10-24-1984

Test 1546: Case 1594 Syncromesh Diesel 12-Speed

Nebraska Tractor Test Lab
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NEBRASKA TRACTOR TEST 1546—CASE 1594 SYNCROMESH DIESEL
ALSO CASE INTERNATIONAL 1594 SYNCROMESH DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1123 rpm)								
85.90 (64.06)	2300	5.178 (19.602)	0.421 (0.256)	16.59 (3.268)	192 (88.9)	64 (17.8)	75 (24.1)	28.78 (97.20)
Standard Power Take-off Speed (1000 rpm)—One Hour								
80.83 (60.28)	2048	4.744 (17.957)	0.410 (0.249)	17.04 (3.357)	192 (89.0)	64 (17.8)	75 (24.1)	28.74 (97.03)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
75.08 (55.99)	2364	4.555 (17.241)	0.424 (0.258)	16.48 (3.247)	191 (88.3)	64 (17.8)	76 (24.2)	....
0.00 (0.00)	2425	1.371 (5.189)	....	....	186 (85.3)	63 (16.9)	75 (23.6)	....
38.24 (28.51)	2409	2.832 (10.719)	0.517 (0.315)	13.50 (2.660)	187 (86.1)	63 (17.2)	74 (23.3)	....
86.38 (64.41)	2300	5.186 (19.632)	0.419 (0.255)	16.66 (3.281)	192 (88.9)	63 (17.2)	74 (23.3)	....
19.18 (14.30)	2414	2.084 (7.889)	0.759 (0.461)	9.20 (1.813)	187 (85.8)	63 (17.2)	74 (23.3)	....
56.86 (42.40)	2387	3.614 (13.679)	0.444 (0.270)	15.73 (3.100)	188 (86.7)	63 (17.2)	74 (23.1)	....
Av 45.96	**2383**	**3.273**	**0.497**	**14.04**	**188**	**63**	**74**	**28.70**
Av (34.27)		***(12.391)***	***(0.303)***	***(2.766)***	***(86.9)***	***(17.3)***	***(23.5)***	***(96.92)***

The following performance figures apply to tractors after chassis S/N 11221501.

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 7th (L2) Gear											
72.17 (53.82)	5113 (22.74)	5.29 (8.52)	2300	6.98	5.063 (19.166)	0.490 (0.298)	14.26 (2.808)	191 (88.1)	39 (3.6)	47 (8.3)	29.19 (98.55)
75% of Pull at Maximum Power—Ten Hours 7th (L2) Gear											
58.81 (43.86)	3911 (17.40)	5.64 (9.08)	2401	5.09	4.338 (16.422)	0.515 (0.313)	13.56 (2.671)	191 (88.1)	29 (–1.5)	33 (0.4)	29.28 (98.87)
50% of Pull at Maximum Power—Two Hours 7th (L2) Gear											
40.26 (30.02)	2608 (11.60)	5.79 (9.32)	2424	3.54	3.359 (12.714)	0.583 (0.354)	11.99 (2.361)	191 (88.1)	37 (2.8)	44 (6.7)	29.18 (98.52)
50% of Pull at Reduced Engine Speed—Two Hours 10th (L3) Gear											
40.23 (30.00)	2610 (11.61)	5.78 (9.30)	1403	3.65	2.700 (10.220)	0.469 (0.285)	14.90 (2.935)	187 (86.1)	43 (6.1)	44 (6.7)	28.90 (97.57)
MAXIMUM POWER IN SELECTED GEARS											
67.33 (50.21)	8331 (37.06)	3.03 (4.88)	2354	14.64	4th (L1) Gear			191 (88.1)	35 (1.7)	39 (3.9)	29.23 (98.71)
69.32 (51.69)	7581 (33.72)	3.43 (5.52)	2299	11.67	5th (LS3) Gear			190 (87.5)	36 (2.2)	40 (4.4)	29.24 (98.74)
70.59 (52.64)	6494 (28.88)	4.08 (6.56)	2301	9.27	6th (HS2) Gear			190 (87.8)	36 (2.2)	41 (5.0)	29.23 (98.71)
73.54 (54.84)	5215 (23.20)	5.29 (8.51)	2300	7.08	7th (L2) Gear			191 (88.1)	39 (3.9)	46 (7.8)	29.20 (98.60)
72.84 (54.32)	4189 (18.63)	6.52 (10.50)	2299	5.63	8th (H1) Gear			190 (87.8)	37 (2.8)	42 (5.6)	29.23 (98.71)
70.77 (52.77)	3596 (16.00)	7.38 (11.88)	2300	4.78	9th (HS3) Gear			190 (87.5)	37 (2.8)	43 (6.1)	29.22 (98.67)
70.01 (52.21)	2778 (12.35)	9.45 (15.21)	2299	3.76	10th (L3) Gear			190 (87.5)	37 (2.8)	44 (6.7)	29.22 (98.67)

