

# 797F

## LARGE MINING TRUCK



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<b>Engine:</b>	C175-20 Tier 4 / High Altitude Arrangement (optional)
<b>Gross Power:</b>	2983 kW / 4,000 HP or 2647 kW / 3,550 HP
<b>Gross Weight:</b>	623 690 kg / 1,375,000 lb
<b>Nominal Rated Payload:</b>	364 tonnes / 401 tons



CAT® LARGE  
MINING TRUCKS

# DELIVERING A BETTER BOTTOM LINE

With a truck for every site or application — no matter the size class or drive system — and a complete lineup of loading tools, Caterpillar delivers a complete loading and hauling solution that delivers a better bottom line.





## **WHAT CAN MINERS EXPECT FROM THEIR CAT MINING TRUCKS? THE LOWEST POSSIBLE COST PER TON OVER THE LIFE OF THE MACHINE.**

A lot goes into delivering that value. Like high speed on grade for improved productivity. A class-leading standard payload. Anytime braking plus front and rear wheel retarding for more confident operators. Total Cat integration, which results in highly efficient systems and performance. And high reliability, so trucks spend more time hauling material than they do sitting in the maintenance shop.

# CAT<sup>®</sup> 797F

HIGH  
PRODUCTIVITY.  
SUPERIOR  
BRAKING.  
LONG LIFE.



## WHAT WILL IT TAKE TO BOOST YOUR BOTTOM LINE?

Greater productivity thanks to a best-in-class payload? Superior braking that leads to confident, productive operators? Or a tough, rugged frame that delivers performance and long life no matter the conditions?

With the Cat<sup>®</sup> 797F, you get all of this — and more. Today's 797F is the most productive 364-tonne (401-ton) truck in the market. It's fast, fuel efficient and delivers class-leading productivity, making it the industry benchmark for lower cost per ton in its size class. It hauls more every load, every cycle and every shift. And it delivers a better bottom line to the most important mine in the world: yours.

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## OVERALL LOWER COSTS

**26%  
LOWER**

MAINTENANCE  
COSTS

**20%  
LOWER**

OPERATING  
COSTS

**36%  
LOWER**

OILS & LUBE  
COSTS

UP TO  
**10%  
LOWER**

FUEL COSTS

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## GREATER THAN 90% AVAILABILITY

- + Lower maintenance ratios
- + Longer component lives
- + High reliability

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## MOST DURABLE 797F EVER

- + Over 130,000 hours in Canadian Oil Sands
- + Major drive train component life improvement
- + Over 80% of frame is cast, not fabricated
- + 5% tire life improvement
- + Significant engine life increase



