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Test 1374: White Iseki 2-35 Diesel 8-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1374 — WHITE ISEKI 2-35 DIESEL ALSO WHITE FARM EQUIPMENT-ISEKI 2-35 DIESEL 8 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—595 rpm)								
32.84 (24.49)	2400	2.604 (9.857)	0.554 (0.337)	12.61 (2.485)	214 (101.3)	55 (12.6)	75 (23.8)	29.050 (98.096)
Standard Power Take-off Speed (540 rpm)—One Hour								
30.94 (23.07)	2176	2.441 (9.240)	0.551 (0.335)	12.68 (2.497)	212 (100.2)	54 (12.2)	75 (23.9)	29.035 (98.047)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
28.88 (21.54)	2480	2.153 (8.150)	0.521 (0.317)	13.41 (2.643)	201 (93.6)	54 (12.2)	75 (23.9)	..... .....
0.00 (0.00)	2616	0.791 (2.994)	..... .....	..... .....	177 (80.6)	54 (12.2)	75 (23.9)	..... .....
14.73 (10.98)	2531	1.388 (5.254)	0.658 (0.400)	10.61 (2.090)	183 (83.9)	54 (12.2)	75 (23.9)	..... .....
32.85 (24.50)	2401	2.617 (9.906)	0.556 (0.338)	12.56 (2.473)	211 (99.2)	54 (12.2)	75 (23.9)	..... .....
7.46 (5.56)	2567	1.066 (4.035)	0.997 (0.607)	7.00 (1.378)	180 (82.2)	54 (12.2)	76 (24.2)	..... .....
21.89 (16.32)	2509	1.732 (6.556)	0.552 (0.336)	12.64 (2.489)	186 (85.3)	54 (12.2)	76 (24.2)	..... .....
Av Av	17.64 (13.15)	2517 (6.148)	1.624 (0.391)	0.643 (2.139)	10.86 (87.4)	189 (12.2)	54 (24.0)	75 (98.007)

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 6th (H2) Gear											
28.55 (21.29)	2152 (9.57)	4.98 (8.01)	2400	8.63	2.542 (9.623)	0.622 (0.378)	11.23 (2.213)	184 (84.4)	44 (6.4)	51 (10.3)	29.140 (98.401)
75% of Pull at Maximum Power—Ten Hours 6th (H2) Gear											
24.19 (18.04)	1705 (7.58)	5.32 (8.56)	2497	6.23	2.062 (7.807)	0.595 (0.362)	11.73 (2.310)	181 (82.7)	47 (8.1)	54 (12.1)	29.100 (98.266)
50% of Pull at Maximum Power—Two Hours 6th (H2) Gear											
16.68 (12.44)	1133 (5.04)	5.52 (8.89)	2532	4.02	1.611 (6.099)	0.674 (0.410)	10.35 (2.039)	177 (80.6)	42 (5.3)	45 (7.2)	29.085 (98.216)
50% of Pull at Reduced Engine Speed—Two Hours 7th (H3) Gear											
16.70 (12.45)	1133 (5.04)	5.53 (8.90)	1640	3.86	1.253 (4.744)	0.524 (0.319)	13.33 (2.625)	179 (81.4)	51 (10.3)	58 (14.2)	29.040 (98.064)
MAXIMUM POWER IN SELECTED GEARS											
27.39 (20.42)	2978 (13.25)	3.45 (5.55)	2460	14.72	5th (H1) Gear			183 (83.6)	39 (3.9)	45 (7.2)	29.180 (98.536)
30.06 (22.41)	2268 (10.09)	4.97 (8.00)	2399	8.77	6th (H2) Gear			184 (84.2)	40 (4.4)	46 (7.8)	29.180 (98.536)
30.37 (22.64)	1424 (6.33)	8.00 (12.87)	2401	5.04	7th (H3) Gear			183 (83.9)	42 (5.6)	48 (8.9)	29.150 (98.435)
LUGGING ABILITY IN 6th (H2) GEAR											
Crankshaft Speed rpm			2399	2156	1907	1674	1436	1188			
Pull—lbs (kN)			2268 (10.09)	2376 (10.57)	2408 (10.71)	2417 (10.75)	2407 (10.71)	2347 (10.44)			
Increase in Pull %			0	5	6	7	6	3			
Power—Hp (kW)			30.06 (22.41)	28.12 (20.97)	25.18 (18.78)	22.16 (16.53)	18.92 (14.11)	15.33 (11.43)			
Speed—Mph (km/h)			4.97 (8.00)	4.44 (7.14)	3.92 (6.31)	3.44 (5.53)	2.95 (4.74)	2.45 (3.94)			
Slip %			8.77	9.34	9.53	9.53	9.62	9.15			

