NEBRASKA TRACTOR TEST 799 - JOHN DEERE 2010 RU DIESEL

The University of Nebraska Agricultural Experiment Station

E. F. Frolik, Dean; A. W. Epp, Acting Director, Lincoln, Nebraska

POWER TAKE-OFF PERFORMANCE

Hp	Crank shaft speed rpm	Fuel Consumption Gal per hr	Fuel Consumption Lb per hp-hr	Hp-hr per gal	Temp. Degrees F Cooling med	Temp. Degrees F Air wet bulb	Temp. Degrees F Air dry bulb	Barometer inches of mercury
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours								
46.67	2500	3.651	0.539	12.78	196	69	75	28.953
Standard Power Take-off Speed (1000 rpm)—One Hour								
38.64	1903	2.934	0.524	13.17	194	69	75	28.980
VARYING POWER AND FUEL CONSUMPTION—TWO HOURS								
41.16	2594	3.263	0.547	12.61	187	68	75	.....
0.00	2651	1.214	.....	.....	171	68	75	.....
20.84	2625	2.101	0.695	9.92	184	68	76	.....
46.30	2500	3.611	0.538	12.82	198	68	76	.....
10.44	2639	1.653	1.092	6.32	174	67	75	.....
31.02	2609	2.619	0.582	11.84	187	67	75	.....
Av 24.96	**2603**	**2.410**	**0.666**	**10.36**	**184**	**68**	**75**	**29.027**

DRAWBAR PERFORMANCE

Hp	Draw-bar pull lbs	Speed miles per hr	Crank shaft speed rpm	Slip of driv-ers %	Fuel Consumption Gal per hr	Fuel Consumption Lb per hp-hr	Hp-hr per gal	Temperature Degrees F Cooling medium	Temperature Degrees F Air wet bulb	Temperature Degrees F Air dry bulb	Barometer inches of mercury
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours—3rd Gear											
39.28	3399	4.33	2503	8.19	3.645	0.640	10.78	188	58	68	29.203
75% of Pull at Maximum Power—Ten Hours—3rd Gear											
31.94	2599	4.61	2588	5.48	3.039	0.656	10.51	182	66	73	28.851
50% of Pull at Maximum Power—Two Hours—3rd Gear											
21.79	1722	4.74	2617	3.81	2.365	0.749	9.21	178	60	72	29.175
MAXIMUM POWER WITH BALLAST											
29.37	4553	2.42	2600	14.28	1st Gear			181	55	66	29.230
38.64	4296	3.37	2505	12.41	2nd Gear			187	55	66	29.230
39.95	3458	4.33	2502	8.09	3rd Gear			188	58	68	29.200
41.40	2465	6.30	2497	5.59	4th Gear			186	59	70	29.185
39.73	1872	7.96	2499	3.95	5th Gear			187	59	72	29.170
39.70	1305	11.41	2496	2.55	6th Gear			184	59	72	29.170
38.24	1055	13.59	2507	2.19	7th Gear			182	59	72	29.170
MAXIMUM POWER WITHOUT BALLAST											
38.61	3356	4.31	2500	8.81	3rd Gear			193	59	76	28.765

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST—3rd Gear						
Pounds pull	3450	3550	3700	3750	3700	3550
Horsepower	40.0	36.9	33.5	30.0	24.7	20.8
Miles per hour	4.3	3.9	3.4	3.0	2.5	2.2

TIRES, BALLAST and WEIGHT		With Ballast	Without Ballast
Rear tires	—No, size, ply & psi	Two 13.6-28; 4; 14	Two 13.6-28; 4; 14
Ballast	—Liquid	None	None
	—Cast iron	614 lb each	None
Front tires	—No, size, ply & psi	Two 6.00-16; 4; 28	Two 6.00-16; 4; 28
Ballast	—Liquid	None	None
	—Cast iron	None	None
Height of drawbar		14 inches	14½ inches
Static weight	—Rear	4397 lb	3170 lb
	—Front	1820 lb	1775 lb
Total weight with operator		6392 lb	5120 lb

Department of Agricultural Engineering
Dates of Test: June 6 to June 22, 1961
Manufacturer: JOHN DEERE DUBUQUE TRACTOR WORKS, DUBUQUE, IOWA
Manufacturer's Power Rating: Not Rated

FUEL, OIL and TIME Fuel No 2 Diesel **Cetane No** 54 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60°** 0.8283 **Weight per gallon** 6.896 lb **Oil** SAE 10W-30 **API service classification** MS, DM **To motor** 1.459 gal **Drained from motor** 0.904 gal **Transmission and final-drive lubricant** John Deere Special Oil or SAE 10W-30 crankcase oil **Total time engine was operated** 46½ Hours.

ENGINE Make John Deere Diesel **Type** 4 cylinder vertical **Serial No** RU15693 **Crankshart mounted** lengthwise **Rated rpm** 2500 **Bore and stroke** 3⅞" x 3½" **Compression ratio** 19 to 1 **Displacement** 165.1 cu in **Cranking system** 12 volt electric **Lubrication** pressure **Air cleaner** oil washed wire mesh **Fuel filter** primary filter with replaceable paper element and secondary filter with replaceable paper element **Muffler** was used **Cooling medium temperature control** thermostat. **Oil filter** replaceable paper element.

CHASSIS Type standard **Serial No** RU15693 **Tread width** rear 56" to 80" front 50" to 74" **Wheel base** 87" **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 31.5" Vertical distance above roadway 31.6" Horizontal distance from center of rear wheel tread 0" to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio, partial range synchro-mesh **Advertised speeds mph** first 2.67 second 3.78 third 4.64 fourth 6.58 fifth 8.16 sixth 11.57 seventh 13.63 eighth 19.30 reverse 2.96, 5.11 and 9.03 **Clutch** single plate dry disc operated by foot pedal **Brakes** dry disc operated by two foot pedals **Steering** power assisted **Turning radius** (on concrete surface with brake applied) right 124" left 124" (on concrete surface without brake right 141" left 141" **Turning space diameter** (on concrete surface with brake applied) right 258" left 258" (on concrete surface without brake) right 292" left 292" **Belt pulley** 987 rpm at 1951 engine rpm diam 12" face 8½" **Belt speed** 3100 fpm **Power take-off** 998 rpm or 535 rpm at 1900 engine rpm.

REPAIRS and ADJUSTMENTS No repairs or adjustments.

REMARKS All test results were determined from observed data obtained in accordance with the SAE and ASAE test code.

Eighth gear was not run as it exceeded 15 mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 799.

L. F. LARSEN
Engineer-in-Charge

L. W. HURLBUT, Chairman
G. W. STEINBRUEGGE
J. J. SULEK
Board of Tractor
Test Engineers

Application for Test of the

John Deere (Name) 2010 HU (Diesel) (Model) Tractor

Dubuque, Iowa (P.O.) Aug. 25, (Date) 19 60

Department of Agricultural Engineering,
College of Agriculture,
University of Nebraska,
Lincoln 1, Nebraska

Gentlemen:

_____ hereby applies for test

as provided by Nebraska law, of the John Deere 2010 Row Crop Utility (Trade Name)

2010 HU (Diesel) - Not Rated (Model, Hp) Tractor. Specifications of this

tractor are given on sheets attached hereto and marked exhibits A, B

(A, B, C, etc.)

