

The CASE logo is rendered in a stylized, blocky font with a distinctive shape for the 'S'.

# W20B Loader



#### **103 (76.8 kW) NET FLYWHEEL HORSEPOWER**

Case 401 in<sup>3</sup> (6571 cm<sup>3</sup>) diesel engine

#### **FULL POWERSHIFT TRANSMISSION**

Four speeds forward, two reverse

#### **SINGLE LEVER SHIFT CONTROL**

Modulated transmission clutching for fast, smooth, on the go directional changes

#### **TWIN TURBINE TORQUE CONVERTER**

Automatically shifts to meet changing load demands for optimum cycling productivity

#### **FRONT MOUNTED OPERATOR'S COMPARTMENT**

Visibility, controllability, serviceability, comfort and noise reduction

#### **IN-LINE LOADER LINKAGE**

All linkage mounted in line with the loader lift arms for good visibility to bucket work area

#### **AIR/HYDRAULIC BRAKES**

Four-wheel caliper disc

#### **LONG 108" (2.74 m) WHEELBASE PLUS 40° ARTICULATION**

Combines operational stability and balance with excellent turning radius

#### **CENTER-PIVOT STEER**

Allows rear and front tires to track at all times

Unit shown is equipped with non-standard items.

## **JI Case**

A Tenneco Company

Construction Equipment Division

700 State Street Racine, WI 53404



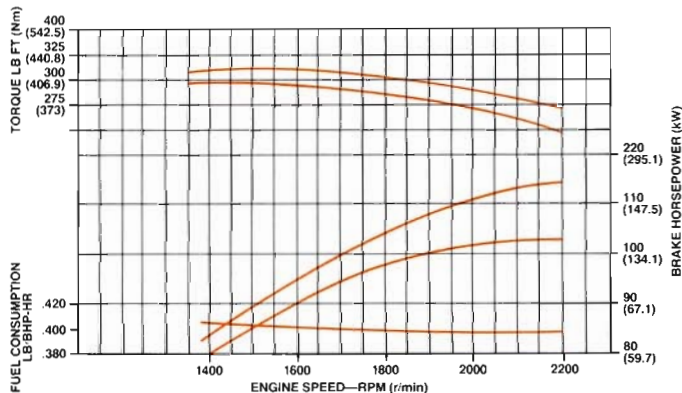
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# W20B SPECIFICATIONS

## ENGINE

- Make and model ..... Case A401BD  
 Fuel ..... Diesel  
 Maximum rated horsepower  
 (1) Gross ..... 114 @ 2200 rpm  
 (85 kW @ 2200 r/min)  
 (2) SAE net ..... 103 @ 2200 rpm  
 (76.8 kW @ 2200 r/min)  
 Torque, maximum  
 At 500' (152 m) altitude,  
 85°F (29°C) ..... 298 lbs-ft @ 1450 rpm  
 (411.8 Nm @ 1450 r/min)  
 Cylinders, number (valve-in-head) ..... 6  
 Bore and stroke ..... 4.125" x 5"  
 (105 mm x 127 mm)  
 Displacement ..... 401 in<sup>3</sup> (6571 cm<sup>3</sup>)  
 Air cleaner (with service indicator) ..... Two element, dry type  
 Oil filter ..... Full-flow type
- (1) Manufacturer's rating of maximum engine horsepower at flywheel when equipped with oil and water pumps. Fuel set at maximum quantity for this application. Corrected to sea level 29.92" (760 mm) Hg and 60°F (15°C) dry air.
- (2) SAE net flywheel horsepower of engine as applied to this vehicle when equipped with operating accessories including oil and water pumps, alternator, air cleaner, fan and muffler. Corrected to 500' (152 m) altitude with .38" (9.5 mm) Hg vapor pressure, 29.38" (746 mm) Hg observed barometer and 85°F (29°C) per SAE J816 specifications.

