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## Test 1612: Case International 7140 and 7240 18-Speed

Nebraska Tractor Test Lab

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# NEBRASKA OECD TRACTOR TEST 1612—SUMMARY 052

## CASE INTERNATIONAL 7140 DIESEL

## ALSO CASE INTERNATIONAL 7240 DIESEL

### 18 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Fuel Consumption			Mean Atmospheric Conditions
		Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1004 rpm)					
197.53 (147.30)	2199	11.18 (42.32)	0.391 (0.238)	17.67 (3.48)	
Maximum Power (Two hours)					
208.85 (155.74)	2000	11.31 (42.83)	0.374 (0.228)	18.46 (3.64)	Air temperature

#### VARYING POWER AND FUEL CONSUMPTION

197.53 (147.30)	2199	11.18 (42.32)	0.391 (0.238)	17.67 (3.48)	75°F (24°C)
172.17 (128.38)	2256	10.12 (38.32)	0.406 (0.247)	17.01 (3.35)	Relative humidity
130.63 (97.41)	2282	8.25 (31.25)	0.436 (0.265)	15.82 (3.12)	49%
88.23 (65.79)	2314	6.56 (24.83)	0.513 (0.312)	13.45 (2.65)	Barometer
44.75 (33.37)	2346	4.48 (16.94)	0.691 (0.420)	10.00 (1.97)	28.84" Hg (97.65 kPa)
0.89 (0.66)	2379	2.87 (10.85)	22.269 (13.546)	0.31 (0.06)	

Maximum Torque 635.9 lb. ft (862.1 Nm) @ 1550 RPM  
Maximum Torque Rise 34.8%

#### DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull (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)
<b>75% of Pull at Maximum Power—Five Hours 9th Gear</b>									
154.02 (114.85)	9606 (42.73)	6.01 (9.68)	2251	1.85	0.479 (0.292)	14.41 (2.84)	191 (88)	87 (31)	28.71 (97.23)

#### MAXIMUM POWER IN SELECTED GEARS

<b>3rd Gear</b>									
138.40 (103.21)	22309 (99.23)	2.33 (3.74)	2253	11.58	0.522 (0.317)	13.23 (2.61)	186 (85)	75 (24)	28.98 (98.14)
<b>4th Gear</b>									
154.65 (115.32)	22302 (99.20)	2.60 (4.18)	2186	11.28	0.506 (0.308)	13.64 (2.69)	187 (86)	74 (23)	28.99 (98.17)
<b>5th Gear</b>									
165.22 (123.20)	22159 (98.57)	2.80 (4.50)	2001	9.15	0.471 (0.286)	14.66 (2.89)	188 (86)	73 (23)	28.99 (98.17)
<b>6th Gear</b>									
169.36 (126.29)	19242 (85.59)	3.30 (5.31)	1997	6.43	0.459 (0.279)	15.05 (2.96)	190 (88)	78 (26)	28.97 (98.10)
<b>7th Gear</b>									
176.55 (131.65)	16862 (75.01)	3.93 (6.32)	1999	4.66	0.442 (0.269)	15.64 (3.08)	192 (89)	79 (26)	28.97 (98.10)
<b>8th Gear</b>									
177.47 (132.34)	14616 (65.02)	4.55 (7.33)	1999	3.53	0.440 (0.268)	15.68 (3.09)	193 (89)	80 (27)	28.97 (98.10)
<b>9th Gear</b>									
180.72 (134.76)	12808 (56.97)	5.29 (8.52)	1999	2.91	0.434 (0.264)	15.89 (3.13)	192 (89)	81 (27)	28.97 (98.10)
<b>10th Gear</b>									
177.76 (132.55)	10927 (48.60)	6.10 (9.82)	1999	2.28	0.440 (0.268)	15.68 (3.09)	193 (89)	81 (27)	28.96 (98.07)
<b>11th Gear</b>									
177.12 (132.08)	9447 (42.02)	7.03 (11.31)	2001	1.74	0.440 (0.268)	15.69 (3.09)	193 (89)	82 (28)	28.96 (98.07)
<b>12th Gear</b>									
172.80 (128.86)	8009 (35.62)	8.09 (13.02)	2002	1.65	0.452 (0.275)	15.26 (3.01)	194 (90)	83 (28)	28.96 (98.07)

