

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

2009

Nebraska Summary: S736 Case-IH Farmall 95U

Nebraska Tractor Test Laboratory

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](#)

Laboratory, Nebraska Tractor Test, "Nebraska Summary: S736 Case-IH Farmall 95U" (2009). *Nebraska Tractor Tests*. 3231.

<https://digitalcommons.unl.edu/tractormuseumlit/3231>

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.

SUMMARY OF OECD TESTS 2505 & 2507 — NEBRASKA SUMMARY 736

CASE IH FARMALL 95U DIESEL

12 SPEED

POWER TAKE-OFF PERFORMANCE-2WD

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—1017 rpm)					
85.8 (64.0)	2299	5.48 (20.73)	0.447 (0.272)	15.68 (3.09)	
Standard Power Take-off speed (997 rpm)					
85.4 (63.7)	2254	5.37 (20.33)	0.441 (0.268)	15.89 (3.13)	
Maximum Power (1 hour)					
87.2 (65.0)	2003	5.02 (18.99)	0.403 (0.245)	17.41 (3.43)	

VARYING POWER AND FUEL CONSUMPTION

85.8 (64.0)	2299	5.48 (20.73)	0.447 (0.272)	15.68 (3.09)	Air temperature
78.7 (58.7)	2471	5.53 (20.95)	0.493 (0.300)	14.21 (2.80)	68°F (20°C)
59.5 (44.4)	2494	4.61 (17.44)	0.543 (0.330)	12.90 (2.54)	Relative humidity
40.0 (29.8)	2510	3.62 (13.71)	0.636 (0.387)	11.01 (2.17)	55%
20.2 (15.1)	2528	2.71 (10.27)	0.939 (0.571)	7.46 (1.47)	Barometer
--	2557	1.97 (7.45)	--	--	29.1" Hg (98.7 kPa)

Maximum torque -309.3 lb.-ft. (419.3 Nm) at 902 rpm
 Maximum torque rise -57.8%
 Torque rise at 1800 engine rpm -27%

POWER TAKE-OFF PERFORMANCE - FWA

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—1016 rpm)					
80.3 (59.9)	2297	5.29 (20.02)	0.462 (0.281)	15.18 (2.99)	
Standard Power Take-off speed (1001 rpm)					
81.1 (60.5)	2263	5.24 (19.82)	0.453 (0.275)	15.48 (3.05)	
Maximum Power (1 hour)					
83.3 (62.1)	2003	4.90 (18.55)	0.412 (0.251)	17.00 (3.35)	

VARYING POWER AND FUEL CONSUMPTION

80.3 (59.9)	2297	5.29 (20.02)	0.462 (0.281)	15.18 (2.99)	Air temperature
73.2 (54.6)	2460	5.33 (20.18)	0.511 (0.311)	13.71 (2.70)	67°F (19°C)
55.4 (41.3)	2489	4.24 (16.06)	0.537 (0.327)	13.05 (2.57)	Relative humidity
37.4 (27.9)	2501	3.55 (13.43)	0.664 (0.404)	10.55 (2.08)	45%
18.8 (14.0)	2516	2.73 (10.33)	1.021 (0.621)	6.87 (1.35)	Barometer
--	2555	2.06 (7.80)	--	--	29.0" Hg (98.1 kPa)

Maximum torque -293.9 lb.-ft. (398.5 Nm) at 900 rpm
 Maximum torque rise -60.0%
 Torque rise at 1800 engine rpm -24%

Location of tests: Istituto per le Macchine e Movimento Terra 73, Strada delle Cacce, 10135 Torino, Italy

Dates of tests: November 2008 to February 2009
Manufacturer: CNH Italia SpA, Via Leone XIII, 160035, Jesi, Italy

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.842 **Fuel weight** 7.01 lbs/gal (0.840 kg/l) **Oil** SAE 15W40 **API service classification** CH-4 **Transmission and hydraulic lubricant** Akcela Nexplore fluid **Front axle lubricant** Akcela Nexplore fluid

ENGINE: Make CNH Diesel **Type** four cylinder vertical with turbocharger and air to air intercooler **Serial No.** 573005 **Crankshaft** lengthwise **Rated engine speed** 2300 **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 **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat

CHASSIS: **Type** 2WD & front wheel assist **Serial No.** Z8JL07752 **Tread width** rear 56.3" (1430 mm) to 89.0" (2260 mm), front 2WD - 55.4" (1407 mm) to 85.6" (2175 mm), FWA-60.1" (1526 mm) to 70.3" (1786 mm) **Wheel base** 2WD - 92.2" (2342 mm), FWA - 92.5" (2350 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph(km/h)** first 1.16 (1.87) second 1.69 (2.72) third 2.44 (3.92) fourth 2.72 (4.37) fifth 3.49 (5.61) sixth 3.95 (6.35) seventh 5.69 (9.15) eighth 6.39 (10.28) ninth 8.15 (13.11) tenth 9.28 (14.94) eleventh 13.38 (21.54) twelfth 19.17 (30.85) reverse 1.14 (1.83), 1.65 (2.66), 2.39 (3.84), 2.66 (4.28), 3.42 (5.50), 3.87 (6.22), 5.57 (8.97), 6.26 (10.08), 7.98 (12.84), 9.10 (14.64), 13.12 (21.11), 18.79 (30.24) **Clutch** dual dry disc operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2198 engine rpm or 1000 rpm at 2261 engine rpm **Unladen tractor mass** 2WD - 8005 lbs (3630 kg), FWA - 9125 lb (4140 kg)

FARMALL 95U - 2WD(30 kph transmission)

(Unballasted)

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—7th(3 II)Gear									
72.0 (53.7)	4925 (21.91)	5.48 (8.82)	2295	7.4	0.533 (0.324)	13.15 (2.59)	187 (86)	50 (10)	29.1 (98.5)
75% of Pull at Maximum Power—7th(3 II)Gear									
59.1 (44.1)	3640 (16.20)	6.09 (9.80)	2481	5.0	0.608 (0.370)	11.52 (2.27)	190 (88)	54 (12)	29.1 (98.6)
50% of Pull at Maximum Power—7th(3 II)Gear									
40.2 (30.0)	2450 (10.90)	6.15 (9.90)	2503	4.0	0.704 (0.428)	9.96 (1.96)	192 (89)	55 (13)	29.1 (98.6)
75% of Pull at Reduced Engine Speed—8th(1 III) Gear									
59.3 (44.2)	3640 (16.20)	6.10 (9.82)	2231	5.1	0.539 (0.328)	12.99 (2.56)	183 (84)	52 (11)	29.1 (98.6)
50% of Pull at Reduced Engine Speed—8th(1 III) Gear									
40.2 (30.0)	2430 (10.80)	6.21 (10.00)	2236	3.9	0.670 (0.407)	10.47 (2.06)	190 (88)	55 (13)	29.1 (98.6)

MAXIMUM POWER IN SELECTED GEARS

5th(4 I) Gear									
58.7 (43.8)	6265 (27.87)	3.52 (5.66)	2479	13.3	0.619 (0.377)	11.32 (2.23)	189 (87)	43 (6)	29.4 (99.6)
6th(2 II) Gear									
65.2 (48.6)	6140 (27.31)	3.98 (6.40)	2472	10.5	0.591 (0.360)	11.86 (2.34)	187 (86)	52 (11)	29.4 (99.5)
7th(3 II) Gear									
74.0 (55.2)	5590 (24.86)	4.96 (7.99)	2103	8.5	0.487 (0.296)	14.39 (2.83)	187 (86)	54 (12)	29.3 (99.3)
8th(1 III) Gear									
75.5 (56.3)	5155 (22.92)	5.49 (8.84)	2055	7.6	0.478 (0.291)	14.67 (2.89)	187 (86)	48 (9)	29.3 (99.3)
9th(4 II) Gear									
74.7 (55.7)	4155 (18.47)	6.74 (10.85)	1940	5.4	0.468 (0.284)	14.99 (2.95)	187 (86)	48 (9)	29.3 (99.3)
10th(2 III)Gear									
75.1 (56.0)	3645 (16.21)	7.73 (12.44)	1945	4.9	0.467 (0.284)	15.02 (2.96)	185 (85)	52 (11)	29.3 (99.3)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The performance results on this summary were taken from OECD tests conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Reports No. **2505** and **2507**, Nebraska summary 736, October 5, 2010.

Roger M. Hoy
Director

M.F. Kocher
D.R. Keshwani
J.A. Smith
Board of Tractor Test Engineers

Famall 95U - 2WD

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 600/65R34; **; 12 (80)
Two 10:00-16; 8; 45 (310)
19.5 in (495 mm)
5380 lb (2440 kg)
2790 lb (1265 kg)
8170 lb (3705 kg)

FARMALL 95U(40 kph transmission)
(Unballasted - Front Drive Engaged)
FRONT WHEEL ASSIST
DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

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)	
					lb/hp.hr (kg/kW.hr)	Hp.hr/gal (kW.hr/l)	cool- ing med	Air dry bulb	
Maximum Power—6th (2 II) Gear									
66.1 (49.3)	5215 (23.21)	4.75 (7.65)	2297	4.3	0.562 (0.342)	12.48 (2.46)	187 (86)	55 (13)	28.8 (97.4)
75% of Pull at Maximum Power—6th(2 II) Gear									
53.9 (40.2)	3910 (17.40)	5.17 (8.32)	2471	3.4	0.639 (0.389)	10.96 (2.16)	187 (86)	52 (11)	28.8 (97.4)
50% of Pull at Maximum Power—6th (2 II) Gear									
36.3 (27.1)	2610 (11.60)	5.22 (8.40)	2495	2.6	0.752 (0.458)	9.32 (1.84)	187 (86)	57 (14)	28.8 (97.4)
75% of Pull at Reduced Engine Speed—7th(3 II) Gear									
54.2 (40.4)	3935 (17.50)	5.17 (8.31)	1684	3.4	0.511 (0.311)	13.71 (2.70)	181 (83)	59 (15)	28.8 (97.4)
50% of Pull at Reduced Engine Speed—7th(3 II) Gear									
36.3 (27.1)	2610 (11.60)	5.22 (8.40)	1687	2.6	0.557 (0.339)	12.59 (2.48)	181 (83)	57 (14)	28.8 (97.4)

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.hr)	Hp.hr/gal (kW.hr/l)	Temp.°F (°C)	Barom. inch Hg (kPa)	
1st(1 I) Gear									
29.5 (22.0)	8120 (36.11)	1.36 (2.19)	2502	14.1	0.827 (0.503)	8.47 (1.67)	187 (86)	57 (14)	28.6 (97.0)
2nd(2 I) Gear									
43.0 (32.1)	7960 (35.41)	2.03 (3.26)	2487	13.4	0.702 (0.427)	9.99 (1.97)	187 (86)	52 (11)	28.6 (97.0)
3rd(3 I) Gear									
61.6 (45.9)	7765 (34.54)	2.97 (4.78)	2410	10.5	0.601 (0.366)	11.66 (2.30)	187 (86)	57 (14)	28.6 (97.0)
4th(1 II) Gear									
63.2 (47.1)	7755 (34.49)	3.06 (4.92)	2322	10.2	0.588 (0.357)	11.93 (2.35)	187 (86)	57 (14)	28.6 (97.0)
5th(4 I) Gear									
67.8 (50.6)	6795 (30.23)	3.74 (6.02)	1969	6.5	0.502 (0.305)	13.96 (2.75)	185 (85)	63 (17)	28.6 (97.0)
6th(2 II) Gear									
68.8 (51.3)	6390 (28.43)	4.04 (6.50)	1977	5.5	0.493 (0.300)	14.21 (2.80)	185 (85)	57 (14)	28.6 (97.0)
7th(3 II) Gear									
67.8 (50.6)	4260 (18.96)	5.97 (9.60)	1934	3.7	0.499 (0.303)	14.06 (2.77)	183 (84)	55 (13)	28.6 (97.0)
8th(1 III) Gear									
68.9 (51.4)	4070 (18.11)	6.35 (10.21)	1920	3.5	0.486 (0.296)	14.42 (2.84)	185 (85)	59 (15)	28.6 (97.0)
9th(4 II) Gear									
68.0 (50.7)	2905 (12.92)	8.77 (14.12)	1928	3.0	0.496 (0.302)	14.14 (2.79)	187 (86)	57 (14)	28.6 (97.0)

Famall95U - Front Wheel Assist

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 600/65R34;**,12(80)
Two 480/65R24;**,12(80)
19.1 in (485 mm)
5490 lb (2490 kg)
3805 lb (1725 kg)
9295 lb (4215 kg)

TRACTOR SOUND LEVEL WITH CAB	FWA dB(A)	2WD dB(A)
At no load in 6th (2 II) gear	80.4	80.4
Bystander	--	--

HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

Maximum force exerted through whole range:	4180 lbs (18.6 kN)
i) Sustained pressure with relief valve open:	2900 psi (200 bar)
ii) Pump delivery rate at minimum pressure:	17.5 GPM (66.1 l/min)
iii) Pump delivery rate at maximum	
hydraulic power:	13.5 GPM (51.1 l/min)
Delivery pressure:	2685 psi (185 bar)
Power:	21.2 hp (15.8 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD

	SAE TEST		OECD TEST	
	inch	mm	inch	mm
A	26.1	664	26.5	674
B	10.0	255	10.0	255
C	13.9	352	13.9	352
D	11.7	296	11.7	296
E	13.3	337	10.1	257
F	8.1	205	8.1	205
G	30.5	775	30.5	775
H	0.6	16	0.6	16
I	15.7	400	15.7	400
J	22.4	570	22.4	570
K	20.7	526	17.7	450
L	42.1	1070	42.1	1070
M	21.6	548	21.6	548
N	37.0	940	37.0	940
O	9.6	245	7.9	200
P	41.5	1053	46.5	1180
Q	42.1	1069	36.2	920
R	25.2	640	24.4	620

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed maximum pressure psi. (bar)	2900 (200)
Location:	remote outlets
Hydraulic oil temperature: °F (°C)	131 (55)
Location:	hydraulic sump
Category:	II
Quick attach:	none

System pressure 2610 psi (180 Bar)

Hitch point distance to ground level in. (mm)	9.7 (246)	16.5 (420)	22.4 (570)	28.3 (720)	36.2 (920)
Lift force on frame lb	9260	7935	7285	7170	6295
" " " " " " (kN)	(41.2)	(35.3)	(32.4)	(31.9)	(28.0)