(Each loose sheet and each set of sheets should be permanently bound together and marked as an exhibit.)

All of the claims made regarding the construction and performance of this tractor by the applicant either directly or through his selling agents are covered in sheets and catalogs attached hereto and marked exhibits _____

_____ (Each loose sheet and each catalog to be marked as an exhibit.)

All printed operating instructions furnished to purchasers of this tractor are enclosed herewith and market exhibits B, C, D, E

Mr. ~~W. E. Trump~~ R. J. Woolf - Head of Development Dept.
(Name) (Position with Applicant)

will be the official representative of the applicant during the test, and will carry the proper credentials.

John Deere Dubuque Tractor Works (Applicant) hereby agrees that no claim for the

tractor in excess of those declared herewith will be made by the applicant either directly or through his agents' and that no tractor will be offered for sale either

by the applicant or his agents under permit based on this test, which does not correspond with the description given herewith; excepting such changes made for the tractor or in construction of the tractor as may from time to time be approved in writing by the Board of Tractor Test Engineers and the State Railway Commission.

Respectfully submitted,

*(Signature) L. H. Bundy

(Name typewritten) L. H. Bundy

(Position) Manager

*(To be signed by an officer having power to make contracts for the Applicant.)

SPECIFICATIONS OF John Deere (Name) 2010 RU (Diesel) (Model) Tractor

(To be submitted with tractor for official certification of performance)

1. Manufacturer ~~John Deere Dubuque Tractor Works~~

Address Dubuque, Iowa

Tractor submitted for test by Same

Manufacturer's rating:

Mechanical Power Outlet: Belt Not Rated PTO Not Rated

Drawbar Not Rated Other

This tractor is to be advertised or sold for operation on the following fuels:

~~No. 1 or No. 2 Diesel Fuel~~

Minimum Octane or Cetane 40

Other fuel requirements

ENGINE
(Report Nominal Dimensions)

2. General Specifications:

Manufacturer ~~John Deere Dubuque Tractor Works~~

Name John Deere Model 165 D No. of cylinders 4

4 stroke cycle. Bore 3-7/8 in. Stroke 3-1/2 in.

Clearance Volume ~~2.297 ± .510~~ 2.428 +.324 -.256 cu. in. Displacement 165.11 cu. in.

Compression ratio ~~Nominal 19~~ 18.0 ± 2.0 -1 Compression pressure ~~500 - 550~~ 550-650 lbs. per sq. in. gage at 2500 rpm Type of cylinder head Valve in Head

RJM 6/15/61

Crankshaft rpm:

Belt Operation	Rated 2500	Governor High Idle	~~2675 ± 25~~ ±100
Standard PTO Operation	Rated 1900	Governor High Idle	~~2100 ± 25~~ ±100
Drawbar Operation	Rated 2500	Governor High Idle	~~2675 ± 25~~ ±100
Other Maximum	Rated 2500	Governor High Idle	~~2675 ± 25~~ ±100

Blower: Used for scavenging None Supercharging

Ratio to engine --- -1

SPECIFICATIONS OF John Deere 2010 RU (Diesel) Tractor
(Name) (Model)

3. Cylinders:

Removable sleeves? Yes* Wet Yes Dry ---

Vertical Yes Horizontal --- Opposed --- Vee ---

4. Valves:

Inlet: Lift .429/.421 inches

Exhaust: Lift .429/.421 inches

Timing: Inlet Opens 18 ° Before T. C. Closes 30 °

after L. C. Exhaust Opens 48 ° before L. C. Closes 0 °

After T. C.

5. Lubricating Oil:

Capacity 5 quarts to fill engine crankcase to proper operating level. (Filter change not included.)

Oils recommended (Give trade names when available, SAE weight for temperature range -- 30° to 110°F and service classifications)

32° - 90° F SAE 20W or 10W-30 Type DM or DS

6. Oil Filter:

Type of Element Replaceable Paper Full flow? No By-pass? Yes

7. Oil Cooler: (Specify cooling medium - engine coolant, air and or other)

Crankcase Oil None Transmission oil None

Torque Convertor None Hydraulic System None

Other (describe)

8. Ignition System:

Voltage of electrical system: 12VDC

Battery: Number 1 Volts each 12

*A new design using a sleeve and deck insert.

SPECIFICATIONS OF John Deere (Name) 2010 NF (Diesel) (Model) Tractor

9. Cranking Equipment:

Engine _____ Make _____ Model _____

Electrical Yes Make Delco Remy Model 1108672 Volts 12

Other _____

_____

10. Carburetor Furnished as Standard Equipment:

Make --- Size --- Model --- Fuels ---

Fixed Jet? --- Adj. Jet? ---

11. Fuel Injection System:

Pump: Make Roosa Master Model DBGVC 431-1J

Injector: Make American Bosch Model ADE 105 27C (Nozzle) AKP - 40S - 24 (Holder)

12. Fuel filters: Type of Element Micronic - Paper

Type of Element Micronic - Paper

Type of Element _____

Type of Element _____

13. Air Cleaner: Type Oil Washed Size 6" Dia.

Type of Element Crimped Wire Mesh

14. Cooling System:

Cooling medium temperature control Thermostat

Circulation of coolant:

Thermosyphon No Pump Yes

15. Belt Pulley:

Diameter 12 in. Face 8-1/2 in.

Speeds specified by manufacturer for belt operation: ~~(For SAE Belt Speed)~~

Engine 1900, 1951 (SAE) rpm Belt pulley 961, 987 (SAE) rpm

Belt speed 3019, 3100 (SAE) ~~xxxx~~ rpm ~~fpm~~

Gear ratio crankshaft to pulley shaft 1.977

BJW 6/15/61

SPECIFICATIONS OF John Deere (Name) 2010 RU (Diesel) (Model) Tractor

16. Power take-off speeds:

998 rpm, corresponding engine 1900 rpm

535 rpm, corresponding engine 1900 rpm

17. Clutches:

For transmission: Type 10" Single Plate, Spring Loaded, Dry

For steering (if used): Type None

For belt pulley (if separate): Type 6-1/2 - 4 Disc Dry - Spring Loaded - 4 Disc

For power take-off (if separate): Type 6-1/2 Dry - Spring Loaded

18. Brakes:

Type 5-5/8 OD X 3-3/8 ID Double Disc, Dry (contracting band, shoe, disc., etc.)

Brakes operated by hand lever, pedal, or other means Foot Pedal

19. Transmission:

(1) Selective gear fixed-ratio transmission Yes

(2) Torque multiplier None

(3) Torque multiplier with lock-out None

(4) Automatic, power-shifting, fixed-ratio transmission None

(5) Operator-controlled, power-shifting, fixed-ratio transmission None

(6) Infinitely variable transmission None

(7) Other Selective Range - Synchronizers used on high-low range and reverse.