## POWER CURVE



## ELECTRICAL SYSTEM

- Voltage ..... 24 volt  
 Standard alternator ..... 40 amp  
 Batteries ..... (2) 12-volt  
 System protected by circuit breakers.

## TRAVEL SPEEDS (with 17.5 x 25 tires)

	1st		2nd		3rd		4th	
	mph	km/h	mph	km/h	mph	km/h	mph	km/h
Forward	3.7	5.95	7.5	12.07	12.0	19.31	23.3	37.49
Reverse	4.7	7.56	9.7	15.61				

## TRANSMISSION

Four speeds forward, two speeds reverse, powershift. Single lever control. Modulated clutching. Transmission shifts automatically from first to second and third to fourth.

## TORQUE CONVERTER

Twin turbine integral with transmission. 6.97 to 1.0 stall ratio.

## AXLES (front and rear)

Front axle fixed. Rear axle oscillates up or down 12°, 24° total oscillation. One wheel can drop 16" (406 mm) with all wheels remaining on the ground for maximum traction. Axle shafts may be removed without disturbing the wheels or planetaries.

## DIFFERENTIALS

Torque proportioning differentials, front and rear for maximum traction.

## BRAKES

Air over hydraulic, 4-wheel, caliper disc. Air actuated mechanical parking brake. Automatically sets if air pressure drops below effective operating level. Red warning light indicates when parking brake is engaged.

## STEERING

Center pivot articulated design with hydrostatic power steering. Front and rear wheels always track.

- Steering angle—each direction from center ..... 40°  
 Steering pump ..... 23 gpm @ 2200 rpm @ 2200 psi  
 (87 lit/min @ 2200 r/min @ 13 790 kPa)  
 Steering cylinders ..... 3" dia x 15" stroke  
 (76 mm dia x 381 mm stroke)  
 Turning circle outside tires ..... 32'7" (9.93 m)

## LOADER HYDRAULIC SYSTEM

**Cylinders:** Double-acting with hardened and chrome-plated rods to increase strength and resist corrosion.

- Lift (2) ..... 5" dia x 30.1" stroke  
 (127 mm dia x 764 mm stroke)  
 Bucket (2) ..... 4" dia x 28.35" stroke  
 (102 mm dia x 720 mm stroke)

**Pump:** Dual-stage, gear-type, engine-driven. 48 gpm @ 2200 rpm @ 2150 psi (182 lit/min @ 2200 r/min @ 15 168 kPa).

**Control valve:** Open-center, series parallel circuit.

**Hydraulic lines:** Steel tubing with brazed fittings and wire-braid, high-pressure hose with swaged fitting.

**Reservoir:** Closed, positive air pressurized reservoir insures exclusion of contaminants and positive input flow to pump. All input oil to pump passes through micron filter, furnishing clean oil to all components of the hydraulic system.

### Hydraulic cycle time:

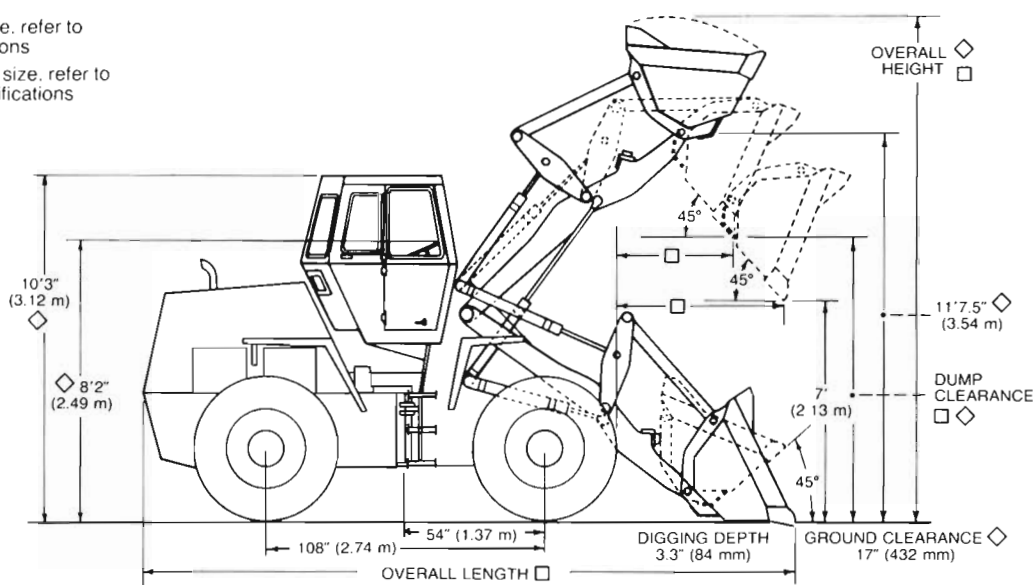
(Rated load in bucket)	Seconds
Raise	6.1
Lower	3.5
Dump	1.7
Total	11.3