**Location of Test:** Center for Agricultural Equipment, Lincoln Nebraska 68583-0832, U.S.A.

**Dates of Test:** May - July, 1988

**Manufacturer:** J.I. Case Company, 700 State Street, Racine, Wisconsin 53404 U.S.A.

**FUEL AND OIL:** Fuel No. 2 Diesel Cetane No. 51.2 Specific gravity converted to 60°/60°F (15°/15°C) 0.8293 Fuel weight 6.905 lbs/gal (0.828 kg/l) Oil SAE 15W-40 Oil Consumption for 10 hours 3.18 lb (1444 gm) Transmission and hydraulic lubricant Case IH Hytran Plus Fluid Front axle lubricant Case IH 135 HEP Gear Lube

**ENGINE:** Make Consolidated Diesel Corporation-Case Diesel Type six cylinder vertical with turbocharger and intercooler Serial No. \*44236042\* Crankshaft lengthwise Rated engine speed 2200 Bore and stroke 4.488" × 5.315" (114 mm × 135 mm) Compression ratio 16.5 to 1 Displacement 504.5 cu in (8268 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements and aspirator Oil filter one full flow cartridge Oil cooler engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil Fuel filter two paper cartridges Muffler underhood Exhaust vertical Cooling medium temperature control two thermostats and variable speed fan.

**ENGINE OPERATING PARAMETERS:** Fuel rate 75.7-83.7 lb/hr (34.3-37.9 kg/hr) High idle 2315-2395 rpm Turbo boost nominal 11.7-15.4 psi (81-106 kPa) as measured 14.0 psi (96 kPa)

**CHASSIS:** Type front wheel assist with duals Serial No. \*JJA0002026\* Tread width rear 64" (1626 mm) to 130" (3302 mm) front 62.1" (1577 mm) to 92.8" (2357) Wheel base 118.3" (3006 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with full range operator controlled powershift Nominal travel speeds mph (km/h) first 1.92 (3.09) second 2.20 (3.54) third 2.54 (4.08) fourth 2.91 (4.68) fifth 3.34 (5.37) sixth 3.83 (6.16) seventh 4.46 (7.19) eighth 5.12 (8.24) ninth 5.91 (9.50) tenth 6.77 (10.90) eleventh 7.77 (12.50) twelfth 8.91 (14.34) thirteenth 10.20 (16.41) fourteenth 11.70 (18.82) fifteenth 13.49 (21.71) sixteenth 15.47 (24.90) seventeenth 17.75 (28.56) eighteenth 20.36 (32.76) reverse 2.76 (4.44), 3.17 (5.09) Clutch multiple wet disc hydraulically power actuated by foot pedal Brakes multiple wet disc hydraulically power actuated and operated by two foot pedals which can be locked together Steering hydrostatic Power take-off 1004 rpm at 2200 engine rpm Unladen tractor mass 17565 lb (7967 kg).

TRACTOR SOUND LEVEL WITH CAB (OECD Test)		dB(A)
Maximum sound level		73.5
Bystander in 18th gear		85.5

#### CENTER OF GRAVITY

Horizontal distance forward from centerline of rear wheels	37.7" in (958 mm)
Vertical distance above roadway	44.1" in (1120 mm)
Horizontal distance from center of rear wheel tread 0.5" (13 mm) to the left	

#### TURNING ON A CONCRETE SURFACE

Turning radius—with brake applied right 177" (4.50 m) left 180" (4.57 m)	
—without brake right 241" (6.12 m) left 239" (6.07 m)	
Turning space radius—with brake applied right 186" (4.72 m) left 189" (4.80 m)	
* —without brake right 250" (6.35 m) left 248" (6.30 m)	

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
<b>Rear Tires</b>	—No., size, ply & psi (kPa)	Four 20.8R42; **, inner 16 (110) outer 12 (85)	Two 20.8R42; **, 16 (110)
<b>Ballast</b>	—Liquid (total)	2325 lb (1055 kg)	None
	—Duals (total)	1830 lb (830 kg)	None
<b>Front Tires</b>	—No., size, ply & psi (kPa)	Two 18.4R26; **, 16 (110)	Two 18.4R26; **, 16 (110)
<b>Ballast</b>	—Cast iron (total)	1530 lb (694 kg)	None
	—Test equip. (total)	530 lb (240 kg)	None
<b>Height of Drawbar</b>		20.5 in (520 mm)	19 in (485 mm)
<b>Static Weight</b>	—Rear	16010 lb (7262 kg)	11950 lb (5420 kg)
	—Front	7770 lb (3524 kg)	5615 lb (2547 kg)
	—Total	23780 lb (10786 kg)	17565 lb (7967 kg)