**OVER 130,000 HOURS**  
IN CANADIAN OIL SANDS

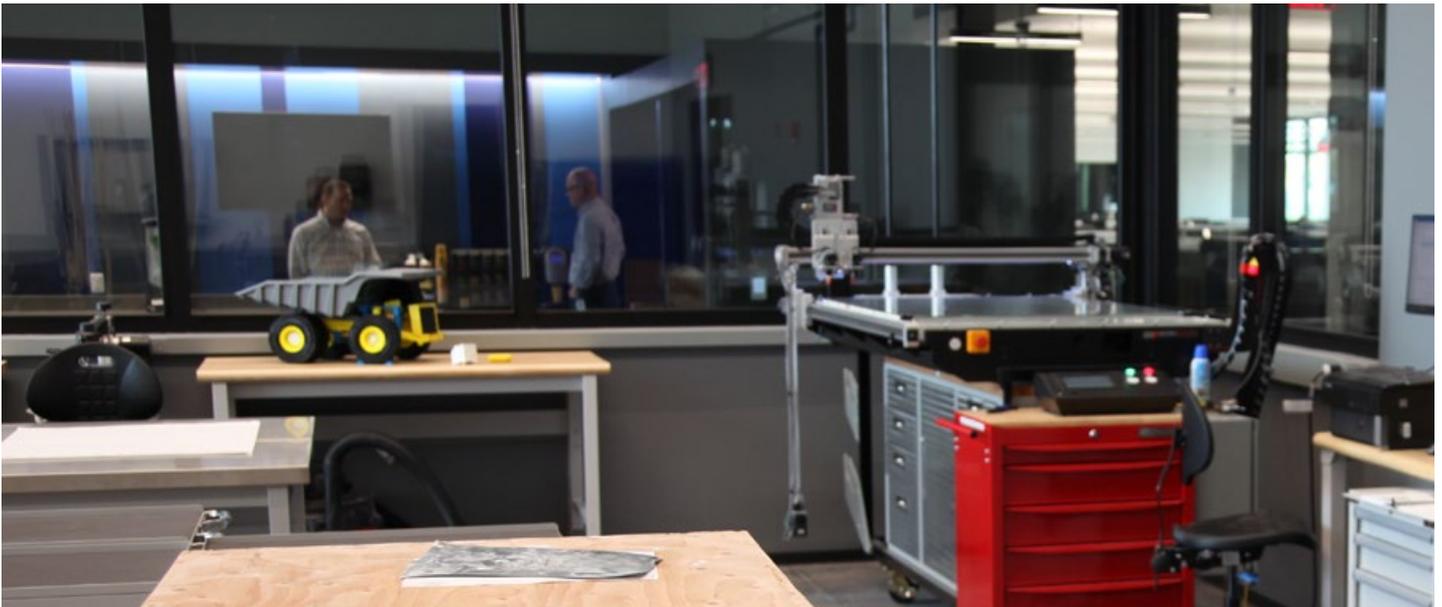
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# LOWERING COST PER TON

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With offerings in both electric and mechanical drive and payloads ranging from 138 to 372 tonnes (152 to 410 tons), Caterpillar can offer a truck for every type of mining application. But one thing all the models have in common is the philosophy we follow in their design. Whatever measurement you use for material movement, our goal is to help you optimize that cycle — lowering cost per ton and delivering a better bottom line to your operation.





## A PROVEN DESIGN PHILOSOPHY

When it comes to making Cat large mining trucks, we follow a proven design philosophy that focuses around five main areas:

1. MAKING A SUSTAINED INVESTMENT IN RESEARCH & DEVELOPMENT
2. INTEGRATING EVERY COMPONENT
3. DELIVERING IRON THAT PERFORMS
4. SUPPORTING PRODUCTS— AND PRODUCTIVITY
5. LISTENING TO OUR CUSTOMERS TO SPUR CONTINUOUS IMPROVEMENT

By following this philosophy — for every truck, every time — we ensure that you get what you expect from Caterpillar: the lowest cost per ton of any mining truck in the industry.

