



# CATERPILLAR

## 920 wheel loader



Dependable . . . with the adjustment-free Cat diesel engine, rugged planetary power shift transmission and long-life sealed hydraulic system to keep you working. Mobile . . . with four-wheel drive, articulated steering and caliper disc brakes to get you in, out and around fast. Versatile . . . with all kinds of attachments to match the 920 to your work — buckets, forks, cabs and more. And easy, economical servicing . . . with low-maintenance sealed linkage, spin-on filters, convenient dipsticks and fewer costly repairs.

- 80 flywheel horsepower Cat diesel engine.
- Single lever power shift transmission . . . fast, easy speed and direction changes . . . four speeds forward, three reverse.
- Articulated frame design with hinge point midway between front and rear axles . . . rear and front wheels track at all times.
- Disc brakes on all wheels . . . separate brake circuits for each axle . . . automatically applied emergency brake.



### Cat engine

Horsepower (flywheel) @ 2200 RPM 80

The net horsepower at the flywheel of the vehicle engine operating under S.A.E. standard ambient temperature and barometric conditions 85° F. (29° C) and 29.8" (746 mm) Hg., using 35 API gravity fuel oil at 60° F. (15.6° C). Vehicle engine equipment includes blower fan, air cleaner, water pump, lubricating oil pump, fuel pump, muffler, air compressor, and alternator. Engine will maintain specified flywheel horsepower up to 2,500 feet (750 m) altitude.

U.S.A. taxable horsepower 35.1

# 920 wheel loader

## design data:

Caterpillar 4-stroke cycle diesel Model 3304 with four cylinders, 4.75" bore (121 mm), 6" stroke (152 mm), and 425 cu. in. displacement (7 litres).

Precombustion chamber fuel system with individual adjustable fuel injection pumps and valves.

Cast ground and tapered aluminum alloy pistons with 3-ring design and cooled by oil spray. Steel backed aluminum bearings. Hi-Electra hardened crankshaft journals. Pressure-lubrication with full-flow filtered oil. Dry-type air cleaner with primary and safety elements.

Uses economical No. 2 Fuel Oil (ASTM Specification D396), often called No. 2 furnace or burner oil, with a minimum cetane rating of 35. Premium quality diesel fuel can be used but is not required.

Two 24-volt direct electric starting systems - standard or optional low temperature. Glow plugs for preheating pre-combustion chambers included with both.



## transmission

Full power shift. Single stage, single phase torque converter. Single lever on left side of steering column controls both speed and direction. Twist the lever handle for four forward speeds and three in reverse. A safety lever locks the transmission control in neutral.

Speeds	1st	2nd	3rd	4th
Forward, mph:	4.0	7.3	11.9	26.2
(km/h):	(6.4)	(11.7)	(19.2)	(42.3)
Reverse, mph:	4.8	8.7	14.2	-
(km/h):	(7.7)	(14.0)	(22.9)	-



## axles

Front axle fixed, rear axle oscillates up or down 14", total of 28". One wheel can drop or rise 17" (430 mm) with all wheels remaining on the ground. Axle shafts may be removed independently of wheels and planetaries. Conventional differentials. Torque proportioning differentials are optional.



## final drives

All-wheel drive with planetary reduction in each wheel. Planetary units may be removed independently of wheels and brakes.



## brakes

Service - Caliper discs on all four wheels, hydraulic/air actuated. Separate brake circuits for front and rear axles. Transmission neutralizer actuated by left pedal.

Parking - Mechanical shoe-type mounted on transmission shaft. Operator applies manually.

Emergency - Uses parking brake. If air pressure drops, an audible alarm sounds, then brake automatically applies to bring machine to a controlled stop. Operator may also apply manually.

Brake systems meet OSHA requirements.



## tires

Tubeless, Nylon, loader-doser design.

Choice of:

- 13.00-24, 8 PR Traction-type (G-2)
- 15.50-25, 12 PR Rock-type (L-3)
- 15.50-25, 12 PR Traction-type (L-2)



## steering

Articulated frame. Rear and front wheels track at all times. Full hydraulic power.