SPECIFICATIONS OF John Deere (Name) 2010 HI (Diesel) (Model) Tractor

20. Ratio engine to drive wheels or tracks (3 decimals):

1st	2nd	3rd	4th	5th	6th	7th
130.850	92.360	75.340	53.180	41.820	30.230	25.650
8th	9th	10th	11th	12th	Reverse 1	Reverse 2
18.110					118.190	68.050

Reverse 3: 38.680

21. Rate of Travel at Drawbar Rated Engine Speed:

	Calculated Speed in miles per hour (No tire or track slippage allowance)		Advertised mph		Drive wheel tire size
	1500	2500	1900	2500	
1st gear	2.02	2.67	2.03	2.67	13.6 - 28
2nd gear	2.87	3.78	2.87	3.78	13.6 - 28
3rd gear	3.52	4.64	3.53	4.64	13.6 - 28
4th gear	4.98	6.58	5.00	6.58	13.6 - 28
5th gear	6.20	8.16	6.20	8.16	13.6 - 28
6th gear	8.80	11.57	8.79	11.57	13.6 - 28
7th gear	10.35	13.63	10.36	13.63	13.6 - 28
8th gear	14.65	19.30	14.67	19.30	13.6 - 28
9th gear					
10th gear					
11th gear					
12th gear					
Reverse, one	2.24	2.96	2.25	2.96	13.6 - 28
Reverse, two	3.88	5.11	3.88	5.11	13.6 - 28
Reverse, three	6.86	9.03	6.86	9.03	13.6 - 28

22. Drive Wheels and Tires:

Drive Wheels: Number 2 Size of rim (with standard tire) 12 in.

width 28 in. diameter.

SPECIFICATIONS OF John Deere (Name) 2010 RU (Diesel) (Model) Tractor

22. Drive Wheel and Tires: (continued)

	Drive Tires
Standard size and ply	13.6 x 28 4 Ply
Optional size and ply	12.4 x 28 4 Ply
Optional size and ply	14.9 x 28 6 Ply

23. Non-drive Wheels and Tires:

Non-drive Wheels: Number 2

Size of rim (with standard tire) 16 in. Dia. x 4.00 in. Width

	Non-drive Tires	
Standard size and ply	6.00 x 16	4 ply
Optional size and ply	6.00 x 16 6.50 x 16	6 Ply 6 Ply
Optional size and ply	7.50 x 15	6 Ply

24. Track-laying Type:

	STD.	OPT.	OPT.
Number of tracks			
Number of shoes per track			
Length of track bearing on ground - in.			
Width of each track - in.			
Center to center of track pins - in.			
Height of grouser - in.			
Length of grouser - in.			
Drive sprocket revolutions per track revolution			

SPECIFICATIONS OF John Deere (Name) 2010 RU (Diesel) (Model) Tractor

25. Steering:

Power steering regular equipment No available Yes

26. Turning radius - wheel-type tractor, minimum tread on concrete surface:

Turning to right with brake 124 in.
Turning to left with brake 124 in.
Turning to right without brake 141 in.
Turning to left without brake 141 in.

The turning radius of a wheel-type tractor is one-half of the diameter of the minimum circle described by the center of the tread of the outermost wheel when turning through 360 degrees.

27. Turning space diameter - wheel-type tractor, minimum tread on concrete surface:

Turning to right with brake applied 258 in.
Turning to left with brake applied 258 in.
Turning to right without brake 292 in.
Turning to left without brake 292 in.

The turning space of a tractor is the minimum diameter described by the outermost point of the tractor when turning through 360 degrees.

28. Static weight on each wheel or track:

Fuel tank filled and tractor serviced for operation, less operator. Fully equipped with commonly used devices such as pto, hydraulic system, drawbar or hitch, multirange transmission, etc.

Wheel or Track	Weight, lbs.	Ballast
Left Front	890	None
Right Front	890	None
Left Rear	1565	None
Right Rear	1565	None

SPECIFICATIONS OF John Deere (Name) 2010 NU (Diesel) (Model) Tractor

29. Center of gravity - without operator or ballast, minimum tread, with fuel tank filled, tractor serviced for operation:

Horizontal distance from center-line of rear wheels 31.5 in.
Vertical distance above ground 31.6 in.
Horizontal distance right or left from center of drive wheel tread on C in.

30. General Dimensions:

Wheel base 87 in.
Wheel tread ____ in.
Front wheels 50 in. to 74 in.
Rear wheels or tracks 56 in. to 80 in. (Power Adjusted Wheel

NEBRASKA TRACTOR TEST 799 - JOHN DEERE 2010 RU DIESEL

The University of Nebraska Agricultural Experiment Station
E F. Frolik, Dean; A. W. Epp, Acting Director, Lincoln, Nebraska

POWER TAKE-OFF PERFORMANCE

	Hp	Crank shaft speed rpm	Fuel Consumption Gal per hr	Fuel Consumption Lb per hp-hr	Hp-hr per gal	Temperature Degrees F Cooling medium	Air wet bulb	Air dry bulb	Barometer inches of Mercury
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	0.00	2651	1 214	- ---	-- --	171	68	75	-- ---
	20.84	2625	2.101	0.695	9.92	184	68	76	-- ---
	46.30	2500	3.611	0.538	12.82	198	68	76	-- ---
	10.44	2639	1.653	1.092	6.32	174	67	75	-- ---
	31.02	2609	2.619	0.582	11.84	187	67	75	-- ---
Av	24.96	2603	2.410	0.666	10.36	184	68	75	29.027

DRAWBAR PERFORMANCE

Hp	Draw-bar pull lbs	Speed miles per hr	Crank shaft speed rpm	Slip of drivers %	Fuel Consumption Gal per hr	Fuel Consumption Lb per hp-hr	Hp-hr per gal	Temp Degrees F 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 - 3rd Gear											
39.28	3399	4.33	2503	8.19	3.645	0.640	10.78	188	58	68	29 203
75% of Pull at Maximum Power - Ten Hours - 3rd Gear											
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MAXIMUM POWER WITHOUT BALLAST											
38.61	3356	4.31	2500	8.81	3rd Gear			193	59	76	28.765

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST - 3rd Gear

Pounds pull	3450	3550	3700	3750	3700	3550
Horsepower	40.0	36.9	33.5	30.0	24.7	20.8
Miles per hour	4.3	3.9	3.4	3.0	2.5	2.2

TIRES, BALLAST and WEIGHT	With Ballast	Without Ballast
Rear tires - No, size, ply & psi	Two 13.6-28; 4; 14	Two 13.6-28; 4; 14
Ballast - Liquid	None	None
- Cast iron	614 lb each	None
Front tires - No, size, ply & psi	Two 6.00-16; 4; 28	Two 6.00-16; 4; 28
Ballast - Liquid	None	None
- Cast iron	None	None
Height of drawbar	14 inches	14 1/2 inches
Static weight - Rear	4397 lb	3170 lb
- Front	1820 lb	1775 lb
Total weight with operator	6392 lb	5120 lb

Department of Agricultural Engineering
DATES OF TEST: June 6 to June 22, 1961
MANUFACTURER: JOHN DEERE DUBUQUE TRACTOR WORKS, DUBUQUE, IOWA
MANUFACTURER'S POWER RATING: Not Rated

FUEL, OIL and TIME Fuel No 2 Diesel Cetane No 54 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8283 Weight per gallon 6.896 lb Oil SAE 10W-30 API service classification MS, DM To motor 1.459 gal Drained from motor 0.904 gal Transmission and final-drive lubrica John Deere Special Oil or SAE 10W-30 crankcase oil Total time engine was operated 46 1/2 Hours.

