

# 950G Wheel Loader



#### Cat® 3126 DITA Diesel Engine

Flywheel Power	134 kW	180 hp
Maximum Flywheel Power	147 kW	197 hp
Bucket Capacities	2.5 to 3.5 m <sup>3</sup>	3.25 to 4.5 yd <sup>3</sup>
Operating Weight	17 782 kg	39,200 lb

# 950G Wheel Loader

*State-of-the-art design, engine performance and operator comfort maximize productivity.*

## Engine

- ✓ *Cat 3126 DITA Diesel Engine is built for performance, durability, excellent fuel economy and meets emission regulations. The 3126 has many heavy-duty features normally found on larger displacement engines.*
- pg. 4-5

## Transmission

- Planetary power shift transmission with automatic shift capability helps provide on-the-go speed and direction changes.
- ✓ *The Electronic Clutch Pressure Controls (ECPC) allow for smoother shifts and transmission neutralization, which let the operator adjust for specific site conditions.*
- pg. 6

## Axles and Frame

Larger diameter axle shafts on the high torque side of the final drive provide greater torsional strength. Durable, articulated frame has a full box-section which absorbs twisting and impact forces to provide a solid foundation for the entire structure. **pg. 7-8**

*Performance and comfort you can feel. Caterpillar® design delivers excellent breakout force, fast load and cycle times, precise maneuvering and smoother shifts for optimal performance and comfort.*

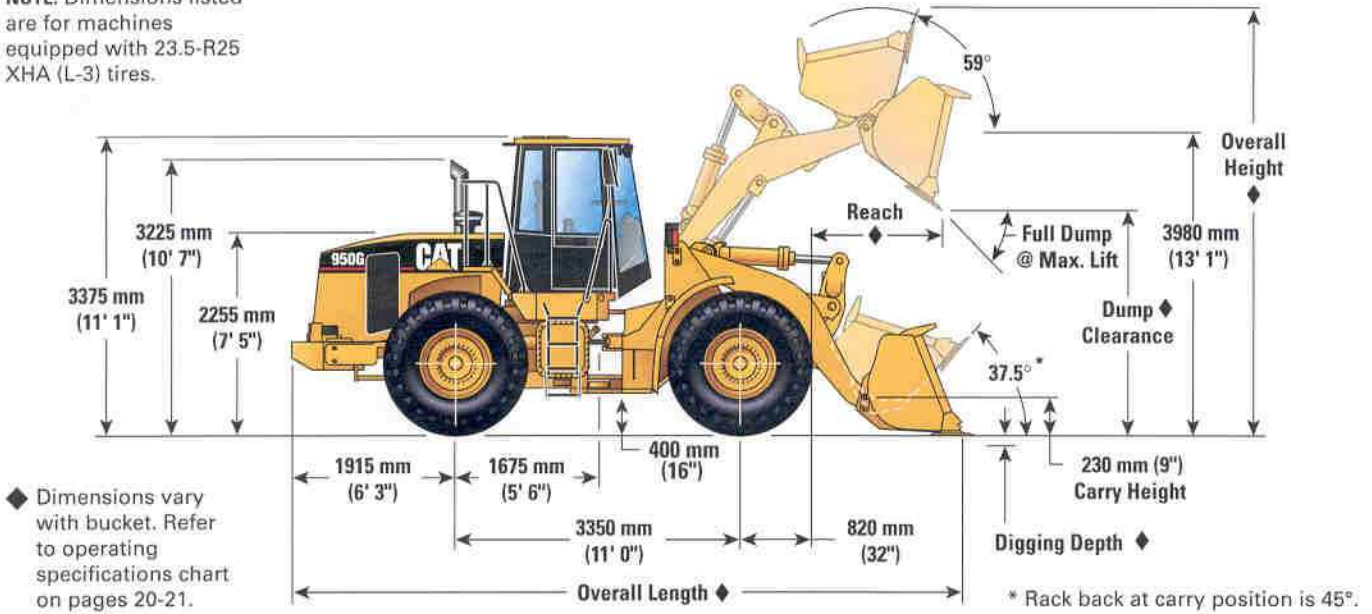
*Reliability you can trust. Proven components, field-tested durability, combined with easy maintenance, ensures reliability over the life of the machine.*



# Dimensions

All dimensions are approximate.

**NOTE:** Dimensions listed are for machines equipped with 23.5-R25 XHA (L-3) tires.



Tread width for all tires 2140 mm (84")

	Width over tires		Ground clearance		Change in vertical dimensions	
	mm	inches	mm	inches	mm	inches
23.5-25 16 PR (L-2)	2760	109	380	15	-20	-0.8
23.5-25 16 PR (L-3)	2810	111	360	14	-40	-1.7
23.5-R25 XHA (L-3) standard	2890	114	400	16	—	—
23.5-R25 XTLA (L-2) steel radial	2890	114	340	13	-60	-2.4
23.5-R25 GP-2B (L-2/3) steel radial	2750	108	380	15	-22	-0.9

## Supplemental Specifications

	Change in operating weight		Change in static tipping load – straight	
	kg	lb	kg	lb
23.5-25 16 PR (L-2)	-408	-900	-300	-660
23.5-25 16 PR (L-3)	-300	-660	-221	-480
23.5-R25 XHA (L-3) standard	—	—	—	—
23.5-R25 XTLA (L-2) steel radial	-100	-220	-63	-130
23.5-R25 GP-2B (L-2/3) steel radial	-76	-160	-60	-130

**NOTE:** Tire options include tires and rims.

## Bucket Controls

Pilot-operated lift and tilt circuits.

### Lift circuit features

- four positions: raise, hold, lower and float
- mechanically adjustable lift height with automatic kickout on Conventional steering configuration
- in-cab, programmable high and low lift kickouts with cushioned stops on Command Control steering configuration

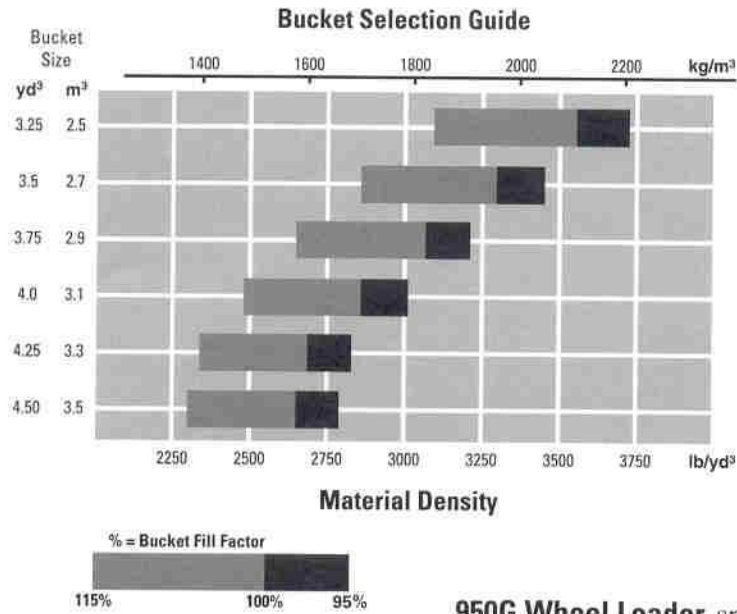
### Tilt circuit features

- three positions: tilt back, hold and dump
- one mechanically adjustable kickout for return-to-dig bucket positioner on both steering versions

### Controls

- two lever control (standard)
- three lever control (optional)
- wobble stick (optional) combines lift and tilt controls on Command Control steering configuration

									Rock Buckets	
*Teeth & Segments	*Teeth	Bolt-on Edges	*Teeth & Segments	*Teeth	Bolt-on Edges	*Teeth & Segments	*Teeth	Bolt-on Edges	Bottom Strap Teeth	
3.5	3.3	3.3	3.3	3.1	3.1	3.1	2.9	2.9	2.9	
4.5	4.25	4.25	4.25	4.0	4.0	4.0	3.75	3.75	3.75	
3.0	2.83	2.83	2.83	2.66	2.66	2.66	2.51	2.45	2.44	
3.9	3.68	3.68	3.68	3.46	3.46	3.46	3.26	3.18	3.16	
2995	2995	2930	2995	2995	2930	2995	2995	2985	2970	
9' 10"	9' 10"	9' 7"	9' 10"	9' 10"	9' 7"	9' 10"	9' 10"	9' 10"	9' 9"	
2700	2700	2845	2735	2735	2880	2770	2770	2880	2720	
8' 10"	8' 10"	9' 4"	9' 0"	9' 0"	9' 5"	9' 1"	9' 1"	9' 5"	8' 11"	
1300	1300	1175	1265	1265	1140	1230	1230	1315	1440	
4' 3"	4' 3"	3' 10"	4' 2"	4' 2"	3' 9"	4' 0"	4' 0"	4' 4"	4' 9"	
2745	2745	2555	2695	2695	2505	2645	2645	2605	2805	
9' 0"	9' 0"	8' 5"	8' 10"	8' 10"	8' 3"	8' 8"	8' 8"	8' 7"	9' 2"	
95	95	85	95	95	85	95	95	85	125	
3.7"	3.7"	3.3"	3.7"	3.7"	3.3"	3.7"	3.7"	3.3"	4.8"	
8200	8200	8010	8155	8155	7960	8100	8100	8060	8260	
26' 11"	26' 11"	26' 3"	26' 9"	26' 9"	26' 1"	26' 7"	26' 7"	26' 5"	27' 1"	
5435	5435	5390	5390	5390	5485	5485	5485	5350	5350	
17' 10"	17' 10"	17' 8"	17' 8"	17' 8"	18' 0"	18' 0"	18' 0"	17' 7"	17' 7"	
13 585	13 585	13 280	13 425	23 425	13 250	13 395	13 395	13 360	13 380	
44' 7"	44' 7"	43' 7"	44' 1"	44' 1"	43' 6"	43' 11"	43' 11"	43' 10"	43' 11"	
12 215	12 513	12 421	12 319	12 621	12 525	12 423	12 728	12 197	12 335	
26,930	27,590	27,380	27,160	27,820	27,610	27,390	28,060	26,890	27,190	
11 084	11 369	11 286	11 184	11 472	11 385	11 282	11 574	11 056	11 190	
24,440	25,060	24,880	24,660	25,290	25,100	24,870	25,520	24,370	24,670	
10 717	10 999	10 918	10 815	11 100	11 015	10 913	11 200	10 686	10 819	
23,630	24,250	24,070	23,840	24,470	24,280	24,060	24,690	23,560	23,850	
140.9	141.7	148.1	147.6	148.4	155.3	154.8	155.6	144.3	149.3	
31,680	31,860	33,210	33,100	33,280	34,820	34,710	34,890	31,680	33,480	
17 847	17 682	17 711	17 806	17 641	17 670	17 765	17 600	17 984	17 901	
39,350	38,980	39,050	39,260	38,890	38,960	39,170	38,800	39,650	39,470	



