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1984

## Nebraska Summary S021: Zetor 16145

Nebraska Tractor Test Laboratory

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# SUMMARY OF OECD TEST 910—NEBRASKA SUMMARY 021

## ZETOR 16145 DIESEL

### 12 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)	
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed—(PTO speed—1148 rpm)</b>					
135.9 (101.4)	2205	7.91 (29.94)	0.413 (0.251)	17.21 (3.39)	
<b>Standard Power Take-off Speed (1000 rpm)</b>					
128.6 (95.9)	1920	7.05 (26.67)	0.389 (0.236)	18.22 (3.59)	
<b>VARYING POWER AND FUEL CONSUMPTION</b>					
119.7 (89.3)	2277	7.32 (27.72)	0.434 (0.264)	16.29 (3.21)	Air temperature
.....	2465	2.25 (8.52)	.....	.....	72°F (22°C)
61.7 (46.0)	2351	4.57 (17.31)	0.526 (0.320)	13.45 (2.65)	Relative humidity
135.9 (101.4)	2205	7.91 (29.94)	0.413 (0.251)	17.21 (3.39)	23%
31.1 (23.2)	2396	3.25 (12.32)	0.742 (0.451)	9.54 (1.88)	Barometer
90.5 (67.5)	2314	5.87 (22.22)	0.460 (0.280)	15.38 (3.03)	30.42" Hg (102.7 kPa)

Maximum Torque 356.2 lb. ft (483.0 Nm) @ 1660 RPM  
Maximum Torque Rise 10%

#### DRAWBAR PERFORMANCE

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 6th (H1M) Gear</b>									
95.6 (71.3)	7981 (35.5)	4.49 (7.23)	2311	5.0	0.584 (0.355)	12.13 (2.39)	184 (84)	45 (7)	29.56 (99.8)

#### MAXIMUM POWER IN SELECTED GEARS

<b>4rd Gear (L2)</b>									
105.0 (78.3)	14520 (64.6)	2.71 (4.36)	2246	15.0	0.562 (0.341)	12.59 (2.48)	189 (87)	55 (13)	29.65 (100.1)
<b>5th Gear (L3M)</b>									
115.3 (86.0)	12100 (53.9)	3.57 (5.75)	2201	10.0	0.502 (0.305)	14.11 (2.78)	189 (87)	54 (12)	29.65 (100.1)
<b>6th Gear (H1M)</b>									
117.3 (87.5)	10620 (47.3)	4.14 (6.66)	2204	8.2	0.495 (0.301)	14.26 (2.81)	188 (86)	54 (12)	29.65 (100.1)
<b>7th Gear (L3)</b>									
119.3 (89.0)	9070 (40.4)	4.93 (7.94)	2202	6.5	0.488 (0.297)	14.47 (2.85)	189 (87)	54 (12)	29.65 (100.1)
<b>8th Gear (H1)</b>									
121.4 (90.5)	7960 (35.4)	5.72 (9.20)	2210	5.5	0.479 (0.291)	14.77 (2.91)	188 (86)	54 (12)	29.65 (100.1)
<b>9th Gear (H2M)</b>									
119.2 (88.9)	6330 (28.2)	7.06 (11.36)	2204	4.0	0.485 (0.295)	14.57 (2.87)	188 (86)	54 (12)	29.65 (100.1)

**Location of Test:** National Institute of Agricultural Engineering, Wrest Park, Silsoe, Bedford, England MK45 4HS

**Dates of Test:** February to June 1984

**Manufacturer:** Zavody Tazkeho Strojartstva, Narodny Podnik, Box 03657, Martin, Czechoslovakia

**FUEL AND OIL:** Fuel No. 2 Diesel Cetane No. NA Specific gravity converted to 60°/60°F (15°/15°C) 0.8515 Fuel weight 7.08 lbs/gal (0.849 kg/l) Oil SAE 10W30 Oil Consumption for 10 hours 1.40 lb (635 gm) Transmission lubricant PP 80 API GL-4 Front axle lubricant SAE 80 API GL-4

**ENGINE:** Make Zetor Diesel Type six cylinder vertical with turbocharger Serial No. 000 002 Crankshaft lengthwise Rated engine speed 2200 Bore and stroke 4.3" × 4.7" (110 mm × 120 mm) Compression ratio 17 to 1 Displacement 417 cu in (6842 ml) Starting system 12 volt Lubrication pressure Air cleaner oil bath with centrifugal pre-cleaner Oil filter full flow centrifugal Oil cooler engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil Fuel filter two paper elements and sediment bowl Muffler vertical Cooling medium temperature control thermostat.

**CHASSIS:** Type four wheel drive Serial No. 100 003 Tread width rear 68" (1725 mm) to 74" (1875 mm) front 67" (1700 mm) to 71" (1800 mm) Wheel base 106.3" (2700 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 1.47 (2.37) second 1.97 (3.17) third 2.40 (3.86) fourth 3.21 (5.17) fifth 4.03 (6.48) sixth 4.62 (7.43) seventh 5.39 (8.67) eighth 6.18 (9.94) ninth 7.53 (12.11) tenth 10.06 (16.19) eleventh 12.62 (20.31) twelfth 16.88 (27.16) reverse 1.73 (2.79), 2.32 (3.73), 2.82 (4.54), 3.77 (6.07), 4.73 (7.61) 6.33 (10.19) Clutch single dry disc operated by foot pedal Brakes multiple dry disc hydraulically operated by two foot pedals which can be locked together Steering power assist Power take-off 540 rpm at 1890 engine rpm and 1000 rpm at 1920 engine rpm Unladen tractor mass 11243 lb (5100 kg).

