

IT38G

Integrated
Toolcarrier

CAT[®]



Cat[®] 3126 Engine

Flywheel power	119 kW	160 hp
Maximum Flywheel Power	128 kW	172 hp
Bucket capacities	2.2 to 2.5 m ³	2.9 to 3.3 yd ³
Pallet forks	1219 mm	48"
Operating weight	13 062 kg	28,714 lb

IT38G Integrated Toolcarrier

State-of-the-art design and superior quality allow you to maximize productivity.

Engine

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

Power Train

Automatic power shift transmission helps provide on-the-go speed and direction changes, while heavy-duty axles with enclosed wet-disc brakes are designed to provide optimum performance in all kinds of applications and operating environments. **pg. 6**

Traction Control System

The optional Caterpillar® electronic system automatically transfers torque to the wheel with the best traction. Operates on all four wheels independently and provides the maneuverability of an open differential with the power of limited slip. **pg. 6**

Performance you can feel.

Caterpillar design delivers excellent breakout force, fast cycle times and precise maneuvering for top all-around performance.

Reliability you can trust.

Proven components, combined with easy maintenance ensure reliability over the life of the machine.



Hydraulics

Powerful and efficient Caterpillar hydraulics help provide strength and versatility for various applications, giving the IT38G exceptional lift capacity and load handling.

pg. 7

Operator's Station

Engineered using advanced virtual reality technology to provide exceptional visibility and operator comfort. Ergonomically designed for total machine control in a comfortable, roomy environment. All control levers, switches and gauges are positioned to maximize productivity. **pg. 8-9**

Attachments

A wide selection of Caterpillar attachments including buckets, forks, brooms, blades and a material handling arm allow you to match the machine to any job. **pg. 10-11**

Quick Coupler/Linkage

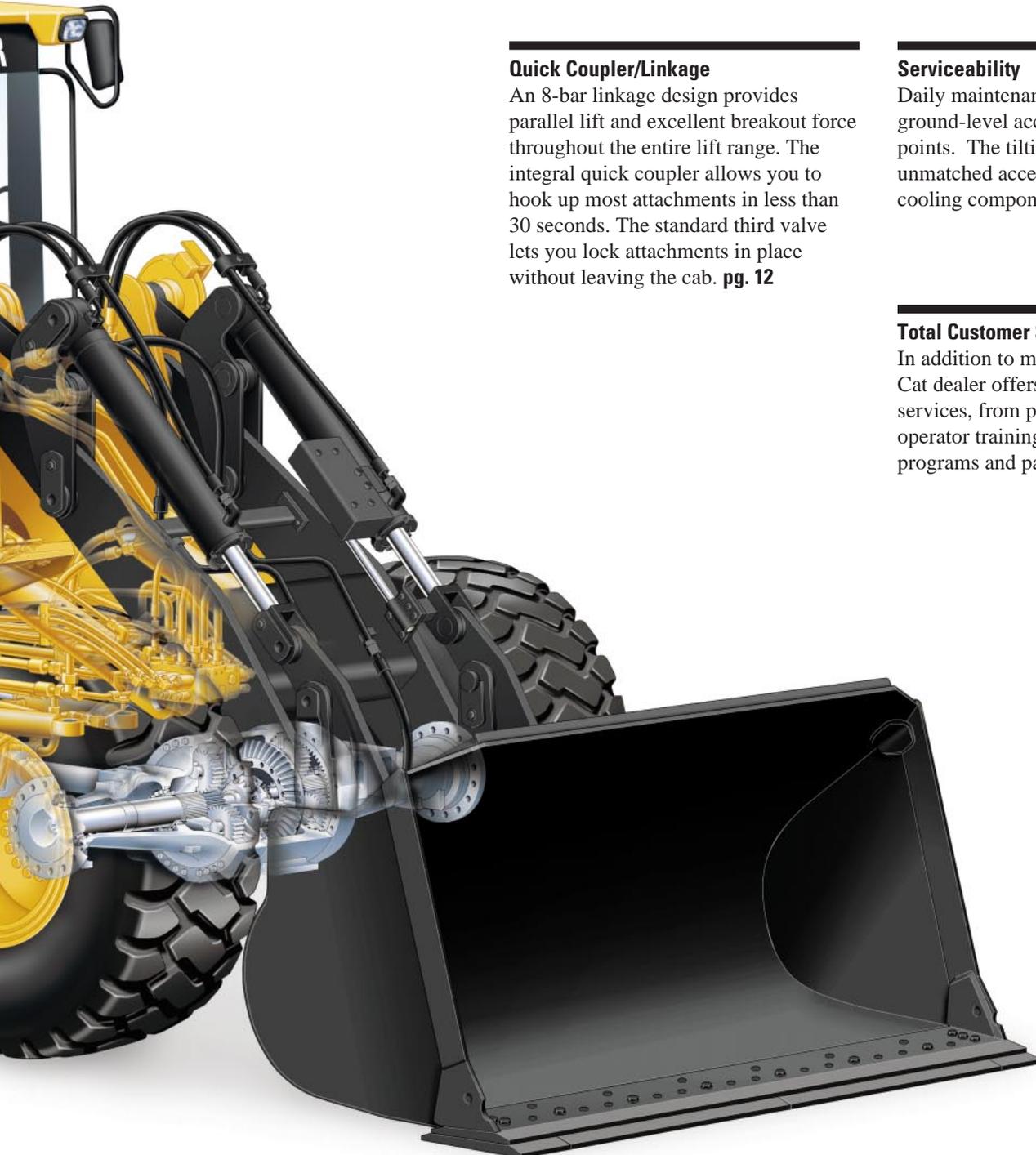
An 8-bar linkage design provides parallel lift and excellent breakout force throughout the entire lift range. The integral quick coupler allows you to hook up most attachments in less than 30 seconds. The standard third valve lets you lock attachments in place without leaving the cab. **pg. 12**

Serviceability

Daily maintenance is easier thanks to ground-level access to all major service points. The tilting hood provides unmatched access to the engine and cooling components. **pg. 13**