Department of Agricultural Engineering

Dates of Test: October 22 — November 3, 1980

Manufacturer: ISEKI AND CO., LTD., Tokyo, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 47.9 (rating taken from oil company's inspection data) Specific gravity converted to 60°/60° (15°/15°) 0.8385 Fuel weight 6.982 lbs/gal (0.837 kg/l) Oil White Farm Equipment Turbo-Diesel Oil SAE 30 API service classification CB/CD (DS) To motor 2.719 gal (10.293 l) Drained from motor 2.568 gal (9.719 l) Transmission lubricant SAE 80-90 Hydraulic lubricant White Farm Equipment type 55 hydraulic oil Total time engine was operated 32.0 hours

ENGINE: Make Isuzu Diesel Type three cylinder vertical Serial No. 531954 Crankshaft lengthwise Rated rpm 2400 Bore and stroke 3.386" x 4.02" (86 mm x 102 mm) Compression ratio 20 to 1 Displacement 108.4 cu in (1777 ml) Cranking system 12 volt Lubrication pressure Air cleaner one paper element Oil filter one full flow paper cartridge Fuel Filter one metal screen with sediment bowl and one paper cartridge Muffler vertical Cooling medium temperature control one thermostat.

CHASSIS: Type standard Serial No. 004408 J Tread width rear 46.8" (1190 mm) to 60.6" (1540 mm) front 43.3" (1100 mm) to 59.1" (1500 mm) Wheel base 68.9" (1750 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 26.5" (673 mm) Vertical distance above roadway 27.9" (709 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 0.7 (1.2) second 1.0 (1.6) third 1.6 (2.5) fourth 2.2 (3.6) fifth 3.9 (6.2) sixth 5.3 (8.5) seventh 8.2 (13.2) eighth 11.6 (18.7) reverse 1.0 (1.6), 5.3 (8.5) Clutch dry single disc operated by foot pedal Brakes drum and shoe operated by two foot pedals which can be locked together Steering power assist Turning radius (on concrete surface with brake applied) right 108" (2.75 m) left 105" (2.67 m) (on concrete surface without brake) right 120" (3.05 m) left 118" (3.00 m) Turning space diameter (on concrete surface with brake applied) right 230" (5.84 m) left 224" (5.69 m) (on concrete surface without brake) right 254" (6.45 m) left 250" (6.35) Power take-off 540 rpm at 2176 engine rpm.

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)
Maximum Available Power—Two Hours	96.5
75% of Pull at Maximum Power—Ten Hours	94.0
50% of Pull at Maximum Power—Two Hours	92.0
50% of Pull at Reduced Engine Speed—Two Hours	89.0
Bystander in 8th (H4) gear	82.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (<i>kPa</i>)	Two 13.6-24; 4; 14 (<i>95</i>)	Two 13.6-24; 4; 14 (<i>95</i>)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	330 lb (<i>150 kg</i>)	None
Front Tires	—No., size, ply & psi (<i>kPa</i>)	Two 5.50-16; 6; 40 (<i>275</i>)	Two 5.50-16; 6; 40 (<i>275</i>)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	70 lb (<i>32 kg</i>)	None
Height of Drawbar		13.5 in (<i>345 mm</i>)	13.5 in (<i>345 mm</i>)
Static Weight with Operator—Rear		2680 lb (<i>1216 kg</i>)	2020 lb (<i>916 kg</i>)
	Front	1290 lb (<i>585 kg</i>)	1150 lb (<i>522 kg</i>)
	Total	3970 lb (<i>1801 kg</i>)	3170 lb (<i>1438 kg</i>)

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure. Temperature at injection pump was 145°F (62.8°C). Three 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 **1374**.

LOUIS I. LEVITICUS
Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

K. VON BARGEN

Board of Tractor Test Engineers



White Iseki 2-35 Diesel