# Operation Specifications

		General Purpose Buckets									Material Handling
		Bolt-on Edges	*Teeth & Segments	*Teeth	Bolt-on Edges	*Teeth & Segments	*Teeth	Bolt-on Edges	*Teeth & Segments	*Teeth	Bolt-on Edges
Rated capacity (\$)	m <sup>3</sup>	3.1	3.1	2.9	2.9	2.9	2.7	2.7	2.7	2.5	3.5
	yd <sup>3</sup>	4.0	4.0	3.75	3.75	3.75	3.5	3.5	3.5	3.25	4.5
Struck capacity (\$)	m <sup>3</sup>	2.66	2.66	2.5	2.46	2.46	2.27	2.27	2.27	2.12	3.0
	yd <sup>3</sup>	3.46	3.46	3.25	3.2	3.2	2.95	2.95	2.95	2.76	3.9
Width (\$)	mm	2930	2995	2995	2930	2995	2995	2930	2995	2995	2930
	ft/in	9' 7"	9' 10"	9' 10"	9' 7"	9' 10"	9' 10"	9' 7"	9' 10"	9' 10"	9' 7"
Dump clearance at full lift and 45° discharge (\$)	mm	2890	2785	2785	2935	2835	2835	2985	2880	2880	2810
	ft/in	9' 6"	9' 2"	9' 2"	9' 8"	9' 4"	9' 4"	9' 10"	9' 5"	9' 5"	9' 3"
Reach at full lift and 45° discharge (\$)	mm	1270	1365	1365	1235	1330	1330	1200	1300	1300	1210
	ft/in	4' 2"	4' 6"	4' 6"	4' 1"	4' 4"	4' 4"	3' 11"	4' 3"	4' 3"	4' 0"
Reach with lift arms horizontal and bucket level	mm	2570	2710	2710	2510	2650	2650	2450	2590	2590	2605
	ft/in	8' 5"	8' 11"	8' 11"	8' 3"	8' 8"	8' 8"	8' 0"	8' 6"	8' 6"	8' 7"
Digging depth (\$)	mm	85	95	95	85	95	95	85	95	95	85
	in	3.3"	3.7"	3.7"	3.3"	3.7"	3.7"	3.3"	3.7"	3.7"	3.3"
Overall length (\$)	mm	8025	8165	8165	7965	8105	8105	7905	8045	8045	8060
	ft/in	26' 4"	26' 9"	26' 9"	26' 2"	26' 7"	26' 7"	25' 11"	26' 5"	26' 5"	26' 5"
Overall height with bucket at full raise (\$)	mm	5400	5400	5400	5340	5340	5340	5280	5280	5280	5435
	ft/in	17' 9"	17' 9"	17' 9"	17' 6"	17' 6"	17' 6"	17' 4"	17' 4"	17' 4"	17' 10"
Loader clearance circle with bucket in carry position (\$)	mm	13 290	13 430	13 430	13 255	13 395	13 395	13 220	13 360	13 360	13 460
	ft/in	43' 7"	44' 1"	44' 1"	43' 6"	43' 11"	43' 11"	43' 4"	43' 10"	43' 10"	44' 2"
Static tipping load straight** (\$)	kg	12 195	12 094	12 388	12 311	12 210	12 508	12 430	12 329	12 631	12 317
	lb	26,890	26,660	27,310	27,140	26,920	27,580	27,400	27,180	27,850	27,150
Static tipping load at full 35° turn** (\$)	kg	11 074	10 973	11 255	11 185	11 084	11 369	11 299	11 198	11 487	11 186
	lb	24,410	24,190	24,810	24,660	24,440	25,060	24,910	24,690	25,320	24,660
Static tipping load at full 40° turn** (\$)	kg	10 710	10 609	10 887	10 820	10 719	11 000	10 932	10 832	11 116	10 820
	lb	23,610	23,390	24,000	23,850	23,630	24,250	24,100	23,880	24,510	23,850
Breakout force*** (\$)	kN	146.3	145.8	146.6	154.5	154.0	154.8	163.1	162.7	163.4	141.9
	lb	32,810	32,690	32,870	34,640	34,530	34,710	36,570	36,480	36,640	31,910
Operating weight** (\$)	kg	17 782	17 877	17 712	17 730	17 825	17 660	17 676	17 771	17 606	17 752
	lb	39,200	39,410	39,050	39,090	39,300	38,940	38,970	39,180	38,820	39,140

Specifications and ratings conform to all applicable standards recommended by the Society of Automotive Engineers. SAE Standards J732c govern loader ratings and are denoted in the text by (\$).

\* Dimensions are measured to the tip of the bucket teeth to provide accurate clearance data. SAE Standards specifies the cutting edge.

\*\* Static tipping load and operating weight shown are based on standard machine configuration with 23.5-R25 XHA (L-3) tires, air conditioning, crank case guard, power train guard, full fuel tank, lubricants and operator.

\*\*\* Measured 102 mm (4.0"); behind tip of cutting edge with bucket hinge pin as pivot point in accordance with SAE J732c.

## Steering

Full hydraulic power steering. Meets SAE J1511 FEB94 and ISO 5010:1992

### Ratings

Minimum turning radius (over tire)	6025 mm (19' 9")
Steering angle, each direction	40°
Hydraulic output at 2,280 rpm and 7000 kPa (1,015 psi)	160 liters/min (42.3 gpm)
Relief valve setting	19 980 kPa (2,897 psi)

### Features

- center-point frame articulation
- load sensing hydraulic steering pump
- front and rear wheels track
- flow-amplified, closed-center, pressure-compensated system
- steering wheel operated pilot valve controls flow to steering cylinders on Command Control steering
- steering wheel-operated, hand-metering unit controls flow to steering cylinders on Conventional steering version
- full-flow filtering
- adjustable steering column

## Tires

Tubeless, nylon, loader-design tires.

- 23.5-25 16 PR (L-2)
- 23.5-25 16 PR (L-3)
- 23.5-R25 XHA (L-3) standard
- 23.5-R25 XTLA (L-2) steel radial
- 23.5-R25 GP-2B (L-2/3) steel radial
- 625/70-R25 (L-3) low profile

### NOTE:

In certain applications (such as load-and-carry work) the loader's productive capabilities might exceed the tires' tonnes-km/h (ton-mph) capabilities. Caterpillar recommends that a tire supplier be consulted to evaluate all conditions before selecting a tire model.

Using low profile tires will affect the following specs:

Width over tires	- 5 mm	-0.1 "
Ground clearance	-70 mm	-2.7 "
Vertical bucket dimension	-70 mm	-2.7 "
Dig depth	+70 mm	+2.7 "
Reach	+70 mm	+2.7 "
Operating weight	-194 kg	-420 lb
Straight tip load	-137 kg	-300 lb
Full turn static tip load	-121 kg	-260 lb
Run out speeds	-7 %	
Rimpull	+9 %	
Departure angle	-3 %	

## Cab

Caterpillar cab and Rollover Protective Structure (ROPS) are standard in North America, Europe and Japan.

### Features

- meets OSHA and MSHA limits for operator and sound exposure with doors and windows closed (according to ANSI/SAE J1166 MAY90)
- ROPS meets the following criteria:
  - SAE J394
  - SAE 1040 APR88
  - ISO 3471-1:1986
  - ISO 3471:1994
- also meets the following criteria for Falling Objects Protective Structure:
  - SAE J231 JAN81
  - ISO 3449:1992 LEVEL II

### NOTE:

When properly installed and maintained, the cab offered by Caterpillar when tested with doors and windows closed according to ANSI/SAE J1166 MAY90, meets OSHA and MSHA requirements for operator sound exposure limits in effect at time of manufacture. The operator sound pressure level is 75 dB(A) when measured per ISO 6396 or 86/662/EEC.

## Service Refill Capacities

	Liters	Gallons
Fuel tank (dry fill)	295	78
Cooling system	49	12.9
Crankcase	30	7.9
Transmission	34	9.0
Differentials and final drives		
Front	36	9.5
Rear	36	9.5
Hydraulic system (including tank)	153	40.4
Hydraulic tank	88	23.2

# Loader Hydraulic System

Open-centered, interrupted series system with full-flow filtering. System is completely sealed.