ENGINE Make John Deere Diesel Type 4 cylinder vertical Serial NoRU15693 Cran shaft mounted lengthwise Rated rpm 2500 Bore and stroke 3 7/8" x 3 1/2" Compress ratio 19 to 1 Displacement 165.1 cu in Cranking system 12 volt electric Lubrica tion pressure Air cleaner oil washed wire mesh Fuel filter primary filter with replaceable paper element and secondary filter with replaceable paper element Muffl was used Cooling medium temperature control thermostat. Oil filter replaceable pap element.

CHASSIS Type standard Serial NoRU15693 Tread width rear 56" to 80" front 50" to 74" Wheel base 87" Center of gravity (without operator or ballast, with minimu tread, with fuel tank filled and tractor serviced for operation) Horizontal distan forward from center-line of rear wheels 31.5" Vertical distance above roadway 31.6 Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio, partia range synchro-mesh Advertised speeds mph first 2.67 second 3.78 third 4.64 fourth 6.58 fifth 8.16 sixth 11.57 seventh 13.63 eighth 19.30 reverse 2.96, 5.11, and 9.03 Clutch single plate dry disc operated by foot pedal Brakes dry dis operated by two foot pedals Steering power assisted Turning radius (on concrete surface with brake applied) right 124" left 124" (on concrete surface without brake right 141" left 141" Turning space diameter (on concrete surface with brake applie right 258" left 258" (on concrete surface without brake) right 292" left 292" Bel pulley 987 rpm at 1951 engine rpm diam 12" face 8 1/2" Belt speed 3100 fpm Powe take-off 998 rpm or 535 rpm at 1900 engine rpm.

REPAIRS and ADJUSTMENTS No repairs or adjustments

REMARKS All test results were determined from observed data obtained in accordance with the SAE and ASAE test code.

Eighth gear was not run as it exceeded 15 mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 799.

L. H. Barsen
Engineer-in-Charge

A. W. Kurbet
O. W. Stenbuegge

Board of Tractor Test Engineers

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

RECORD OF OFFICIAL TEST 799 Date June 6 - 22, 1961

Name and model of tractor John Deere 2010 RU Diesel

Manufacturer John Deere Dubuque Tractor Works, Dubuque, Iowa

Serial No. engine 15693 Serial No. chassis 15693 Chassis type Standard

Tractor equipment: Governor Roosa-Master Carburetor ------ Oil filter Own

Fuel filter Own Ignition system ---- Air cleaner Donaldson

Power steering Own Battery Autolite Starting system Delco-Remy

Injection pump Roosa-Master Power-take-off Own Temp. control Dole

Kind of oil used in engine Standard Permalube S. A. E. 10 W-30

Kind of fuel used: Diesel ~~Octane/Cetane~~ Cetane 54 Weight per gallon, pounds 6.896

BRAKE TEST

Brake operated by FMZ JWC Fuel weighed by RB AR

Brake used General Electric Brake arm, inches 21.008 Brake constant 1/3000

PTO test: Yes Standard pto speed, rpm 1000 @ 1903 Eng. RPM

Belt test: ------ Belt used ------

Size belt pulley (circumference at crown), feet: Engine ----- Brake -----

DRAWBAR TEST

Dynamometer car operated by FMZ Tractor operated by Co. Rep. Dynamometer car used Adams

Load used Two Oliver 880's

Drive wheels (Tire size and ply): 13.6 - 28 - 4

Drive wheels (Air pressure, psi): With ballast 14 Without ballast 14

Added weight per wheel, pounds: Rear wheels 600 Front wheels ----

Added weight on crawler tractor, pounds: ----

Cleats: Height, inches ----- Width, inches ----- No. per track -----

We, the undersigned, certify that this sheet and the log sheets attached hereto give a true and correct record of official Tractor Test 799.

Frank Zoz FMZ Operator — Robert H. Becker RB Calculator

John W. Cable JWC Operator — Albert Rahn AR Calculator

Operator — A. G. Haag AGH Calculator

K. F. Larsen Engineer-in-charge

L. F. Larsen

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Observers FMZ AR JMC RB
Calculated FMZ AGH

Log of Official Tractor Brake Horsepower Test 799 Maximum Power - 2 hours - Rated Engine Speed

Name and model of tractor John Deere 2010 RU Diesel Date June 14, 1961

Reading No.	Time of Day	Varying Power	Engine Crankshaft R. P. M. / Ratio to Tachometer	Brake R. P. M.	Belt Slippage %	Net Brake Load Pounds	Brake Horsepower	Fuel: Scale Reading Pounds Left	Fuel: Scale Reading Pounds Right	Fuel: Am't used pounds	Fuel: lbs/hr gal/hr hphr/gal lbs/bhp hr.	Temperature: Rad. Deg. F.	Temperature: Atm. Deg. F. wet	Temperature: Atm. Deg. F. dry	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	5.10		2499	1314		105.6			193.69			195	70	75	
2	5.20		2500	1314		105.8			189.50	4.19		195	70	75	
3	5.30		2500	1314		106.2			185.32	4.18		195	69	74	
4	5.40		2500	1314		106.3			181.13	4.19		195	69	75	
5	5.50		2500	1314		106.6			176.96	4.17		197	70	75	
6	6.00		2501	1314		106.2			172.77	4.19		196	69	75	
7	6.10		2499	1314		106.4			168.56	4.21		196	69	75	
8	6.20		2500	1314		106.4			164.35	4.21		196	69	75	
9	6.30		2501	1314		106.7			160.16	4.19		196	69	75	
10	6.40		2500	1314		107.4			155.96	4.20		197	69	75	
11	6.50		2499	1314		107.2			151.76	4.20		197	68	74	
12	7.00		2499	1314		107.2			147.55	4.21		197	69	75	
13	7.10		2503	1315		107.0			143.34	4.21		197	69	75	
Total			32501	17083		1385.0				50.35		2549	899	973	
Average			2500	1314.1		106.54	46.67					196	69	75	

FUEL	
Lbs. per gal.	6.896
Lbs. per hr.	25.175
Gals. per hr.	3.651
H. p. hrs. per gal.	12.78
Lbs. per h. p. hr.	0.539

BAROMETER	
28.945	"Hg at 5.10
28.945	"Hg at 6.10
28.970	"Hg at 7.10
Use 28.953	

CARB. ADJ., Turns Open	
H. s.	l. s.

High Idle Speed 2651 R.P.M.

Remarks: PTO TEST 150 Hp. O.E. Dyn.

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT

AGRICULTURAL COLLEGE, LINCOLN

Observers .....

Calculated .....