## A PROVEN APPROACH TO R&D



A WORLD-CLASS TEAM OF ENGINEERS AND EXPERTS



A DISCIPLINED APPROACH TO DEVELOPMENT



MINING INDUSTRY FEEDBACK



TESTING AND VALIDATION OF EVERY MACHINE

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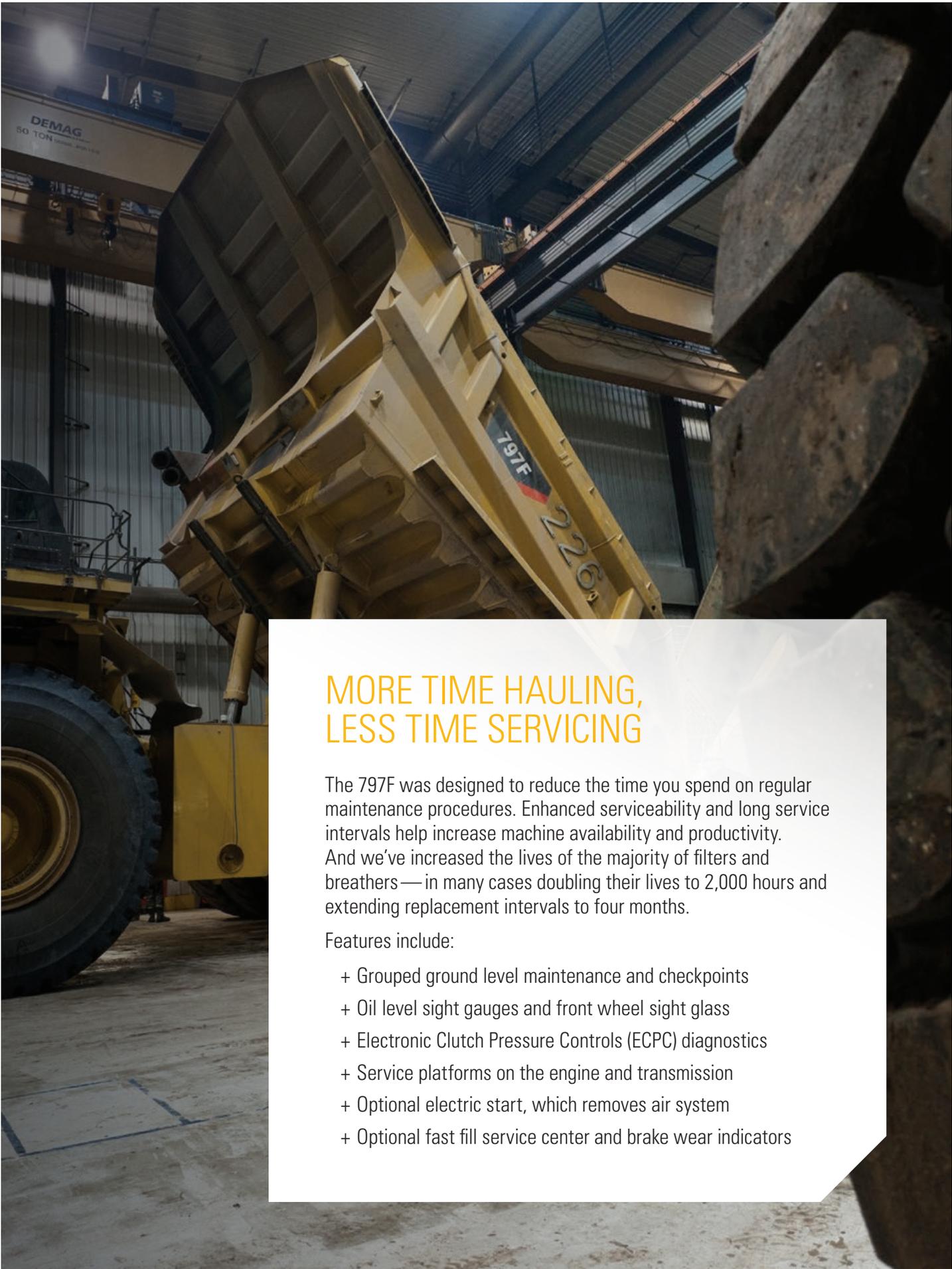
# BUMPER-TO-BUMPER CATERPILLAR

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The individual components, software, systems and engine that go inside a Cat 797F truck have different purposes, but they have one very important thing in

common: They are all manufactured by Caterpillar and supported by the Cat dealer network. This integration ensures that the entire truck, from tires to transmissions, engines to electronics, can be fully optimized to deliver the lowest cost per ton.