## Implement system, vane-type pump

Output at 2,200 rpm and 6900 kPa (1000 psi) with SAE 10W oil at 66° C (150° F)	292 liters/min	77.2 gpm
Relief valve setting	20 700 kPa	3,000 psi
Cylinders, double acting: lift, bore and stroke	152.4 x 800 mm	6.0 x 31.5"
Cylinder, double acting: tilt, bore and stroke	177.8 x 540 mm	7.0 x 21.25"

## Pilot system, vane-type pump

Output at 2,200 rpm and 6900 kPa (1000 psi) with SAE 10W oil at 66° C (150° F)	34 liters/min	9.0 gpm
Working pressure		
–EH system	3450 kPa	500 psi
–pilot system	2600 kPa	375 psi

Hydraulic cycle time	seconds
Raise	6.3
Dump	2.2
Lower, empty, float down	2.2
Total	10.7

## Features

- completely enclosed system
- low effort, electro-hydraulic controls on Command Control steering version
- low effort, pilot-operated controls on Conventional steering version
- full-flow filtering
- reusable couplings with O-ring face seals
- pilot shutoff valve on Conventional steering or electrical lockout switch on Command Control steering disable implement functions
- tilt-out hydraulic oil cooler is standard
- Caterpillar XT hoses
- pressure taps
- automatic Ride Control System is available

## Axles

Fixed front, oscillating rear ( $\pm 13^\circ$ ).

### Features

- maximum single-wheel rise and fall: 470 mm (19")
- differentials, enclosed brakes and final drives included
- conventional differentials are standard; limited slip differentials are available
- corrosion-resistant alloy steel
- bronze sleeve bearings in the planet gears; bronze spherical thrust washers on differential pinions
- Patented Duo-Cone Seals between axle shaft and housing
- threaded nuts to set bearing pre-load
- uses SAE 30W (oil change interval: 2,000 hours or one year)

## Brakes

Meet the following standards: OSHA, SAE J1473 OCT90, ISO 3450-1996.

### Service brake features

- full-hydraulic actuated, oil-disc brakes
- completely enclosed and sealed
- self adjusting; modulated engagement
- separate circuits for front and rear axles
- dual pedal braking system
- left pedal functions as brake or brake/neutralizer

### Parking brake features

- spring applied, hydraulically released, dry drum
- mounted on transmission output

## Final Drives

Planetary final drives consist of ring gears and planetary carrier assemblies.

### Features

- ring gears are pressed in and doweled to axle housings
- carrier assemblies include:
  - planet gears with full-floating bronze sleeve bearings
  - planet shafts
  - retaining pins
  - bearings
  - sun gear shafts
  - planetary carriers

## Engine

Four-stroke cycle, six-cylinder 3126 Turbocharged Diesel Engine.

Ratings*	kW	hp
Flywheel @ 2,200 rpm	134	180
Maximum flywheel @ 1,900 rpm	147	197

The following ratings apply at 2,200 rpm when tested under the specified standard conditions for the specified standard:

Flywheel power	kW	hp	PS
Caterpillar	134	180	—
ISO 9249	134	180	—
SAE J1349	134	180	—
EEC 80/1269	134	180	—
DIN 70020	—	—	187

Maximum torque (net) @ 1,400 rpm	932 Nm	687 lb-ft
Total torque rise	56%	

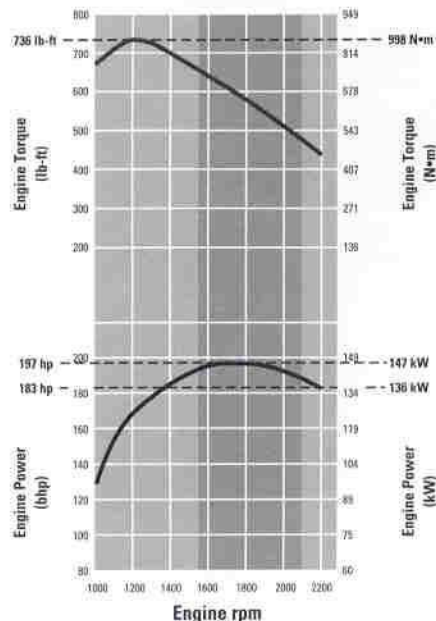
### Dimensions

Bore	110 mm	4.3 in
Stroke	127 mm	5.0 in
Displacement	7.2 liters	439 in <sup>3</sup>

### Exhaust emissions

The 3126 meets the following emissions requirements:

- EU
- US EPA
- Japan MOC



### \*Power rating conditions

- based on standard air conditions of 25° C (77° F) and 99 kPa (29.32 in Hg) dry barometer
- used 35° API gravity fuel having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 30° C (86° F) [ref. a fuel density of 838.9 g/L (7.001 lb/U.S. gal)]
- flywheel power advertised is the power available when the engine is equipped with hydraulic fan drive, alternator, air cleaner, and muffler
- no derating required up to 2300 m (7,500 ft) altitude

### Features

- direct-injection fuel system with individual adjustment-free unit injectors for cylinders
- water jacket aftercooled
- aluminum-alloy skirt and steel crown, 3-ring, 2-piece articulated pistons, cam-ground, tapered and cooled by oil spray
- Chrome Ceramic Surface (CCS) ring package, designed for high load/high temperature application
- induction-hardened, forged crankshaft
- uniflow cylinder head design with two alloy-steel valves per cylinder
- deep-skirted cast cylinder block
- tapered connecting rods
- oscillating roller-followers
- direct-electric 24-volt starting and charging system with two 12-volt, 950 CCA Caterpillar maintenance-free batteries, heavy-duty starter and a 70-amp alternator

### High Torque Rise

The unit-injected fuel system delivers a controlled increase of fuel as the engine lugs back from rated speed. This results in horsepower greater than rated power. The combination of increased torque rise and maximum horsepower improves response, provides greater rimpull, more lift force and faster cycle times. The 147 kW (197 hp) maximum flywheel power occurs at 1,900 rpm when power is needed during the working cycle.

## Transmission

Planetary power shift transmission with automatic shift capability has four speeds forward and four reverse.

### Maximum travel speeds (standard 23.5-R25 XHA L-3 tires)

		km/h	mph
Forward	1	6.9	4.3
	2	12.7	7.9
	3	22.3	13.9
	4	37.0	23.0
Reverse	1	7.6	4.7
	2	13.9	8.7
	3	24.5	15.3
	4	40.5	25.3

### Features

- single control for both speed and direction
- separate control to lock in neutral
- single-stage, single-phase torque converter
- automatic shift capability
- high energy friction material provides extended clutch life
- externally mounted controls with quick disconnects for easy diagnostic checks
- high contact ratio gears are precision ground for quieter operation
- thumb operated upshift/downshift rocker switch on Command Control steering version
- quick gear kickdown button included on Conventional steering version
- Electronic Clutch Pressure Control (ECPC) modulates clutch engagement
- transmission can be recalibrated using Electronic Technician (ET) service tool



## Total Customer Support

*Unmatched in the industry.*



**Customer support agreements.** Cat Dealers offer a wide variety of product support agreements. Dealers will work with customers to develop a plan that best meets specific needs. To protect your investment, these plans can cover the entire machine, including attachments.

**Selection.** Make detailed comparisons of the machine being considered before a purchase. How long do components last? What is the cost of preventative maintenance? What is the true cost of lost production? Cat Dealers can give precise answers to these questions.

**Purchase.** Look past initial price. Consider the financing options available as well as day-to-day operating costs. This is also the time to look at dealer services that can be included in the cost of the machine to yield lower equipment owning and operating costs over the long run.

**Operation.** Improving operating techniques can boost profits. Cat Dealers have training videotapes, literature and other ideas to help increase productivity.

**Maintenance.** Choose from a wide range of maintenance services at the time a machine is purchased. Repair option programs guarantee the cost of repairs up front. Diagnostic programs such as S•O•S oil analysis and technical analysis help avoid unscheduled repairs.

**Replacement.** Repair, rebuild or replace? Cat dealers can help evaluate the cost involved so the right choice can be made.

**Product support.** Cat Dealers utilize a worldwide computer network to find in-stock parts to minimize machine downtime. Save money with remanufactured parts. Receive the same warranty and reliability as new products at cost savings of 40 to 70 percent.

## Serviceability

*Keep machines up and running with easy-to-perform daily maintenance.*



**Maintenance** has never been more accessible than on G-Series machines. Fast, easy and reduced maintenance means improved uptime and greater value.

- Lockable, ground level service door on right side gives quick access to engine oil fill and dipstick, coolant sight gauge, air filter indicator, rear grease fittings, and main battery disconnect switch.
- 295 liter (78 gallon) fuel tank provides extra capacity for long work days.
- Grouped remote grease fittings allow ground level access for lubricating tilt and steering cylinder pins and rear axle oscillation bearings.
- Caterpillar fluid filters are especially designed to assure maximum component life. The unique design uses non-metallic center tube and molded end-caps, which fully blend with media ensuring no internal leakage.
- Cat high efficiency fuel filters feature cellulose/synthetic blend media that remove more than 98 percent of particles that are two microns or larger, maximizing fuel injector life.
- Caterpillar Radial Seal air filters do not require tools to service, reducing maintenance time. The ultra-high efficiency primary air filter element is coated with a fine layer of fibers that prevent dust particles from entering the filter media. This results in more efficient filtration, extended service intervals, and extended filter life — all contributing to reduced operating costs.
- Caterpillar Extended Life Coolant allows extended change intervals (6,000 hours).
- Caterpillar maintenance-free, high output batteries are designed for high cranking power and maximum protection against vibration.
- Individual Multi-Row Modular core radiator reduces time to repair or replace the radiator.
- The Electronic Technician service tool provides diagnostics of electro-hydraulics, transmission and optional Payload Control System to allow effective and efficient troubleshooting by service personnel.