## SERVICE CAPACITIES

	U.S. Gals	Litres
Fuel tank	50	189
Hydraulic system	29	110
Transmission and torque converter	9	34
Engine crankcase	3	11
Differentials and final drives		
Front	4.5	17
Rear	4.5	17
Cooling system	13	49

**NOTE:** Specifications herein are in accordance with all Society of Automotive Engineer's standards (SAE). The applicable Loader Standard is SAE J732C.

- ◇ Varies with tire size, refer to operating dimensions
- Varies with bucket size, refer to performance specifications



## PERFORMANCE SPECIFICATIONS — Loader ratings are governed by SAE J732C and 742B

BUCKET TYPE — Capacity	GENERAL PURPOSE			4-IN-1*		
	1.75 yd <sup>3</sup> (1.34 m <sup>3</sup> )	2.0 yd <sup>3</sup> (1.53 m <sup>3</sup> )	2.5 yd <sup>3</sup> (1.91 m <sup>3</sup> )	1.5 yd <sup>3</sup> (1.2 m <sup>3</sup> )	1.75 yd <sup>3</sup> (1.34 m <sup>3</sup> )	
SAE Rated (nominally heaped)	1.41 yd <sup>3</sup> (1.08 m <sup>3</sup> )	1.63 yd <sup>3</sup> (1.25 m <sup>3</sup> )	2.07 yd <sup>3</sup> (1.58 m <sup>3</sup> )	1.29 yd <sup>3</sup> (1.0 m <sup>3</sup> )	1.41 yd <sup>3</sup> (1.08 m <sup>3</sup> )	
Struck	94.6" (2.40 m)	94.6" (2.40 m)	94.6" (2.40 m)	95.6" (2.47 m)	95.6" (2.47 m)	
Cutting edge width	1350 lbs (612 kg)	1400 lbs (635 kg)	1450 lbs (658 kg)	1900 lbs (862 kg)	1950 lbs (885 kg)	
Weight	9'2" (2.79 m)	9'0" (2.74 m)	8'8" (2.62 m)	9'0" (2.74 m)	9'0" (2.74 m)	
Dump Clearance @ 45° Dump — Full Height	2'11" (.89 m)	3'1" (.94 m)	3'5" (1.04 m)	3'2" (.97 m)	3'2" (.97 m)	
Bucket Reach @ Full Height & 45° Dump	4'4" (1.32 m)	4'5" (1.35 m)	4'7" (1.40 m)	4'6" (1.37 m)	4'6" (1.37 m)	
Bucket Reach @ 7' (2.13 m) Clearance & 45° Dump	35'4" (10.77 m)	35'6" (10.82 m)	35'9" (10.90 m)	35'10" (10.92 m)	35'10" (10.92 m)	
Loader Clearance Circle — Bucket in Carry Position	19'11" (6.07 m)	20'2" (6.15 m)	20'7" (6.27 m)	20'5" (6.22 m)	20'5" (6.22 m)	
Overall Length	15'0" (4.52 m)	15'3" (4.65 m)	15'8" (4.78 m)	14'8" (4.47 m)	15'5" (4.69 m)	
Overall Height	22,440 (10 179 kg)	20,438 (9271 kg)	17,572 (7971 kg)	21,628 (9810 kg)	21,628 (9810 kg)	
SAE Breakout Force, lbs	15,872 (7199 kg)	15,725 (7133 kg)	15,376 (6974 kg)	14,053 (6374 kg)	14,099 (6395 kg)	
SAE Tipping Load, Straight, lbs**	35° Turn	14,523 (6588 kg)	14,388 (6526 kg)	14,070 (6382 kg)	12,861 (5834 kg)	12,903 (5853 kg)
35° Turn	40° Turn	14,126 (6407 kg)	13,995 (6348 kg)	13,686 (6208 kg)	12,511 (5675 kg)	12,552 (5683 kg)
40° Turn	Operating Load, lbs**	7063 (3204 kg)	6998 (3174 kg)	6843 (3104 kg)	6256 (2838 kg)	6276 (2847 kg)
Operating Load, lbs**	Maximum Material Weight per yd <sup>3</sup> (m <sup>3</sup> )	4036 (1831 kg)	3499 (1587 kg)	2737 (1242 kg)	4171 (1892 kg)	3586 (1627 kg)
Maximum Material Weight per yd <sup>3</sup> (m <sup>3</sup> )	Hydraulic Lifting Capacity @ Full Height	12,335 (5595 kg)	12,285 (5572 kg)	12,235 (5550 kg)	11,785 (5346 kg)	11,735 (5323 kg)
Hydraulic Lifting Capacity @ Full Height	SAE Operating Weight, lbs**	21,133 (9586 kg)	21,183 (9608 kg)	21,233 (9631 kg)	21,683 (9835 kg)	21,733 (9858 kg)
SAE Operating Weight, lbs**						