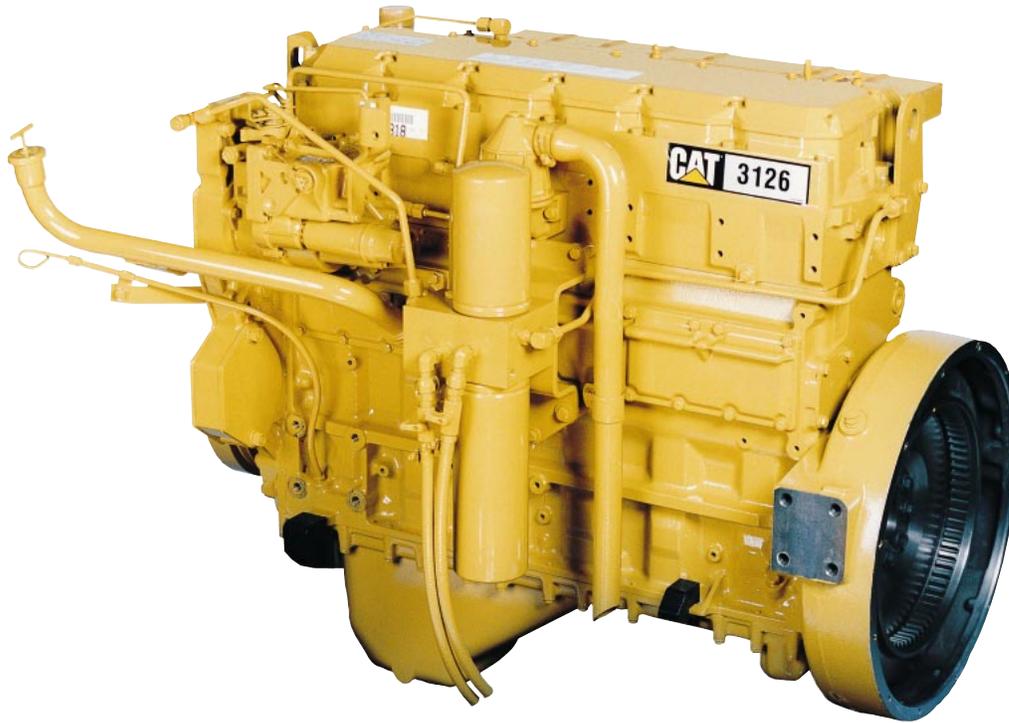
Total Customer Service

In addition to machine selection, your Cat dealer offers a wide range of services, from purchase options to operator training, maintenance programs and parts support. **pg. 14**



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 rated flywheel power of 119 kW (160 hp) @ 2,200 rpm, and meets all current and proposed worldwide emissions standards.

- The four-stroke 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 increases fuel as the engine lugs back from rated speed, resulting in greater engine torque rise. This higher torque rise increases flywheel power above the rated point. Maximum flywheel power of 128 kW (172 hp) occurs in the working range @ 1,700 rpm when the extra power is needed most for improved response, greater rimpull, more lift and breakout force, and faster cycle times.

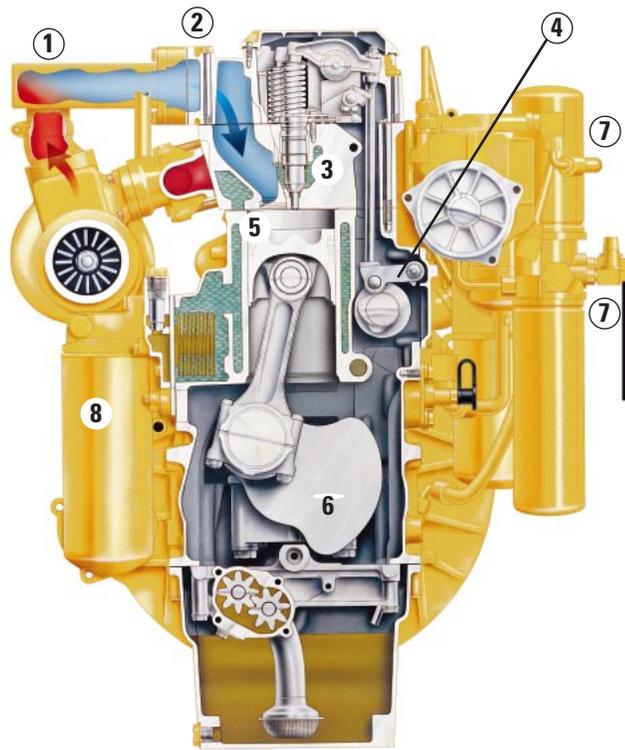
Turbocharger. New waste gate design enhances performance and engine efficiency.

Jacket water aftercooler cools combustion air from the turbocharger for more efficient combustion, reducing smoke and emissions. This also extends piston ring and engine bore life.

Air intake heating (optional on some configurations) improves starting capability in cold temperatures. When engine 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, and 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 fuel filters (in series) ensure excellent fuel cleanliness, provide extended injector life, fuel system durability, and protection.



- 1 Jacket water aftercooler
- 2 Air intake heater*
- 3 Radius cone injector nozzle
- 4 Camshaft roller followers
- 5 Two-piece piston
New ceramic coated ring package
- 6 Induction hardened forged
crankshaft
- 7 Series fuel filters with
ecological drain hoses
- 8 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, 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 ease of service.

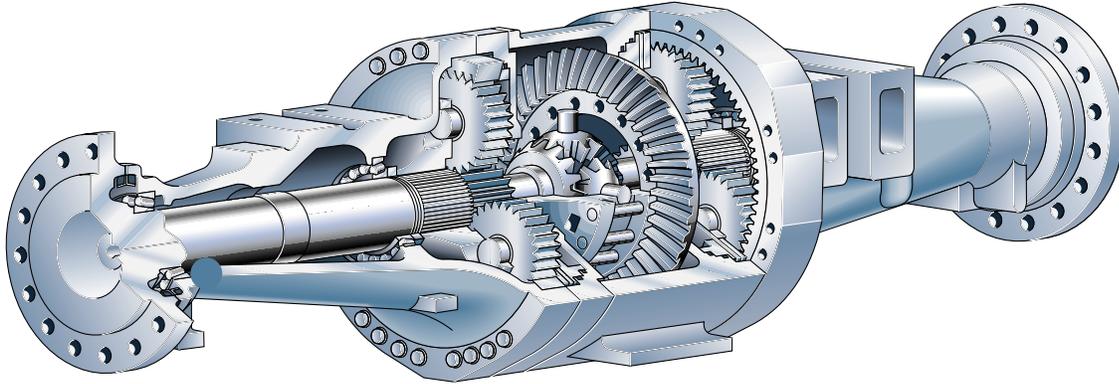
Deep skirt engine block design ensures rigidity and reduces vibration.

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 reduces total repair costs.

Power Train

The Cat power train makes dependable performance a standard feature.

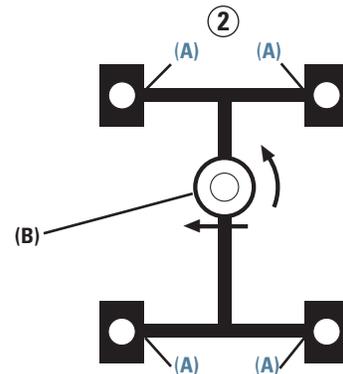


1 Heavy duty axles and brakes are designed to last in all kinds of operating conditions. Planetary final drives use full-floating bronze sleeve bearings in the planet gears and differential pinion. Oil-disc brakes are adjustment free and fully enclosed to lock out contaminants. Patented Duo-Cone Seals between the axle shafts and housings keep lubrication in and dirt out. Oscillating rear axle helps ensure four-wheel ground contact for traction and stability, even on rugged terrain.

Power shift transmission with automatic shift capability is designed 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.

