321)
75% of Pull at Maximum Power—Ten Hours 12th (HH1) Gear											
39.12 (29.17)	2813 (12.51)	5.21 (8.39)	2304	5.45	2.961 (11.208)	0.530 (0.323)	13.21 (2.603)	184 (84.3)	37 (2.6)	43 (6.2)	28.844 (97.402)
50% of Pull at Maximum Power—Two Hours 12th (HH1) Gear											
26.82 (20.00)	1875 (8.34)	5.36 (8.63)	2330	3.85	2.354 (8.913)	0.615 (0.374)	11.39 (2.244)	185 (84.7)	39 (3.9)	45 (6.9)	28.950 (97.760)
50% of Pull at Reduced Engine Speed—Two Hours 14th (HH2) Gear											
26.80 (19.99)	1875 (8.34)	5.36 (8.63)	1373	3.76	2.016 (7.630)	0.527 (0.321)	13.30 (2.620)	181 (82.8)	39 (3.6)	45 (6.9)	28.905 (97.608)
MAXIMUM POWER IN SELECTED GEARS											
45.21 (33.72)	5037 (22.41)	3.37 (5.42)	2227	14.92	10th (HL2) Gear			186 (85.3)	43 (6.1)	50 (10.0)	28.870 (97.490)
46.72 (34.84)	4115 (18.30)	4.26 (6.85)	2198	8.75	11th (HL3) Gear			187 (86.1)	45 (7.2)	54 (12.2)	28.860 (97.456)
48.49 (36.16)	3728 (16.58)	4.88 (7.85)	2203	7.55	12th (HH1) Gear			187 (86.1)	44 (6.7)	52 (11.1)	28.870 (97.490)
47.67 (35.55)	2719 (12.09)	6.57 (10.58)	2200	5.18	13th (HL4) Gear			186 (85.6)	46 (7.8)	55 (12.8)	28.850 (97.422)
47.22 (35.21)	2066 (9.19)	8.57 (13.79)	2200	3.95	14th (HH2) Gear			187 (85.8)	47 (8.3)	56 (13.3)	28.840 (97.388)

Department of Agricultural Engineering

Dates of Test: March 17 - April 21, 1983

Manufacturer: ISEKI AND COMPANY, LTD.,
2-6 Kioicho, Chiyoda-ku, Tokyo, Japan 102

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 47.0 (rating taken from oil company's inspection data) Specific gravity converted to 60°/60° (15°/15°) 0.8417 Fuel weight 7.008 lbs/gal (0.840 kg/l) Oil White Farm Equipment Supreme Blend SAE 30 API service classification CC-CD, SD-SF To motor 2.139 gal (8.096 l) Drained from motor 1.999 gal (7.568 l) Transmission and final drive lubricant White Farm Equipment Company Universal Fluid Total time engine was operated 53.0 hours

ENGINE: Make Isuzu Diesel Model 4BC2 Type four cylinder vertical Serial No. 905747 Crankshaft lengthwise Rated rpm 2200 Bore and stroke 4.02" x 3.94" (102 mm x 100 mm) Compression ratio 17 to 1 Displacement 199.4 cu in (3268 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements Oil filter one full flow element Oil cooler engine coolant heat exchanger for crankcase oil Fuel filter two paper elements with sediment bowl and screen Muffler vertical Cooling medium temperature control one thermostat.

