

January 1936

Test 273: Caterpillar Model RD-4 (Diesel)

Tractor Museum

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 273

Dates of test: October 14 to 28, 1936.

Name and model of tractor: CATERPILLAR DIESEL RD-4

Manufacturer: Caterpillar Tractor Company, Peoria, Illinois.

Manufacturer's Rating: 35 Drawbar Horsepower Maximum in 2nd Gear (standard conditions)

B R A K E H O R S E P O W E R T E S T S

H. P.	:Crank : :shaft :	Fuel Consumption	: Water Consumption :	Temp. :	: Barometer
:speed :	Gals. :	H. P. :	Lbs. per :	Cool- : In :	:Cool-: :Inches of
:R.P.M.:	per :	hrs. per:	H. P. :	ing : fuel : Total :	ing : Air :Mercury
:	: hour :	gal. :	hour :	:	: :med. : :

TESTS B AND C 100% MAXIMUM LOAD. TWO HOURS

39.82 : 1400 : 2.885 : 13.80 : 0.506 : 0.000 : 0.000 : 0.000 : 186 : 62 : 28.990

TEST D RATED LOAD. ONE HOUR

35.61 : 1400 : 2.574 : 13.83 : 0.505 : 0.000 : 0.000 : 0.000 : 185 : 68 : 28.950

TEST E *VARYING LOAD. TWO HOURS

35.61	: 1398	: 2.584	: 13.78	: 0.507	: --	: --	: --	: 185	: 67	: --
0.77	: 1523	: 0.983	: 0.78	: 8.922	: --	: --	: --	: 169	: 67	: --
18.31	: 1439	: 1.721	: 10.64	: 0.657	: --	: --	: --	: 171	: 68	: --
37.29	: 1363	: 2.721	: 13.70	: 0.510	: --	: --	: --	: 186	: 69	: --
9.48	: 1486	: 1.330	: 7.13	: 0.981	: --	: --	: --	: 172	: 68	: --
27.08	: 1424	: 2.086	: 12.98	: 0.538	: --	: --	: --	: 176	: 68	: --
21.42	: 1439	: 1.904	: 11.25	: 0.621	: 0.000	: 0.000	: 0.000	: 176	: 68	: 28.860

*20 minute runs. Last line is average for two hours.

D R A W B A R H O R S E P O W E R T E S T S

H. P.	: Draw : Speed :	Crank : Slip :	Fuel Consumption	:Water:	Temp. :	: Barometer
: bar :	miles :	shaft : on :	: H. P. : Lbs. :	used :	: :Inches of	
: pull :	per :	speed : drive:	Gal.:	hour :	:Cool-: :Mercury	
: pounds:	hour :	R.P.M.:	wheels:	per : per :	H.P. :per :ing :Air:	
:	:	:	% :	hour: gal. :	hour :hour :med. : :	

TESTS F AND G 100% MAXIMUM LOAD

33.43	: 7852	: 1.60	: 1398	: 6.17	: -----	: Not Recorded	: -----	: 172	: 45	: 29.005
35.36	: 5811	: 2.28	: 1400	: 3.27	: -----	: "	: -----	: 173	: 40	: 29.075
35.06	: 4541	: 2.90	: 1400	: 2.44	: -----	: "	: -----	: 174	: 45	: 29.005
33.71	: 3471	: 3.64	: 1402	: 1.90	: -----	: "	: -----	: 170	: 42	: 28.985
31.76	: 2230	: 5.34	: 1402	: 1.11	: -----	: "	: -----	: 168	: 42	: 29.000

TEST H RATED LOAD. TEN HOURS Second GEAR.

26.80 : 4374 : 2.30 : 1400 : 2.63 : 2.281 : 11.75 : 0.595 : 0.000 : 173 : 55 : 28.940

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BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. 4G2233W Type 4 cylinder, vertical, diesel
 Head I Mounting Crankshaft lengthwise
 Bore and stroke: 4 1/4" x 5 1/2" Rated R.P.M. 1400
 Port Diam. Valves: Inlet 1 1/2" Exhaust 1 1/2"
 Belt pulley: Diam. 12" Face 8 1/2" R.P.M. 840
 Fuel system Own
 Governor Own Type Centrifugal
 Air Cleaner: Donaldson Type Oil-washed wire-screen filter
 Lubrication Pressure

CHASSIS: Type Tracklayer Serial No. 4G2233W Drive Enclosed gear
 Clutch Own Type Single-plate, dry Operated by Hand
 Advertised speeds, miles per hour: First 1.7 Second 2.4
 Third 3.0 Fourth 3.7 Fifth 5.4 Reverse 1.9
 Measured length of track 17.479 Feet Face 13"
 Lugs: Type Cleats integral with shoes No. per track 31
 Size 2" high x 13" face
 Seat Upholstered
 Total weight as tested (with operator) 10,100 pounds.

FUEL AND OIL:

Fuel Dieseline Weight per gallon 6.99 pounds.
 Oil S.A.E. Viscosity No. 30
 Total oil to motor 3.452 gallons
 Total drained from motor 3.163 gallons
 Total time motor was operated 57 hours

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REPAIRS AND ADJUSTMENTS

No repairs or adjustments.

REMARKS

All results shown on page 1 of this report were determined from observed data and without allowances, additions or deductions. Tests B and F were made with the fuel pumps set to develop 35 drawbar horsepower maximum in second gear under standard conditions. These figures were used in determining the ratings recommended by the A.S.A.E. and S.A.E. tractor rating codes. Tests C, D, E, G and H were made with the same setting as B and F.

Observed maximum horsepower (tests F & B) Drawbar 35.36 Belt 39.82

Sea level (calculated) maximum horsepower Drawbar 35.68 Belt 41.17
 (based on 60° F. and 29.92" Hg.)

Highest permissible horsepower ratings Drawbar 26.76 Belt 34.99
 (as recommended by A.S.A.E. and S.A.E.
 codes)

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 273.

Carlton L. Zink
 Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
 Board of Tractor Test Engineers