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

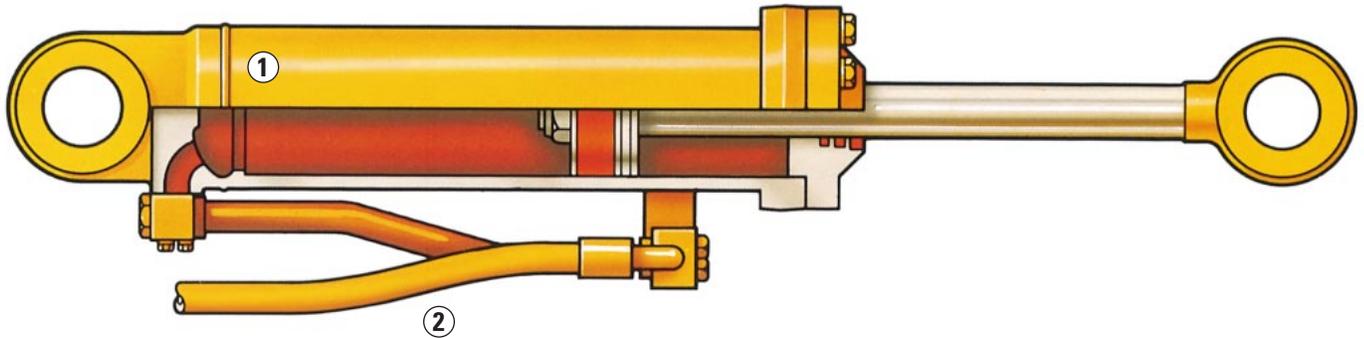
2 Optional Traction Control System is a state-of-the-art Caterpillar electronic system. Sensors (A) measure rotation of each axle shaft and vehicle articulation angle (B). When a tire slips, the system applies the service brake for that wheel and torque is transferred through the differential to the opposite wheel with better traction, whether traveling straight ahead or turning. An energy management system also monitors brake energy and protects the brakes by automatically reducing brake pressure as needed. The system operates on all four wheels independently, providing the maneuverability of an open differential and the power of a limited slip.



Optional limited-slip differentials and NoSPIN rear differentials are also available to deliver traction in poor underfoot conditions.

Hydraulics

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



Matched hydraulics. Pump flow, large-bore lift, and tilt cylinders (1) ensure quick, efficient load handling.

Low-effort hydraulic control. Pilot control valves reduce operator effort and provide precise attachment control. The IT38G features two return-to-work kickouts that allow for multiple attachments to return to the correct work position. For example, by using a switch in the cab, the operator can select between the correct return-to-dig position for a bucket and the return-to-level position for a set of forks.

Caterpillar XT hose and couplings (2) 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. In today's hydraulic systems, that means long life, less unscheduled downtime and reduced operating costs.

- 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.

Pressure taps allow quick diagnosis of the hydraulic system.

Sampling valves provide easy access to hydraulic oil for S•O•S oil analysis.

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 improved breakout and lift forces. Load sensing reduces horsepower draw by up to 8%, resulting in increased fuel economy. Large-bore steering cylinders allow responsive maneuverability.

Caterpillar hydraulic oil offers maximum protection against mechanical and corrosive wear in all hydraulic systems. Its high zinc content reduces wear and extends pump life.

Automatic Ride Control. This optional Caterpillar system uses a nitrogen-oil accumulator in the hydraulic lift circuit that acts as a shock absorber. The lift arm and bucket response to movement is dampened over rough ground, reducing fore and aft pitch. Automatic Ride Control System benefits include a more controlled ride, less dynamic stress on structures and components, reduced tire flexing and greater payload retention. Collectively, these benefits contribute to improved operator efficiency, lower operating cost and enhanced productivity.

Standard third valve. This valve is an integral part of the quick coupler feature. Normally, it operates the attachment retaining pins. By using a manual diverter valve, you can route hydraulic flow to a powered attachment instead.

Optional fourth valve. By using a switch in the cab, the operator can use the tilt lever to control the fourth valve. The fourth valve is then available to provide hydraulic flow to a powered attachment.

Operator's Station

Comfort and control — top-quality operator's station will help maximize productivity.



The IT38G cab is a spacious and comfortable work environment that promotes productive operation. The new cab includes larger windows, better ergonomics and generous storage areas.

Access/egress is through a new two-door design. Both doors open fully and lock flush against the side of the cab. Doors are available with either fixed or sliding glass windows. Steps are wide and angled out for secure footing.

- 1 Larger windows** improve the viewing area in all directions. Twelve percent more glass area (compared to the former model) opens the operator's view for excellent forward and peripheral viewing. The stylish, sloping hood allows the operator a better view to the rear of the machine. View to the bucket corners is better, too. Silicone-bonded windshield and rear window eliminate pillar obstructions and improve serviceability.
- 2 Automatic shift control** allows the operator to concentrate on the work, not gear selection. Preset factory shift points ensure each shift occurs at optimum torque. A switch allows the operator to select either automatic or manual shifting. The low-effort shift control allows one-handed shifting for speed or directional changes.
- 3 Joystick (optional)** combines lift and tilt function on one lever. (Not available with 4th valve hydraulic arrangement).
- 4 Pilot-assisted hydraulic bucket controls** make low-effort operation possible.
- 5 Padded, adjustable wrist rest** helps reduce fatigue.
- 6 Load-sensing, steering system** with flow amplification matches steering response to application requirements.

7 Steering console and all the machine's primary gauges can be positioned infinitely within the tilt range by the operator. With the stroke of a lever, the entire console lifts effortlessly out of the way for easy access or egress.

8 Dual suspended 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.

9 Generous storage space includes:

- Lockable compartment for personal items.
- Molded compartments for lunchbox, cooler, thermos, cup or can.

10 Parking brake.

11 LED warning indicators.

12 Improved ventilation for better air flow to the operator and windows. Six repositioned vents throughout the cab keep air flowing. A large recirculation filter ensures better air quality and contributes to operator comfort.

13 Third valve control for actuating the quick coupler pin to retain attachments, or for controlling the hydraulic flow when using powered attachments.

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

Seat options include the standard seat with adjustable fore/aft position, seatback angle, lumbar support, bottom cushion height, armrest angle and suspension stiffness. The seat cover is a combination of durable, breathable cloth and vinyl. Also available is the optional Cat Contour Series Seat, with added back support extension and electrically adjustable air suspension. Both seats are equipped with a 76 mm (3 in) wide, retractable seat belt.

