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Test 2159A: Case IH Farmall 140A

Nebraska Tractor Test Lab

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NEBRASKA OEC D TRACTOR TEST 2159A—SUMMARY 1040A

CASE IH FARMALL 140A DIESEL

16 SPEED

Chassis serial numbers CT00001M and higher

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—629 rpm)						
118.06 (88.04)	2201	7.22 (27.32)	0.429 (0.261)	16.36 (3.22)	0.49 (1.87)	
Standard Power Take-off Speed (540 rpm)						
122.93 (91.67)	1890	6.88 (26.04)	0.392 (0.239)	17.87 (3.52)	0.48 (1.83)	
Maximum Power (1 hour)						
122.93 (91.67)	1890	6.88 (26.04)	0.392 (0.239)	17.87 (3.52)	0.48 (1.83)	

VARYING POWER AND FUEL CONSUMPTION

118.06 (88.04)	2201	7.22 (27.32)	0.429 (0.261)	16.36 (3.22)	0.49 (1.87)	Air temperature
102.11 (76.14)	2241	6.50 (24.61)	0.446 (0.272)	15.70 (3.09)	0.43 (1.64)	75°F (24°C)
77.50 (57.79)	2268	5.39 (20.39)	0.487 (0.296)	14.39 (2.83)	0.36 (1.36)	Relative humidity
52.41 (39.08)	2297	4.34 (16.41)	0.580 (0.353)	12.09 (2.38)	0.24 (0.89)	59%
26.51 (19.76)	2325	3.27 (12.37)	0.864 (0.526)	8.11 (1.60)	0.15 (0.59)	Barometer
0.96 (0.71)	2349	2.30 (8.71)	16.862 (10.257)	0.42 (0.08)	0.00 (0.01)	28.97" Hg (98.11 kPa)

Maximum torque - 419 lb.-ft. (567 Nm) at 1502 rpm

Maximum torque rise - 48.6%

Torque rise at 1760 engine rpm - 30%

Power increase at 1890 engine rpm - 4.1%

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE ENGAGED

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)	D.E.F. Consumption Hp.hr/gal (kW.h/l)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Power at Rated Engine Speed—8th (L4R) Gear										
100.47 (74.92)	6421 (28.56)	5.87 (9.45)	2200	7.5	0.503 (0.306)	13.94 (2.75)	0.031 (0.019)	182 (83)	69 (20)	28.96 (98.07)
75% of Pull at Rated Engine Speed—8th (L4R) Gear										
79.35 (59.17)	4813 (21.41)	6.18 (9.95)	2252	4.9	0.535 (0.325)	13.11 (2.58)	0.041 (0.025)	182 (83)	76 (25)	28.92 (97.93)
50% of Pull at Rated Engine Speed—8th (L4R) Gear										
54.72 (40.80)	3212 (14.29)	6.39 (10.28)	2285	3.0	0.617 (0.375)	11.36 (2.24)	0.046 (0.028)	182 (83)	77 (25)	28.92 (97.93)
75% of Pull at Reduced Engine Speed—10th (H1R) Gear										
79.44 (59.24)	4810 (21.40)	6.19 (9.96)	1648	4.4	0.439 (0.267)	15.95 (3.14)	0.040 (0.024)	180 (82)	78 (25)	28.93 (97.97)
50% of Pull at Reduced Engine Speed—10th (H1R) Gear										
54.65 (40.75)	3191 (14.19)	6.42 (10.33)	1680	2.6	0.479 (0.291)	14.65 (2.89)	0.043 (0.026)	180 (82)	77 (25)	28.91 (97.90)

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832

Dates of tests: August 31 to September 7, 2016

Manufacturer: CNH De Mexico, Queretaro Mexico

CONSUMABLE Fluids, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8418 **Fuel weight** 7.009 lbs/gal (0.840 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil** SAE 10W30 **API service classification** CJ-4 **Transmission, hydraulic and front axle lubricant** Case IH Akcelra Nexplore fluid **Total time engine was operated** 20.0 hours

ENGINE: Make F.P.T. NEF **Diesel Type** Four cylinder vertical with turbocharger, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment. **Serial No.** 001388055 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.094" x 5.197" (104.0 mm x 132.0 mm) **Compression ratio** 17.0 to 1 **Displacement** 274 cu in (4485 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Exhaust** DOC (diesel oxidation catalyst) and SCR (selective catalyst reduction) integrated within a vertical muffler **Cooling medium temperature control** one thermostat

ENGINE OPERATING PARAMETERS: Fuel rate: 48.7 - 52.5 lb/h (22.1 - 23.8 kg/h) **High idle:** 2325 - 2375 rpm **Turbo boost:** nominal 18.1- 19.6 psi (125 - 135 kPa) as measured 19.1 psi (132 kPa)

