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Test 1218: Case 1570 Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1218 — CASE 1570 DIESEL

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—1003 rpm)								
180.41 (134.53)	2101	11.952 (45.243)	0.463 (0.282)	15.09 (2.974)	201 (93.9)	59 (15.1)	75 (23.8)	28.993 (97.906)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
158.28 (118.03)	2170	10.793 (40.857)	0.477 (0.290)	14.66 (2.889)	197 (91.7)	60 (15.6)	76 (24.2)	..... .....
0.00 (0.00)	2319	3.340 (12.645)	..... .....	..... .....	182 (83.3)	60 (15.3)	75 (23.9)	..... .....
82.52 (61.54)	2263	6.900 (26.118)	0.585 (0.356)	11.96 (2.356)	191 (88.3)	60 (15.6)	76 (24.4)	..... .....
181.64 (135.45)	2100	12.028 (45.532)	0.463 (0.282)	15.10 (2.975)	202 (94.2)	60 (15.8)	76 (24.4)	..... .....
41.96 (31.29)	2294	5.094 (19.284)	0.849 (0.517)	8.24 (1.622)	186 (85.3)	60 (15.8)	75 (23.9)	..... .....
121.70 (90.76)	2222	8.855 (33.520)	0.509 (0.310)	13.74 (2.707)	194 (90.3)	61 (16.1)	75 (23.9)	..... .....
Av	97.68	7.835	0.561	12.47	192	60	75	29.000
Av	(72.84)	(29.659)	(0.341)	(2.456)	(88.8)	(15.7)	(24.1)	(97.929)

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 (3-L) Gear											
147.89 (110.28)	11049 (49.15)	5.02 (8.08)	2101	6.17	11.632 (44.031)	0.550 (0.335)	12.72 (2.505)	193 (89.2)	68 (19.7)	80 (26.4)	28.990 (97.895)
75% of Pull at Maximum Power—Ten Hours 6th (3-L) Gear											
122.22 (91.14)	8571 (38.13)	5.35 (8.60)	2196	4.38	9.806 (37.118)	0.561 (0.341)	12.46 (2.455)	187 (86.2)	67 (19.3)	82 (27.6)	28.959 (97.790)
50% of Pull at Maximum Power—Two Hours 6th (3-L) Gear											
83.43 (62.21)	5621 (25.00)	5.57 (8.96)	2251	2.84	7.665 (29.016)	0.643 (0.391)	10.88 (2.144)	183 (83.9)	68 (20.0)	84 (28.9)	28.990 (97.895)
50% of Pull at Reduced Engine Speed—Two Hours 8th (3-I) Gear											
83.59 (62.33)	5647 (25.12)	5.55 (8.93)	1684	2.84	6.218 (23.537)	0.520 (0.317)	13.44 (2.648)	181 (82.8)	65 (18.3)	75 (23.6)	28.835 (97.371)

MAXIMUM POWER IN SELECTED GEARS

147.28 (109.83)	17115 (76.13)	3.23 (5.19)	2162	11.17	4th (2-L) Gear			187 (85.8)	63 (17.2)	68 (20.0)	28.820 (97.321)
150.40 (112.16)	12934 (57.53)	4.36 (7.02)	2100	7.24	5th (2-I) Gear			189 (87.2)	64 (17.8)	68 (20.0)	28.960 (97.794)
152.96 (114.06)	11420 (50.80)	5.02 (8.08)	2100	6.09	6th (3-L) Gear			190 (87.8)	63 (17.2)	65 (18.3)	28.950 (97.760)
152.33 (113.59)	10283 (45.74)	5.56 (8.94)	2100	5.46	7th (2-H) Gear			191 (88.1)	65 (18.3)	70 (21.1)	28.970 (97.827)
152.72 (113.88)	8397 (37.35)	6.82 (10.98)	2099	4.35	8th (3-I) Gear			191 (88.3)	66 (18.9)	73 (22.8)	28.980 (97.861)
149.23 (111.28)	6495 (28.89)	8.62 (13.87)	2100	3.38	9th (3-H) Gear			190 (87.8)	66 (18.9)	74 (23.3)	28.980 (97.861)

LUGGING ABILITY IN RATED GEAR 6th (3-L)

