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January 1965

Test 931: International 4100 (Diesel)

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 931 - INTERNATIONAL 4100 DIESEL

DRAWBAR PERFORMANCE

Hp	Draw- bar pull lbs	Speed miles per hr	Crank- shaft speed rpm	Slip of drivers %	Fuel Consumption		Temp Degrees F				Barom- eter inches of Mercury
					Gal per hr	Lb per hp-hr	Hp-hr per gal	Cool- ing med	Air wet bulb	Air dry bulb	

VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST

Maximum Available Power—Two Hours—4th Gear												
110.82	7137	5.82	2393	3.58	8.791	0.549	12.61	188	45	52	28.670	

75% of Pull at Maximum Power—Ten Hours—4th Gear												
93.77	5625	6.25	2549	2.89	8.142	0.601	11.52	187	41	47	28.810	

50% of Pull at Maximum Power—Two Hours—4th Gear												
64.32	3756	6.42	2594	1.91	6.759	0.727	9.52	186	37	38	28.650	

MAXIMUM POWER WITH BALLAST

78.30	16365	1.79	2568	14.79	1st Gear	183	45	55	28.800
113.06	10780	3.93	2403	6.17	2nd Gear	190	45	55	28.800
114.58	8874	4.84	2401	4.83	3rd Gear	188	42	48	28.820
116.15	7501	5.81	2393	3.93	4th Gear	190	42	48	28.820
115.77	6560	6.62	2395	3.37	5th Gear	189	42	48	28.820
101.76	2636	14.48	2405	1.07	6th Gear	185	36	37	28.670

MAXIMUM POWER WITHOUT BALLAST

115.42	7480	5.79	2400	5.44	4th Gear	182	47	54	28.700
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VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST—4th Gear

Pounds pull	7501	8300	8732	8780	8726	8432
Horsepower	116.15	115.37	107.48	94.42	81.02	65.11
Crankshaft speed, rpm	2393	2160	1918	1678	1445	1201
Miles per hour	5.81	5.21	4.62	4.03	3.48	2.90
Slip of drivers, %	3.93	4.42	4.69	4.83	4.69	4.55

TIRES, BALLAST and WEIGHT

		With Ballast	Without Ballast
Rear tires	—No, size, ply & psi	Two 18.4-30; 8; 20	Two 18.4-30; 8; 16
Ballast	—Liquid	1205 lb each	None
	Cast iron	None	None
Front tires	—No, size, ply & psi	Two 18.4-30; 8; 20	Two 18.4-30; 8; 16
Ballast	—Liquid	758 lb each	None
	Cast iron	None	None
Height of drawbar		15 inches	16½ inches
Static weight	—Rear	8300 lb	5890 lb
	Front	10625 lb	9110 lb
Total weight with operator		19100 lb	15175 lb

Department of Agricultural Engineering

Dates of Test: NOVEMBER 19 TO NOVEMBER 24, 1965

Manufacturer: INTERNATIONAL HARVESTER COMPANY, CHICAGO, ILLINOIS

FUEL, OIL and TIME Fuel No 2 diesel Cetane No 57.0 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8312 Weight per gallon 6.920 lb Oil SAE 30 API service classification MS, DG, DM, DS To motor 3.850 gal Drained from motor 2.807 gal Transmission lubricant IH HyTran fluid Final drive lubricant SAE 90 Type multi-purpose lubricant Total time engine was operated 35½ hours.

ENGINE Make International diesel Type 6 cylinder vertical with turbocharger Serial No DT 429 10007 Crankshaft mounted lengthwise Rated rpm 2400 Bore and stroke 4½" x 4½" Compression ratio 16.0 to 1 Displacement 429 cu in Cranking system 12 volt electric (two 6-volt batteries) Lubrication pressure Air cleaner two stage dry type with replaceable pleated paper element Oil filter full flow replaceable pleated paper element Oil cooler engine coolant heat exchanger for crankcase oil and radiator for transmission and hydraulic oil Fuel filter primary filter with replaceable cotton waste element and final filter with replaceable pleated paper element Muffler was not used Cooling medium temperature control thermostat.

CHASSIS Type 4-wheel drive Serial No 502 Tread width rear 77" front 77" Wheel base 100" 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 63.6" Vertical distance above roadway 39.5" Horizontal distance from center of rear wheel tread 0.7" to the right Hydraulic control system direct engine drive Transmission selective gear fixed ratio Advertised speeds mph first 2 second 4 third 4¾ fourth 5¾ fifth 6½ sixth 14 seventh 17 eighth 20¼ reverse first 2¼ second 4¾ third 5¾ fourth 6¾ Clutch single plate dry disc operated by foot pedal Brakes internal expanding shoes for all four wheels hydraulically power actuated operated by single foot pedal Steering hydraulic with power assist Turning radius (on concrete surface with front wheel steering) right 264" left 264" (on concrete surface with four wheel steering) right 164" left 164" Turning space diameter (on concrete surface with front wheel steering) right 546" left 546" (on concrete surface with four wheel steering) right 348" left 348" Belt pulley none Power take-off none.

REPAIRS and ADJUSTMENTS No repairs or adjustments.

REMARKS All test results were determined from observed data obtained in accordance with the SAE and ASAE test code.

Seventh and eighth gears were not run as they exceeded 15 mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 931.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

J. J. SULEK

D. E. LANE

Board of Tractor Test Engineers

The University of Nebraska Agricultural Experiment Station
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