CHASSIS: Type front wheel assist **Serial No.** NT01006M **Tread width** rear 64.0" (1625 mm) to 93.0" (2360 mm) front 64.0" (1625 mm) to 86.0" (2184 mm) **Wheelbase** 103.5" (2630 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.75 (2.81) second 2.14 (3.45) third 2.56 (4.12) fourth 3.14 (5.05) fifth 3.66 (5.89) sixth 4.48 (7.21) seventh 5.03 (8.10) eighth 6.17 (9.93) ninth 6.88 (11.07) tenth 8.43 (13.57) eleventh 10.08 (16.22) twelfth 12.35 (19.88) thirteenth 14.39 (23.16) fourteenth 17.64 (28.38) fifteenth 19.80 (31.87) sixteenth 24.27 (39.06) reverse 2.22 (3.57), 3.24 (5.22), 4.64 (7.46), 6.38 (10.27), 8.72 (14.03), 12.77 (20.55), 18.24 (29.35), 25.10 (40.39) **Clutch** single dry disc operated by foot pedal **Brakes** single wet disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1890 engine rpm or 1000 rpm at 2049 engine rpm **Unladen tractor mass** 11100 lb (5035 kg)

DRAWBAR PERFORMANCE UNBALLASTED - FRONT DRIVE ENGAGED 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)	Hp.hr/gal (kW.h/l)	D.E.F Consumption lb/hp.hr (kg/kW.h)	Temp.°F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
5th (L3T) Gear										
79.30 (59.13)	9118 (40.56)	3.27 (5.25)	2241	15.0	0.581 (0.353)	12.07 (2.38)	0.043 (0.026)	182 (83)	71 (22)	28.93 (97.97)
6th (L3R) Gear										
93.73 (69.89)	8837 (39.31)	3.98 (6.41)	2202	13.7	0.539 (0.328)	13.00 (2.56)	NA (NA)	182 (83)	70 (21)	28.94 (98.00)
7th (L4T) Gear										
96.12 (71.68)	7793 (34.66)	4.63 (7.44)	2200	10.6	0.526 (0.320)	13.32 (2.62)	0.037 (0.022)	182 (83)	70 (21)	28.95 (98.04)
8th (L4R) Gear										
100.47 (74.92)	6421 (28.56)	5.87 (9.45)	2200	7.5	0.503 (0.306)	13.94 (2.75)	0.031 (0.019)	182 (83)	69 (20)	28.96 (98.07)
9th (H1T) Gear										
101.21 (75.47)	5740 (25.53)	6.61 (10.64)	2200	6.5	0.500 (0.304)	14.03 (2.76)	0.041 (0.025)	182 (83)	72 (22)	28.94 (98.00)
10th(H1R) Gear										
102.64 (76.53)	4668 (20.76)	8.25 (13.27)	2200	4.8	0.492 (0.299)	14.25 (2.81)	0.030 (0.018)	183 (84)	74 (23)	28.93 (97.97)

UNBALLASTED - FRONT DRIVE ENGAGED-1890 ENGINE RPM

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)	D.E.F Consumption lb/hp.hr (kg/kW.h)	Temp.°F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
5th (L3T) Gear										
79.39 (59.20)	9141 (40.66)	3.26 (5.25)	2240	15.0	0.580 (0.353)	12.09 (2.38)	0.042 (0.025)	182 (83)	71 (21)	28.94 (98.00)
6th (L3R) Gear										
93.79 (69.94)	8853 (39.38)	3.98 (6.40)	2200	13.7	0.539 (0.328)	13.01 (2.56)	NA (NA)	182 (83)	70 (21)	28.95 (98.04)
7th (L4T) Gear										
97.24 (72.51)	8091 (35.99)	4.51 (7.26)	2160	11.2	0.521 (0.317)	13.45 (2.65)	0.043 (0.026)	182 (83)	69 (21)	28.93 (97.97)
8th (L4R) Gear										
102.66 (76.55)	7925 (35.25)	4.86 (7.82)	1890	10.6	0.471 (0.287)	14.88 (2.93)	0.040 (0.024)	180 (82)	70 (21)	28.95 (98.04)
9th (H1T) Gear										
104.01 (77.56)	7021 (31.23)	5.56 (8.94)	1890	8.4	0.465 (0.283)	15.06 (2.97)	0.039 (0.024)	181 (83)	73 (23)	28.94 (98.00)
10th(H1R) Gear										
107.30 (80.01)	5764 (25.64)	6.98 (11.23)	1890	6.2	0.449 (0.273)	15.59 (3.07)	0.038 (0.023)	182 (83)	74 (23)	28.94 (98.00)
11th(H2T) Gear										
105.00 (78.29)	4643 (20.65)	8.48 (13.65)	1889	4.3	0.459 (0.279)	15.27 (3.01)	0.040 (0.025)	182 (83)	75 (24)	28.93 (97.97)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 7th (L4T) gear	80.0	80.1
Bystander in 15th (H4T) gear		87.0