Minimum turning radius (over tires) [ - 16' 11" (5150 mm)  
Steering angle (each direction) 35°

Hydraulic system - Two 3" (76 mm) bore, double-acting cylinders powered by vane-type pump:

- Output @ 2200 RPM and 1000 PSI (70 kg/cm<sup>2</sup>) 25.4 GPM (96 litres/min)
- Relief valve setting 2500 PSI (176 kg/cm<sup>2</sup>)



## bucket controls

Lift circuit - positions: raise, hold, lower and float. Automatic kickout at full lift height.

Tilt circuit - positions: roll back, hold and dump.

Sealed pins in bucket control group.



## loader hydraulic system

Sealed with valves enclosed in reservoir.

Pump output @ 2200 RPM and 1,000 PSI (70 kg/cm<sup>2</sup>), with S.A.E. No. 19 oil @ 158° F. (66° C) 33.3 GPM (126 litres/min)

Relief valve setting 2500 PSI (175 kg/cm<sup>2</sup>)

Cylinders (double-acting):

Lift - bore and stroke 4.25 x 30.83" (108 x 780 mm)

Tilt - bore and stroke 4.0 x 16.56" (102 x 420 mm)

Hydraulic cycle time, rated load in bucket, in seconds [:

Raise	Lower	Dump	Total
6.0	3.0	1.2	10.2



## service refill capacities

	U.S. Gal.	(Litres)
Cooling system	7.75	(29)
Crankcase	5	(19)
Transmission and torque converter	6.75	(26)
Differentials and final drives:		
front	5.5	(21)
rear	5.5	(21)
Hydraulic system	19.5	(74)
Fuel tank	39	(148)

Specifications and ratings conform to all applicable standards recommended by the Society of Automotive Engineers, SAE Standard J732c (1989) govern loader ratings, denoted in the text by (L).



SEALED HYDRAULICS

## DEPENDABILITY

Sealed hydraulic system keeps out damaging dirt. All valves and filters are enclosed in the tank. There are no external valves or breathers to let in wear-causing grit.

# 920



ADJUSTMENT-FREE FUEL SYSTEM



CLUTCH PACK  
PLANETARY POWER SHIFT

**Cat Diesel Engine** keeps running smoothly, even after idling for long periods. And you never need to adjust the Cat fuel system. Fuel is completely vaporized in pre-combustion chambers before it sprays into the main cylinder. So it burns clean, even and complete.

**Durable Power Shift** performs without troublesome adjustments. It's precision-built to keep working . . . save repair costs. Big clutch packs absorb shock loads. They're oil-cooled and lubricated to reduce wear-causing heat and friction. Hydraulic modulation eases clutch packs together. And torque loads spread out evenly over three planetary gears spaced 120° apart.



SEE YOUR DEALER

## VERSATILITY

Choose from 3 types of buckets to match your job: General purpose for most kinds of work; Multi-purpose for grading, demolition, clean-up, grading and bulldozing; Side dump for close quarter work. General purpose buckets now have forged corner plates and thru-hardened cutting edges for long wear.

**Attachments** for versatility, protection, and operating ease. (See page 6 for complete list.) For example, locking instrument panel guard and filter caps protect your Cat 920 from vandalism.



LOCKING FILTER CAPS



INSTRUMENT PANEL GUARD

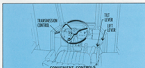


## MOBILITY

35° articulated steering maneuvers in and out of tight spaces fast and easy. Rear wheels track the front, so the 900's rear clears any obstacle the front can. It lets you maneuver in close quarters backfilling trenches.

Controls are simple to learn and easy to use. One lever changes speed and direction . . . on-the-go. Two levers control bucket lift and lower, rack-back and dump. Automatic bucket control kicks out at preset dump height. And an optional automatic bucket positioner returns the bucket to preset digging angle.

Caliper disc brakes stop you dependably in almost all conditions. They're fade-free, and mud and grime don't affect their stopping power. 900 has disc brakes on all four wheels, with separate front and rear circuits.