Crankshaft Speed rpm	2100	1887	1682	1464	1254	1043
Pull—lbs (kN)	11420 (50.80)	12397 (55.14)	12917 (57.46)	12593 (56.02)	11572 (51.48)	9926 (44.15)
Increase in Pull %	0	9	13	10	1	-13
Power—Hp (kW)	152.96 (114.06)	148.15 (110.47)	137.03 (102.18)	116.62 (86.96)	92.33 (68.85)	66.52 (49.60)
Speed—Mph (km/h)	5.02 (8.08)	4.48 (7.21)	3.98 (6.40)	3.47 (5.59)	2.99 (4.82)	2.51 (4.04)
Slip %	6.09	6.93	7.08	6.78	6.47	5.39

Department of Agricultural Engineering

Dates of Test: August 27 to September 3, 1976

Manufacturer: J. I. CASE COMPANY, 700 State Street, Racine, Wisconsin 53404

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 51.8 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8402 **Fuel weight** 6.996 lbs/gal (0.840 kg/l) **Oil** SAE 30 **API service classification** CC, CD, SC, SD, SE **To motor** 5.362 gal (20.297 l) **Drained from motor** 5.293 gal (20.036 l) **Transmission and final drive lubricant** Case TFD Fluid **Total time engine was operated** 46.5 hours

ENGINE Make Case Diesel Type 6 cylinder vertical with turbocharger **Serial No.** 10009552 **Crankshaft** lengthwise **Rated rpm** 2100 **Bore and stroke** 4.625" × 5.000" (117.48 mm × 127.00 mm) **Compression ratio** 15.8 to 1 **Displacement** 504 cu in (8259 ml) **Cranking system** 12 volt **Lubrication pressure** **Air cleaner** two stage dry type with paper elements and precleaner with aspirator **Oil filter** two parallel full flow spin-on cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic oil **Fuel filter** viscose wind and paper spin-on cartridges and sediment bowl with screen **Muffler** vertical **Cooling medium temperature control** two thermostats

CHASSIS: Type standard with duals **Serial No.** 8805026 **Tread width** rear 64" (1630 mm) to 109" (2770 mm) front 60" (1520 mm) to 88" (2240 mm) **Wheel base** 104" (2640 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 29.7" (754 mm) Vertical distance above roadway 39.5" (1003 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 with partial (3 range) operator controlled power shifting **Advertised speeds mph (km/h)** first 1.9 (3.1) second 2.6 (4.2) third 3.2 (5.2) fourth 3.3 (5.3) fifth 4.4 (7.1) sixth 5.0 (8.1) seventh 5.5 (8.9) eighth 6.7 (10.8) ninth 8.4 (13.5) tenth 10.6 (17.1) eleventh 14.2 (22.8) twelfth 19.5 (31.4) reverse 3.2 (5.1), 5.5 (8.9), 8.4 (13.4) **Clutch** wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically actuated by two pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 151" (3.84 m) left 151" (3.84 m) (on concrete surface without brake) right 172" (4.37 m) left 172" (4.37 m) **Turning space diameter** (on concrete surface with brake applied) right 314" (7.98 m) left 314" (7.98 m) (on concrete surface without brake) right 361" (9.17 m) left 361" (9.17 m) **Power take-off** 1002 rpm at 2100 engine rpm.

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	84.5
75% of Pull at Maximum Power—Ten Hours	84.5
50% of Pull at Maximum Power—Two Hours	84.0
50% of Pull at Reduced Engine Speed—Two Hours	81.5
Bystander in 12th (4-H) gear	90.0

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Four 20.8-38; 8; 16 (110)	Four 20.8-38; 8; 16 (110)
	—Liquid (inner tires)	1370 lb (621 kg)	None
	—Cast Iron (each)	280 lb (127 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 11.00-16; 8; 40 (280)	Two 11.00-16; 8; 40 (280)
	—Liquid (each)	None	None
	—Cast Iron (each)	100 lb (45 kg)	None
Height of drawbar		20 in (510 mm)	20 in (510 mm)
Static weight with operator—rear		16220 lb (7357 kg)	12360 lb (5606 kg)
	front	4130 lb (1873 kg)	3930 lb (1783 kg)
	total	20350 lb (9230 kg)	16290 lb (7389 kg)

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 return was 198°F (92.2°C). Six gears were chosen between stability limit and 15 mph (24.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1218.

LOUIS I. LEVITICUS
Engineer-in Charge

G. W. STEINBRUEGGE, Chairman
W. E. SPLINTER
K. VON BARGEN
Board of Tractor Test Engineers



Case 1570 Diesel