**Sloped hood**, electrically activated, tilts up for complete access to the engine, cooling system and other major components. If needed, the hood can be removed quickly and easily by removing three pins and disconnecting a single harness connector. A built-in lifting point facilitates easy lift off.

**Sampling valves** allow quick, clean access to engine, transmission and hydraulic oils, and provide the most representative oil samples for analysis. S•O•S oil analysis enables scheduling of downtime for component repair or replacement before major problems occur.

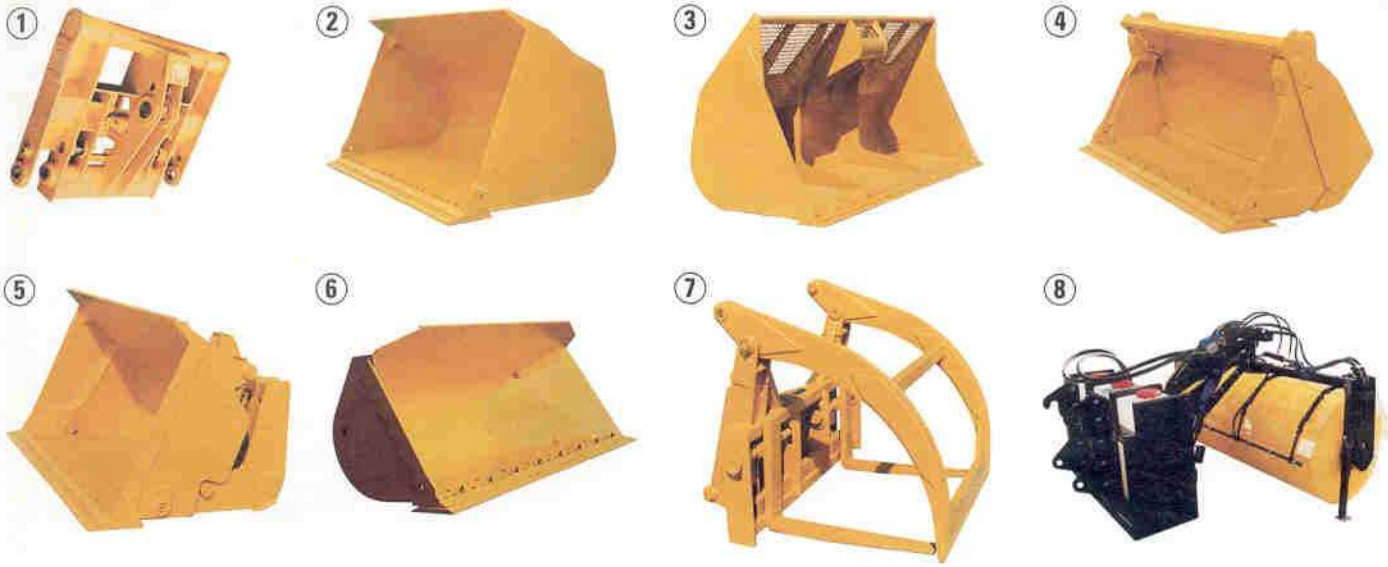
**Ecology drains** for the engine, transmission, hydraulics, radiator and fuel are factory installed and replace the standard drain plugs. Activating the valve allows fluids to be drained into a container without spillage. Axle oil ecology drains are available only as factory-installed options.

**Caterpillar engine, transmission and hydraulic oils** deliver maximum performance and service life.

**Factory remanufactured parts.** A large choice of factory remanufactured parts and dealer proposed repair options increases machine availability and reduces repair cost.

## Attachments

Add versatility to a machine with a wide range of buckets and attachments designed for the 950G to optimize operation.



A complete range of attachments and tools is available from your Caterpillar Dealer.

- 1 **Quick couplers** provide unmatched versatility and allow one operator with one machine to perform a wide variety of tasks, resulting in greater machine performance and efficiency.
- 2 **Coal buckets** are available in special widths. All coal buckets include a bolt-on cutting edge.
- 3 **Woodchip buckets** are specially designed to load and carry woodchips and similar light materials. Bolt-on cutting edges are included in standard. Visibility screens help the operator with loading.
- 4 **Multi-purpose buckets.** Loading, dozing, clamping objects or filtering the discharge of material are easy tasks with multi-purpose buckets.
- 5 **High-dump buckets** are ideal for loading stockpiled, light material into high sided trucks, hoppers in waste transfer stations or rehandling fertilizer, coal or grain.
- 6 **Side-dump buckets** permit loaders to operate in congested worksites and also dump forward like conventional buckets.

**Fertilizer buckets** are available and can be designed for different hopper heights, widths and intake capacities. The special design allows fertilizers to spread in the bucket, utilizing the full bucket volume.

**Brick and clay buckets** are ideal in applications requiring non-stick qualities, including handling gypsum, clay and opencast materials. Special material or linings can be used to offer low coefficients of friction or abrasion resistance.

**Screening buckets** allow operators to scoop, screen, blend, mix and load materials as various as top soil, clay, sand peat, compost, bark, coal, lime, glass bottle. Different screening drums and tool options are available.

### Other available buckets:

- Light material.
- Rock.
- Sand and gravel.
- Landfill/refuse.

- 7 **Forks.** Pallet, logging, millyard and lumber forks are the ideal tools for handling a variety of materials. The different configurations (various tine lengths, top clamps, etc.) are well-matched to the applications, and log size.

### Other available forks:

- Core forks.
- Hay ejector forks.

- 8 **Hydraulic brooms** offer a unique balanced suspension system which eliminates the need for supporting wheels. Three different widths (2.5, 3.0 and 3.5 m) are available.

**Snow plows**, hydraulically reversible angle 35° left or right. This reversing action is ideal for cleaning applications on mountain roads, airports, parking lots, plant facilities, etc.

### Also available:

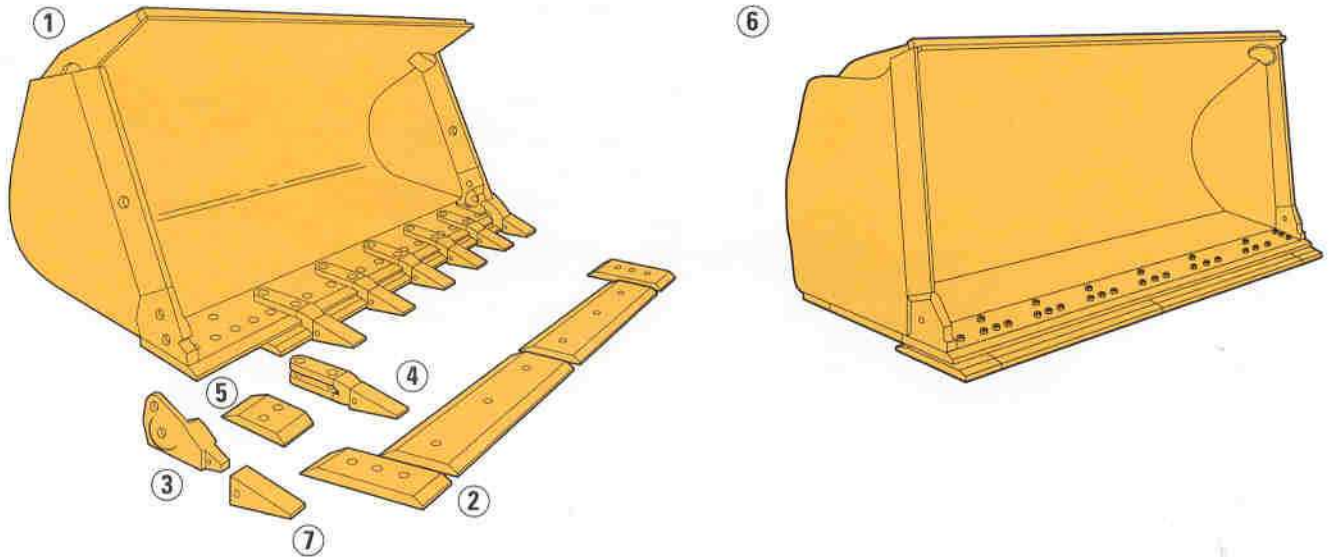
- Material handling arms.
- V-plow.

### Other attachments:

- **Rakes** are ideal for fast, economical removal of brush, trees, stumps and rocks. (Various clamp options available.)
- **Tire loaders** are specially designed to feed tires to shredder or load trucks.
- **Hooks** convert any brand or type of pin-on tool or attachment to quick coupler.

# Buckets

A wide variety of bucket combinations optimize performance and versatility of the 950G.



**1 General purpose buckets.** Nine combinations are designed for a broad range of applications such as bank loading, excavating, and stock pile loading.

**Corner Guard System** allows maximum flexibility between teeth and edge systems providing superior protection and performance for each application.

**2 Bolt-on cutting edge and end bits.**

- Standard DH-2 for superior strength and wear life.
- Optional Abrasion Resistant Material (ARM) with impregnated tungsten carbide for maximum wear life in low-to-medium impact applications.