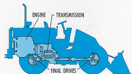


## EASY, ECONOMICAL SERVICING

Sealed loader linkage needs lubing only every 250 service meter units. (Lube the upper and lower bucket hinge pins every 100 BMU's due to constant exposure to dirt.) Seals keep out wear-causing dirt for longer life.

Simple servicing saves you money and effort. Change engine oil only every 500 hours . . . check the engine oil level, air cleaner and oil filter all from the engine's right side . . . fuel filter spins on and off . . . check batteries under the operator's seat.

Fewer repairs come from precision engineering and quality components. The Cat 900 is built to last, with durable construction that won't keep on costing you with frequent breakdowns. The complete Cat built power train lives longer . . . with the dependable adjustment-free fuel system, rugged power shift, and planetary final drives.



CAT BUILT POWER TRAIN



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**General Purpose Buckets** are made from high-strength, wear resistant steel plate and bearing, joined by 100% penetration weld. Forged corners, straight through cutting edge, side plate, bottom replaceable wear plates and reinforced hinge guards are heat treated to last longer.



**Side Dump Bucket** dumps forward or to the left. Reduces turning, aids close-quarter loading and work on public streets. 740 lb. (335 kg) counterweight recommended. Additional hydraulic valve required.



**Multi-Purpose Bucket** loads, ballbores, strips top soil and cleans up debris. Optional teeth aid digging. 740 lb. (335 kg) counterweight recommended. Additional hydraulic valve required.



### optional equipment

(with approximate change in installed weights)

Alternator, 50 amp	15 lb. (7 kg)
Automatic bucket positioner	24 lb. (11 kg)
Buckets	see Operating Specifications
Bucket teeth, set of 9:	
long tip	105 lb. (48 kg)
short tip	101 lb. (46 kg)
Cab, HOPS	650 lb. (295 kg)
Cab, steel, fully enclosed	400 lb. (181 kg)
Canopy, HOPS	650 lb. (295 kg)
Canopy, top	85 lb. (38 kg)
Clamp, top	540 lb. (245 kg)
Counterweight, rear-mounted	740 lb. (335 kg)
Differential, torque proportioning, front	5 lb. (2 kg)
For front and rear	10 lb. (5 kg)
Drawbar, rear	32 lb. (15 kg)
Fan, reversible blade	14 lb. (6 kg)
Fenders	100 lb. (220 kg)

Fork, lumber	1,100 lb. (526 kg)
Guard, power train	240 lb. (109 kg)
Heater and defroster, cab	120 lb. (54 kg)
Hydraulic system, third valve:	
For side dump bucket or top clamp	155 lb. (69 kg)
For multi-purpose bucket	150 lb. (68 kg)
Lighting system for cab	7 lb. (3 kg)
Mirror	7 lb. (3 kg)
Preclenset for preclenset	15 lb. (7 kg)
Seat, suspension type, adjustable	5 lb. (2 kg)
Seat belt	4 lb. (2 kg)
Starting system, low temperature	25 lb. (11 kg)
Steering system, supplemental	42 lb. (19 kg)
Tire inflation kit	4 lb. (2 kg)
Tires,	
Set of four 15.5-25, 12 PR:	
Rock (L-3)	550 lb. (250 kg)
Traction (L-2)	420 lb. (190 kg)
Tool kit	23 lb. (10.4 kg)
Vandalism protection group	15 lb. (7 kg)
Windshield wiper and washer	12 lb. (5 kg)



### standard equipment

Alternator, 19 amp.  
Blower fan.  
Fuel priming pump.  
Muffler.  
Stop and tail lights.

Front and rear working lights.  
Dry-type air cleaner.  
HOPS mountings.  
Adjustable seat.

**gauges:**  
Engine jacket water temperature.  
Analogometer.  
Engine oil pressure.

Fuel pressure.  
Torque converter temperature and visual indicator for parking brake and low air pressure.

Materials and specifications are subject to change without notice.