**TRACTOR SOUND LEVEL WITH CAB** **dB(A)**

Maximum sound level	87.0
Bystander in 12th (H3) gear	90.0

**CENTER OF GRAVITY**

Horizontal distance forward from centerline of rear wheels	41.5" in (1053 mm)
Vertical distance above roadway	38.0" in (964 mm)
Horizontal distance from center of rear wheel tread 0" to the right/left	

**TURNING ON A CONCRETE SURFACE**

Turning radius—without brake right 239" (6.08 m) left 234" (5.95 m)	
Turning radius—with brake applied right 204" (5.17 m) left 203" (5.15 m)	
Turning space radius—without brake right 246" (6.26 m) left 241" (6.12 m)	
Turning space radius—with brake applied right 211" (5.35 m) left 209" (5.32 m)	

<b>TIRES, BALLAST AND WEIGHT</b>		<b>With Ballast</b>	<b>Without Ballast</b>
<b>Rear Tires</b>	—No., size, ply & psi (kPa)	Two 18.4-38; 8; 13 (90)	Two 18.4-38; 8; 12 (83)
<b>Ballast</b>	—Liquid (total)	1623 lb (736 kg)	None
	—Cast Iron (total)	728 lb (330 kg)	None
<b>Front Tires</b>	—No., size, ply & psi (kPa)	Two 14.9-24; 8; 16 (110)	Two 14.9-24; 8; 12 (83)
<b>Ballast</b>	—Liquid (total)	None	None
	—Cast Iron (total)	966 lb (438 kg)	None
<b>Height of Drawbar</b>		15.6 in (395 mm)	16.1 in (410 mm)
<b>Static Weight</b>	—Rear	8960 lb (4064 kg)	6818 lb (3093 kg)
	—Front	5600 lb (2540 kg)	4424 lb (2007 kg)
	—Total	14560 lb (6604 kg)	11243 lb (5100 kg)

**THREE POINT HITCH PERFORMANCE  
(STATIC TEST)**

CATEGORY: III

Quick Attach: None

Maximum Force Exerted Through Whole Range: 7037 lbs (31.3 kN)

i) Opening pressure of relief valve: 2320 psi (163 Bar)

Sustained pressure of the open relief valve: 2740 psi (193 Bar)

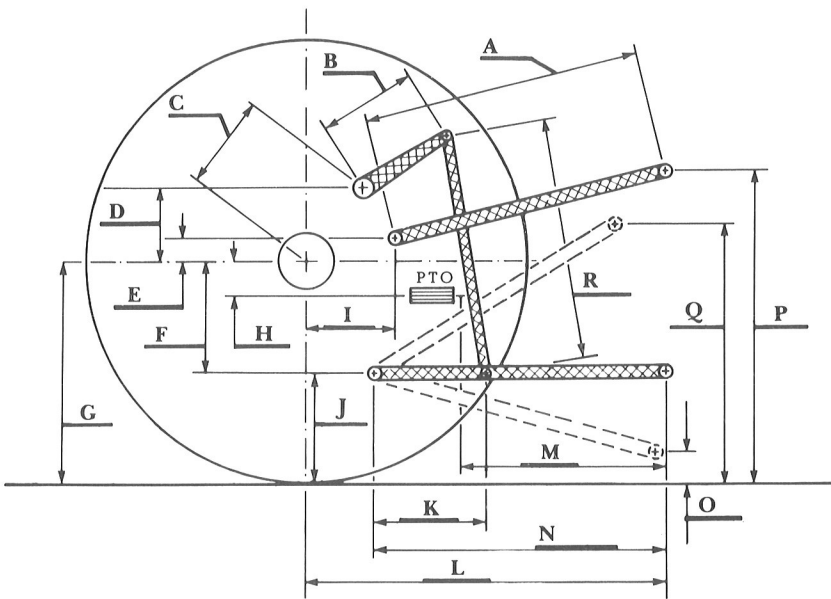
ii) Pump delivery rate at minimum pressure and rated engine speed: 12.2 GPM (46.3 l/min)

iii) Pump delivery rate at maximum hydraulic power: 9.0 GPM (34.0 l/min)

Delivery pressure: 2320 psi (163 Bar)

Power: 12.1 Hp (9.0 kW)

**HITCH DIMENSIONS AS TESTED—NO LOAD**



Hitch Dimensions as Tested — No Load

	inch	mm
A	26.9	683
B	13.0	330
C	13.1	333
D	11.3	286
E	8.3	210
F	10.0	255
G	32.3	820
H	6.0	153
I	15.2	385
J	22.3	565
K	19.6	498
L	42.2	1072
M	22.1	562
N	37.1	942
O	12.1	306
P	44.3	1125
Q	39.3	997
R	22.0	559

**REPAIRS AND ADJUSTMENTS:** A new starter motor assembly was fitted to rectify a faulty switch and a torque multiplier brake band was replaced.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures.

The performance figures on this summary are taken from a test conducted under the OECD standard test code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. 910, Nebraska Summary 021, May 17, 1988.

LOUIS I. LEVITICUS

Engineer-in-Charge

K. VON BARGEN

R. D. GRISSO

J. R. GILLEY

Board of Tractor Test Engineers