**3 New, two-bolt corner adapter** securely attached to prevent shifting.

**4 Bolt-on, two-strap center adapters**

**5 Bolt-on segments** protect the base edge eliminating scalloping and maintaining a smooth work surface.

**Rock buckets.** Two combinations have a spade-edge design that makes them well suited to high-impact jobs. Rock buckets are available with or without teeth.

**6 Material handling buckets.** Nine combinations have a flat floor for excellent performance in stock pile applications. Equipped with teeth and corner guards, these buckets provide excellent load retention.

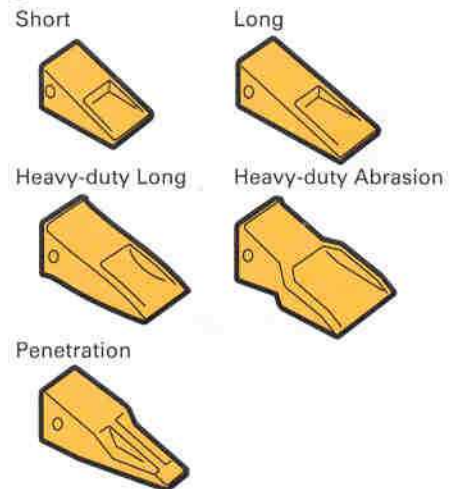
**7 Tips**

**Five tip options** are available to provide the best combination of wear life, penetration and strength needed for each application.

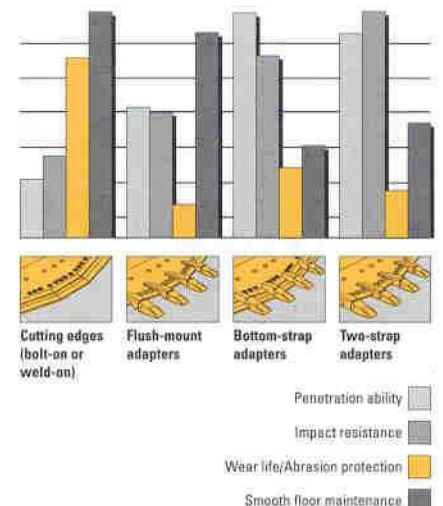
- Retention systems.** Two systems are now available: standard and heavy-duty. The heavy-duty system eliminates pin walking and the resultant tip loss in particularly severe loading conditions.

Consult your Caterpillar Dealer for the tip recommendations for specific applications.

**7 Tip Options**



**G.E.T. System Selection Guide**



## Operator Controls

*Low-effort controls provide ease of operation for increased comfort and efficiency.*



The 950G is available with two different configurations of operator controls – one with electro-hydraulic implement controls and Command Control steering, and another with pilot hydraulic implement controls and Conventional steering. Customers who want the ultimate in operator comfort and efficiency have a choice.

- 1 Command Control steering** allows one hand operation of steering and transmission controls. Turning the Command Control steering approximately plus or minus 70 degrees from the centerpoint achieves full machine articulation. Tilt and telescoping steering column help fit the controls to the operator.
- 2 Integrated transmission controls** are part of the steering design, providing one hand operation. Select forward, neutral or reverse with the three-position rocker switch. Use the thumb-operated rocker switch to manually upshift and downshift.

- 3 Finger tip implement control levers** require very low operator effort and reduced travel. Operator can slide the right-hand armrest and control pod forward and back as a unit, and adjust the armrest up and down to find the most comfortable position. By removing two bolts and unplugging a wiring harness connector, an optional wobble stick or third-lever arrangement can be installed.

- 4 Pilot hydraulics and Conventional steering** give owners another choice in operator controls. Conventional steering uses a well-proven, hand-metering-unit hydraulic system. The lift control lever features a quick gear kickdown button, which lets the operator downshift easily to a lower gear. This version is also available with an optional third lever control.

**Electronic Autoshift Control** allows the operator to concentrate on the work, not gear selection.

- On the Command Control steering configuration, the operator uses a cab-mounted switch to select second, third or fourth as the highest gear the transmission will shift to automatically.
- On the Conventional steering configuration, the auto function is achieved using a cab mounted switch and a rotating gear selector lever on the steering column.

**Dual-pedal braking** lets the left pedal function as a transmission neutralizer and as a brake. The right pedal functions as a regular brake. Initial pedal travel neutralizes the transmission. Further pedal travel engages the service brakes. The point of brake engagement is adjustable depending on application requirements.

**Transmission neutralizer lockout switch** lets the operator shut the neutralizer off, allowing the left pedal to work as a brake only. This provides a choice to operators who prefer to operate without a neutralizer or to match the application.

The 950G cab is a spacious and comfortable work environment that promotes productive operation. The cab includes improved viewing area, ease of service, ergonomic design and control placement, improved ventilation and generous storage areas.

- 1 **Improved viewing** in all directions. Extended windows open the operator's view for remarkable forward and peripheral viewing. View to the bucket corner has also been improved. Bonded glass in the windshield eliminates frame obstructions. The stylish, sloping hood improves the view to the rear of the machine by letting the operator see objects closer to the machine.
- 2 **Command Control steering** with integrated transmission controls. Load-sensing, steering system with flow amplification matches steering response to application requirements. Tilt and telescopic steering column help fit the machine to the operator.
- 3 **Finger tip bucket controls** use electro-hydraulics for extremely low effort and precise hydraulic modulation capability. This configuration allows the cab to be removed in about one hour, as pilot control hydraulic lines have been removed from inside the cab.
- 4 **Automatic lift/lower kickouts** are easily adjustable from the cab. Kickout stops are hydraulically cushioned for greater operator comfort and less material spillage.
- 5 **950G Monitoring System** provides gauges, tachometer/speedometer and 3-level warning to provide full time monitoring of key functions. The system alerts the operator of immediate or impending problems with engine oil pressure, parking brake, brake oil pressure, charging system, brake oil temperature, hydraulic oil level, hydraulic filter bypass, primary and supplemental steering oil pressures.

- 6 **Left, rear-hinged door** provides entrance and exit to operator station. Swing open right-side window provides a secondary exit if needed.
- 7 **Dual brake pedals** serve brake and transmission neutralizer functions (left pedal only for neutralizer) so the operator can maintain high engine rpm for full hydraulic flow.
- 8 **Generous storage space** includes:
  - Coat hook.
  - Molded compartments for lunchbox, cooler, thermos, cup or can.
- 9 **Caterpillar Contour Series seat**, which is standard on the Command Control steering version and optional on the Conventional steering version, is 6-way adjustable, providing comfort and support. The seat cushions reduce the pressure on the lower back and thighs, while offering unrestricted arm and leg movement. Air suspension adds to the overall comfort level by smoothing the ride over rough terrain. Seat is equipped with a 76 mm (3 in) retractable seat belt.
- 10 **Improved ventilation** for better air flow to the operator and windows. There are twelve louvered vents with two on each door post.
- 11 **Electronic autoshift control**
- 12 **Ride control switch**
- 13 **Transmission neutralizer lockout** lets the operator shut the neutralizer off, allowing the left pedal to work as a brake only. This provides a choice for operators who prefer to operate without a neutralizer or to match application.

**Conventional steering configuration** offers generous storage.

- Lockable compartment for personal items.
- 14 **Steering wheel** can be positioned infinitely within the tilt range by the operator.
  - 15 **Pilot-assisted, hydraulic bucket control** makes low-effort operation possible. Pilot lines are marked and can be easily disconnected at the bottom of the right-hand door.
  - 16 **Quick gear kickdown button** lets the operator downshift easily to a lower gear, saving time, increasing bucket fill factors and lowering cycle times.
  - 17 **Padded, adjustable wrist rest** helps reduce fatigue.
  - 18 **KAB seat** is standard on the Conventional steering configuration, with adjustable fore/aft position seatback angle, lumbar support, bottom cushion height, armrest angle and suspension stiffness.

