

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

1-1-1991

Test 1650: Case International 9240 Diesel and Steiger 9240 Diesel 12-Speeds

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Energy Systems Commons](#), [History of Science, Technology, and Medicine Commons](#), [Other Mechanical Engineering Commons](#), [Physical Sciences and Mathematics Commons](#), [Science and Mathematics Education Commons](#), and the [United States History Commons](#)

Nebraska Tractor Test Lab, "Test 1650: Case International 9240 Diesel and Steiger 9240 Diesel 12-Speeds" (1991). *Nebraska Tractor Tests*. 1960.
<https://digitalcommons.unl.edu/tractormuseumlit/1960>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

NEBRASKA OECD TRACTOR TEST 1650—SUMMARY 088

CASE INTERNATIONAL 9240 DIESEL

ALSO STEIGER 9240 DIESEL

12 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1048 rpm)					
200.53 (149.53)	2199	11.68 (44.20)	0.407 (0.248)	17.17 (3.38)	
Standard Power Take-off Speed (1000 RPM)					
212.08 (158.15)	2098	11.88 (44.99)	0.392 (0.238)	17.85 (3.52)	

Maximum Power (2 Hours)					Air temperature
215.87 (160.97)	2001	11.81 (44.71)	0.383 (0.233)	18.28 (3.60)	
VARYING POWER AND FUEL CONSUMPTION					71°F (22°C)
200.53 (149.53)	2199	11.68 (44.20)	0.407 (0.248)	17.17 (3.38)	
177.18 (132.12)	2290	10.85 (41.09)	0.428 (0.261)	16.32 (3.22)	Relative humidity
130.36 (97.21)	2323	8.92 (33.78)	0.479 (0.291)	14.61 (2.88)	
87.70 (65.40)	2355	6.86 (25.98)	0.547 (0.333)	12.78 (2.52)	Barometer
45.49 (33.92)	2380	5.11 (19.32)	0.785 (0.477)	8.91 (1.76)	
0.66 (0.49)	2407	3.26 (12.34)	34.784 (21.159)	0.20 (0.04)	28.94" Hg (98.02 kPa)

Maximum Torque 603 lb.-ft (818 Nm) at 1699 rpm
Maximum Torque Rise 26.0%

DRAWBAR PERFORMANCE

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—5th Gear									
175.89 (131.16)	13340 (59.34)	4.94 (7.96)	2202	2.38	0.466 (0.283)	15.00 (2.96)	181 (83)	70 (21)	28.95 (98.04)
75% of Pull at Maximum Power—5th Gear									
137.75 (102.72)	10006 (44.51)	5.16 (8.31)	2287	1.78	0.511 (0.311)	13.70 (2.70)	183 (84)	88 (31)	28.87 (97.77)
50% of Pull at Maximum Power—5th Gear									
93.83 (69.97)	6672 (29.68)	5.27 (8.49)	2325	1.25	0.591 (0.359)	11.84 (2.33)	180 (82)	88 (31)	28.87 (97.77)
75% of Pull at Reduced Engine Speed—6th Gear									
137.78 (102.74)	10002 (44.49)	5.17 (8.31)	1860	1.78	0.451 (0.275)	15.49 (3.05)	182 (83)	88 (31)	28.87 (97.77)
50% of Pull at Reduced Engine Speed—6th Gear									
93.97 (70.07)	6672 (29.68)	5.28 (8.50)	1892	1.16	0.508 (0.309)	13.78 (2.71)	179 (82)	88 (31)	28.87 (97.77)

Location of Test: Tractor Testing Laboratory,
University of Nebraska, Lincoln, Nebraska 68583-
0832, U.S.A.

Dates of Test: June 5-14, 1991

Manufacturer: J.I. CASE CO. 3401 First Avenue
North, Fargo ND 58102

FUEL OIL and TIME: Fuel No. 2 Diesel Cetane
No. 53.9 Specific gravity converted to 60°/60°F
(15°/15°C) 0.8399 Fuel weight 6.993 lbs/gal (0.838
kg/l) Oil SAE 15W-40 API service classification
CE, CD To motor 4.670 gal (17.677 l) Drained
from motor 3.987 gal (15.094 l) Transmission and
final drive lubricant Case IH Hytran Plus fluid
Hydraulic lubricant Case IH Hytran Plus fluid
Total time engine was operated 42.0 hours.