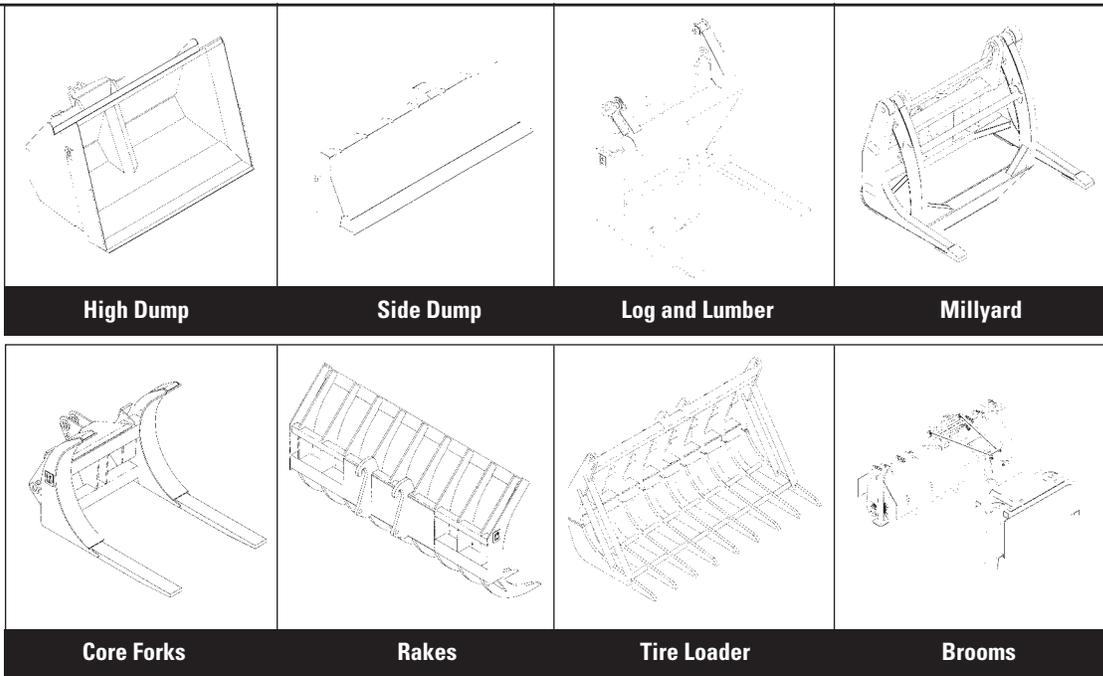
Other options available for the IT38G operator's station:

- Sun visor for the front windshield.
- Roll-down sun screen for the rear window.
- External mirror package.
- Auxiliary lighting package.
- Air conditioning.
- Ride Control allows the selection of three different travel modes:
 - Off: always off service.
 - On: always in service.
 - Auto: system will automatically be actuated when machine travels at a speed greater than 6 mph and will be turned off below 6 mph.
- Remote F-N-R Switch



Attachments

Add versatility to your machine with a wide range of buckets and attachments designed for the IT38G to optimize your operation.



Buckets.

- High Dump — ideal for loading stockpiled, light material into high sided trucks or hoppers.
- Side Dump — permits loaders to operate in congested worksites. Also dumps forward like a conventional bucket.
- Other available buckets:
 - Woodchip.
 - Coal.
 - Fertilizer.
 - Light material.
 - Rock.
 - Sand and gravel.
 - Landfill/refuse.
 - Multi-purpose.

Forks.

- Log and Lumber — ideal for a wide range of jobs — loading, decking and sorting lumber, logs, or palletized material. (Various tine lengths and clamps available.)
- Millyard — maximize loader efficiency in millyard applications.
- Other available forks:
 - Pallet forks (various clamp options).
 - Core forks.

Other Attachments.

- Rakes — For fast, economical removal of brush, trees, stumps and rocks. (Top clamp option available.)
- Tire loader — specially designed to feed tires to shredder or load trucks.
- Brooms — are ideal for clearing parking lots, industrial plants, millyards, airport runways and streets.
- Also available:
 - Material handling arms.
 - Snow plows.
 - V-plow.
 - Reversible plows.

See your Caterpillar dealer for these, as well as a number of other specialty attachments available from Caterpillar Work Tools and Services.

Factory Installed Attachments

A wide variety of factory attachment combinations optimize performance and versatility.

Material Handling Buckets

Designed for excellent performance in stockpile applications. Flat floor design. Bolt-on cutting edges are standard.



Material Handling Arm

The material handling arm provides a boom for placing material from overhead — great for lowering pipes or beams into position on construction projects. Adjustable extension length; hook and shackle included.



Pallet Forks

Fork configurations are as varied as the applications they serve. Available in a wide range of lengths. Log forks (with or without top clamp) and millyard forks are available from Caterpillar Work Tools and Services.



Quick Coupler

Change attachments quickly from the cab.

As an integral part of the IT38G, the quick coupler allows most attachments to be changed in under 30 seconds. A standard third valve actuates attachment retaining pins without the operator leaving the cab, or the manual diverter valve can be used to route hydraulic flow to a powered attachment. An optional fourth valve provides additional hydraulic flow for powered attachments.



Linkage

Advanced linkage design provides maximum control.

The 8-bar linkage provides parallel lift, keeping the load level throughout the entire lifting range, especially important when using forks. This lets the operator concentrate on placing the load instead of continually adjusting the forks to retain the load. It's simply faster and more efficient.



Serviceability

Keep your machine up and running with easy-to-perform daily maintenance.



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

- Lockable, ground level service doors give quick access to engine oil fill and dipstick, coolant sight gauge, air filter indicator, fuel tank fill and battery disconnect switch. Sight gauges for hydraulic and transmission oil levels are also easily viewable from the ground.
 - 254 liter (67 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 centertube 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 up to 6,000 hours.
 - Maintenance-free batteries are protected by a built-in battery box in the left rear frame. These premium high output Caterpillar batteries are designed for high cranking power and maximum protection against vibration, offering extended service life in severe earthmoving applications.
 - Individual Multi-Row Modular core reduces time to repair or replace the radiator.
 - Electronic Technician provides self diagnostics of the Traction Control System, transmission and 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.

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.

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 an investment, these plans can cover the entire machine, including attachments.

Selection. Make detailed comparisons of the machines being considered before a purchase. How long do components last? What is the cost of preventive 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. More and more equipment buyers are planning for effective maintenance before buying equipment. Choose from a wide range of maintenance services at the time you purchase a machine. 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 customers can make the right choice.

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

Engine

Four-stroke cycle, six-cylinder 3126 turbocharged and aftercooled diesel engine.

Ratings*	kW	hp
Flywheel @ 2,200 rpm	119	160
Maximum flywheel @ 1,700 rpm	128	172

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	119	160	—
ISO 9249	119	160	—
SAE J1349	119	160	—
EEC 80/1269	119	160	—
DIN 70020	—	—	166

Maximum torque (net) @ 1,200 rpm	874 Nm	645 lb-ft
Total torque rise	69%	

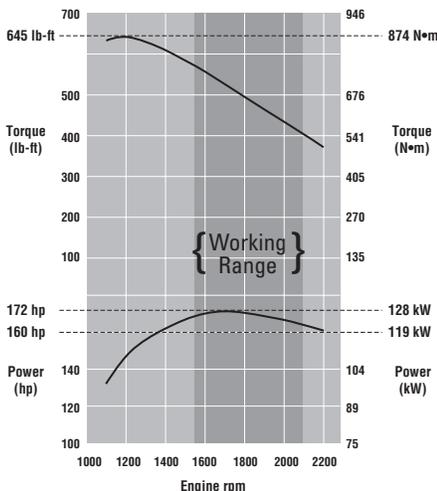
Dimensions

Bore	110 mm	4.3 in
Stroke	127 mm	5.0 in
Displacement	7.2 liters	439 in ³

Exhaust emissions

The 3126 meets the following emissions requirements:

- EU
- US EPA Tier 1
- 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 fan, 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
- 3-ring aluminum-alloy/forged steel 2-piece articulated pistons, cam-ground, tapered and cooled by oil spray
- Chrome Ceramic Surface (CSS) ring package, designed for high load/high temperature applications
- 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 50-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. Maximum flywheel power of 128 kW (172 hp) occurs at 1,700 rpm when power is needed during the working cycle.

