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January 1972

Test 1099: International Utility 574 Diesel (Also International 574 Row Crop Diesel)

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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NEBRASKA TRACTOR TEST 1099 – INTERNATIONAL UTILITY 574 DIESEL (ALSO INTERNATIONAL 574 ROW CROP DIESEL)

POWER TAKE-OFF PERFORMANCE

Hp	Crankshaft speed rpm	Fuel Consumption		Hp-hr per gal	Temperature Degrees F			Barometer inches of Mercury
		Gal per hr	Lb per hp-hr		Cooling medium	Air wet bulb	Air dry bulb	
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1004 rpm)								
52.55	2200	3.634	0.478	14.46	186	61	75	28.827
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
47.57	2342	3.359	0.488	14.16	183	62	76	.....
0.00	2431	1.220	.....	.....	176	62	75	.....
24.27	2392	2.300	0.655	10.55	179	62	75	.....
52.52	2199	3.589	0.472	14.63	188	62	75	.....
12.25	2410	1.753	0.989	6.99	179	62	76	.....
36.00	2365	2.752	0.528	13.08	182	63	75	.....
Av 28.77	2356	2.496	0.600	11.53	181	62	75	28.845

DRAWBAR PERFORMANCE

Hp	Drawbar pull lbs	Speed miles per hr	Crankshaft speed rpm	Slip of drivers %	Fuel Consumption		Hp-hr per gal	Temp Degrees F			Barometer inches of Mercury
					Gal per hr	Lb per hp-hr		Cooling med	Air wet bulb	Air dry bulb	
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours—3rd Gear (3 Lo)											
45.85	3894	4.42	2202	5.93	3.565	0.537	12.86	180	55	60	29.035
75% of Pull at Maximum Power—Ten Hours—3rd Gear (3 Lo)											
38.00	3000	4.75	2330	4.43	3.070	0.558	12.38	176	56	59	28.987
50% of Pull at Maximum Power—Ten Hours—3rd Gear (3 Lo)											
26.76	2060	4.87	2357	3.11	2.531	0.653	10.57	174	58	62	29.050
50% of Pull at Reduced Engine Speed—Two Hours—5th Gear (1 Hi)											
27.00	2081	4.86	1404	3.05	1.971	0.504	13.70	179	66	55	29.040
MAXIMUM POWER WITH BALLAST											
33.45	6446	1.95	2352	14.84	1st Gear (1 Lo).....		173	56	65	28.910	
45.01	5355	3.15	2196	9.23	2nd Gear (2 Lo).....		174	60	65	28.910	
46.95	3998	4.40	2196	6.17	3rd Gear (3 Lo).....		178	54	66	28.910	
45.82	2980	5.77	2200	4.46	4th Gear (4 Lo).....		177	65	69	28.920	
46.83	2304	7.62	2204	3.14	5th Gear (1 Hi).....		178	56	70	28.920	
44.17	1319	12.56	2199	1.59	6th Gear (2 Hi).....		179	66	70	28.920	

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 3rd Gear (3 Lo)

Pounds Pull	3998	4186	4353	4461	4500	4577	4262
Horsepower	46.95	43.89	40.71	35.99	30.82	26.52	19.95
Crankshaft Speed rpm	2196	1970	1764	1531	1297	1099	882
Miles Per Hour	4.40	3.93	3.51	3.03	2.57	2.17	1.76
Slip of Drivers %	6.17	6.52	6.76	7.35	7.23	7.35	7.23

TRACTOR SOUND LEVEL dB(A)

Maximum Available Power 2 Hours	95.0
75% of Pull at Max. Power 10 Hours	96.5
50% of Pull at Max. 2 Hours	95.0
50% of Pull at Reduced Engine Speed 2 Hours	88.0
Bystander	8th gear (4 High) 86.0

TIRES, BALLAST and WEIGHT

	With Ballast	Without Ballast
Rear tires	—No., size, ply & psi Two 16.9-28; 6; 16	Two 16.9-28; 6; 16
Ballast	—Liquid 978 lb each	None
	—Cast Iron 780 lb each	None
Front tires	—No., size, ply & psi Two 7.50-16; 6; 24	Two 7.50-16; 6; 24
Ballast	—Liquid None	None
	—Cast Iron None	None
Height of drawbar	13½ inches	14½ inches
Static weight with operator —rear	6735 lb	3220 lb
front	1940 lb	1930 lb
total	8675 lb	5150 lb

Department of Agricultural Engineering

Date of Test: April 22 to May 12, 1972

Manufacturer: International Harvester Company, Chicago, Illinois

FUEL, OIL and TIME Fuel No. 2 Diesel Cetane No. 50.1 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8302 Weight per gallon 6.912 lb Oil SAE 30 API service classification I.H. No. 1 Oil for Diesel Engines (CD CC DB CA SE SD SC—or DS DM DG MS) To motor 2.409 gal Drained from motor 1.979 gal Transmission and final drive lubricant I.H. Hy-Tran Fluid Total time engine was operated 47 hours.

ENGINE Make International Diesel Type 4 cylinder vertical Serial No. 239DT2D067393* Crankshaft Mounted lengthwise Rated rpm 2200 Bore and stroke 3.875" x 5.06" Compression ratio 16 to 1 Displacement 238.6 cu. in. Cranking system 12 volt electric Lubrication pressure Air cleaner Two stage dry type with replaceable pleated paper element and automatic dust unloader Oil filter full flow treated paper replaceable screw-on cartridge Oil cooler radiator for transmission and hydraulic oil Fuel filter one primary and one final using replaceable screw-on cartridges Muffler was used Cooling medium temperature control thermostat.

CHASSIS Type standard Serial No. 2310002-U003513* Tread width rear 56" to 76" front 48" to 80" Wheel base 77.5" 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 29.1" Vertical distance above roadway 27.9" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio Advertised speeds mph first 2 second 3¼ third 4½ fourth 5¾ fifth 7½ sixth 12¼ seventh 16½ eighth 21¼ reverse 2½, 4¼, 5½, 7¼ Clutch single plate dry disc operated by foot pedal Brakes wet single disc hydraulically actuated by two foot pedals that can be locked together with automatic equalizing Steering hydrostatic Turning radius (on concrete surface with brake applied) right 114" left 114" (on concrete surface without brake) right 125" left 125" Turning space diameter (on concrete surface with brake applied) right 239" left 239" (on concrete surface without brake) right 261" left 261" Power take-off 1004 or 555 rpm at 2200 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 or official Nebraska test procedure. Seventh and eighth gears were not run as test procedure requires only six gears.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1099.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers