

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

January 1971

Test 1075: Deutz 4006 Diesel

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 1075: Deutz 4006 Diesel" (1971). *Nebraska Tractor Tests*. 1402.
<https://digitalcommons.unl.edu/tractormuseumlit/1402>

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 TRACTOR TEST 1075 - DEUTZ 4006 DIESEL

POWER TAKE-OFF PERFORMANCE

Hp	Crank-shaft speed rpm	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temperature Degrees F	Air wet bulb	Air dry bulb	Barometer inches of Mercury
MAXIMUM POWER AND FUEL CONSUMPTION								
(Rated Engine Speed—Two Hours (PTO Speed—621 rpm)								
36.95	2150	2.147	0.406	17.21	air-cooled	70	78	28.707
Standard Power Take-off Speed (540 rpm)—One Hour								
32.15	1870	1.810	0.393	17.76	air-cooled	70	78	28.710
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
32.36	2215	1.925	0.415	16.81	air-cooled	72	80	.....
0.00	2242	0.636	.....	.....	air-cooled	72	81	.....
16.20	2216	1.246	0.537	13.00	air-cooled	72	82	.....
36.65	2149	2.131	0.406	17.20	air-cooled	73	84	.....
8.14	2229	0.919	0.789	8.86	air-cooled	73	84	.....
24.20	2208	1.581	0.456	15.31	air-cooled	74	85	.....
Av 19.59	2210	1.406	0.501	13.93	air-cooled	73	83	28.710

DRAWBAR PERFORMANCE

Hp	Draw-bar pull lbs	Speed miles per hr	Crank-shaft speed rpm	Slip of drivers %	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temp Degrees F	Air Cool-ing med	Air wet bulb	Air dry bulb	Barometer inches of Mercury
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST												
Maximum Available Power—Two Hours—5th Gear (1S)												
30.81	2310	5.00	2149	5.73	2.076	0.470	14.84	air-cooled	66	86	28.860	
75% of Pull at Maximum Power—Ten Hours—5th Gear (1S)												
26.13	1895	5.17	2198	4.84	1.866	0.499	14.00	air-cooled	70	79	28.626	
50% of Pull at Maximum Power—Two Hours—5th Gear (1S)												
18.07	1285	5.27	2197	2.72	1.414	0.546	12.78	air-cooled	67	92	28.785	
50% of Pull at Reduced Engine Speed—Two Hours—6th Gear (2S)												
18.68	1323	5.29	1645	2.69	1.324	0.495	14.10	air-cooled	66	93	28.780	
MAXIMUM POWER WITH BALLAST												
28.95	5043	2.15	2186	14.83	3rd Gear (3L)		air-cooled	68	75	28.820		
31.48	3685	3.21	2152	9.24	4th Gear (4L)		air-cooled	63	80	28.860		
32.30	2422	5.00	2149	5.65	5th Gear (1S)		air-cooled	60	71	28.880		
32.19	1769	6.82	2151	4.10	6th Gear (2S)		air-cooled	60	68	28.880		
30.22	1074	10.55	2146	2.85	7th Gear (3S)		air-cooled	59	68	28.870		
MAXIMUM PULL WITHOUT BALLAST												
25.08	2990	3.15	2199	14.81	4th Gear (4L)		air-cooled	71	100	28.780		

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 5th Gear (1S)

Pounds Pull	2422	2382	2313	2329	2226	2080
Horsepower	32.30	28.42	24.66	22.03	17.81	13.98
Crankshaft Speed rpm	2149	1924	1720	1523	1288	1076
Miles Per Hour	5.00	4.47	4.00	3.55	3.00	2.52
Slip of Drivers %	5.65	5.76	5.65	5.53	5.53	5.06

TRACTOR SOUND LEVEL (without cab)

	DB(A)
Maximum Available Power 2 Hours	94.0
75% of Pull at Max. Power 10 Hours	93.5
50% of Pull at Max. Power 2 Hours	91.5
50% of Pull at Reduced Engine Speed 2 Hours	88.5
Bystander 8th gear (4S)	81.0

TIRES, BALLAST and WEIGHT

	With Ballast	Without Ballast
Rear tires	—No, size, ply & psi	Two 14.9-28; 4; 14
Ballast	—Liquid	548 lb each
	—Cast iron	750 lb each
Front tires	—No, size, ply & psi	Two 6.00-16; 4; 28
Ballast	—Liquid	None
	—Cast iron	None
Height of drawbar	14½ inches	15½ inches
Static weight with operator—rear	5270 lb	2675 lb
	front	1735 lb
	total	7005 lb
		4485 lb

Department of Agricultural Engineering

Dates of Test: August 27 to September 7, 1971

Manufacturer: KLOCKNER - HUMBOLD - DEUTZ A. G., COLOGNE, WEST GERMANY

FUEL, OIL and TIME Fuel No. 2 Diesel Cetane No. 53.5 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8387 Weight per gallon 6.983 lb. Oil SAE 30 API service classification MS, DG, DM, DS To motor 1.984 gal. Drained from motor 1.728 gal. Transmission and final drive lubricant SAE20 Total time engine was operated 58 hours.

ENGINE Make Deutz Diesel Type 3 cylinder air-cooled Serial No. 4948775 Crankshaft Mounted lengthwise Rated rpm 2150 Bore and stroke 3.94" x 4.72" Compression ratio 17 to 1 Displacement 172.5 cu. in. Cranking system 12 volt electric Lubrication pressure Air cleaner dry replaceable paper element with automatic dust unloader Oil filter replaceable pleated paper cartridge Fuel filter replaceable pleated paper cartridge Muffler was used Cooling medium temperature control air cooled.

CHASSIS Type Standard Serial No. 7878/2324 Tread width rear 48" to 68" front 59.6" to 73" Wheel base 78.5" 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 27.8" Vertical distance above roadway 30.0" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission constant mesh selective gear fixed ratio Advertised speeds mph first 1.24 second 1.62 third 2.49 fourth 3.54 fifth 5.34 sixth 7.15 seventh 10.94 eighth 15.53 Clutch dry disc dual clutch operated by a foot pedal Brakes internal expanding shoes operated by two foot pedals that can be locked together Steering mechanical Turning radius (on concrete surface with brake applied) right 130" left 134" (on concrete surface without brake) right 146" left 144" Turning space diameter (on concrete surface with brake applied) right 136" left 142" (on concrete surface without brake) right 152" left 154" Belt pulley 1300 rpm at 2150 engine rpm diam. 12.6" face 5.5" Belt speed 4290 fpm Power take-off 540 rpm at 1870 engine rpm.

REPAIRS and ADJUSTMENTS: Stripped threads on fuel adjusting control made it necessary to replace diesel fuel pump during preliminary pto test.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure. First and second gears were not run as it was necessary to limit the pull in third gear to avoid excessive wheel slippage. Eighth gear was not run as test procedure permits a maximum of six travel speeds.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1075.

L. F. LARSEN

Engineer-in-charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers

The University of Nebraska Agricultural Experiment Station
E. F. Frolik, Dean; H. W. Ottoson, Director; Lincoln, Nebraska