ENGINE: Make Consolidated Diesel Corpora-
tion Diesel Type six cylinder vertical with turbo-
charger and intercooler Serial No. *44598515*
Crankshaft lengthwise Rated rpm 2200 Bore and
stroke (as specified) 4.488" × 5.315" (114.0 mm ×
135.0 mm) Compression ratio 16.5 to 1 Displace-
ment 505 cu in (8269 ml) Starting system 12 volt
Lubrication pressure Air cleaner two paper ele-
ments and aspirator Oil filter one full flow car-
tridge Oil cooler engine coolant heat exchanger
for crankcase oil, radiator for hydraulic and trans-
mission oil Fuel filter one paper element Muffler
vertical Cooling medium temperature control two
thermostats.

ENGINE OPERATING PARAMETERS: Fuel
rate 75.6-83.8 lb/hr (34.3-38.0 kg/hr) High idle
2350-2450 rpm Turbo boost nominal 12-15.5 psi
(81-106 kPa) as measured 15.5 psi (106 kPa).

CHASSIS: Type four wheel drive with duals,
rigid frame Serial No. -JCB0027368- Tread width
rear 84.0" (2135 mm) and 139.7" (3550 mm) front
84.0" (2135 mm) to 139.7" (3550 mm) Wheel base
124.0" (3150 mm) Hydraulic control system direct
engine drive Transmission selective gear fixed ra-
tio with full range operator controlled powershift
Nominal travel speeds mph (km/h) first 2.25 (3.62)
second 2.73 (4.39) third 3.36 (5.40) fourth 4.07
(6.55) fifth 4.93 (7.93) sixth 6.06 (9.76) seventh
7.16 (11.52) eighth 8.66 (13.94) ninth 10.66 (17.16)
tenth 12.95 (20.84) eleventh 15.67 (25.21) twelfth
19.28 (31.03) reverse 2.95 (4.74), 5.33 (8.57), 9.36
(15.06) Clutch multiple wet disc hydraulically power
actuated by foot pedal Brakes caliper disc hy-
draulically operated by foot pedal Steering hy-
drostatic for front wheels, electrohydraulic for rear
wheels. Front and rear wheels may be steered in-
dependently or together Power take-off 1000 rpm
at 2098 engine rpm Unladen tractor mass 28214
lb (12798 kg).

DRAWBAR PERFORMANCE **MAXIMUM POWER IN SELECTED GEARS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
1st Gear								
160.76 (119.88)	28747 (127.87)	2.10 (3.38)	2240	10.86	0.507 (0.308)	13.79 (2.72)	180 (82)	28.92 (97.93)
2nd Gear								
173.93 (129.70)	27039 (120.27)	2.41 (3.88)	2082	8.88	0.480 (0.292)	14.58 (2.87)	181 (83)	28.92 (97.93)
3rd Gear								
184.90 (137.88)	23353 (103.88)	2.97 (4.78)	2001	5.14	0.452 (0.275)	15.47 (3.05)	181 (83)	28.92 (97.93)
4th Gear								
187.32 (139.68)	19164 (85.25)	3.67 (5.90)	2002	3.65	0.445 (0.271)	15.70 (3.09)	182 (83)	28.92 (97.93)
5th Gear								
190.31 (141.91)	15956 (70.98)	4.47 (7.20)	2000	2.72	0.437 (0.266)	16.01 (3.15)	182 (83)	28.95 (98.04)
6th Gear								
188.54 (140.59)	12767 (56.79)	5.54 (8.91)	2002	2.30	0.442 (0.269)	15.82 (3.12)	181 (83)	28.94 (98.00)
7th Gear								
187.42 (139.76)	10728 (47.72)	6.55 (10.54)	2001	1.86	0.445 (0.271)	15.72 (3.10)	182 (83)	28.94 (98.00)
8th Gear								
185.74 (138.50)	8746 (38.90)	7.96 (12.82)	2002	1.60	0.451 (0.274)	15.52 (3.06)	184 (84)	28.92 (97.93)
9th Gear								
181.86 (135.61)	6929 (30.82)	9.84 (15.84)	2004	1.25	0.457 (0.278)	15.29 (3.01)	184 (84)	28.92 (97.93)