CHASSIS: Type front wheel assist Serial No. 00189 m Tread width rear 55.5" (1410 mm) to 79.1" (2010 mm) front 59.3" (1505 mm) Wheel base 80.3" (2040 mm) Center of gravity (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 34.0" (865 mm) Vertical distance above roadway 30.0" (762 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 Advertised speeds mph (km/h) first 0.4 (0.7) second 0.7 (1.1) third 0.8 (1.4) fourth 1.0 (1.5) fifth 1.3 (2.0) sixth 1.6 (2.6) seventh 1.9 (3.1) eighth 2.2 (3.6) ninth 2.9 (4.6) tenth 3.8 (6.0) eleventh 4.5 (7.2) twelfth 5.1 (8.1) thirteenth 6.7 (10.7) fourteenth 8.6 (13.8) fifteenth 10.3 (16.5) sixteenth 15.2 (24.5) reverse 0.6 (0.9), 1.3 (2.0), 2.9 (4.7), 6.6 (10.7) Clutch single dry disc operated by foot pedal Brakes multiple wet disc operated by two foot pedals which can be locked together and hand lever Steering power assist Turning radius (on concrete surface with brake applied) right 122" (3.10 m) left 122" (3.10 m) (on concrete surface without brake) right 145" (3.70 m) left 145" (3.70 m) Turning space diameter (on concrete surface with brake applied) right 254" (6.44 m) left 254" (6.44 m) (on concrete surface without brake) right 300" (7.62 m) left 300" (7.62 m) Power take-off 540 rpm at 1812 engine rpm.

LUGGING ABILITY IN 12th (HH1) GEAR

Crankshaft Speed rpm	2203	1982	1756	1545	1316	1104
Pull—lbs (kN)	3728 (16.58)	3812 (16.96)	3905 (17.37)	3958 (17.61)	3953 (17.58)	3760 (16.73)
Increase in Pull %	0	2	5	6	6	1
Power—Hp (kW)	48.49 (36.16)	44.47 (33.16)	40.29 (30.05)	35.82 (26.71)	30.49 (22.74)	24.47 (18.25)
Speed—Mph (km/h)	4.88 (7.85)	4.37 (7.04)	3.87 (6.23)	3.39 (5.46)	2.89 (4.66)	2.44 (3.93)
Slip %	7.55	7.73	8.09	8.33	8.21	7.73

TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)	Front Wheel Drive Disengaged dB(A)
Maximum Available Power—Two Hours	92.0	91.0
75% of Pull at Maximum Power—Ten Hours		91.0
50% of Pull at Maximum Power—Two Hours		91.5
50% of Pull at Reduced Engine Speed—Two Hours		88.0
Bystander in 16th (HH4) gear		85.5

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool- ing med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 12th (HH1) Gear											
47.63 (35.52)	3577 (15.91)	4.99 (8.04)	2202	5.50	3.567 (13.504)	0.525 (0.319)	13.35 (2.630)	187 (85.8)	52 (10.8)	62 (16.4)	28.765 (97.135)

MAXIMUM POWER IN SELECTED GEARS

44.39 (33.10)	6318 (28.10)	2.63 (4.24)	2262	14.81	9th (LH4) Gear			185 (85.0)	42 (5.6)	49 (9.4)	28.870 (97.490)
48.74 (36.34)	3668 (16.32)	4.98 (8.02)	2198	5.46	12th (HH1) Gear			187 (85.8)	43 (6.1)	51 (10.6)	28.870 (97.490)

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires		
Ballast	—No., size, ply & psi (kPa) —Liquid (each) —Cast Iron (each)	Two 16.9-30; 6; 16 (110) None 372 lb (169 kg)
Front Tires		
Ballast	—No., size, ply & psi (kPa) —Liquid (each) —Cast Iron (each)	Two 9.5-24; 6; 30 (205) None 58 lb (26 kg)
Height of Drawbar	17 in (430 mm)	17 in (430 mm)
Static Weight with Operator—Rear	4400 lb (1996 kg)	3653 lb (1658 kg)
Front	2655 lb (1204 kg)	2540 lb (1152 kg)
Total	7055 lb (3200 kg)	6195 lb (2810 kg)

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes or official Nebraska test procedure. For maximum power tests, the fuel temperature at the injection pump was maintained at 178°F (81.2°C). Five 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 **1466**.

LOUIS I. LEVITICUS

Engineer-in-Charge

K. VON BARGEN

W. E. SPLINTER

L. L. BASHFORD

Board of Tractor Test Engineers



White Farm Equipment-Iseki 2-55 Diesel

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