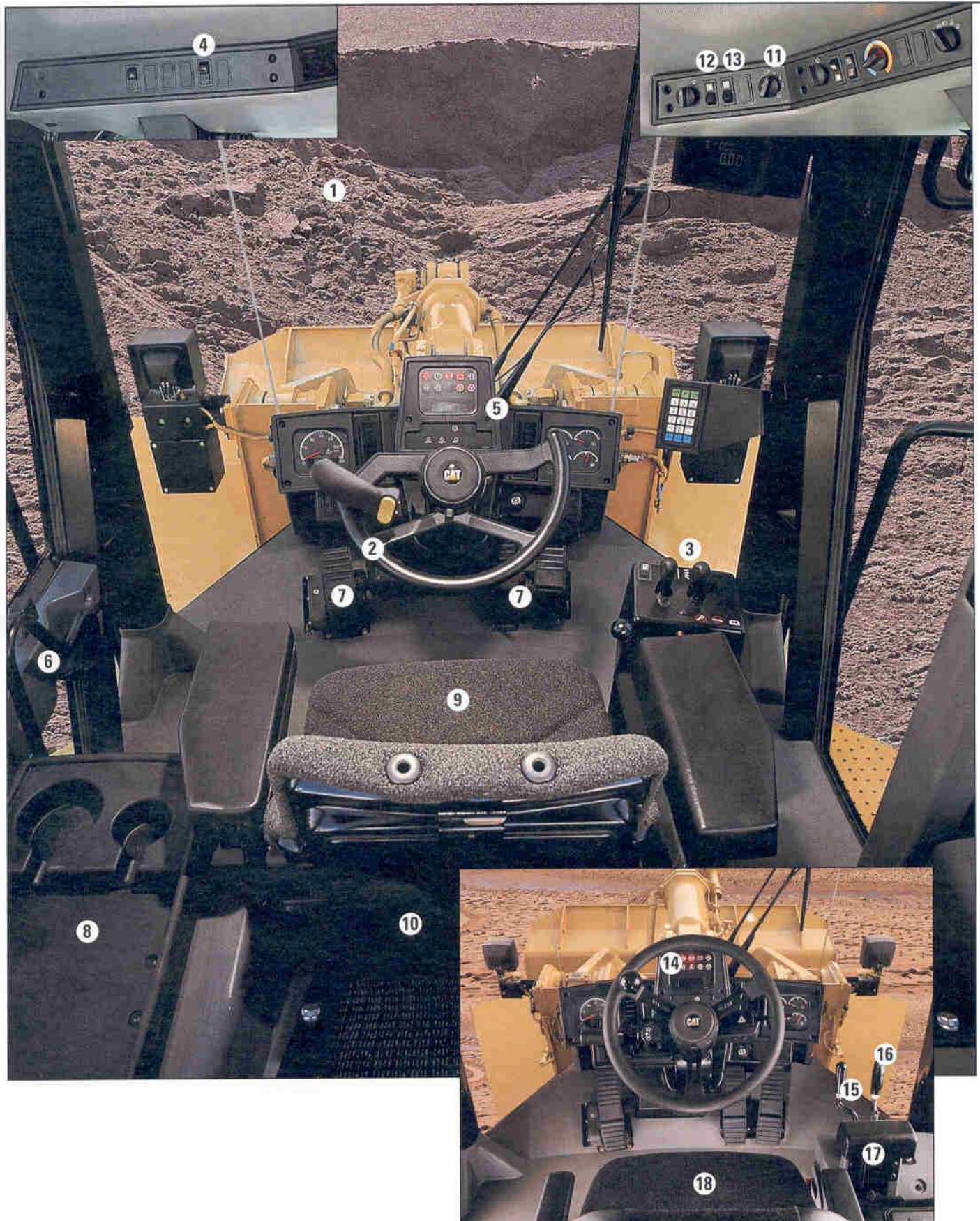
**Radio-ready** means this cab includes a 12-volt converter (5-amp), speakers, antenna, all wiring and brackets for entertainment radio installation.

**Other options** available for the 950G operator station:

- Air conditioning that uses blended air for quick temperature changes and R-134a refrigerant which does not contain chlorofluorocarbons. Quick-connect couplings allow easy removal from the cab with no release of refrigerant.
- Sun visor for the front windshield.
- External mirror package.

# Operator Station

Comfort and control — top-quality operator station helps maximize productivity.



## Hydraulics

*Well-balanced hydraulics deliver precise, low-effort control and trouble-free operation.*



**Low-effort hydraulic controls** allow the operator to precisely maneuver bucket lift and tilt.

- Electro-hydraulic controls, which are included with Command Control steering, offer extremely low operator effort and greater bucket position control. Automatic kickouts, adjustable from inside the cab, allow the operator to set upper and lower lift stops. Lift stops are hydraulically cushioned for greater operator comfort and less material spillage. There is one return-to-dig bucket positioner, mechanically adjustable, on the linkage.
- Pilot valve controls, which come with Conventional steering, provide a familiar control environment that some operators may prefer. One lift and one return-to-dig position may be adjusted on the loader linkage.

**Smooth, efficient steering.** Load sensing steering maximizes machine performance by directing power through the steering system only when needed. When the machine is not steering, more engine power is available to generate rimpull, breakout and lift forces. Load sensing reduces horsepower draw by up to eight percent, resulting in increased fuel economy. Large-bore steering cylinders allow responsive maneuverability.

**Positive-displacement hydraulic pumps** perform with high efficiency and great reliability. For improved serviceability, all hydraulic pumps are mounted on a single pump drive. Increased flow rates provide faster hydraulics and greater lift force, resulting in a better balance between breakout and rimpull.

**Caterpillar XT hose and couplings** are uniquely designed and tested to work together as a system for superior performance. Hoses are specifically engineered and manufactured for high abrasion resistance, excellent flexibility and easy installation. Caterpillar couplings use O-ring face seals which provide positive sealing for reliable leak-free connections. Reliable components reduce the risk of leaks and blown lines, helping protect the environment.

**Automatic Ride Control** is an optional attachment that helps operators perform better. This system uses a nitrogen oil accumulator in the hydraulic lift circuit that acts like a shock absorber for the bucket. The lift arms and bucket response to movement is dampened over rough ground, reducing fore and aft pitch. A smoother, more comfortable ride gives operators the confidence to travel at higher speeds during load and carry, improving cycle times and load retention.

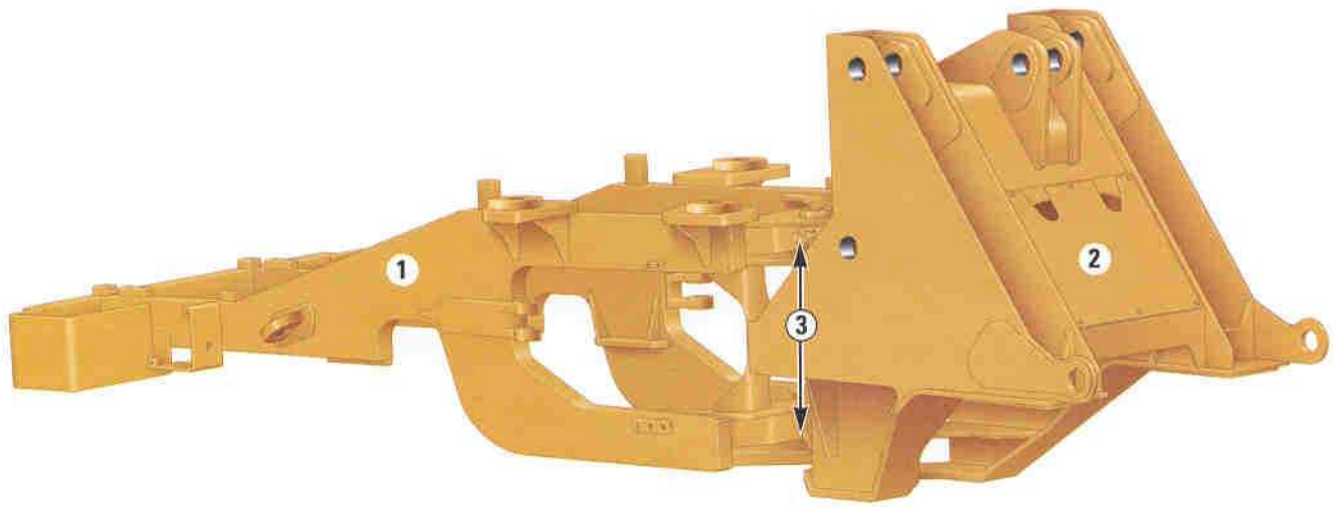
**Pressure taps** allow quick diagnosis of the hydraulic system.

**Sampling valves** provide easy access to hydraulic oil for analysis.



## Frame

*Superior engineering and materials provide excellent strength and durability.*



**Articulated frame** consists of a durable box-section engine frame and a rigid four-plate loader tower to absorb impact forces and provide a solid foundation for the entire machine.

- 1 Full box-section frame** has been designed to resist twisting and impact forces to provide a solid foundation for the engine, transmission and axles.
- 2 Four-plate loader tower** provides a solid mount for lift arms, lift cylinders and Z-Bar tilt lever. This structure is also built to absorb severe twisting, impact and loading forces.

- 3 Spread-hitch design** widens the distance between upper and lower hitch plates to distribute forces and increase bearing life. Thicker hitch plates and butterfly supports reduce deflection. The wide opening also provides good service access.

**Upper and lower hitch pins** pivot on double-tapered roller bearings. This design distributes vertical and horizontal loads over a greater surface area.

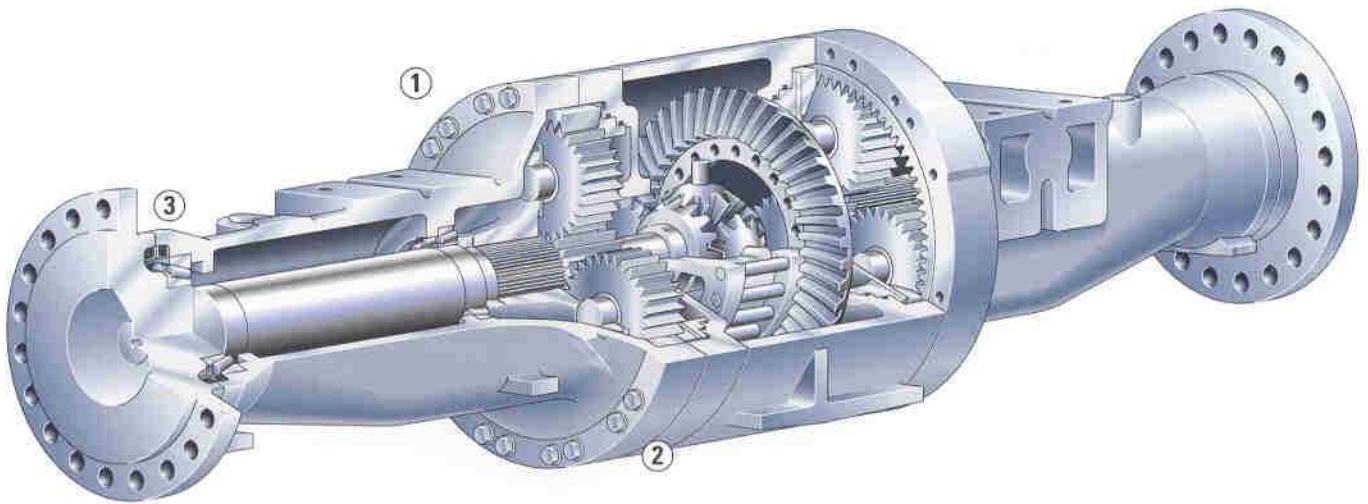
**Frame structure specifically designed for:**

- Increased machine stability without sacrificing turning radius.
- Improved loader performance and operating specifications.
- Improved serviceability to frame and components.