Transmission

Countershaft power shift transmission with four speeds forward and three reverse.

Maximum travel speeds (standard 20.5-R25 XTLA 1★ L2 tires)

		km/h	mph
Forward	1	7.4	4.6
	2	13.4	8.3
	3	23.4	14.5
	4	39.4	24.5
Reverse	1	7.4	4.6
	2	13.4	8.3
	3	23.4	14.5

Features

- single lever to control both speed and direction
- separate control to lock in neutral
- single-stage, single-phase torque converter
- automatic shift capability
- quick gear kickdown button
- F-37 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 quiet operation
- transmission cooler bypass valve

Axles

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

Features

- maximum single-wheel rise and fall: 420 mm (16.5")
- conventional differentials, enclosed brakes and final drives
- threaded nuts to set bearing pre-load
- Patented Duo-Cone Seals between axle shaft and housing
- uses SAE 30W (oil change interval: 2,000 hours or one year)
- limited slip and NoSPIN differentials available
- Traction Control System available

Steering

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

Ratings

Minimum turning radius (over tire)	5480 mm (18')
Steering angle, each direction	40°
Hydraulic output at 2597 rpm and 6900 kPa (1,000 psi)	102 liters/min (27 gpm)
Relief valve setting	22 800 kPa (3,306 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 metering pump controls flow to steering cylinders
- full-flow filtering
- adjustable steering column

Loader Hydraulic System

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

Work tools system, vane-type pump

Output at 2597 rpm and 6900 kPa (1,000 psi) with SAE 10W oil at 66° C (150° F)	163 liters/min	43 gpm
Relief valve setting	24 800 kPa	3600 psi
Cylinders, double acting: lift, bore and stroke	120.7 x 715 mm	4.75 x 28.15"
Cylinder, double acting: tilt, bore and stroke	114.3 x 732 mm	4.5 x 28.8"

Pilot system, variable displacement piston-type pump*

Output at 2,597 rpm and 6900 kPa (1,000 psi) with SAE 10W oil at 66° C (150° F)	102 liters/min	27 gpm
Working pressure	3000 kPa	435 psi

*Common with steering pump.

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

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
- adjustment-free
- separate circuits for front and rear axles
- dual pedal braking system
- left pedal functions as brake or brake/neutralizer

Parking brake features

- mechanical, shoe-type brake
- mounted on transmission output
- pull-cable operated

Tires

Tubeless, nylon, loader-design tires.

Choice of

- 20.5-25, 12 PR (L-2)
- 20.5-25, 12 PR (L-3)
- 20.5-R25 GP-2B 1★ (L-3) steel radial
- 20.5-R25 XTLA 1★ (L-2) standard
- 20.5-R25 XHA 1★ (L-3) steel radial
- 555/70-R25 XLD70 1★ (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 you consult a tire supplier to evaluate all conditions before selecting a tire model.

Low profile tires will have the following affect on specs:

Width over tires	+17 mm	+0.7 "
Ground clearance	-44 mm	-1.7 "
Vertical bucket dimension	-44 mm	-1.7 "
Dig depth	+44 mm	+1.7 "
Reach	+80 mm	+3.1 "
Operating weight	+20 kg	+44 lb
Straight tip load	+15 kg	+33 lb
Full turn static tip load	+13 kg	+29 lb
Run out speeds		-7 %
Rimpull		+9 %
Departure angle		-3 %

Service Refill Capacities

	Liters	Gallons
Fuel tank (dry fill)	254	67
Cooling system	48	12.7
Crankcase	20	5.3
Transmission	30	7.9
Differentials and final drives		
front	24	6.3
rear	27	7.1
Hydraulic system (including tank)	90	23.8
Hydraulic tank	76	20.1

Bucket Controls

Pilot-operated lift and tilt circuits.

Lift circuit features

- four positions: raise, hold, lower and float
- adjustable automatic kickout from horizontal to full lift

Tilt circuit features

- three positions: tilt back, hold and dump
- adjustable automatic tool positioner for desired loading angle
- doesn't require visual spotting

Controls

- three lever control (standard)
- fourth valve selector switch (optional)
- joystick (optional) combines lift and tilt controls (not available with 4th valve)
- lever lockout
- remote F-N-R switch (optional)

Cab

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

Features

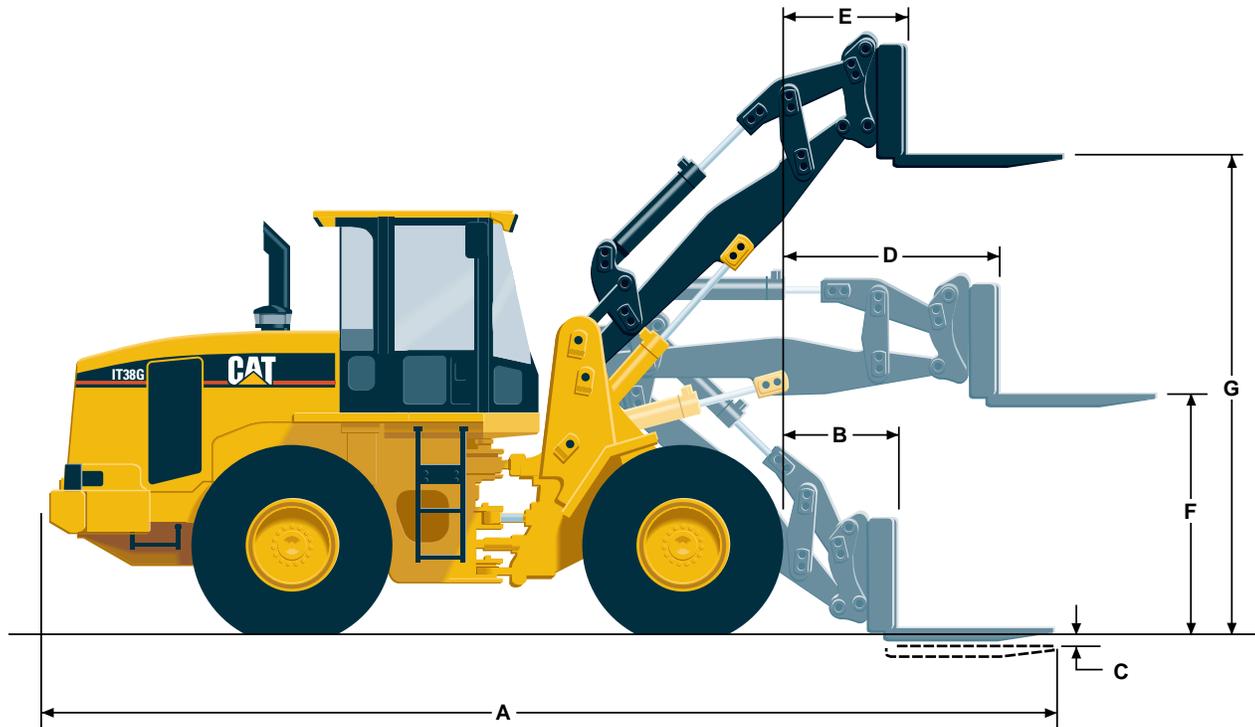
- meets OSHA and MSHA limits for operator and sound exposure with doors and windows closed (according to ANSI/SAE J1166 MAY90)
- ROPS meets the following criteria:
 - SAE J394
 - SAE 1040 APR88
 - ISO 3471-1:1986
 - ISO 3471:1994
- also meets the following criteria for Falling Objects Protective Structure:
 - SAE J231 JAN81
 - 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 6394 or 86/662/EEC.

