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Test 1572: Zetor 7245 and 7211 Diesel 10-Speeds

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1572—ZETOR 7245 DIESEL ALSO ZETOR 7211 DIESEL 10 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption		Temperature °F (°C)				Barometer inch Hg (kPa)
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling medium	Air wet bulb	Air dry bulb	
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—596 rpm)								
58.28 (43.46)	2200	3.603 (13.637)	0.434 (0.264)	16.18 (3.187)	180 (81.9)	66 (18.8)	75 (23.8)	29.14 (98.40)
Standard Power Take-off Speed (540 rpm) — One Hour								
54.91 (40.95)	1995	3.265 (12.361)	0.417 (0.254)	16.82 (3.313)	179 (81.9)	66 (18.8)	75 (23.8)	29.14 (98.40)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
51.41 (38.34)	2283	3.148 (11.918)	0.429 (0.261)	16.33 (3.217)	177 (80.3)	66 (18.9)	75 (23.6)	..... .....
0.00 (0.00)	2425	1.057 (4.000)	..... .....	..... .....	173 (78.3)	66 (18.9)	76 (24.2)	..... .....
26.65 (19.88)	2368	2.058 (7.789)	0.541 (0.329)	12.95 (2.552)	175 (79.4)	65 (18.3)	75 (23.6)	..... .....
58.54 (43.65)	2200	3.615 (13.683)	0.433 (0.263)	16.19 (3.190)	180 (82.2)	66 (18.6)	75 (23.9)	..... .....
13.48 (10.05)	2394	1.454 (5.506)	0.757 (0.460)	9.27 (1.825)	173 (78.1)	67 (19.2)	76 (24.4)	..... .....
39.26 (29.27)	2324	2.682 (10.153)	0.479 (0.291)	14.64 (2.883)	175 (79.2)	66 (18.9)	75 (23.9)	..... .....
Av Av	31.56 (23.53)	2332 (8.841)	2.336 (0.316)	0.519 (2.661)	13.51 (79.6)	175 (18.8)	66 (23.9)	75 (98.32)

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

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)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power — Two Hours 7th (2H) Gear											
51.28 (38.24)	3233 (14.38)	5.95 (9.57)	2201	5.06	3.572 (13.521)	0.489 (0.297)	14.36 (2.828)	183 (83.9)	74 (23.3)	81 (26.9)	28.98 (97.86)
75% of Pull at Maximum Power — Ten Hours 7th (2H) Gear											
41.67 (31.07)	2483 (11.04)	6.29 (10.13)	2296	3.76	2.997 (11.346)	0.504 (0.307)	13.90 (2.738)	182 (83.3)	72 (22.3)	85 (29.3)	28.74 (97.05)
50% of Pull at Maximum Power — Two Hours 7th (2H) Gear											
28.66 (21.37)	1650 (7.34)	6.51 (10.48)	2347	2.56	2.324 (8.798)	0.569 (0.346)	12.33 (2.429)	180 (81.9)	76 (24.2)	89 (31.4)	28.90 (97.59)
50% of Pull at Reduced Engine Speed — Two Hours 8th (3H) Gear											
28.67 (21.38)	1650 (7.34)	6.52 (10.49)	1685	2.53	1.996 (7.557)	0.488 (0.297)	14.36 (2.829)	179 (81.7)	75 (23.6)	84 (28.9)	28.96 (97.78)

MAXIMUM POWER IN SELECTED GEARS

43.54 (32.47)	6356 (28.27)	2.57 (4.13)	2267	14.95	4th (4L) Gear		180 (81.9)	69 (20.6)	72 (22.2)	28.76 (97.12)	
50.21 (37.44)	5158 (22.94)	3.65 (5.87)	2202	9.34	5th (5L) Gear		182 (83.1)	68 (20.0)	70 (21.1)	28.94 (97.73)	
52.10 (38.85)	4372 (19.45)	4.47 (7.19)	2200	7.10	6th (1H) Gear		181 (82.8)	69 (20.6)	71 (21.7)	28.94 (97.73)	
52.52 (39.16)	3311 (14.73)	5.95 (9.57)	2203	5.17	7th (2H) Gear		182 (83.1)	71 (21.7)	75 (23.9)	28.96 (97.79)	
51.78 (38.61)	2306 (10.26)	8.42 (13.55)	2199	3.52	8th (3H) Gear		182 (83.3)	72 (22.2)	77 (25.0)	28.96 (97.79)	

Department of Agricultural Engineering

Dates of Test: August 23 to September 6, 1985

Manufacturer: AGROZET ZETOR, Brno 63200, Czechoslovakia

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 46.9 (rating taken from oil company's inspection data) Specific gravity converted to 60°/60°F (15°/15°C) 0.8423 Fuel weight 7.013 lbs/gal (0.840 kg/l) Oil SAE 15W-40 API service classification SE, SF, CC, CD To motor 2.841 gal (10.753 l) Drained from motor 2.567 gal (9.716 l) Transmission and final drive lubricant SAE 80W gear lubricant Total time engine was operated 51.5 hours.