Department of Agricultural Engineering

Dates of Test: October 24 to November 2, 1984

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

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60° F *(15/15°C)*** 0.8385 **Fuel weight** 6.982 lbs/gal *(0.837 kg/l)* **Oil SAE** 30 **API service classification** SF-CD **To motor** 3.090 gal *(11.698 l)* **Drained from motor** 2.572 gal *(9.735 l)* **Transmission and hydraulic lubricant** Case TFD fluid **Final drive lubricant** Case ETHB fluid **Total time engine was operated** 36.5 hours.

ENGINE: Make Case Diesel **Type** six cylinder vertical **Serial No.** 330002 11465511 **Crankshaft** lengthwise **Rated rpm** 2300 **Bore and stroke** 3.939″ × 4.500″ *(100 mm × 114.3 mm)* **Compression ratio** 16 to 1 **Displacement** 329 cu in *(5392 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and centrifugal precleaner **Oil filter** one full flow cartridge **Fuel filter** two paper elements with sediment bowl and screen **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type standard **Serial No.** *154/BEB/11219518* **Tread width** rear 61″ *(1549 mm)* to 85″ *(2159 mm)* front 60″ *(1524 mm)* to 88″ *(2235 mm)* **Wheel base** 100″ *(2540 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 33.2″ *(842 mm)* Vertical distance above roadway 36.7″ *(932 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 1.4 *(2.3)* second 2.3 *(3.7)* third 2.8 *(4.5)* fourth 3.5 *(5.6)* fifth 3.9 *(6.3)* sixth 4.5 *(7.2)* seventh 5.7 *(9.2)* eighth 6.9 *(11.1)* ninth 7.8 *(12.6)* tenth 9.9 *(15.9)* eleventh 11.4 *(18.3)* twelfth 19.7 *(31.7)* reverse 2.3 *(3.7)*, 4.6 *(7.4)*, 5.8 *(9.3)*, 11.6 *(18.7)* **Clutch** single dry disc hydraulically actuated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 148″ *(3.76 m)* left 148″ *(3.76 m)* (on concrete surface without brake) right 176″ *(4.47 m)* left 176″ *(4.47 m)* **Turning space diameter** (on concrete surface with brake applied) right 309″ *(7.85 m)* left 309″ *(7.85 m)* (on concrete surface without brake) right 364″ *(9.25 m)* left 364″ *(9.25 m)* **Power take-off** 540 rpm at 2077 engine rpm and 1000 rpm at 2048 engine rpm **Unladen tractor mass** 9170 lb *(4160 kg)*.

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

LUGGING ABILITY IN 7th (L2) GEAR

Crankshaft Speed rpm	2300	2070	1837	1610	1373	1148	914
Pull—lbs	5215	5572	5908	6086	6083	6090	5823
(kN)	*(23.20)*	*(24.79)*	*(26.28)*	*(27.07)*	*(27.06)*	*(27.09)*	*(25.90)*
Increase in Pull %	0	7	13	17	17	17	12
Power—Hp	73.54	70.31	65.84	59.21	50.49	42.21	32.29
(kW)	*(54.84)*	*(52.43)*	*(49.10)*	*(44.15)*	*(37.65)*	*(31.48)*	*(24.08)*
Speed—Mph	5.29	4.73	4.18	3.65	3.11	2.60	2.08
(km/h)	*(8.51)*	*(7.62)*	*(6.73)*	*(5.87)*	*(5.01)*	*(4.18)*	*(3.35)*
Slip %	7.08	7.55	8.09	8.35	8.35	8.49	8.09