**Frames were tested under severe applications** including virgin material hardbank digging, load and carry, bump course travel and J-hook corner loading.

# Axles

Large, heavy-duty axles protect internal components from the harsh environment and offer excellent serviceability.



**1 Heavy-duty axles and brakes** are designed to last in all kinds of operating conditions. Planetary final drives use full-floating, bronze sleeve bearings in the planet gears. Differential components are larger and more heavy-duty than those used on the F-series machines.

- The differential pinion uses bronze spherical thrust washers for increased durability.
- Oil-disc brakes are adjustment free and fully enclosed to lock out contaminants.
- Oscillating rear axle helps ensure four-wheel ground contact for traction and stability, even on rugged terrain.

**The front axle is rigidly mounted to the front frame** to support the weight of the wheel loader, internal torque loads and external loads applied during breakout.

**The rear axle includes a trunnion, two trunnion supports** and the associated bearings, allowing it to oscillate plus or minus thirteen degrees.

**Either axle can be easily removed for service** by removing the bolts that fasten it to the frame.

**Limited slip differentials** (optional on some configurations) deliver maximum traction on uneven ground and in changing traction conditions such as mud, snow and ice.

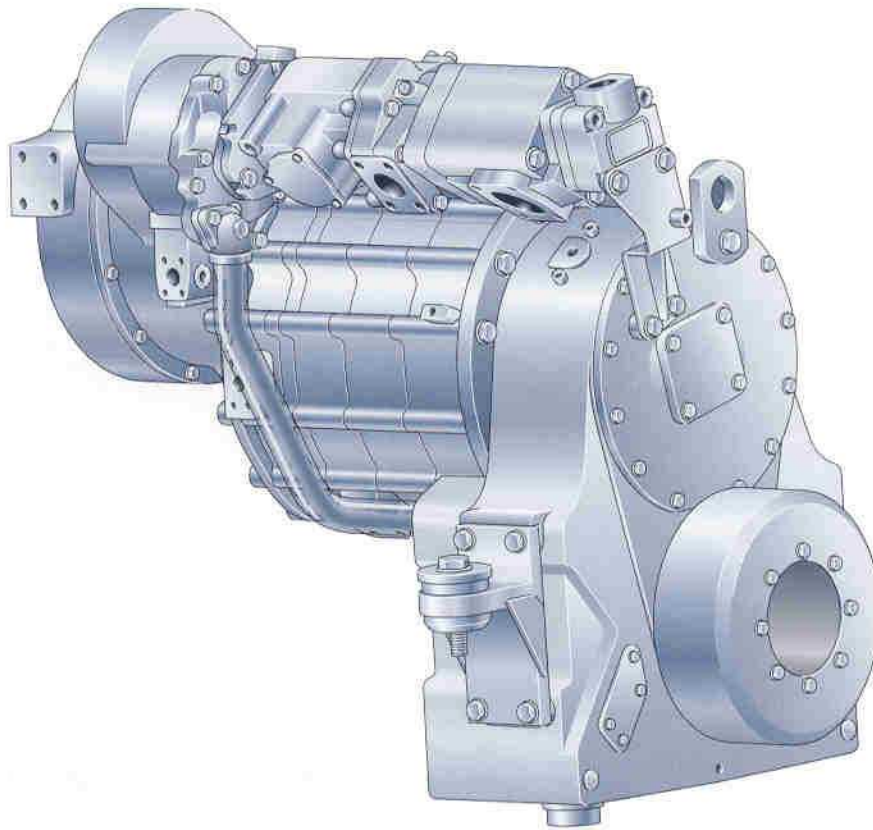
**2 The four-piece axle design** contains two axle shaft housings, the center housing, and the intermediate housing. Features and benefits of this design include:

- Inboard brakes are positioned immediately adjacent to the differential and operate on the low torque side of the final drive, requiring less braking force to stop the machine.
- Independent front and rear brake circuits use separate, heavy-duty, piston-type accumulators to ensure dead engine braking.

- Brakes are bathed in axle oil for excellent heat dissipation.
  - Brakes can be serviced without disassembling the final drive.
  - Inboard final drives are positioned immediately after the brakes, near the differential protecting them from exposure to mud, sand and other elements.
  - Larger diameter axle shafts on high torque side of final drive provide greater torsional strength for better performance and durability.
- 3 Patented metal-to-metal, Duo-Cone Seals** between the axle shafts and housings keep lubrication in and dirt out.

## Transmission

*Caterpillar power train makes dependable performance a standard feature.*



**Power shift transmission with automatic shift capability** is designed, developed and built by Caterpillar. The electronically controlled power shift transmission allows full-power, speed and directional changes. Fully modulated shifts increase component life and productivity, and help reduce operator fatigue.

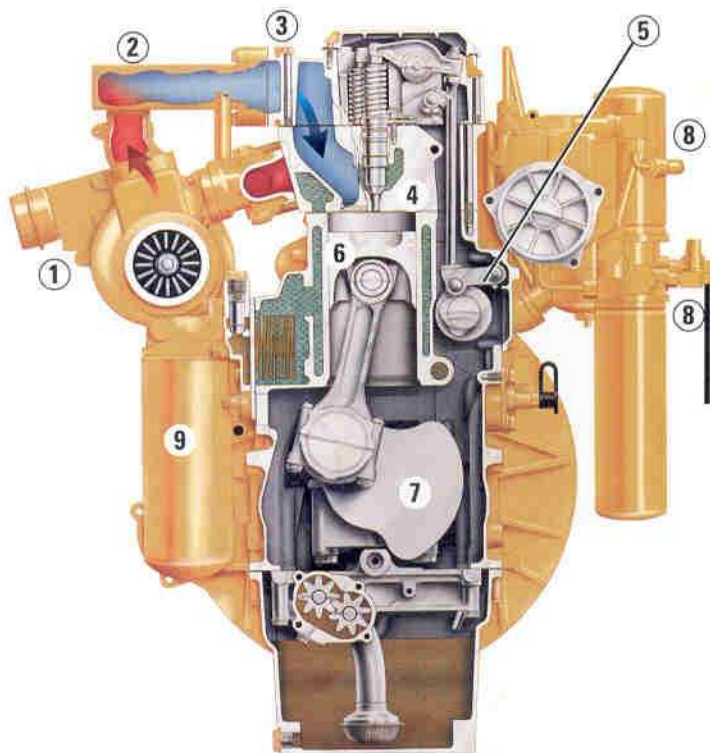
**Caterpillar transmission oil** is balanced to provide optimum friction control for power shift transmissions and brake disc material and at the same time optimize transmission and final drive gear life.

**Electronic Clutch Pressure Control (ECPC)** delivers smoother shifting and longer clutch life. ECPC senses input from both the transmission and the operator controls in the cab to modulate each individual clutch. This results in smoother shifts in both speed and direction. Energy is modulated into the clutches, resulting in extended clutch life.

**Transmission neutralizer** allows the operator to disengage the transmission clutches, removing torque from the drive train. With the neutralizer, high engine rpm's are maintained for full hydraulic flow and brake drive-through is prevented. Adjusting the neutralizer for a given application improves machine inching control, reduces brake energy, and improves fuel efficiency.

**Six, proportional electro-hydraulic valves** driving the clutches are identical and are easy to service. Using the Electronic Technician (ET) service tool, the transmission can be easily recalibrated to maintain quick response.

**Easy maintenance** is designed into the transmission. Built-in pressure taps help reduce troubleshooting time for increased machine availability. The daily level check is done from ground level through a well protected sight gauge. Oil sampling valves allow quick, clean access to the transmission for S•O•S oil analysis.



- 1 Turbocharger waste gate valve (quick response)
- 2 Jacket water aftercooler
- 3 Air intake heater\*
- 4 Radius cone injector nozzle
- 5 Camshaft roller followers
- 6 Two-piece piston  
New ceramic coated ring package
- 7 Induction hardened forged crankshaft
- 8 Series fuel filters with ecological drain hoses
- 9 Large spin-on oil filter

\* Optional on some configurations.

**Camshaft roller followers** reduce wear and frictional power losses for durability and fuel economy. Followers and pushrods can be replaced without removing the camshaft.

**Two-piece, articulated pistons** with forged steel crown and forged aluminum skirt provide durability, lower engine sound levels, enhanced fuel efficiency with improved thermal and structural capability. The new Chrome Ceramic Surface (CCS) ring package, specifically developed for high load/high temperature applications, significantly improves ring and bore life.

**Crankshaft** is forged and induction hardened for long-term durability. It has seven main journals and eight counterweights and is dynamically balanced for smooth operation. The crankshaft is completely regrindable. Connecting rods can be removed through the tops of the cylinders for servicing ease.