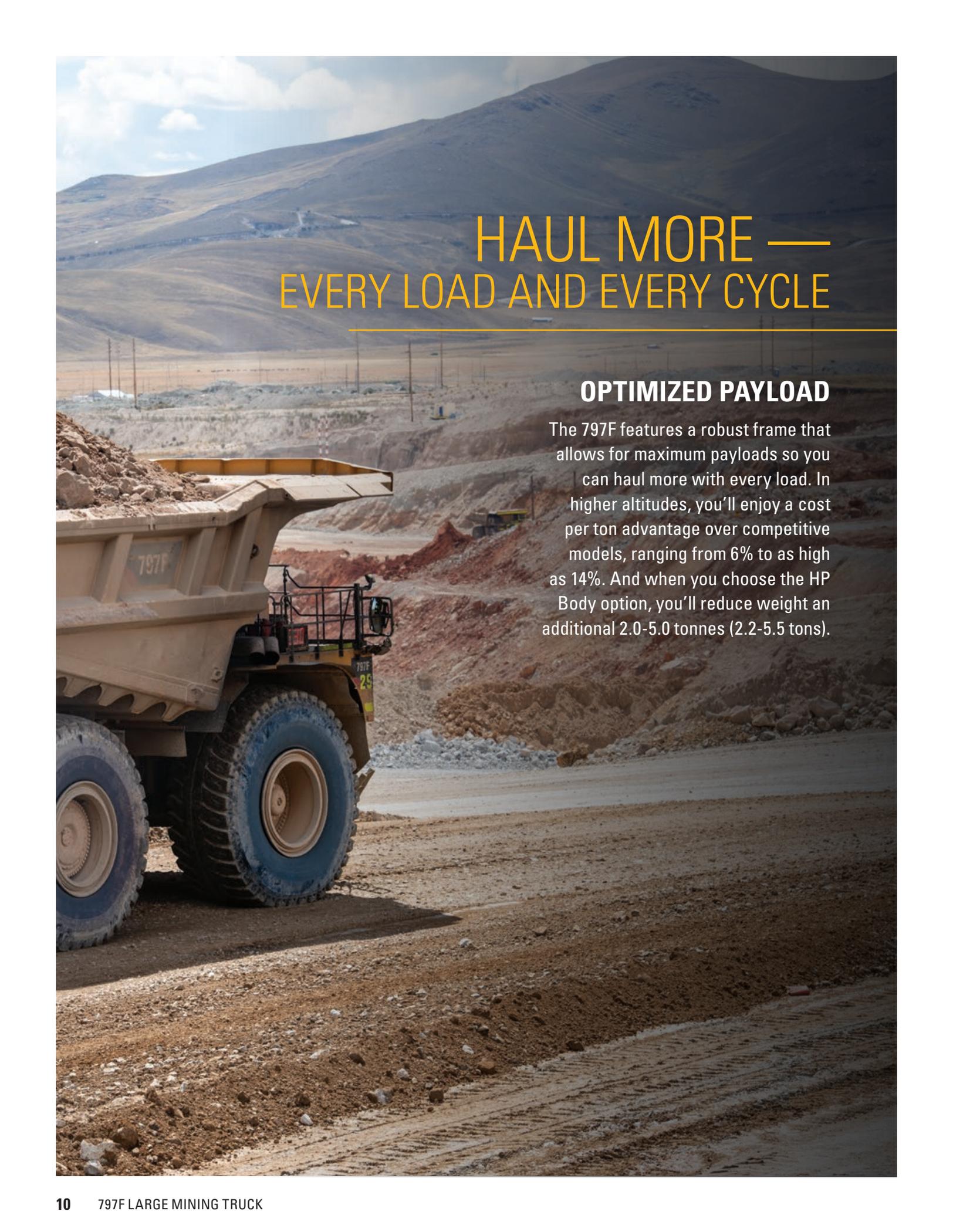


## MORE TIME HAULING, LESS TIME SERVICING

The 797F was designed to reduce the time you spend on regular maintenance procedures. Enhanced serviceability and long service intervals help increase machine availability and productivity. And we've increased the lives of the majority of filters and breathers—in many cases doubling their lives to 2,000 hours and extending replacement intervals to four months.

Features include:

- + Grouped ground level maintenance and checkpoints
- + Oil level sight gauges and front wheel sight glass
- + Electronic Clutch Pressure Controls (ECPC) diagnostics
- + Service platforms on the engine and transmission
- + Optional electric start, which removes air system
- + Optional fast fill service center and brake wear indicators



# HAUL MORE — EVERY LOAD AND EVERY CYCLE

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## OPTIMIZED PAYLOAD

The 797F features a robust frame that allows for maximum payloads so you can haul more with every load. In higher altitudes, you'll enjoy a cost per ton advantage over competitive models, ranging from 6% to as high as 14%. And when you choose the HP Body option, you'll reduce weight an additional 2.0-5.0 tonnes (2.2-5.5 tons).