Log of Official Tractor Brake Horsepower Test ... 799 - Maximum Power - 1 hour - Rated (1000 RPM) PTO Speed

Name and model of tractor ... John Deere 2010 RU Diesel ... Date ... June 14, 1961

Reading No.	Time of Day	Varying Power	Engine Crankshaft R. P. M. / Ratio to Tachometer	Brake R. P. M.	Belt Slippage %	Net Brake Load Pounds	Brake Horsepower	Fuel: Scale Reading Pounds Left	Fuel: Scale Reading Pounds Right	Fuel: Am't used pounds	Fuel: lbs/hr gal/hr hphr/gal lbs/bhp hr.	Temperature: Rad. Deg. F.	Temperature: Atm. Deg. F. wet	Temperature: Atm. Deg. F. dry	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	7.20		1904	1001		115.9			139.87			194	69	75	
2	7.30		1905	1001		116.1			136.50	3.37		194	69	75	
3	7.40		1901	999		115.8			133.13	3.37		194	69	75	
4	7.50		1901	999		115.8			129.77	3.36		194	69	75	
5	8.00		1904	1001		115.7			126.39	3.38		194	69	75	
6	8.10		1902	999		116.1			123.03	3.36		194	69	75	
7	8.20		1903	1000		116.0			119.64	3.39		194	68	74	
8															
9															
10															
11															
12															
13															
Total			13319	70000		8114				20.23					
Average			1903	1000.0		115.91	38.64					194	69	75	

FUEL	
Lbs. per gal.	6.896
Lbs. per hr.	20.230
Gals. per hr.	2.934
H. p. hrs. per gal.	13.17
Lbs. per h. p. hr.	0.524

CARB. ADJ., Turns Open	
H. s.	l. s.

BAROMETER	
28.970	"Hg at 7.20
28.990	"Hg at 8.20
	"Hg at
Use 28.980	

2651

High Idle Speed ..... R.P.M.

Remarks: _____

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Observers FMZ AR
Calculated FMZ ACH

Log of Official Tractor Brake Horsepower Test 799 - Varying Power - 2 hours - Page 1

Name and model of tractor John Deere 2010 RU Diesel Date June 14, 1961

Reading No.	Time of Day	Varying Power	Engine Crankshaft R. P. M. / Ratio to Tachometer	Brake R. P. M.	Belt Slippage %	Net Brake Load Pounds	Brake Horsepower	Fuel: Scale Reading Pounds Left	Fuel: Scale Reading Pounds Right	Fuel: Am't used pounds	Fuel: lbs/hr gal/hr hphr/gal lbs/bhp hr.	Temperature: Rad. Deg. F.	Temperature: Atm. Deg. F. wet	Temperature: Atm. Deg. F. dry	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	8.30								185.74						
2	8.40	85% of	2594	1363		90.6			181.98	3.76	22.500	187	68	75	
3	8.50	Max.	2594	1363		90.6			178.24	3.74	3.263	187	68	75	
4	Total									7.50	12.61				
5	Ave.		2594	1363.0		90.6	41.16				0.547	187	68	75	
6	9.00	Min.	2651						176.84	1.40	8.37	171	68	75	
7	9.10		2652						175.45	1.39	1.214	171	68	75	
8	Total									2.79	---				
9	Ave.		2651								---	171	68	75	
10	9.20	1/2 of	2625	1380		45.3			173.03	2.42	14.490	184	68	76	
11	9.30	85%	2625	1380		45.3			170.62	2.41	2.101	184	68	75	
12	Total									4.83	9.92				
13	Ave.		2625	1380.0		45.3	20.84				0.695	184	68	76	
Total															
Average															

FUEL	
Lbs. per gal.	6.896
Lbs. per hr.	
Gals. per hr.	
H. p. hrs. per gal.	
Lbs. per h. p. hr.	

CARB. ADJ., Turns Open	
H. s.	l. s.

BAROMETER
"Hg at
"Hg at
"Hg at
Use

High Idle Speed 2651 R.P.M.

Remarks:

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Observers FMZ ... AR ...
Calculated FMZ ... AGH

Log of Official Tractor Brake Horsepower Test 799 - Varying Power - Page 2

Name and model of tractor John Deere 2010 RU Diesel Date June 14, 1961

Reading No.	Time of Day	Varying Power	Engine Crankshaft R. P. M. / Ratio to Tachometer	Brake R. P. M.	Belt Slippage %	Net Brake Load Pounds	Brake Horsepower	Fuel: Scale Reading Pounds Left	Fuel: Scale Reading Pounds Right	Fuel: Am't used pounds	Fuel: lbs/hr gal/hr hphr/gal lbs/bhp hr.	Temperature: Rad. Deg. F.	Temperature: Atm. Deg. F. wet	Temperature: Atm. Deg. F. dry	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	9.30								170.62						
2	9.40	Max.	2499	1314		105.3			166.45	4.17	24.900	198	69	77	
3	9.50		2500	1314		106.1			162.32	4.13	3.611	198	67	75	
4	Total					211.4				8.30	12.82				
5	Ave.		2500	1314.0		105.7	46.30				0.538	198	68	76	
6	10.00	1/4 of	2638	1386		22.6			160.43	1.89	11.400	174	67	74	
7	10.10	85%	2640	1387		22.6			158.52	1.91	1.653	174	67	75	
8	Total									3.80	6.32				
9	Ave.		2639	1386.5		22.6	10.44				1.092	174	67	75	
10	10.20	3/4 of	2608	1370		67.9			155.50	3.02	18.060	187	67	75	
11	10.30	85%	2609	1371		67.9			152.50	3.00	2.619	187	67	75	
12	Total									6.02	11.84				
13	Ave.		2609	1370.5		67.9	31.02				0.582	187	67	75	
Total			31234				149.76			33.24		2202	812	902	
Average			2603				24.96					184	68	75	

FUEL	
Lbs. per gal.	6.896
Lbs. per hr.	16.620
Gals. per hr.	2.410
H. p. hrs. per gal.	10.36
Lbs. per h. p. hr.	0.666

BAROMETER	
28.990	"Hg at 8.30
29.035	"Hg at 9.30
29.055	"Hg at 10.30
Use	29.027

CARB. ADJ., Turns Open	
H. s.	l. s.

High Idle Speed 2651 R.P.M.

Remarks:

Friction Hp = $\frac{60.0 \times 1314}{3000}$ = 26.28

Gear Ratio... 3rd - .75/3.40... UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT Copied FMZ AR

Barometer... 29.203... AGRICULTURAL COLLEGE, LINCOLN Calculated AGH AR

Log of Official Tractor Drawbar Horsepower Test... 799 - Maximum Available Power - 2 hours

Adv. per rev. ft. 12.484 Tractor Name John Deere 2010 RU Diesel Date June 16, 1961

