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January 1972

Test 1103: Case 1270 Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1103 – CASE 1270 DIESEL

POWER TAKE-OFF PERFORMANCE

Hp	Crank- shaft speed rpm	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temperature Degrees F Cooling medium	Air wet bulb	Air dry bulb	Barometer inches of Mercury
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1050 rpm)								
126.70	2100	8.936	0.489	14.18	190	63	75	29.047
Standard Power Take-off Speed (1000 rpm)—One Hour								
126.60	1999	8.720	0.478	14.52	191	62	75	29.060
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
113.65	2215	8.434	0.515	13.48	188	62	75	.....
0.00	2309	3.080	.....	.....	175	60	72	.....
58.23	2275	5.683	0.677	10.25	187	62	73	.....
125.75	2100	8.923	0.492	14.09	190	64	76	.....
29.39	2286	4.334	1.023	6.78	176	63	75	.....
86.36	2246	6.959	0.559	12.41	179	64	76	.....
Av 68.90	2238	6.236	0.628	11.05	182	62	74	29.067

DRAWBAR PERFORMANCE

Hp	Draw- bar pull lbs	Speed miles per hr	Crank- shaft speed rpm	Slip of drivers %	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temp Degrees F Cool- ing med	Air wet bulb	Air dry bulb	Barometer inches of Mercury
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours—6th Gear (3 Lo)											
108.45	8133	5.00	2099	6.72	8.938	0.571	12.13	188	68	75	28.645
75% of Pull at Maximum Power—Ten Hours—6th Gear (3 Lo)											
89.72	6190	5.44	2234	4.77	7.767	0.600	11.55	182	71	81	28.612
50% of Pull at Maximum Power—Two Hours—6th Gear (3 Lo)											
60.97	4114	5.56	2251	3.30	6.217	0.707	9.81	184	76	94	28.590
50% of Pull at Reduced Engine Speed—Two Hours—8th Gear (3 Int)											
62.05	4175	5.57	1689	3.14	4.865	0.543	12.75	199	77	95	28.590
MAXIMUM POWER WITH BALLAST											
100.38	12690	2.97	2141	14.83	3rd Gear (1 Hi).....			175	70	80	28.690
107.32	9325	4.32	2102	8.67	5th Gear (2 Int).....			186	72	85	28.720
108.28	8165	4.97	2099	7.18	6th Gear (3 Lo).....			188	72	85	28.700
107.63	7313	5.52	2100	6.26	7th Gear (2 Hi).....			188	72	86	28.690
109.77	6060	6.79	2102	4.92	8th Gear (3 Int).....			180	73	87	28.690
108.26	4712	8.62	2104	3.63	9th Gear (3 Hi).....			182	74	89	28.690

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 6th Gear (3 Lo)

Pounds Pull	8165	9270	9964	10136	9802	8841
Horsepower	108.28	110.07	102.63	91.68	76.63	58.22
Chankshaft Speed rpm	2099	1898	1667	1469	1265	1051
Miles Per Hour	4.97	4.45	3.86	3.39	2.93	2.47
Slip of Drivers %	7.18	8.08	9.25	9.54	9.40	8.08

TRACTOR SOUND LEVEL (with cab)

	dB(A)
Maximum Available Power 2 Hours	88.0
75% of Pull at Max. Power 10 Hours	88.5
50% of Pull at Max. Power 2 Hours	88.0
50% of Pull at Reduced Engine Speed 2 Hours	85.5
Bystander 12th (4 Hi)	89.0

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires—No., size, ply & psi	Two 20.8-38; 10; 18	Two 20.8-38; 10; 18
Ballast—Liquid	1468 lb each	None
Cast Iron	610 lb each	None
Front Tires—No., size, ply & psi	Two 9.5-20; 6; 28	Two 9.5-20; 6; 28
Ballast—Liquid	None	None
Cast Iron	15 lb each	None
Height of drawbar	20½ inches	21½ inches
Static weight with operator—rear	13625 lb	9470 lb
front	4000 lb	3970 lb
total	17625 lb	13440 lb

Department of Agricultural Engineering

Dates of Test: June 9 to June 16, 1972

Manufacturer: J. I. CASE COMPANY, RACINE, WISCONSIN

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° 0.8330 Weight per gallon 6.936 lb Oil SAE 30 API service classification SB/SE CA/CD (MS DS) To motor 3.678 gal Drained from motor 3.551 gal Transmission and final drive lubricant Case TFD fluid Total time engine was operated 46½ hours

ENGINE Make J. I. Case Diesel Type 6 cylinder with turbo-charger Serial No. A451BDT-2503234 Crankshaft Mounted lengthwise Rated rpm 2100 Bore and stroke 4⅜" x 5" Compression ratio 16.5 to 1 Displacement 451 cu. in. Cranking system 12 volt electric Lubrication pressure Air cleaner dry type two stage with replaceable pleated paper elements Oil filter two parallel full flow replaceable cartridges Oil cooler engine coolant heat exchanger for crankcase oil and radiator for transmission and hydraulic fluid Fuel filter replaceable primary and secondary filter cartridges Muffler was used Cooling medium temperature control two thermostats

CHASSIS Type standard Serial No. 8695945 Tread width rear 64" to 109" front 60" to 88" Wheel base 104" 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 30.4" Vertical distance above roadway 41.1" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial range operator controlled power shifting Advertised speeds mph first 1.9 second 2.6 third 3.2 fourth 3.4 fifth 4.5 sixth 5.2 seventh 5.6 eighth 6.8 ninth 8.4 tenth 10.8 eleventh 14.3 twelfth 17.8 reverse 3.2, 5.6, 8.4 Clutch multiple disc wet clutches within transmission actuated hydraulically Brakes wet multiple disc hydraulically power actuated by two foot pedals that can be locked together Steering hydrostatic Turning radius (on concrete surface with brake applied) right 148" left 148" (on concrete surface without brake) right 172" left 172" Turning space diameter (on concrete surface with brake applied) right 307" left 307" (on concrete surface without brake) right 356" left 356" Power take-off 1000 rpm at 2000 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. First and second gears were not run as it was necessary to limit the pull in third gear because of excessive wheel slippage. Fourth, tenth, eleventh, and twelfth gears were not run as test procedure requires only six travel speeds. We, the undersigned, certify that this is a true and correct report of official Tractor Test 1103.

L. F. LARSEN

Engineer-In-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers

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