



# Wheel Loader 821B

## ENGINE

Model..... 6T-830  
 Cylinders ..... 6  
 Bore/Stroke..... 4.48" x 5.32"  
 Displacement ..... 504 in<sup>3</sup>  
 Horsepower  
 SAE Gross ..... 185 @ 2000 rpm  
 SAE Net ..... 169 @ 2000 rpm  
 Maximum torque  
 SAE Gross ..... 558 lb-ft @ 1500 rpm  
 SAE Net..... 531 lb-ft @ 1500 rpm

## DRIVELINE

4 forward/3 reverse speed full powershift transmission. Electric twist-grip range selector lever on steering column. Semi-automatic shifting for upshifts and downshifts. Single stage integral torque converter with 3-to-1 stall ratio. Limited slip axles with outboard planetaries and wet disc brakes.

### TRAVEL/WORK SPEEDS MPH

	1st	2nd	3rd	4th
Forward ..	4.9	8.2	16.3	25.1
Reverse ...	4.9	8.2	16.3	—

## OPERATOR ENVIRONMENT

Front cab glass areas and sloped rear hood offer maximum visibility to work area. Easy-to-reach servo loader controls require low effort and short throw, fingertip operation. Five loader control options are available to customize operation. An audible alarm, multi-level warning lights and liquid crystal bar graphs alert operator to individual function status. Transmission shifter features lever-controlled forward/reverse, with twist-grip range selection. Instrumentation monitors all individual machine functions. Optional analog gauges include tachometer, voltmeter, engine oil pressure, transmission oil temperature. A padded adjustable steering wheel and suspension seat increase operator

## HYDRAULIC SYSTEM

Steering pump capacity..... 48.3 gpm @ 2200 rpm @ 2810 psi  
 Loader pump capacity ..... 30.9 gpm @ 2200 rpm @ 2200 psi  
 System relief pressure ..... 2810 psi  
 Loader control valve: .... Open-center, series parallel circuit, with positive low pressure regeneration for bucket dump.

## ELECTRICAL SYSTEM

Voltage..... 24 volt, negative ground  
 Alternator ..... 65 amp  
 Batteries (2) ..... 12 volt

## SERVICE CAPACITIES

Cooling system..... 33.9 qt  
 Fuel tank ..... 70.8 gal  
 Engine crankcase ..... 20 qt  
 Crankcase and filter ..... 22 qt  
 Transmission ..... 28 qt  
 Service (w/filter)..... 13 qt  
 Total hydraulic system ..... 46 gal  
 Hydraulic reservoir ..... 39.8 gal  
 Axles (each)  
 Differential: front..... 22 qt  
 rear ..... 16 qt  
 Hub (each): front..... 6.5 qt  
 rear ..... 6 qt  
 Total: front..... 35 qt  
 rear ..... 28 qt

## LOADER

A 23,865 lb full turn tipping load means that the 821B can easily handle material weighing 4,453 lb per cubic yard.

### CYCLE TIMES

	Seconds
Raise (with rated bucket load) .....	6.2
Dump (with rated bucket load) ....	1.6
Lower (empty, power down).....	4.3
Lower (empty, float down) .....	3.8
Total Cycle Time .....	11.6

## STEERING/ARTICULATION

Stop-to-stop turning ratio is 4.0 turns. Outside turning radius of tires is 18'10". 40° articulation.

## DIMENSIONS

Dimensions are for spec loader with 23.5 x 25 12PR tires, ROPS cab w/heater, 5400 lb counterweight, standard equipment, 175 lb operator, full fuel and 3.50 yd<sup>3</sup> bucket.

Height to top of cab/canopy ..... 10'11"  
 Wheelbase ..... 125.8"  
 Overall height ..... 177"  
 Hinge pin height ..... 12'11"  
 Ground clearance ..... 15.8"  
 Tread width ..... 82"  
 Width over tires ..... 106.4"

### TIRE SIZE ADJUSTMENT FOR VERTICAL DIMENSIONS

23.5 x 25 12PR L2 .....	0"
23.5 x 25 12PR L3 .....	+0.5"
23.5 x 25 XHA TL .....	+1.6"
20.5 x 25 16PR L2 .....	-1.8"
20.5 x 25 16PR L3 .....	-1.4"
20.5 x R25 XHA TL .....	-1.5"

## CYLINDERS

	Diameter	Stroke	Rod
<b>LOADER</b>			
Lift (2) .....	6"	31.8"	3.5"
Dump (1) .....	7"	22.8"	3.5"

### STEERING (ARTICULATION)

(2).....	3.5"	17.1"	1.8"
<b>CLAM</b> .....	5"	14"	2.5"

# PERFORMANCE DATA

Spec loader is a fully serviced unit that includes all standard equipment, 23.5 x 25 12PR L2 tires, ROPS cab with heater, 5,400 lb counterweight and 175 lb operator.