Chart and Reading No.	Time of Day	Stop Watch 500 ft., Minutes	Engine Revolutions x	Engine Crankshaft R.P.M.*	Drive Wheel Slippage: Left Wheel Counter Reading	Left Wheel Revolutions 500 ft.	Right Wheel Counter Reading	Right Wheel Revolutions 500 ft.	Ave. Rev. Columns 7 & 9	Distance Traveled feet	Distance Measured on Ground, ft.	Slippage% Columns 11 & 12	Speed: Feet per Minute	Speed: Miles per Hour	Average Draft Pounds	Drawbar Horsepower	Temperature: Radiator Deg. F.	Temperature: Atmosphere Deg. F. Wet	Temperature: Atmosphere Deg. F. Dry	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
				2510	810		309													
1-N	8.25	1.311	3281	2503	246	436	745	436	43.60		500		381.5	4.34	3361	38.86	187	58	67	
1-S		1.310	3284	2507	684	438	182	437	43.75		500									
2-N	9.25	1.313	3281	2499	120	436	617	435	43.55		500		381.2	4.33	3437	39.70	188	58	68	
2-S		1.310	3281	2505	556	436	053	436	43.60		500									
Total		5.244	13127						174.50		500				6798					
Ave.		1.3110	3282	2507 W.O. 2503 E.O.					43.625	544.61	500	8.19	381.4	4.33	3399	39.28	188	58	68	
	Fuel used:		25.135 lbs./hr.								500		$\frac{25.135}{39.28}$ = 0.640 lbs/hp.hr.							
			$\frac{25.135}{6.895}$ = 3.645 gal./hr.								500									
											500		$\frac{39.28}{3.645}$ = 10.78 Hp.hr./gal.							
											500									
											500									
											500									
											500									

Note: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Engine R.P.M. = $\frac{\text{Gear Ratio x Column (10)}}{\text{column (3)}}$ or $\frac{\text{Column (4)}}{\text{column 3 x 2}}$

Gear Ratio 3rd. - 15.340 | UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT | Copied RB AGH

Barometer 28.851 | AGRICULTURAL COLLEGE, LINCOLN | Calculated RB AGH

Log of Official Tractor Drawbar Horsepower Test 799 - 75% of pull at maximum power - Page 1

Adv. per rev. ft. 12.484 Tractor Name John Deere 2010 RU Diesel Date June 19, 1961

Chart and Reading No.	Time of Day	Stop Watch 500 ft., Minutes	Engine Revolutions / x	Engine Crankshaft R.P.M.*	Drive Wheel Slippage								Speed		Average Draft Pounds	Drawbar Horsepower	Temperature			Remarks
					Left Wheel		Right Wheel		Ave. Rev. Columns 7 & 9	Distance Traveled feet	Distance Measured on Ground, ft.	Slippage% Columns 11 & 12	Feet per Minute	Miles per Hour			Radiator Deg. F.	Atmosphere		
					Counter Reading	Revolutions 500 ft.	Counter Reading	Revolutions 500 ft.										Wet	Dry	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
					635		991													
1-N	10.50	1.232	3188	2588	059	424	414	423	42.35		500		406.2	4.62	2575	31.70	185	71	83	
1-S		1.230	3189	2593	483	424	838	424	42.40		500									
2-N	11.50	1.232	3184	2584	906	423	262	424	42.35		500		405.7	4.61	2593	31.88	185	71	85	
2-S		1.233	3186	2584	329	423	684	422	42.25		500									
3-N	12.50	1.232	3182	2583	751	422	107	423	42.25		500		406.0	4.61	2608	32.09	186	71	85	
3-S		1.231	3184	2587	176	425	530	423	42.40		500									
4-N	1.50	1.232	3183	2584	599	423	952	422	42.25				406.0	4.61	2626	32.31	185	70	78	
4-S		1.231	3183	2586	022	423	375	423	42.30		500									
5-S	2.50	1.232	3187	2587	444	422	798	423	42.25		500		405.8	4.61	2592	31.87	182	66	70	
5-N		1.232	3184	2584	867	423	221	423	42.30		500									
6-N	3.50	1.228	3181	2590	290	423	643	422	42.25		500		406.5	4.62	2608	32.13	180	63	69	
6-S		1.232	3181	2582	712	422	066	423	42.25		500									
7-S	4.50	1.225	3178	2594	134	422	488	422	42.20		500		407.5	4.63	2573	31.77	180	63	67	
7-N		1.229	3181	2588	556	422	911	423	42.25		500									

Note: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Engine R.P.M. = $\frac{\text{Gear Ratio x Column (10)}}{\text{column (3)}}$ or $\frac{\text{Column (4)}}{\text{column 3 x 2}}$

Gear Ratio 3rd - 75.340 | UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT | Copied RB AGH

Barometer 28.851 | AGRICULTURAL COLLEGE, LINCOLN | Calculated RB AGH

Log of Official Tractor Drawbar Horsepower Test 799 - 75% of pull at maximum power - Page 2

Adv. per rev. ft. 12.484 Tractor Name John Deere 2010 RU Diesel Date June 19, 1961

Chart and Reading No.	Time of Day	Stop Watch 500 ft., Minutes	Engine Revolutions x	Engine Crankshaft R.P.M.*	Drive Wheel Slippage: Left Wheel Counter Reading	Left Wheel Revolutions 500 ft.	Right Wheel Counter Reading	Right Wheel Revolutions 500 ft.	Ave. Rev. Columns 7 & 9	Distance Traveled feet	Distance Measured on Ground, ft.	Slippage% Columns 11 & 12	Speed: Feet per Minute	Speed: Miles per Hour	Average Draft Pounds	Drawbar Horsepower	Temperature: Radiator Deg. F.	Temperature: Atmosphere Wet	Temperature: Atmosphere Dry	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
					556		911													
8-S	5.50	1.257	3253	2588	988	432	343	432	43.20		500		398.9	4.53	2572	31.09	181	61	64	
8-N		1.250	3248	2598	419	431	774	431	43.10		500									
9-S	6.50	1.230	3183	2588	842	423	197	423	42.30		500		407.3	4.63	2577	31.81	178	60	64	
9-N		1.225	3179	2595	264	422	619	422	42.20		500									
10-S	7.50	1.231	3183	2585	686	422	042	423	42.25		500		406.0	4.61	2664	32.78	178	59	63	
10-N		1.232	3187	2586	109	423	466	424	42.35		500									
Total		24.656	63804						847.45						25988		1820	655	728	
Ave.		1.2328	3190	2590 M.C. 2588 E.C.					42.373	528.98	500	5.48	405.6	4.61	2599	31.94	182	66	73	
											500									
	Fuel used:		20.960 lbs./hr.								500		$\frac{20.960}{31.94}$ = 0.656 lbs./hp.hr.							
			$\frac{20.960}{6.896}$ = 3.039 gal./hr.								500									
											500		$\frac{31.94}{3.039}$ = 10.51 Hp.hr./gal.							
											500									
											500									

Note: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Engine R.P.M. = $\frac{\text{Gear Ratio x Column (10)}}{\text{column (3)}}$ or $\frac{\text{Column (4)}}{\text{column 3 x 2}}$

Gear Ratio 3rd - 75.340

Barometer 29.175

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT

AGRICULTURAL COLLEGE, LINCOLN

Copied RB AR

Calculated AOH AR

Log of Official Tractor Drawbar Horsepower Test 729 - 50% of pull at maximum power

Adv. per rev. ft. 12.484 Tractor Name John Deere 2010 RU Diesel Date June 16, 1962