Dimensions

All dimensions are approximate



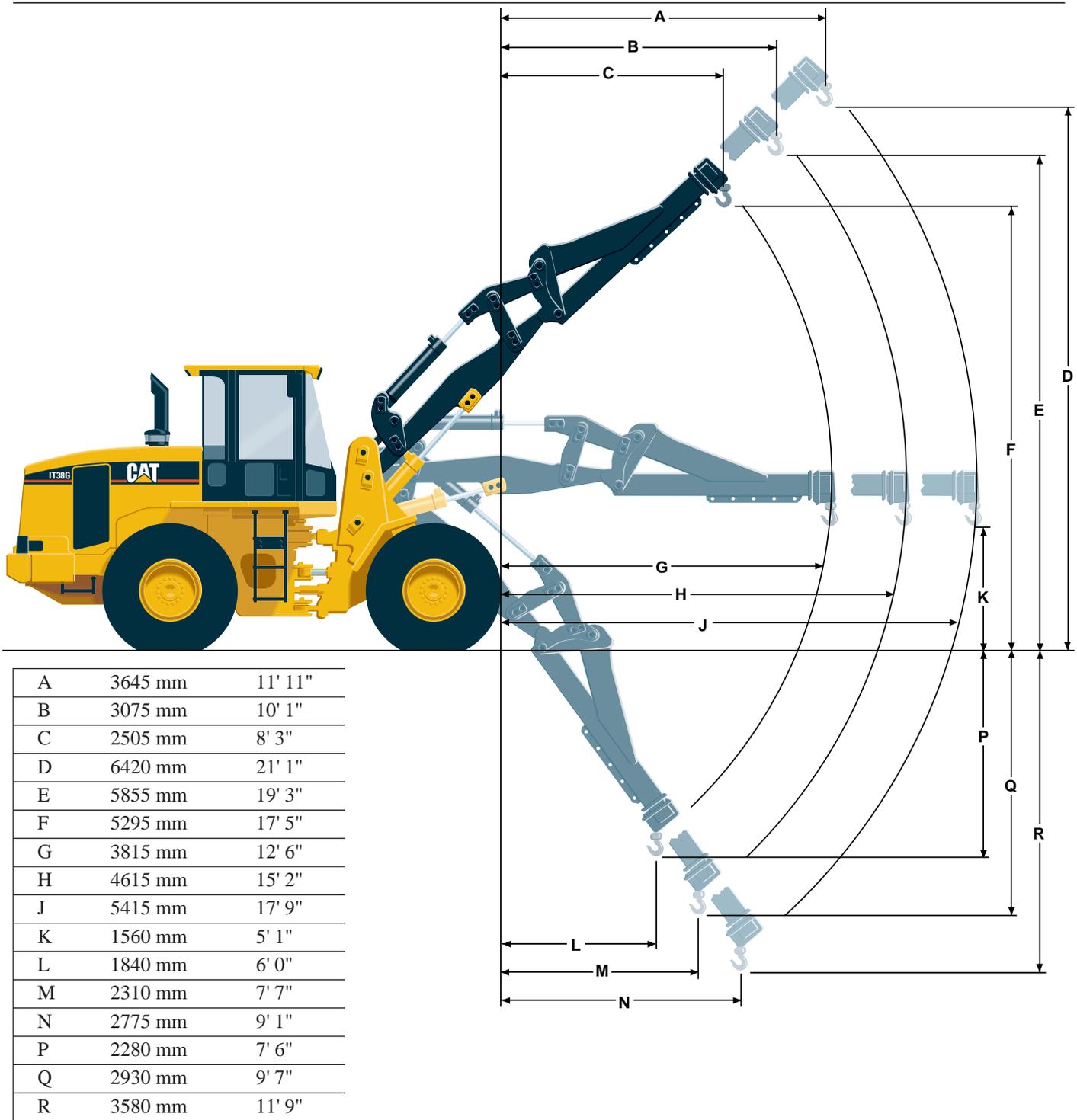
A	varies with fork length		E	945 mm	3' 1"
B	955 mm	3' 2"	F	1865 mm	6' 1"
C	25 mm	1"	G	3715 mm	12' 2"
D	1670 mm	5' 6"			

Fork tine length	1220 mm	4'
Reach with arms horizontal and forks level	2890 mm	9'6"
Overall length	7825 mm	25'8"
Static tipping load with level arms and forks, 600 mm (23.6") load center, straight	7196 kg	15,860 lb
Static tipping load with level arms and forks, 600 mm (23.6") load center, full 40° turn	6218 kg	13,710 lb
Operating weight	12 469 kg	27,490 lb

Dimensions, static tipping load and operating weight are based on standard machine configuration with 20.5 R25 XTLA (L-2)) tires, full fuel tank, coolant, lubricants and operator. Machine stability and operating weight are affected by tire size and other attachments.

Dimensions

All dimensions are approximate.