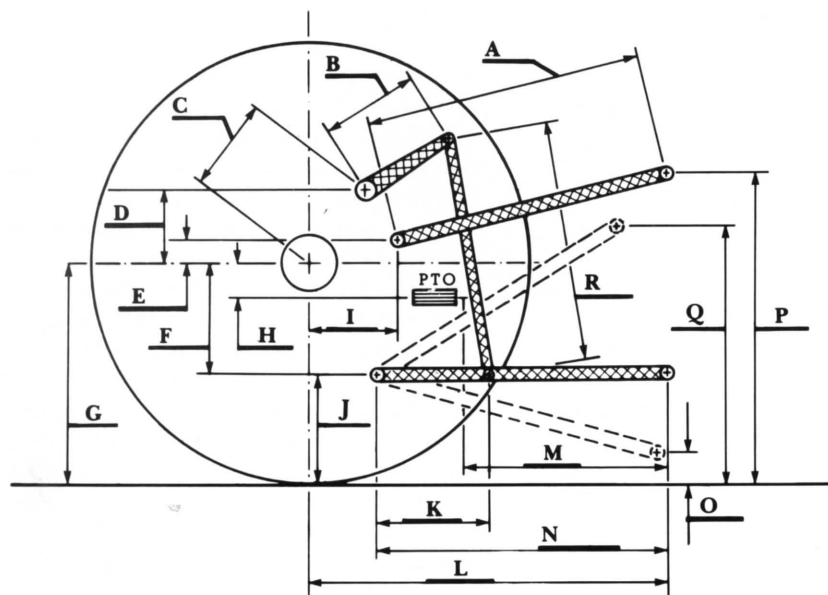
#### THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III

Quick Attach: None

Maximum Force Exerted Through Whole Range: 10036 lbs (44.6 kN)

- i) Opening pressure of relief valve: NA
- Sustained pressure at the compensator cutoff: 2625 psi (181 Bar)
- ii) Pump delivery rate at minimum pressure and rated engine speed: 28.3 GPM (107.2 l/min)
- iii) Pump delivery rate at maximum hydraulic power: 25.9 GPM (98.2 l/min)
- Delivery pressure: 2300 psi (159 Bar)
- Power: 34.8 Hp (26.0 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

**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 was maintained at 150° F (65.5° C). Manufacturers specifications for engine bore, stroke, displacement and compression ratio were not verified. This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperatures.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1612, Nebraska Summary 052, January 31, 1989.

Report reissued: Supplemental sales permit for Case International 7240 Diesel, November, 1993.

LOUIS I. LEVITICUS  
Engineer-in-Charge

L. L. BASHFORD  
R. D. GRISSO  
K. VON BARGEN  
Board of Tractor Test Engineers

	inch	mm
A	25.5	648
B	15.0	381
C	21.9	557
D	16.6	422
E	6.7	169
F	13.1	332
G	35.6	905
H	3.5	90
I	24.7	627
J	22.6	573
K	22.8	579
L	51.4	1306
M	20.1	510
N	33.9	861
O	9.8	249
P	44.6	1133
Q	37.9	963
R	32.5	826

**DRAWBAR PERFORMANCE**  
**MAXIMUM POWER IN SELECTED GEARS**  
**(Front Wheel Drive Disengaged)**

Power Hp (kW)	Drawbar pull (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)
5th Gear									
150.97 (112.58)	19319 (85.94)	2.93 (4.72)	2201	13.70	0.518 (0.315)	13.34 (2.63)	187 (86)	72 (22)	28.99 (98.17)
6th Gear									
157.62 (117.54)	17123 (76.17)	3.45 (5.56)	2168	10.03	0.501 (0.305)	13.79 (2.72)	190 (88)	78 (26)	28.97 (98.10)
7th Gear									
166.32 (124.03)	16514 (73.46)	3.78 (6.08)	1999	8.31	0.468 (0.284)	14.77 (2.91)	193 (89)	79 (26)	28.97 (98.10)
8th Gear									
173.80 (129.61)	14506 (64.53)	4.49 (7.23)	1999	5.01	0.449 (0.273)	15.38 (3.03)	192 (89)	80 (27)	28.97 (98.10)
9th Gear									
176.59 (131.68)	12606 (56.07)	5.25 (8.45)	1999	3.71	0.443 (0.269)	15.59 (3.07)	193 (89)	81 (27)	28.96 (98.07)
10th Gear									
175.87 (131.14)	10854 (48.28)	6.08 (9.78)	2000	3.00	0.445 (0.271)	15.51 (3.06)	194 (90)	82 (28)	28.96 (98.07)
11th Gear									
175.61 (130.95)	9393 (41.78)	7.01 (11.28)	2001	2.38	0.445 (0.271)	15.52 (3.06)	193 (89)	82 (28)	28.96 (98.07)
12th Gear									
171.85 (128.15)	7982 (35.50)	8.07 (12.99)	2001	2.10	0.454 (0.276)	15.21 (3.00)	194 (90)	83 (28)	28.96 (98.07)