\*\* For select items, add to or deduct from the machine operating weight and tipping loads as given in the chart below. All dimensions and specifications based upon unit with 17.5 x 25, L2 12PR tires, ROPS cab, fenders with 175 lb (79.4 kg) operator.

Selected Items	Operating Weight Adjustments		Tipping Load Adjustments					
	lbs	kg	Straight		35° Turn		40° Turn	
			lbs	kg	lbs	kg	lbs	kg
W/ROPS Canopy	-530	-240	-443	-201	-443	-201	-443	-201
17.5 x 25 L2 W/75% CaCl <sub>2</sub>	+1218	+552	+1752	+795	+1594	+723	+1547	+702
17.5 x 25 XRAT 1*	+281	+128	+202	+92	+185	+84	+180	+82
17.5 x 25 XRAT 1* W/15% CaCl <sub>2</sub>	+1499	+680	+2158	+979	+1977	+897	+1923	+872
20.5 x 25, L2	+468	+212	+369	+167	+306	+139	+288	+131
20.5 x 25 XRAT 1*	+925	+420	+666	+302	+609	+276	+593	+269
Without Fenders	-202	-92	-183	-83	-171	-78	-168	-76

## OPERATING DIMENSIONS

	17.5 x 25, L2 tires	17.5 x 25 X RAT 1* tires	20.5 x 25, L2 tires	20.5 x 25 X RAT 1* tires
Tire Options	17.5 x 25, L2 tires	17.5 x 25 X RAT 1* tires	20.5 x 25, L2 tires	20.5 x 25 X RAT 1* tires
Tread	73" (1.85 m)	73" (1.85 m)	75.5" (1.92 m)	75.5" (1.92 m)
Width over tires	91" (2.31 m)	91" (2.31 m)	97.5" (2.48 m)	97.5" (2.48 m)
Decrease in vertical dimensions	None	None	2.1" (53 mm)	2.1" (53 mm)