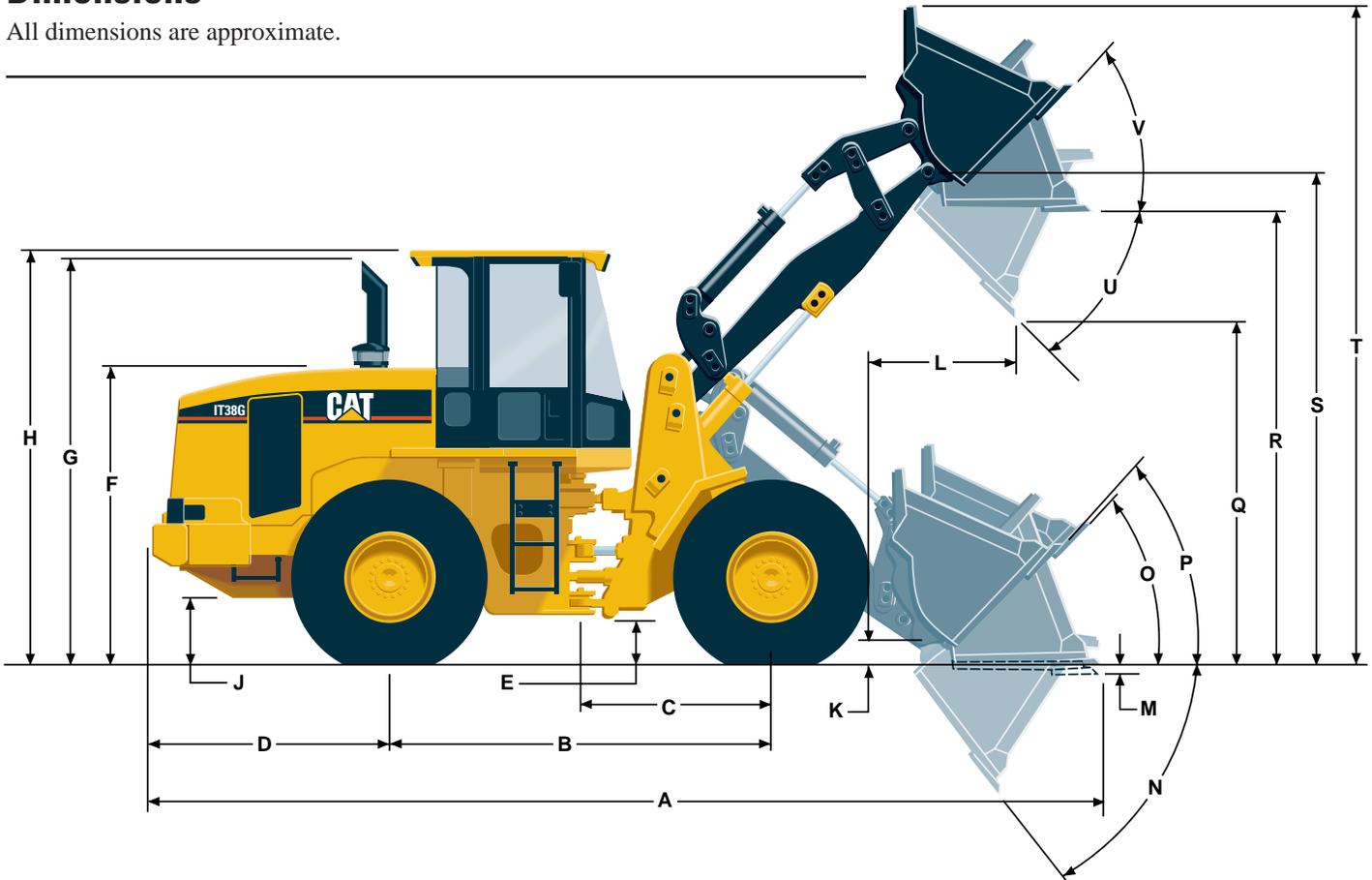
Handling arm position	Retracted		Mid-position		Extended	
Operating load 40° articulation	2049 kg	4510 lb	1729 kg	3810 lb	1492 kg	3290 lb
Static tipping load						
Straight	4746 kg	10,460 lb	4009 kg	8840 lb	3463 kg	7630 lb
Full 40° turn	4098 kg	9030 lb	3457 kg	7620 lb	2983 kg	6570 lb
Operating weight	12 380 kg	27,290 lb	12 380 kg	27,290 lb	12 380 kg	27,290 lb

Dimensions, static tipping load and operating weight are based on standard machine configuration with 20.5 R25, XTLA (L-2) tires, full fuel tank, coolant, lubricants, and operator.

NOTE: Machine stability and operating weight are affected by tire size, tire ballast and other attachments.

Dimensions

All dimensions are approximate.



A	see overall length*		H	3300 mm	10' 10"	P	46.6° @ carry (SAE)	
B	3020 mm	9' 11"	J	690 mm	2' 3"	Q	see dump clearance*	
C	1510 mm	4' 11"	K	235 mm	9.3"	R	3625 mm	11' 11"
D	1905 mm	6' 3"	L	see reach @ 45° discharge angle*		S	3930 mm	12' 11"
E	400 mm	1' 4"	M	see digging depth*		T	see overall height*	
F	2215 mm	7' 3"	N	54°		U	45°	
G	3210 mm	10' 6"	O	48.8°		V	44.6°	

Note: Dimensions listed are for machines equipped with 20.5 R25 XTLA (L-2) tires.

*See operating specifications on page 21

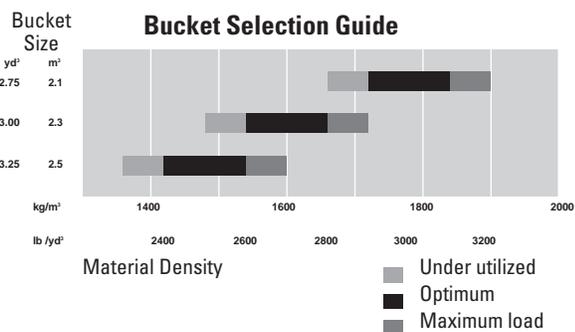
Supplemental Specifications

	Width over tires		Ground clearance		Change in vertical dimensions		Change in operating weight		Change in articulated static tipping load	
	mm	inches	mm	inches	mm	inches	kg	lb	kg	lb
Remove cab only, ROPS	—	—	—	—	—	—	-198	-430	-191	-420
20.5-25 12 PR (L-2)	2605	102.6	400	15.8	1	0.04	-60	-130	-39	-80
20.5-25 12 PR (L-3)	2600	102.4	425	16.7	25	.98	85	180	56	120
20.5 R25 XTLA (L-2)	2600	102.4	400	15.7	—	—	—	—	—	—
20.5 R25 GP-2B (L-2/3)	2595	102.2	410	16.1	10	0.39	130	280	86	190
20.5 R25 XHA (L-3)	2595	102.2	405	15.9	5	0.20	172	380	114	250

Note: Tire options include tires and rims.