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

Two 18.4-38;8;16(110)
Two 14.9-28;8;16(110)
23.0 in (585 mm)
6915 lb (3136 kg)
4360 lb (1978 kg)
11275 lb (5114 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE 1: The performance results on this report were obtained from tests carried out on the New Holland TS6.140 Diesel.

NOTE 2: The performance figures on this report apply to Case IH Farmall 140A tractors with chassis serial numbers CT00001M and higher.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. This tractor did not meet the manufacturer's implement flow claim of 22 GPM (83 l/min) with dual pump system. The manufacturer's 3 point lift claim of 7326 lb (3323 kg) (with 2 external lift cylinders) was not met when tested by OECD Code 2 standards. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2159A**, Nebraska Summary 1040A, March 3, 2017.

Roger M. Hoy
Director

M.F. Kocher
P.J. Jasa
J.D. Luck
Board of Tractor Test Engineers

The 3 point lift performance figures listed below are from tests conducted on the New Holland TS6030 Diesel

HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

Maximum force exerted through whole range: 6174 lbs (27.46 kN)(2 external lift cylinders)

i) Sustained pressure of the open relief valve:

ii) Pump delivery rate at minimum pressure and rated engine speed:

iii) Pump delivery rate at maximum

hydraulic power:

Delivery pressure:

Power:

i) Sustained pressure of the open relief valve:

ii) Pump delivery rate at minimum pressure and rated engine speed:

iii) Pump delivery rate at maximum

hydraulic power:

Delivery pressure:

Power:

Two pump system

two outlet sets combined

2772 psi (191 bar)

19.1 GPM (72.1 l/min)

14.6 GPM (55.4 l/min)

2190 psi (151 bar)

18.7 HP (13.9 kW)

single outlet set

2760 psi (190 bar)

18.1 GPM (68.4 l/min)

13.9 GPM (52.7 l/min)

2070 psi (143 bar)

16.8 HP (12.5 kW)

THREE POINT HITCH PERFORMANCE(SAE Static test)

Observed maximum pressure psi.(bar)

2480 (171)

Location:

lift cylinder

Hydraulic oil temperature: °F (°C)

145 (63)

Location:

pump inlet

Category:

II

Quick attach:

none

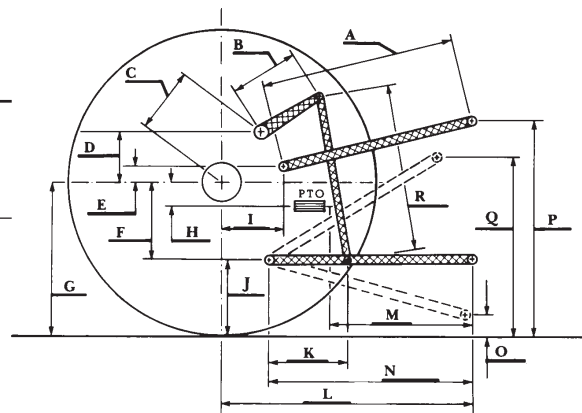
Two external lift cylinders

System pressure 2210 psi (152 Bar)

Hitch point distance to ground level in.(mm) 8.0 (203) 15.0 (381) 22.0 (559) 29.0 (737) 36.0 (914)

Lift force on frame lb 9270 8622 8199 8361 7326

" " " " " (kN) (41.2) (38.4) (36.5) (37.2) (32.6)



HITCH DIMENSIONS AS TESTED—NO LOAD

	SAE Test		OECD Test	
	inch	mm	inch	mm
A	27.7	705	28.5	724
B	9.8	250	9.8	250
C	14.1	357	14.1	357
D	13.5	342	13.5	342
E	8.1	205	8.1	205
F	9.0	229	9.0	229
G	30.3	770	30.3	770
H	0.4	10	0.4	10
I	12.7	323	12.7	323
J	21.3	541	21.3	541
K	18.1	460	18.1	460
L	40.8	1037	40.8	1037
M	22.9	581	22.9	581
N	36.6	930	36.6	930
O	8.0	203	8.0	203
P	40.3	1024	45.3	1151
Q	34.0	864	34.0	864
R	32.5	826	32.5	826



CASE IH FARMALL 140A DIESEL

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