BUCKET CONFIGURATION	EXCAVATING 3.50 YD <sup>3</sup>				STOCKPILING 4.00 YD <sup>3</sup>		MULTIPURPOSE 3.00 YD <sup>3</sup>		
	Bucket only	Bucket w/teeth	Bucket w/bolt-on edge	Bucket w/teeth & segments	Bucket only	Bucket w/bolt-on edge	Bucket only	Bucket w/teeth	Bucket w/bolt-on edge
SAE Heaped capacity	3.50 yd <sup>3</sup>	3.50 yd <sup>3</sup>	3.67 yd <sup>3</sup>	3.67 yd <sup>3</sup>	3.92 yd <sup>3</sup>	3.92 yd <sup>3</sup>	3.04 yd <sup>3</sup>	3.04 yd <sup>3</sup>	3.22 yd <sup>3</sup>
SAE Struck capacity	3.03 yd <sup>3</sup>	3.03 yd <sup>3</sup>	3.17 yd <sup>3</sup>	3.17 yd <sup>3</sup>	3.41 yd <sup>3</sup>	3.41 yd <sup>3</sup>	2.52 yd <sup>3</sup>	2.52 yd <sup>3</sup>	2.71 yd <sup>3</sup>
Bucket weight	2,750 lb	3,068 lb	3,279 lb	3,484 lb	2,975 lb	3,504 lb	4,396 lb	4,714 lb	4,896 lb
Bucket width	109"	110.3"	109"	110.3"	109"	109"	109"	110.4"	109"
Loader clearance circle, bucket at carry	41'3"	41'10"	41'5"	41'10"	41'5"	41'8"	41'2"	41'10"	41'5"
SAE Breakout force	36,391 lb	36,018 lb	33,667 lb	35,700 lb	32,795 lb	30,476 lb	40,047 lb	39,592 lb	36,714 lb
SAE Tipping load straight	29,486 lb	29,068 lb	28,818 lb	28,557 lb	29,222 lb	28,542 lb	27,091 lb	26,682 lb	26,460 lb
SAE Tipping load at 40° turn	23,864 lb	23,448 lb	23,201 lb	22,942 lb	23,599 lb	22,924 lb	21,659 lb	21,255 lb	21,035 lb
SAE Operating load	11,932 lb	11,724 lb	11,601 lb	11,471 lb	11,800 lb	11,462 lb	10,830 lb	10,627 lb	10,518 lb
SAE Operating weight*	37,040 lb	37,358 lb	37,569 lb	37,774 lb	37,265 lb	37,794 lb	38,686 lb	39,004 lb	39,186 lb
Overall length	24'6"	25'4"	24'10"	25'4"	24'10"	25'2"	24'4"	25'3"	24'8"
Dump clearance @ full height - 45°	117.0"	109.7"	114.1"	109.7"	113.9"	110.9"	117.5"	110.1"	114.5"
Bucket reach @ full height - 45°	43.6"	49"	44.7"	49"	46.7"	47.9"	37.4"	42.9"	38.5"
Bucket reach @ 7' - 45°	66.3"	68.1"	66.1"	68.1"	67.9"	67.6"	60.3"	62.2"	60.1"
Dig depth below groundline	3.1"	4.4"	4.4"	4.4"	3.1"	4.4"	7.2"	8.5"	8.4"

\*For selected option changes, adjust operating weight and tipping loads as shown in the table below.

## SELECTED OPTIONS

SELECTED OPTIONS	Weight Adjustments lb	Tipping Load Adjustments 40° Turn-lb
23.5 x 25 12PR L2 .....	0	0
23.5 x 25 12PR L3 .....	+380	+484
23.5 x 25 XHA TL* .....	+860	+1,302
20.5 x R25 16PR L2 .....	-1,340	-540
20.5 x R25 16PR L3 .....	-1,012	+116
20.5 x R25 XHA TL* .....	-916	+84
20.5 x 25 XTLA TL* .....	-1,296	-313
4400 lb counterweight.....	-1,000	-1,552
ILO 5400 lb counterweight		
ROPS canopy .....	-295	-197

NOTE: Ballast is not approved with the 5400 lb counterweight and/or 23.5 x 25 tires.

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Printed in U.S.A.

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