

January 1952

## Test 473: Bolens 12BB

Follow this and additional works at: <http://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Applied Mechanics Commons](#)

---

"Test 473: Bolens 12BB" (1952). *Nebraska Tractor Tests*. 590.  
<http://digitalcommons.unl.edu/tractormuseumlit/590>

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.

Department of Agricultural Engineering  
Dates of test: June 9 to June 14, 1952  
Manufacturer: BOLENS PRODUCTS DIVISION,  
FOOD MACHINERY CORP., PORT WASH-  
INGTON, WISCONSIN  
Manufacturer's rating: Not rated.

BOLENS 12BB

BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer inches of mercury
		Gal per hour	Hp-hr per gal	Lb per hp-hour		Cooling med	Air	
TESTS B and C—100% MAXIMUM LOAD—TWO HOURS								
1.95	3600	0.296	6.59	0.921	Air cooled	79	28.725	
TEST D—RATED LOAD—ONE HOUR								
1.80	3599	0.295	6.10	0.994	Air cooled	82	28.720	
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
1.80	3606	0.292	6.16	0.983	Air cooled	82	.....	
0.06	4050	0.193	3.11	1.950	Air cooled	84	.....	
0.98	3924	0.238	4.12	1.469	Air cooled	84	.....	
1.75	2919	0.262	6.68	0.909	Air cooled	84	.....	
0.50	4032	0.218	2.29	2.640	Air cooled	85	.....	
1.41	3813	0.277	5.09	1.191	Air cooled	86	.....	
1.08	3724	0.247	4.37	1.384	Air cooled	84	28.720	

TORQUE (At Dynamometer)

Eng rpm	3912	3750	3594	3400	3264	3000	2682	2500	2388	1914
Lb-ft	6.51	6.77	7.23	7.50	7.70	7.90	8.09	8.06	8.03	7.83

DRAWBAR HORSEPOWER TESTS

Hp	Draw bar pull lb	Speed miles per hr	Crank shaft speed rpm	Slip of drive wheels %	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer inches of mercury
					Gal per hour	Hp-hr per gal	Lb per hp-hr		Cooling med	Air	
TESTS F and G—100% MAXIMUM LOAD											
1.63	205	2.99	3608	11.30	... Not Recorded ...			Air cooled	78	28.660	
1.19	210	2.13	3591	14.61	... Not Recorded ...			Air cooled	84	28.660	
TEST H—RATED LOAD—TEN HOURS—High											
1.30	159	3.06	3600	6.35	0.226	5.75	1.052	Air cooled	90	28.670	
TEST J—OPERATING MAXIMUM LOAD—High											
0.94	124	2.85	3614	14.02	... Not Recorded ...			Air cooled	99	28.670	

FUEL, OIL and TIME Gasoline octane No. ASTM 76 Research 82 (rating taken from oil company's typical inspection data); weight per gallon 6.063 lb Oil SAE 30; to motor 0.121 gal; drained from motor 0.095 gal; operating time 14 hrs—SAE 20; to motor 0.189 gal; drained from motor 0.107 gal; operating time 23 hrs—Total time motor was operated 37 hours.

CHASSIS Type two wheel garden tractor Tread width 17 3/8" to 23 3/8" Hydraulic control system none used Advertised speeds mph 1 1/4 to 3 1/4 by governor control and sheave adjustment Belt pulley diam 7 3/8" for "B" section belt rpm 600 Clutch belt idler Seat none Brakes none Power take-off none.

ENGINE Make Briggs and Stratton Type single cylinder vertical Serial No. 199540 Crankshaft mounted crosswise Head L Lubrication splash Bore and Stroke 2 1/4" x 2" Rated rpm 3600 Compression ratio 5.4 to 1 Displacement 7.95 cu in Port Diameter Valves inlet 7/8" exhaust 25/32" Governor Air Vane Carburetor Size 1/2" Ignition System magneto Starting System rope Air Cleaner oil bath wire mesh Muffler was used Oil Filter none Cooling medium temperature control air cooled engine.

\*ENGINE Make Clinton Type single cylinder vertical Serial No. 2062301 Crankshaft mounted crosswise Head L Lubrication splash Bore and Stroke 2" x 1 1/2" Rated rpm 3600 Compression ratio 6 to 1 Displacement 5.89 cu in Port Diameter Valves inlet 13/16" exhaust 13/16" Governor variable speed centrifugal flyball Carburetor Size 3/4" Ignition System magneto Starting System rope Air Cleaner oil washed hair mesh Muffler was used Oil Filter none Cooling medium temperature control air cooled engine.

REPAIRS AND ADJUSTMENTS No repairs or adjustments.

REMARKS All test results were determined from observed data and without allowances, additions or deductions. Tests B and F were made with carburetor set for 100% maximum belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G, H, and J were made with an operating setting of the carburetor (selected by the manufacturer) of 100% of maximum belt horsepower.

\*The Clinton engine (observed 100% maximum belt horsepower 1.26) is used in the Model 12BA tractor.

HORSEPOWER SUMMARY

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F and 29.92" Hg)	1.73	2.07
2. Observed maximum horsepower (tests F & B)	1.63	1.95
3. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly ASAE and SAE ratings)	1.30	1.76

We, the undersigned, certify that this is a true and correct report of official tractor test No. 473.

L. F. LARSEN  
Engineer in Charge

C. W. SMITH  
F. D. YUNG  
L. W. HURLBUT  
Board of Tractor  
Test Engineers

TIRES, WHEELS and WEIGHT

	Tests F, G, & H	Test J	Test K
Two wheels	Pressed steel	Pressed steel	No smaller tires suggested by manufacturer
Type	Pressed steel	Pressed steel	
Liquid ballast	25 lb each	None	
Added cast iron	52 lb each	None	
Tires	Two 5.00-12	Two 5.00-12	
No. and size	Two 5.00-12	Two 5.00-12	
Ply	2	2	
Air pressure	6 lb	6 lb	
Height of drawbar	12 inches	12 inches	
Static weight	364 lb	211 lb	
Total weight as tested	364 lb	211 lb	