TRACTOR SOUND LEVEL WITH CAB	**dB(A)**
Maximum Available Power—Two Hours	83.0
75% of Pull at Maximum Power—Ten Hours	82.0
50% of Pull at Maximum Power—Two Hours	83.5
50% of Pull at Reduced Engine Speed—Two Hours	78.5
Bystander in 11th (H2) gear	86.0

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Two 18.4-34; 6; 16 *(110)*	Two 18.4-34; 6; 16 *(110)*
Ballast	—Liquid (each)	582 lb *(264 kg)*	None
	—Cast Iron (each)	205 lb *(93 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 10.00-16; 8; 44 *(305)*	Two 10.00-16; 8; 44 *(305)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	90 lb *(41 kg)*	None
Height of Drawbar		20 in *(510 mm)*	20 in *(510 mm)*
Static Weight with Operator—Rear		7880 lb *(3574 kg)*	6305 lb *(2860 kg)*
	—Front	3220 lb *(1461 kg)*	3040 lb *(1379 kg)*
	—Total	11100 lb *(5035 kg)*	9345 lb *(4239 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kpa)*	2325	*16030*
Location	lift cylinder	
Hydraulic oil temperature °F *(°C)*	170	*77*
Location	drain plug	

	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	6002	*2723*	
TIME sec	2.78		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	12.0	*305*	
Top of timed range	36.0	*914*	
Highest position	36.0	*914*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.9	*303*	
Top of timed range	36.4	*924*	
Highest position	36.2	*919*	

*Implement load capacity for transport purposes not specified by manufacturer.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 170°F *(76.6°C)*. Seven gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. The drawbar performance figures on this report apply to tractors after chassis S/N 11221501.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1546,** December 3, 1984.

Report reissued. Supplemental sales permit for Case International 1594 Syncromesh Diesel June 18, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

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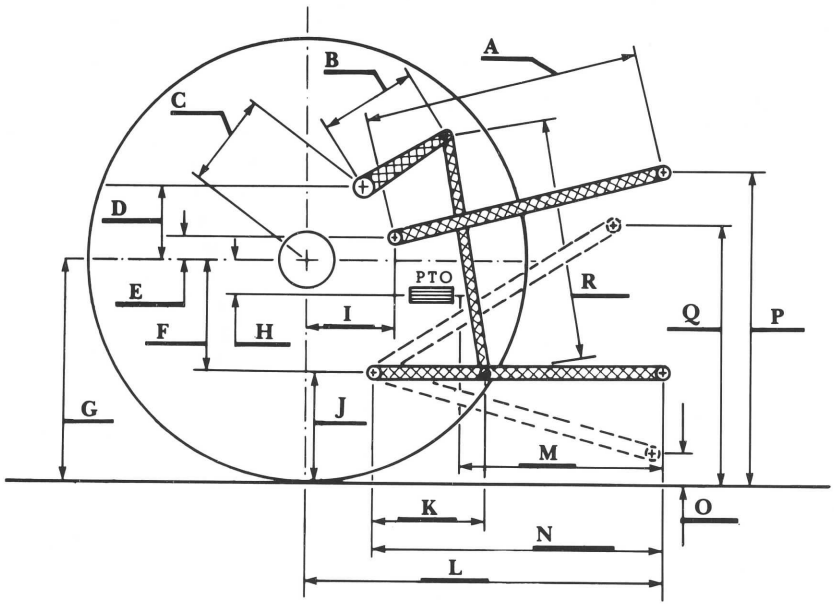

Hitch Dimensions as Tested — No Load

	inch	*mm*
A	30.1	*765*
B	9.5	*241*
C	10.2	*258*
D	10.1	*257*
E	11.4	*289*
F	7.9	*200*
G	29.6	*752*
H	–0.4	*–10*
I	7.0	*178*
J	21.7	*552*
K	19.0	*483*
L	38.0	*965*
M	25.2	*641*
N	38.0	*965*
O	8.0	*203*
P	40.8	*1035*
Q	33.6	*854*
R	24.8	*629*

Case 1594 Synchromesh Diesel

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