Chart and Reading No.	Time of Day	Stop Watch 500 ft., Minutes	Engine Revolutions x	Engine Crankshaft R.P.M.*	Drive Wheel Slippage: Left Wheel Counter Reading	Left Wheel Revolutions 500 ft.	Right Wheel Counter Reading	Right Wheel Revolutions 500 ft.	Ave. Rev. Columns 7 & 9	Distance Traveled feet	Distance Measured on Ground, ft.	Slippage% Columns 11 & 12	Speed: Feet per Minute	Speed: Miles per Hour	Average Draft Pounds	Drawbar Horsepower	Temperature: Radiator Deg. F.	Temperature: Atmosphere Wet	Temperature: Atmosphere Deg. F.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
					580		033													
1-N	11.05	1.198	3135	2617	956	416	450	417	41.65		500		416.7	4.74	1743	22.01	178	60	72	
1-S		1.202	3136	2609	373	417	866	416	41.65		500									
2-N		1.194	3132	2623	789	416	283	417	41.65		500		418.4	4.75	1700	21.55	178	60	72	
2-S		1.196	3133	2620	205	416	699	416	41.60		500									
Total		4.790	12536						166.55		500				3443					
Ave.		1.1975	3134	2620 W.O. 2617 E.O.					41.638	519.81	500	3.81	417.5	4.74	1722	21.79	178	60	72	
	Fuel used:		16.310	lbs./hr.							500		$\frac{16.310}{21.79}$	= 0.749 lbs./hp.hr.						
			$\frac{16.310}{6.890}$	= 2.365 gal/hr							500									
											500		$\frac{21.79}{2.365}$	= 9.21 Hp.hr./gal.						
											500									
											500									
											500									
											500									

Note: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Engine R.P.M. = $\frac{\text{Gear Ratio x Column (10)}}{\text{column (3)}}$ or $\frac{\text{Column (4)}}{\text{column 3 x 2}}$

Gear Ratio.....

Barometer.....

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT

AGRICULTURAL COLLEGE, LINCOLN

Copied FMZ AR

Calculated FMZ RB

Log of Official Tractor Drawbar Horsepower Test 799 - Maximum Power

Adv. per rev. ft. 12.484 Tractor Name John Deere 2010 RU Diesel Date June 15, 1961

Chart and Reading No.	Time of Day	Stop Watch 500 ft., Minutes	Engine Revolutions x	Engine Crankshaft R.P.M.*	Drive Wheel Slippage: Left Wheel Counter Reading	Left Wheel Revolutions 500 ft.	Right Wheel Counter Reading	Right Wheel Revolutions 500 ft.	Ave. Rev. Columns 7 & 9	Distance Traveled feet	Distance Measured on Ground, ft.	Slippage% Columns 11 & 12	Speed: Feet per Minute	Speed: Miles per Hour	Average Draft Pounds	Drawbar Horsepower	Temperature: Radiator Deg. F.	Temperature: Atmosphere Wet	Temperature: Atmosphere Deg. F. Dry	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
			1st Gear Ratio - 130.850										Barometer - 29.230							
					319		896				500									
3-N	12.20	2.344	6097	2601	786	467	362	466	46.65		500		213.3	2.42	4499	29.08	179			
3-S	12.25	2.354	6118	2599	254	468	830	468	46.80		500		212.4	2.41	4607	29.65	183	55	66	
Total		4.698	12215						93.45		500				9106		362			
Ave.		2.3490	6108	2603 W.C. 2600 E.C.					46.725	583.31	500	14.28	212.9	2.42	4553	29.37	181	55	66	
											500									
			2nd. Gear Ratio - 92.360										Barometer - 29.230							
					254		830				500									
1-S	12.35	1.688	4224	2502	712	458	288	458	45.80		500		296.2	3.37	4290	38.51	188			
1-N	12.40	1.681	4213	2506	169	457	744	456	45.65		500		297.4	3.38	4302	38.77	186			
Total		3.369	8437						91.45		500				8592					
Ave.		1.6845	4219	2507 W.C. 2505 E.C.					45.725	570.83	500	12.41	296.8	3.37	4296	38.64	187	55	66	
											500									
											500									

Note: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Engine R.P.M. = $\frac{\text{Gear Ratio x Column (10)}}{\text{column (3)}}$ or $\frac{\text{Column (4)}}{\text{column 3 x 2}}$

Gear Ratio.....

Barometer.....

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AGRICULTURAL COLLEGE, LINCOLN

Copied FMZ RB

Calculated FMZ RB

Log of Official Tractor Drawbar Horsepower Test 799 - Maximum Power

Adv. per rev. ft. ..... Tractor Name ..... Date .....

Chart and Reading No.	Time of Day	Stop Watch 500 ft., Minutes	Engine Revolutions x	Engine Crankshaft R.P.M.*	Drive Wheel Slippage								Speed		Average Draft Pounds	Drawbar Horsepower	Temperature			Remarks
					Left Wheel		Right Wheel		Ave. Rev. Columns 7 & 9	Distance Traveled feet	Distance Measured on Ground, ft.	Slippage% Columns 11 & 12	Feet per Minute	Miles per Hour			Radiator Deg. F.	Atmosphere		
					Counter Reading	Revolutions 500 ft.	Counter Reading	Revolutions 500 ft.										Wet	Dry	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
			3rd. Gear Ratio - 75.340										Barometer - 29.200							
					684		182				500									
2-N	9.25	1.313	3281	2499	120	436	617	435	43.55		500		380.8	4.33	3447	39.78				
2-S		1.310	3281	2505	556	436	053	436	43.60		500		381.7	4.34	3469	40.12				
Total		2.623	6562						87.15		500				6916					
Ave.		1.3115	3281	2503 W.C. 2502 E.C.					43.575	543.99	500	8.09	381.2	4.33	3458	39.95	188	58	68	
											500									
			4th Gear Ratio - 53.180										Barometer - 29.185							
					691		185				500									
3-S	10.20	0.902	2252	2497	116	425	609	424	42.45		500		554.3	6.30	2459	41.30				
4-N		0.902	2252	2497	540	424	033	424	42.40		500		554.3	6.30	2470	41.49				
Total		1.804	4504						84.85		500				4929					
Ave.		0.9020	2252	2501 W.C. 2497 E.C.					42.425	529.63	500	5.59	554.3	6.30	2465	41.40	186	59	70	
											500									
											500									

Note: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Engine R.P.M. = $\frac{\text{Gear Ratio x Column (10)}}{\text{column (3)}}$ or $\frac{\text{Column (4)}}{\text{column 3 x 2}}$

Gear Ratio.....

Barometer.....