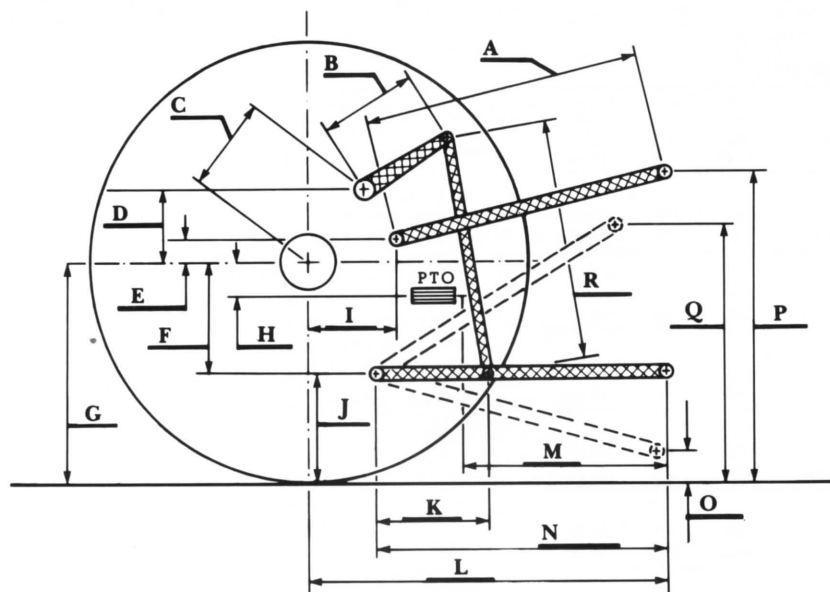
TRACTOR SOUND LEVEL WITH CAB (SAE Test)	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
Maximum Available Power—9th Gear	74.0	74.0
75% of Pull at Maximum Power—9th Gear		73.5
50% of Pull at Maximum Power—9th Gear		73.0
50% of Pull at Reduced Engine Speed—11th Gear		72.5
Bystander in 18th gear	85.0	

**THREE POINT HITCH PERFORMANCE**  
**(SAE Dynamic Test)**

Observed Maximum Pressure psi (kPa)	2700 (18610)	
Location	Hydraulic pump	
Hydraulic oil temperature °F (°C)	136 (58)	
Location	Transmission sump	
	Maximum Lift Capacity	
QUICK ATTACH	Yes	
CATEGORY	III	
LOAD lbs (kg)	12760 (5788)	*15216 (6902)
TIME sec	3.71	6.59
HITCH MOVEMENT in (mm)		
Lowest position	15.0 (381)	14.0 (356)
Top of timed range	**40.0 (1016)	40.0 (1016)
Highest position	40.1 (1019)	40.0 (1016)
LOAD CG MOVEMENT in (mm)		
Lowest position	15.9 (404)	14.1 (358)
Top of timed range	41.1 (1044)	40.0 (1016)
Highest position	41.3 (1049)	40.0 (1016)

\*\*The observed power range 25.0 in (635 mm) is less than the minimum power range for Cat III, 26 in (660 mm) specified by ASAE Standard S217.10.

\*With optional axle—data from Nebraska Tractor Test 1663—Case IH 7150 Diesel.



	inch	mm
A	26.3	667
B	15.0	381
C	21.9	557
D	16.6	422
E	9.8	250
F	13.1	332
G	34.6	878
H	3.5	90
I	24.7	627
J	21.5	546
K	22.8	579
L	51.4	1306
L'	55.4	1407
M	20.1	510
N	33.9	861
O	8.0	203
P	43.5	1105
Q	36.0	914
R	33.8	857

L' to end of Quick Attach

**HITCH DIMENSIONS AS TESTED—NO LOAD**



**Case International 7140 Diesel**

Agricultural Research Division  
 Institute of Agriculture and Natural Resources  
 University of Nebraska—Lincoln  
 Darrell Nelson, Dean and Director