# EQUIPMENT ATTACHMENTS

## 4-IN-1\* BUCKET SPECIFICATIONS

Reach @ 45° dump angle, 7'0"  
(2.13 m) clearance, 4'6" (1.37 m)

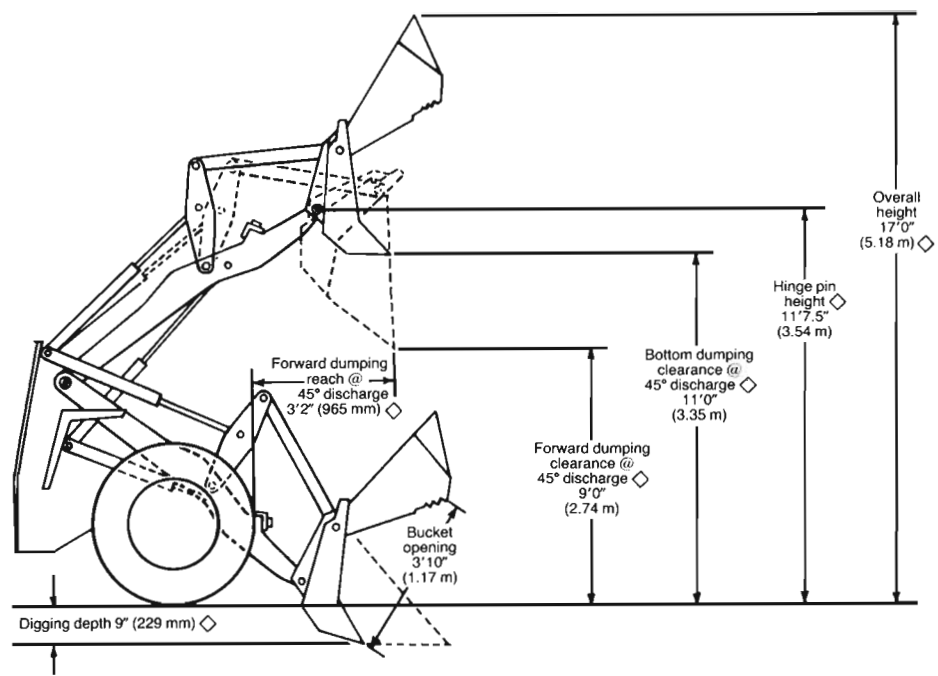
Tilt back @ ground level, 50°

Closure force, clamp to cutting  
edge, 12,850 lbs (5829 kg)

Weight, 1900 lb (862 kg)

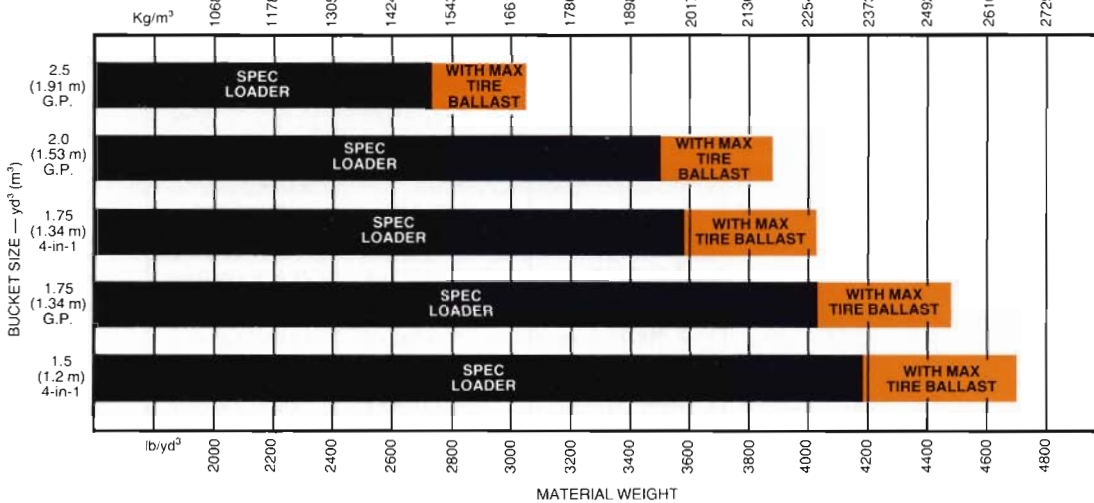
**NOTE:** SAE code adhered to, 17.5 x 25  
L2, 12PR tires used.