Operating Specifications

		General purpose bucket			
Rated bucket capacity (§)	m ³	2.5	2.4		2.2
	yd ³	3.3	3.1		2.9
		Bolt-on edges	Bolt-on edges	Bolt-on teeth	Bolt-on teeth
Struck capacity (§)	m ³	2.1	1.9	2.0	1.8
	yd ³	2.7	2.5	2.6	2.4
Width (§)	mm	2710	2710	2735	2735
	ft/in	8' 11"	8' 11"	9' 0"	9' 0"
Dump clearance at full lift and 45° discharge**	mm	2800	2800	2720	2720
	ft/in	9' 2"	9' 2"	8' 11"	8' 11"
Reach at full lift and 45° discharge**	mm	1200	1200	1290	1290
	ft/in	3' 11"	3' 11"	4' 3"	4' 3"
Reach at 45° discharge and 2130 mm (7 ft 0 in) clearance	mm	1655	1655	1705	1705
	ft/in	5' 5"	5' 5"	5' 7"	5' 7"
Reach with lift arms horizontal and bucket level	mm	2520	2520	2640	2640
	ft/in	8' 3"	8' 3"	8' 8"	8' 8"
Digging depth (§)	mm	70	70	45	45
	in	2.8	2.8	1.8	1.8
Overall length**	mm	7485	7485	7600	7600
	ft/in	24' 7"	24' 7"	24' 11"	24' 11"
Overall height with bucket at full raise (§)	mm	5235	5120	5235	5120
	ft/in	17' 2"	16' 10"	17' 2"	16' 10"
Loader clearance circle with bucket in carry position (§)	mm	12 135	12 135	12 225	12 225
	ft/in	39' 10"	39' 10"	40' 1"	40' 1"
Static tipping load straight* (§)	kg	8861	8859	9059	9110
	lb	19,535	19,530	19,970	20,080
Static tipping load full 40° turn* (§)	kg	7621	7630	7806	7860
	lb	16,800	16,820	17,210	17,330
Breakout force*** (§)	kg	12 650	12 692	12 738	12 782
	lb	27,890	27,980	28,080	28,180
Operating weight* (§)	kg	13 062	12 984	12 967	12 899
	lb	28,800	28,630	28,590	28,440



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 (§).

* Static tipping load and operating weight shown are based on standard machine configuration with sound-suppression cab and ROPS, 20.5 R25 XTLA (L-2) tires, full fuel tank, coolant, lubricants and operator.

** Dump clearance, reach and overall length dimensions for bucket equipped with teeth reflect actual dimensions. SAE J732C allows dimensions for bucket with teeth to reflect the dimension using the cutting edge. Caterpillar Inc. uses actual equipped bucket dimensions.

*** Measured 102 mm (4.0"): behind tip of cutting edge with bucket hinge pin as pivot point in accordance with SAE J732C.

**** All buckets shown can be used on the high lift arrangement. High lift column shows changes in specifications from standard lift to high lift. Add or subtract as indicated to or from specifications given for appropriate bucket to calculate high lift specifications.

Standard Equipment

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

Electrical

- Alarm, back-up
- Alternator (50-amp)
- Batteries (heavy duty, maintenance free, 950 CCA)
- Converter, 12-volt
- Ignition key start/stop switch
- Lighting system, Halogen (six total)
- Main disconnect switch
- Starter, electric, (heavy duty)
- Starting, and charging system (24-volt)

Operator Environment

- Cab, pressurized and sound suppressed, rollover protective structure (ROPS)
- Cigar lighter and ashtray
- Coat hook
- Control, work tool lever lockout
- Cup and thermos holders
- Heater and defroster
- Horn, electric (steering wheel mounted)
- Implement lever lockout
- Instrumentation, Gauges
 - Engine coolant temperature
 - Fuel level
 - Hydraulic oil temperature
 - Transmission oil temperature
- Light, dome (cab)
- Mirrors, rearview (inside mounted)
- Radio ready cab, includes antenna, speakers and converter (12-volt, 5-amp)
- Seat, cloth, KAB (adjustable backrest, armrest, lumbar support)

- Seat belt, retractable, 76 mm (3") wide
- Socket (12-volt)
- Steering column, adjustable angle
- Storage box, lockable
- Warning indicators
 - Battery charge
 - Electrical system
 - Engine coolant temperature
 - Engine oil pressure
 - Hydraulic oil temperature
 - Parking brake
 - Primary steering oil pressure
 - Secondary steering oil pressure
 - Service brake oil pressure
 - Transmission oil temperature
- Windshield washers/wipers, wet-arm (front and rear), intermittent front wiper

Power Train

- Brakes, full hydraulic, enclosed wet-disc
- Engine, Cat 3126 turbocharged aftercooled diesel
- Fan, radiator cooling, hydraulic driven
- Filters, fuel, primary and secondary (in series)
- Fuel priming aid
- Fuel/water separator
- Muffler
- Precleaner, engine air intake
- Radiator, multi-row (six) modular (IMRM)
- Switch, transmission neutralizer on/off
- Torque converter
- Transmission, countershaft, automatic power shift (4F/3R), with fully automatic speed range control and quick gear kickdown button

Hydraulics

- Controls, pilot hydraulic
- Diagnostic connectors, hydraulic
- Steering, load-sensing hydraulic
- Valve, diverter, hydraulic control of third valve flow between quick coupler and attachments
- Valve, third

Other Standard Equipment

- Antifreeze, extended life, protection to -34C (-29F)
- Counterweight
- Fenders, front and rear
- Guard, bottom (crankcase, fuel tank, oil pan)
- Hitch, drawbar with pin
- Hood, non-metallic one piece
- Indicators
 - Air cleaner service
 - Coolant level sight gauge
 - Hydraulic oil level sight gauge
 - Transmission oil level sight gauge
- Kickout, lift, automatic
- Kickouts (2), return to work, adjustable
- Linkage, sealed 8-bar parallel lift
- Quick coupler, hydraulic actuated
- Valves, oil sampling
- Vandalism protection caplocks

Tires, Rims, and Wheels

An allowance for tires is included in the base machine price.

Optional Equipment

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

	kg	lb		kg	lb
Air conditioning	73	161	Hydraulic oil cooling package	3	7
Auxiliary lighting package	8	18	Hydraulic arrangement, four valve	25	55
Axle Oil Cooler	190	419	Ride Control System	46	102
Buckets	see page 21		Roll-down sun screen (rear window)	2	4
Cab, sliding window	—	—	Seat, air suspension	55	121
Cab removed, ROPS remains	-198	-437	Signal lights, directional	8	18
Differentials:			Speedometer	1	2
NoSPIN (rear only)	2	4	Starting aids:		
Limited Slip (front)	4	9	Air intake heater	2	4
(rear)	4	9	Engine coolant heater,		
Fenders, platform extension	—	—	120-volt, 220-volt	1	2
Guard, power train	57	125	Ether starting aid	1	2
Lighting system, warning			Receptacle, 120-volt, 220-volt	3	7
(rotating beacon)	3	7	Steering, secondary	30	66
Mirrors, outside mounted	5	11	Sun screen, rear	2	4
Radio, AM/FM cassette in fixed			Sun visor, front	1	2
mounting or quick release versions	2	4	Traction Control System	73	161
Voltage converter, 5-amp,			Joystick (single lever		
15-25 amp	1.5	3	bucket control)	13	29

Custom Products Offerings

Scrap Handling Arrangement

Waste Handling Arrangement

 Steering, secondary (fuv WHA)

 Traction Control System (fuv WHA)

Differential, NoSPIN front

Fan, auto reversing

Fenders, roading

Guard, axle seal

Guard actuator, electrical

Precleaner, turbine and turbine/trash

Radiator, wider spacing

Retrofit Kits

 Air conditioning

 Axle oil cooler

 Controls, joystick

 Fan, auto reversing

 Fenders, roading/narrow

 Heater, engine air intake

 Hydraulics, fourth valve

 Ride control

IT38G Integrated Toolcarrier

AEHQ5220-03 (06-01)
(Replaces AEHQ5220-02)

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Materials and specifications are subject to change without notice.

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