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT

AGRICULTURAL COLLEGE, LINCOLN

Copied FMZ RB

Calculated FMZ RB

Log of Official Tractor Drawbar Horsepower Test 799 - Maximum Power

Adv. per rev. ft. 12.484 Tractor Name John Deere 2010 RU Diesel Date June 16, 1961

Chart and Reading No.	Time of Day	Stop Watch 500 ft., Minutes	Engine Revolutions / x	Engine Crankshaft R.P.M.*	Drive Wheel Slippage								Speed		Average Draft Pounds	Drawbar Horsepower	Temperature			Remarks
					Left Wheel		Right Wheel		Ave. Rev. Columns 7 & 9	Distance Traveled feet	Distance Measured on Ground, ft.	Slippage% Columns 11 & 12	Feet per Minute	Miles per Hour			Radiator Deg. F.	Atmosphere		
					Counter Reading	Revolutions 500 ft.	Counter Reading	Revolutions 500 ft.										Wet	Dry	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
				5th Gear Ratio - 42.820									Barometer - 29.170							
					*		116				500									
1-N	12.42	0.715	1783	2494			533	417	41.70		500		699.3	7.95	1874	39.71	187			
2-S		0.713	1784	2502			950	417	41.70		500		701.3	7.97	1870	39.74	187			
Total				2501	W.C.						500				3744					
Ave.		0.7140	1784	2499	E.C.				41.70	520.58	500	3.95	700.3	7.96	1872	39.73	187	59	72	
											500									
				6th Gear Ratio - 30.230									Barometer - 29.170							
	12.56						778				500									
1-N		0.498	1242	2494	*		189	411	41.10		500		1004.0	11.41	1303	39.64				
2-S		0.498	1244	2498			600	411	41.10		500		1004.0	11.41	1306	39.73				
Total											500				2609					
Ave.		0.498	1243	2495 2496	W.C. E.C.				41.10	513.09	500	2.55	1004.0	11.41	1305	39.70	184	59	72	
											500									
					* Wheel counter failed. Use right wheel count.																

Note: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Engine R.P.M. = $\frac{\text{Gear Ratio x Column (10)}}{\text{column (3)}}$ or $\frac{\text{Column (4)}}{\text{column 3 x 2}}$

Gear Ratio.....

Barometer.....

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AGRICULTURAL COLLEGE, LINCOLN

Copied FMZ RB

Calculated FMZ RB

Log of Official Tractor Drawbar Horsepower Test 799 - Maximum Power

Adv. per rev. ft. 12.484 Tractor Name John Deere 2010 RU Diesel Date June 16, 1961

Chart and Reading No.	Time of Day	Stop Watch 500 ft., Minutes	Engine Revolutions x	Engine Crankshaft R.P.M.*	Drive Wheel Slippage								Speed		Average Draft Pounds	Drawbar Horsepower	Temperature			Remarks
					Left Wheel		Right Wheel		Ave. Rev. Columns 7 & 9	Distance Traveled feet	Distance Measured on Ground, ft.	Slippage% Columns 11 & 12	Feet per Minute	Miles per Hour			Radiator Deg. F.	Atmosphere Deg. F.		
					Counter Reading	Revolutions 500 ft.	Counter Reading	Revolutions 500 ft.										Wet	Dry	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
				7th Gear Ratio - 25.650									Barometer - 29.170							
	1.03				*		829				500									
3-S		0.418	1048	2507			238	409	40.90		500		1196.2	13.59	1059	38.39				
4-N		0.418	1048	2507			648	410	41.00		500		1196.2	13.59	1050	38.06				
Total									81.900		500				2109					
Ave.		0.418	1048	2513 W.C. 2507 E.C.					40.950	511.22	500	2.19	1196.2	13.59	1055	38.24	182	59	72	
											500									
					* Left counter failed. Use right counter only.															
											500									
											500									
											500									
											500									
											500									
											500									
											500									

Note: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Engine R.P.M. = $\frac{\text{Gear Ratio x Column (10)}}{\text{column (3)}}$ or $\frac{\text{Column (4)}}{\text{column 3 x 2}}$

Gear Ratio 3rd - 75.340 | UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT | Copied FMZ AR

Barometer 28.765 | AGRICULTURAL COLLEGE, LINCOLN | Calculated FMZ AR

Log of Official Tractor Drawbar Horsepower Test 799 - Maximum Power without Ballast

Adv. per rev. ft. 12.526 Tractor Name John Deere 2010 RU Diesel Date June 22, 1961

Chart and Reading No.	Time of Day	Stop Watch 500 ft., Minutes	Engine Revolutions x	Engine Crankshaft R.P.M.*	Drive Wheel Slippage								Speed		Average Draft Pounds	Drawbar Horsepower	Temperature			Remarks
					Left Wheel		Right Wheel		Ave. Rev. Columns 7 & 9	Distance Traveled feet	Distance Measured on Ground, ft.	Slippage% Columns 11 & 12	Feet per Minute	Miles per Hour			Radiator Deg. F.	Atmosphere Wet	Atmosphere Deg. F. Dry	
					Counter Reading	Revolutions 500 ft.	Counter Reading	Revolutions 500 ft.												
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
					962		288													
3-S	8.32	1.320	3297	2498	400	438	727	439	43.85		500		378.8	4.30	3353	38.49	193			
3-N		1.314	3288	2502	837	437	164	437	43.70		500		380.5	4.32	3359	38.73	192			
Total		2.634	6585						87.55		500				6712					
Ave.		1.3170	3293	2504 W.C. 2500 E.C.					43.775	548.33	500	8.81	379.7	4.31	3356	38.61	193	59	76	
											500									
											500									
											500									
											500									
											500									
											500									
											500									
											500									
											500									

Note: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Engine R.P.M. = $\frac{\text{Gear Ratio x Column (10)}}{\text{column (3)}}$ or $\frac{\text{Column (4)}}{\text{column 3 x 2}}$

Gear Ratio 3[illegible] - 75.340 | UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT | Copied FMZ AR

Barometer 29.230 | AGRICULTURAL COLLEGE, LINCOLN | Calculated FMZ AR

Log of Official Tractor Drawbar Horsepower Test 799 - Speed-Pull Characteristics

Adv. per rev. ft. 12.484 | Tractor Name John Deere 2010 RU Diesel | Date June 15, 1961

Chart and Reading No.	Time of Day	Stop Watch 500 ft., Minutes	Engine Revolutions x	Engine Crankshaft R.P.M.*	Drive Wheel Slippage								Speed		Average Draft Pounds	Drawbar Horsepower	Temperature			Remarks
					Left Wheel		Right Wheel		Ave. Rev. Columns 7 & 9	Distance Traveled feet	Distance Measured on Ground, ft.	Slippage% Columns 11 & 12	Feet per Minute	Miles per Hour			Radiator Deg. F.	Atmosphere	Deg. F.	
					Counter Reading	Revolutions 500 ft.	Counter Reading	Revolutions 500 ft.										Wet	Dry	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
Ave.		1.3115	3281	2502	E.C.				43.575	543.99		8.09	381.2	4.3	3450	40.0	188	58	68	
	4.30				011		578				500									
2-S		1.462	3307	2262	451	440	017	439	43.95		500		342.0	3.9	3550	36.9	191			
3-N		1.668	3331	1997	894	443	459	442	44.25		500		299.8	3.4	3700	33.5	188			
3-S		1.909	3338	1749	337	443	902	443	44.30		500		261.9	3.0	3750	30.0	194			
4-N		2.235	3335	1492	780	443	345	443	44.30	553.04	500	9.59	223.7	2.5	3700	24.7	194			
4-S		2.646	3320	1255	221	441	786	441	44.10		500		189.0	2.2	3550	20.8	200	57	68	
											500									
											500									
											500									
											500									
											500									
											500									
											500									

Note: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Engine R.P.M. = $\frac{\text{Gear Ratio x Column (10)}}{\text{column (3)}}$ or $\frac{\text{Column (4)}}{\text{column 3 x 2}}$