ENGINE: Make Zetor Diesel Type four cylinder vertical Serial No. 7201 008344 K Crankshaft lengthwise Rated rpm 2200 Bore and stroke 4.02" × 4.33" (102 mm × 110 mm) Compression ratio 17 to 1 Displacement 219 cu in (3596 ml) Starting system 12 volt Lubrication pressure Air cleaner oil bath with centrifugal precleaner Air compressor direct engine drive Oil filter full flow centrifugal Fuel filter two paper elements and sediment bowl Muffler vertical Cooling medium temperature control one thermostat.

CHASSIS: Type front wheel assist Serial No. 7245 006440 Tread width rear 56.1" (1425 mm) to 70.9" (1800 mm) front 59.4" (1510 mm) to 70.3" (1785 mm) Wheel base 87.5" (2222 mm) 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 35.9" (911 mm) Vertical distance above roadway 37.0" (940 mm) Horizontal distance from center of rear wheel tread 0" (0 mm) to the right/left Hydraulic control system direct engine drive with throwout lever Transmission selective gear fixed ratio Advertised speeds mph (km/h) first 1.2 (1.9) second 1.5 (2.4) third 2.1 (3.4) fourth 3.0 (4.8) fifth 4.1 (6.6) sixth 4.9 (7.9) seventh 6.4 (10.3) eighth 9.0 (14.4) ninth 12.8 (20.5) tenth 17.5 (28.1) reverse 1.6 (2.5), 6.6 (10.6) Clutch single dry disc operated by foot pedal Brakes drum and shoe hydraulically operated by two foot pedals which can be locked together Steering power assist Turning radius (on concrete surface with brake applied) right 165" (4.2 m) left 165" (4.2 m) (on concrete surface without brake) right 185" (4.7 m) left 185" (4.7 m) Turning space diameter (on concrete surface with brake applied) right 343" (8.7 m) left 343" (8.7 m) (on concrete surface without brake) right 390" (9.9 m) left 390" (9.9 m) Power take-off 540 rpm at 1995 engine rpm and 1000 rpm at 2050 engine rpm Unladen tractor mass 7660 lb (3475 kg).

LUGGING ABILITY IN 7th (2H) GEAR

Crankshaft Speed rpm	2203	1981	1763	1541	1324	1104
Pull—lbs (kN)	3311 (14.73)	3428 (15.25)	3524 (15.68)	3558 (15.83)	3517 (15.64)	3349 (14.90)
Increase in Pull %	0	4	6	7	6	1
Power—Hp (kW)	52.52 (39.16)	48.80 (36.39)	44.57 (33.24)	39.32 (29.32)	33.46 (24.95)	26.57 (19.82)
Speed—Mph (km/h)	5.95 (9.57)	5.34 (8.59)	4.74 (7.63)	4.14 (6.67)	3.57 (5.74)	2.98 (4.79)
Slip %	5.17	5.31	5.45	5.45	5.45	5.31

	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
TRACTOR SOUND LEVEL WITH CAB		
Maximum Available Power—Two Hours	83.0	84.0
75% of Pull at Maximum Power—Ten Hours		83.0
50% of Pull at Maximum Power—Two Hours		83.0
50% of Pull at Reduced Engine Speed—Two Hours		80.0
Bystander in 10th (5H) gear	87.5	

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 7th (2H) Gear											
49.66 (37.04)	3236 (14.39)	5.76 (9.26)	2201	8.61	3.558 (13.467)	0.502 (0.306)	13.96 (2.750)	185 (85.0)	72 (22.2)	82 (27.5)	28.68 (96.83)
MAXIMUM POWER IN SELECTED GEARS											
45.11 (33.64)	4788 (21.30)	3.53 (5.69)	2259	14.91	5th (5L) Gear			181 (82.5)	69 (20.6)	77 (25.0)	28.65 (96.75)
50.77 (37.86)	3311 (14.73)	5.75 (9.25)	2200	8.68	7th (2H) Gear			181 (82.8)	71 (21.7)	74 (23.3)	28.95 (97.76)