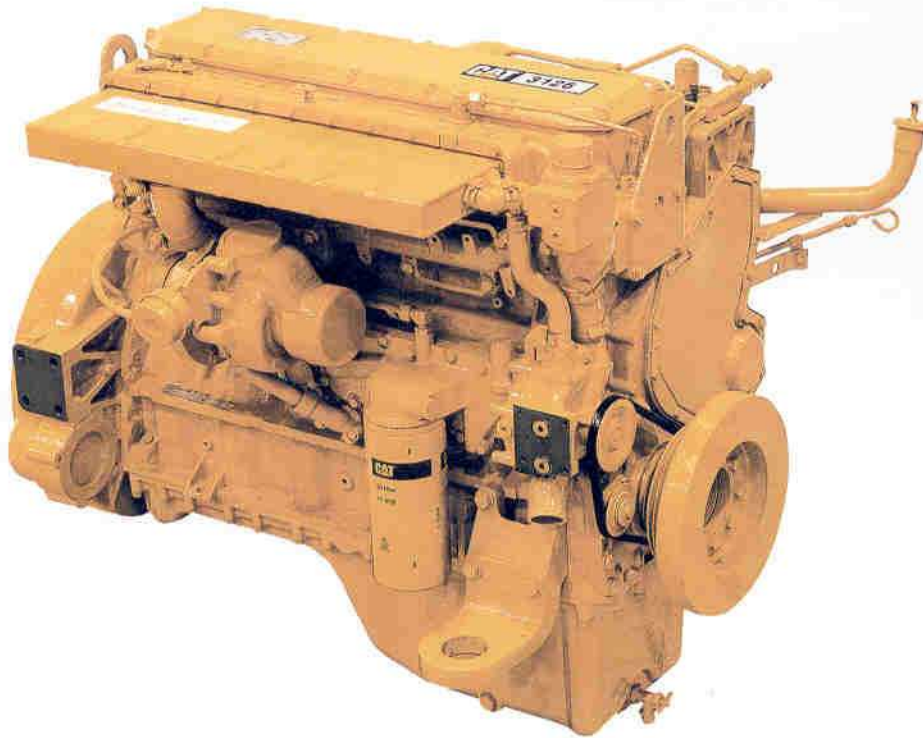
**Deep skirt engine block design** ensures rigidity and reduces vibration.

**Caterpillar engine oil** is formulated to optimize engine life and performance and is strongly recommended for use in Cat diesel engines.

**Factory remanufactured parts.** A large choice of factory remanufactured parts and dealer proposed repair options increase machine availability and reduce total repair costs.

## 3126 Engine

*The six-cylinder, direct injection, turbocharged and aftercooled engine is built for power, reliability, low maintenance, excellent fuel economy and low emissions.*



**Powerful performance.** The 3126 DITA Engine develops flywheel power of 134 kW (180 hp), and meets all current and proposed worldwide emissions standards.

- The four-stroke cycle design delivers long power strokes and efficient fuel combustion with low emissions.
- Precisely engineered and stringently tested to maintain a tradition of quality.
- Profit-boosting performance, heavy-duty durability and reliability.
- Built-in serviceability and excellent fuel economy.

**Torque rise.** The unit injected fuel system provides a controlled fuel delivery increase as the engine lugs back from rated speed. This results in increased horsepower above rated power. A combination of increased torque rise and maximum horsepower improves response, provides greater rimpull, more lift force and faster cycle times. The 147 kW (197 hp) maximum flywheel power occurs at 1,900 rpm when power is needed during the working cycle.

**Turbocharger** enhances performance and engine efficiency, especially at high altitudes by packing more air in the cylinders for excellent combustion.

**Jacket water aftercooler** reduces smoke and emissions by providing a cooler, more efficient combustion. This also extends the life of the piston rings and bore.

**Air intake heating** (optional on some configurations) eases cold starts. When coolant temperature is above 10° C, the air intake heater does not operate. When below 10° C, the length of the heating period automatically adjusts to the temperature.

**Individual, high-pressure unit injectors** atomize fuel efficiently for fast response, increased fuel economy with low emissions. The radius cone injector nozzle provides excellent contact with the cylinder head sleeve to ensure tightness with the combustion chamber.

**Fuel pre-filter and water separator element** combined with two high efficiency micron fuel filters, in series, ensure excellent fuel cleanliness, provide extended injector life, fuel system durability, and protection.

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### Operator Station

- ✓ Ergonomically engineered using advanced virtual reality technology to provide the operator unparalleled comfort, spaciousness and viewing area. Control levers, switches and gauges are positioned to maximize productivity. **pg. 10-11**

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### Hydraulics and Operator Controls

- ✓ Enhanced, low-effort operator controls for steering, shifting and bucket loading precisely respond to operator input. Operator controls can be configured two ways — with Command Control steering and electro-hydraulic bucket controls, or with Conventional steering and pilot hydraulic bucket controls. **pg. 9, 12**

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### Buckets

- ✓ Nine combinations of general purpose buckets, two combinations of rock buckets and nine combinations of material handling buckets allow precise application match. Cat buckets feature proven shell-tine construction design for outstanding durability. **pg. 13**

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### Serviceability

- ✓ Easily perform daily maintenance with ground-level access through hinged doors to all major service points. The tilting hood provides unmatched access for larger maintenance jobs. **pg. 15**

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### Complete Customer Service

In addition to machine selection, a Cat Dealer offers a wide range of services, from purchase options to operator training, maintenance programs and parts support. **pg. 16**

*Rental over 1000 hrs.  
New rubber*



✓ *New feature*

## Standard Equipment

Standard equipment may vary. Consult a Caterpillar Dealer for specifics.

### Electrical

Alternator, 70-amp  
Backup alarm  
Batteries, two 12-volt, maintenance free  
Electric starter, heavy-duty  
Ignition key; start/stop switch  
Main disconnect switch  
Six Halogen road/working lights  
Voltage converter, 12-volt, 5-amp

### Operator Environment

Adjustable steering column  
Cigar lighter and ashtray  
Computerized Monitoring System

#### Gauges:

Engine coolant temperature  
Fuel level  
Gear range indicator, digital  
Hydraulic oil temperature  
Speedometer and tachometer  
Transmission oil temperature

#### Warning indicators:

Air intake heater  
Charging system  
Engine oil pressure  
Hydraulic filter bypass  
Hydraulic oil level  
Parking brake  
Primary steering oil pressure  
Secondary steering oil pressure  
Service brake oil pressure

Dome light, cab

Heater and defroster  
Horn, electric (steering wheel mounted)  
Radio-ready cab for entertainment, includes 5A converter  
Rearview mirrors, inside mounted  
Retractable seat belt, 76 mm (3") wide  
ROPS sound-suppressed, pressurized cab  
Storage:  
Coat hook, cup and thermos holders  
Wet-arm wiper/washers, front and rear, intermittent front wiper

### Power Train

Automatic planetary power shift transmission  
Auto/manual transmission switch  
Electronic clutch pressure control  
Fully automatic speed range control  
Transmission neutralizer on/off switch  
Cat 3126T Diesel Engine  
Air inlet heater  
Direct electric starting system, 24-volt  
Engine air intake precleaner  
Fuel prefilter and water separator  
Fuel priming aid  
Fuel series, two filters, two microns  
Radial seal air filters, primary and secondary  
Turbocharged, waste-gate valve, jacket water aftercooler

Full-hydraulic, enclosed, wet-disc brakes  
Hydraulic-driven radiator cooling fan  
Multi-row modular radiator

### Other Standard Equipment

Counterweight with drawbar hitch and pin  
Fenders, front and rear  
Hydraulic oil cooler  
Locking engine enclosures  
Non-metallic one-piece tilting hood  
Oil sampling valves for engine, transmission and hydraulic system  
Sight gauges:  
Coolant level, hydraulic tank level, transmission level, air cleaner  
Vandalism protection caplocks

### Hydraulics

Automatic bucket positioner, adjustable  
Caterpillar O-ring face seal couplings  
Caterpillar XT hoses  
Hydraulic diagnostics connectors, pressure taps  
Loader linkage, Z-Bar design, cast lever  
Load sensing hydraulic steering

### Antifreeze

Long life coolant -30° C (-20° F)

## Optional Equipment

With approximate changes in operating weights. Optional equipment may vary. Consult a Caterpillar Dealer for specifics.

	kg	lb
Air conditioning	47	104
Axle oil cooler	276	608
Buckets and bucket teeth tips	see page 13	
Caterpillar Contour Series seat with air suspension—		
Conventional steering version	32	71
Cooling, high ambient	4	9
Ecology drain, axle	—	—
Ether aid	1	2
External mirrors	15.5	34
Fender extensions, mud (front and rear)	43	95
Guard		
Crankcase	73	161
Power train	65	143
Heater, engine coolant 110-volt, 220-volt	.5	1
Hydraulic arrangement, third valve	181	399

	kg	lb
Light, warning (rotating beacon)	4	9
Lighting group, four exterior	5.5	12
Limited Slip Differentials (front and/or rear)	16	35
No SPIN Differential (rear axle only)	0	0
Payload Control System	16	35
Radio, AM/FM	3.2	7
Ride Control System	89	196
ROPS canopy	-208	-458
Starting receptacle, emergency	3.2	7
Steering, secondary	47	104
Sun visor	2.3	5
Tool kit	—	—
Turn signals	2	4
Window group, sliding	2.5	5