◇ Varies with tire size - refer to  
performance specifications.



## W20B BUCKET SELECTION CHART

Spec Loader includes all standard equipment, 17.5x25, L2 tires, ROPS cab, fenders, 175 lb (79 kg) operator, and fully serviced



MATERIAL	lb/yd <sup>3</sup>	kg/m <sup>3</sup>
Sand, wet	3500	2075
Sand & Gravel, wet	3375	2000
Gravel, wet, 1/2" x 2"	3375	2000
Sand, slightly damp	3240	1920
Gravel, pit run (graveled sand)	3240	1920
Clay & gravel, wet	3085	1830
Slag, broken	2970	1760
Trap rock, broken	2950	1750
Sand & gravel, dry	2916	1730
Earth, soft loose mud	2916	1730
Gravel, dry, 1/4" x 2"	2835	1680
Granite, broken or crushed	2778	1645
Stone, crushed	2700	1600
Sand, dry loose	2700	1600
Gypsum, crushed	2700	1600
Gravel, sand & clay, loose	2700	1600
Earth, wet excavated	2700	1600
Clay & gravel, dry	2700	1600
Clay, wet lumps	2700	1600
Limestone, broken or crushed	2625	1555
Gravel, loose dry	2565	1520
Sandstone, broken	2550	1510
Earth, moist excavated	2430	1440
Earth, loam, dry excavated	2100	1245
Coal, anthracite, broken	1857	1100
Clay, dry excavated	1847	1095
Clay, dry lumps	1822	1080
Coal, bituminous, broken	1413	840
Garbage, wet	1350	801
Ashes	1100	653
Silage	865	513
Snow, wet	400	237
	600	356
Snow, dry	150	89
	400	237

Bucket recommendations shown above are based on normal materials and average operation conditions. When selecting the proper bucket for a specific application other factors, such as loadability, material characteristics, terrain and other pertinent job conditions must also be considered.

## STANDARD EQUIPMENT

ROPS canopy with seat belt. 40 amp alternator with voltage regulator. Batteries. 24 volt start. Front and rear flood lights. Tail light and stop light. Pusher fan. Two-element, dry-type air cleaner. Air horn. Powershift transmission. 4-wheel, air over hydraulic caliper disc brakes. Parking brake. Alternator warning light, engine oil pressure warning light, engine water temperature gauge, converter oil temperature gauge, clutch pressure warning light, air pressure gauge, fuel gauge, parking brake light, hour-meter and tachometer. Drawbar. Bucket position indicator. Anti-freeze. Torque proportioning front and rear axles.

## OPTIONAL EQUIPMENT

ROPS cab with air pressurization and sound suppression, seat belt accessories ROPS. Buckets. Power train guard. Engine side panels. Fenders. Heater (36,000 Btu/hr) and defroster. Cold weather starting equipment. Lockup kit. Tire inflation kit. Turn signals. Additional driving lights. Automatic, adjustable bucket height kickout. High dump loader linkage. Automatic return-to-dig mechanism. Spark arresting muffler. Air conditioning (24,400 Btu/hr). Suspension seat. Back-up alarm. Auxiliary steering. Rotating beacon. Lift and tie down brackets. Suction fan. 65 amp alternator.

**NOTE:** All specifications are stated in accordance with ICED Definitions or SAE Standards or Recommended Practices, where applicable.

## IMPORTANT

J I Case Company reserves the right to change these specifications without notice and without incurring any obligation relating to such changes.

**Sold and Serviced by:**