TIRES, BALLAST AND WEIGHT

Rear Tires		With Ballast	Without Ballast
—No., size, ply & psi (kPa)		Two 16.9/14-34; 8; 24 (165)	Two 16.9/14-34; 8; 24 (165)
Ballast		None	None
—Liquid (each)		310 lb (141 kg)	None
—Cast Iron (each)			None
Front Tires		With Ballast	Without Ballast
—No., size, ply & psi (kPa)		Two 12.4/11-24; 6; 22 (150)	Two 12.4/11-24; 6; 22 (150)
Ballast		None	None
—Liquid (each)		52 lb (24 kg)	None
—Cast Iron (each)			None
Height of Drawbar		27 in (685 mm)	27 in (685 mm)
Static Weight with Operator—Rear		5295 lb (2402 kg)	4675 lb (2120 kg)
—Front		3270 lb (1483 kg)	3165 lb (1436 kg)
—Total		8565 lb (3885 kg)	7840 lb (3556 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2425 (16720)	
Location	remote outlet	
Hydraulic oil temperature °F (°C)	193 (89)	
Location	pump inlet	
	Maximum Lift Capacity	Lift Capacity for Transport
QUICK ATTACH	no	
CATEGORY	II	*not measured
LOAD lbs (kg)	4698 (2131)	
TIME sec	3.51	
HITCH POINT MOVEMENT in (mm)		
Lowest position	12.1 (307)	
Top of timed range	36.1 (917)	
Highest position	36.8 (935)	
LOAD CG MOVEMENT in (mm)		
Lowest position	11.3 (287)	
Top of timed range	36.7 (932)	
Highest position	37.7 (958)	

*Implement load capacity for transport purposes not specified by manufacturer.

REPAIRS AND ADJUSTMENTS: An "O" ring in the power steering pump was replaced following the 10 hour drawbar test.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 152°F (66.7°C). Five gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1572**, October 25, 1985.

LOUIS I. LEVITICUS

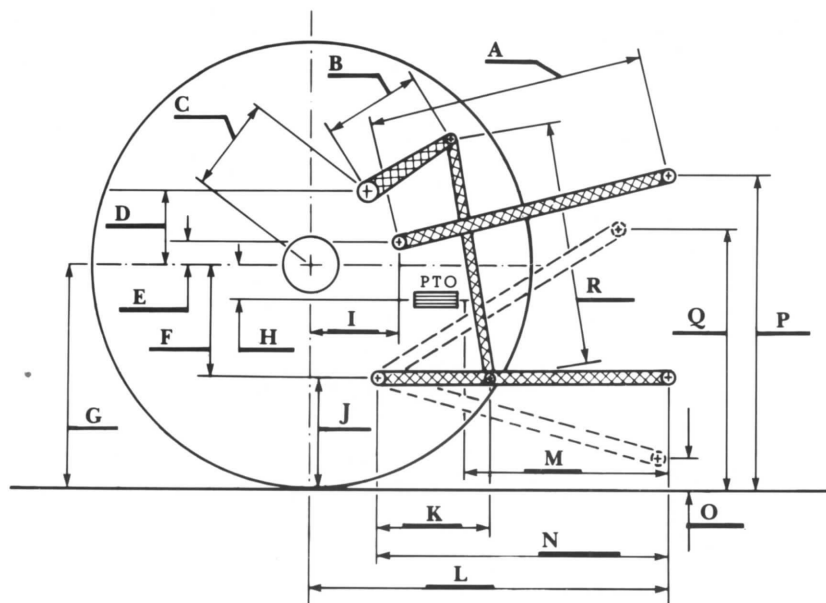
Engineer-in-Charge

K. VON BARGEN

W. E. SPLINTER

L. L. BASHFORD

Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	25.5	648
B	12.6	320
C	14.3	364
D	14.3	363
E	12.7	323
F	5.4	138
G	29.7	754
H	0.3	7
I	11.3	288
J	24.3	616
K	15.8	401
L	37.0	940
M	26.7	677
N	33.8	857
O	8.0	203
P	43.3	1100
Q	35.8	908
R	21.8	552



Zetor 7245 Diesel