TRACTOR SOUND LEVEL WITH CAB

	dB(A)
Gear closest to 4.7 mph (7.5 km/h) 5th gear	74.0
Maximum Sound Level 8th gear	76.5
Transport speed—no load 12th gear	76.5
Bystander	—

TIRES AND WEIGHT

Rear Tires	—No., size, ply & psi (kPa)
Front Tires	—No., size, ply & psi (kPa)
Height of Drawbar	
Static Weight with Operator	—Rear
	—Front
	—Total

Tested Without Ballast

Four 20.8R38; *, 14 (95) outer 12 (85)
Four 20.8R38; *, 14 (95) outer 12 (85)
14.5 in (370 mm)
13784 lb (6252 kg)
14596 lb (6621 kg)
28380 lb (12873 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 130° F (54° C). The drawbar pull in 1st gear was limited to avoid tractor bouncing. The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standard test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1650**, Summary 088, October 17, 1991.

LOUIS I. LEVITICUS

Engineer-in-Charge

K. VON BARGEN

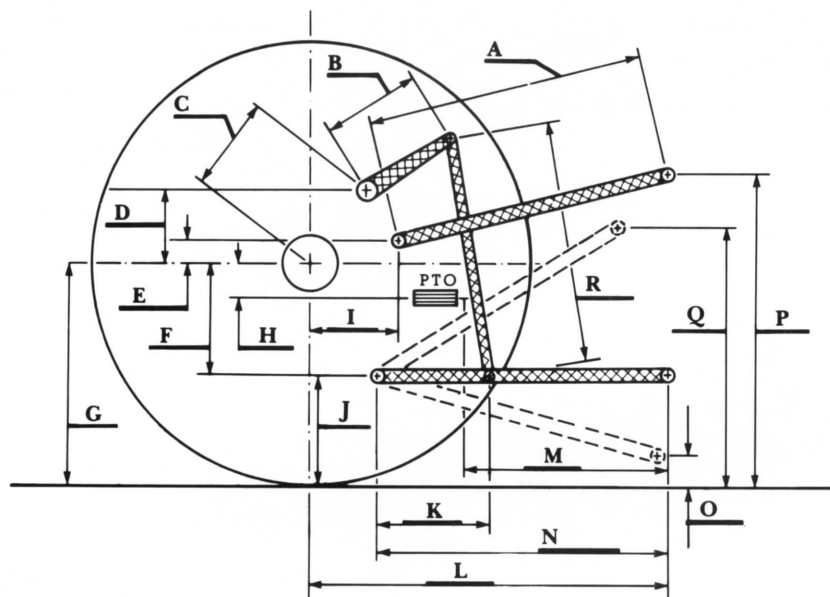
R. D. GRISIO

L. L. BASHFORD

Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY:	III
Quick Attach:	yes
Maximum Force Exerted Through Whole Range:	13212 lbs (58.8 kN)
i) Opening pressure of relief valve:	NA
Sustained pressure at compensator cutoff:	2550 psi (176 bar)
ii) Pump delivery rate at minimum pressure:	29.1 GPM (110.2 l/min)
iii) Pump delivery rate at maximum hydraulic power:	25.3 GPM (95.8 l/min)
Delivery pressure:	2350 psi (162 bar)
Power:	34.7 HP (25.9 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.3	744
B	21.0	533
C	26.3	667
D	25.1	637
E	11.4	289
F	9.9	251
G	33.7	855
H	2.2	56
I	25.3	642
J	23.8	604
K	23.0	584
L	54.7	1389
L'	59.7	1516
M	25.0	635
N	42.0	1067
O	6.6	167
P	45.8	1163
Q	38.3	972
R	37.5	953
L' to end of Quick Attach		



Case International 9240 Diesel