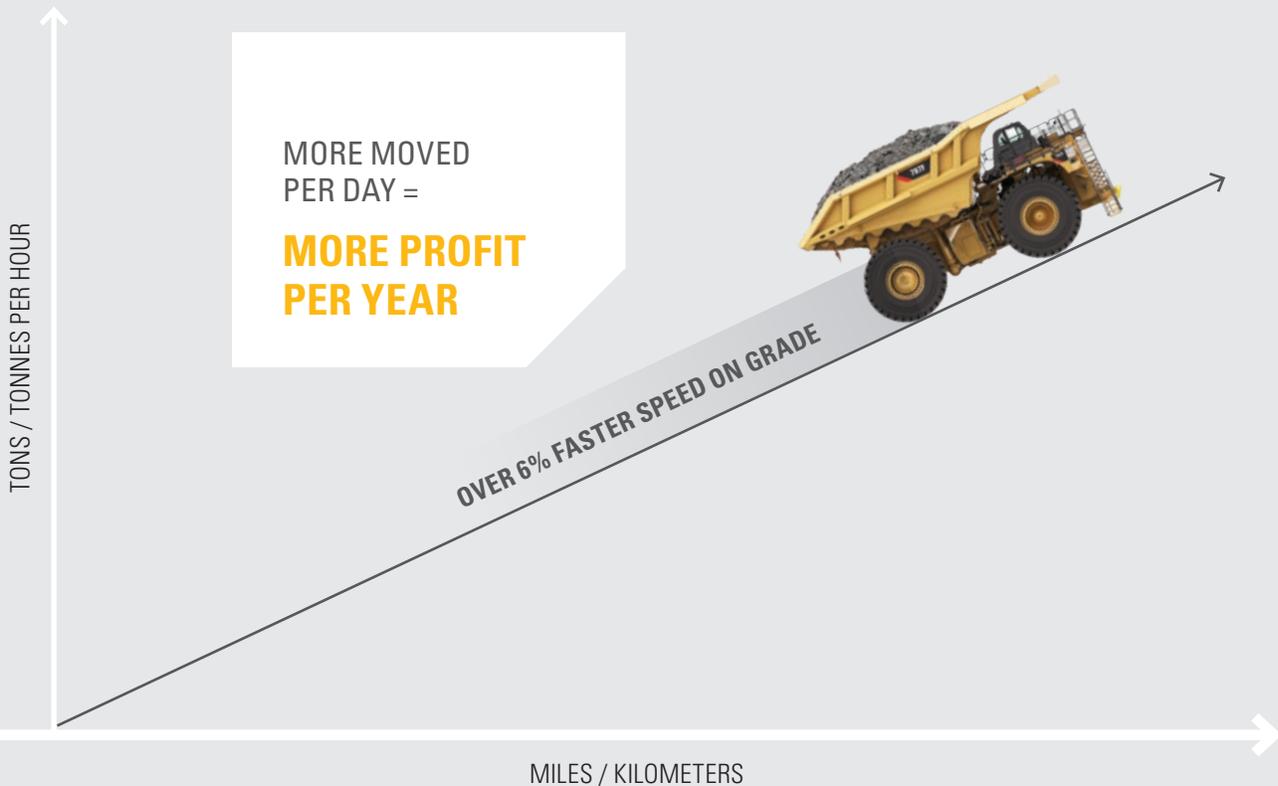
## FASTER SPEEDS

The 797F delivers optimal speed on steep grades, poor underfoot conditions and haul roads with high rolling resistance for faster cycle times when compared to competitive trucks. Its C175-20 diesel engine's 20-cylinder, four-stroke design uses long, effective power strokes for optimum efficiency. The 23% net torque rise provides unequaled lugging force during acceleration. The 797F travels loaded at a top speed of 60 km/h (42 mph).

## CONSTANT POWER

Superior mechanical power density delivers high efficiency at the lowest system weight and cost. The Cat seven-speed planetary power shift transmission varies gear ratios to optimize powertrain efficiency to the application, delivering constant power over a wide range of operating speeds. The lock-up torque converter delivers low-speed movement control and unsurpassed stall torque while still allowing for efficient direct drive haulage. Cat final drives work as a system with the planetary power shift transmission to deliver maximum power to the ground.

## WHAT IF YOU COULD TRAVEL FASTER — EVEN IN TOUGH CONDITIONS?

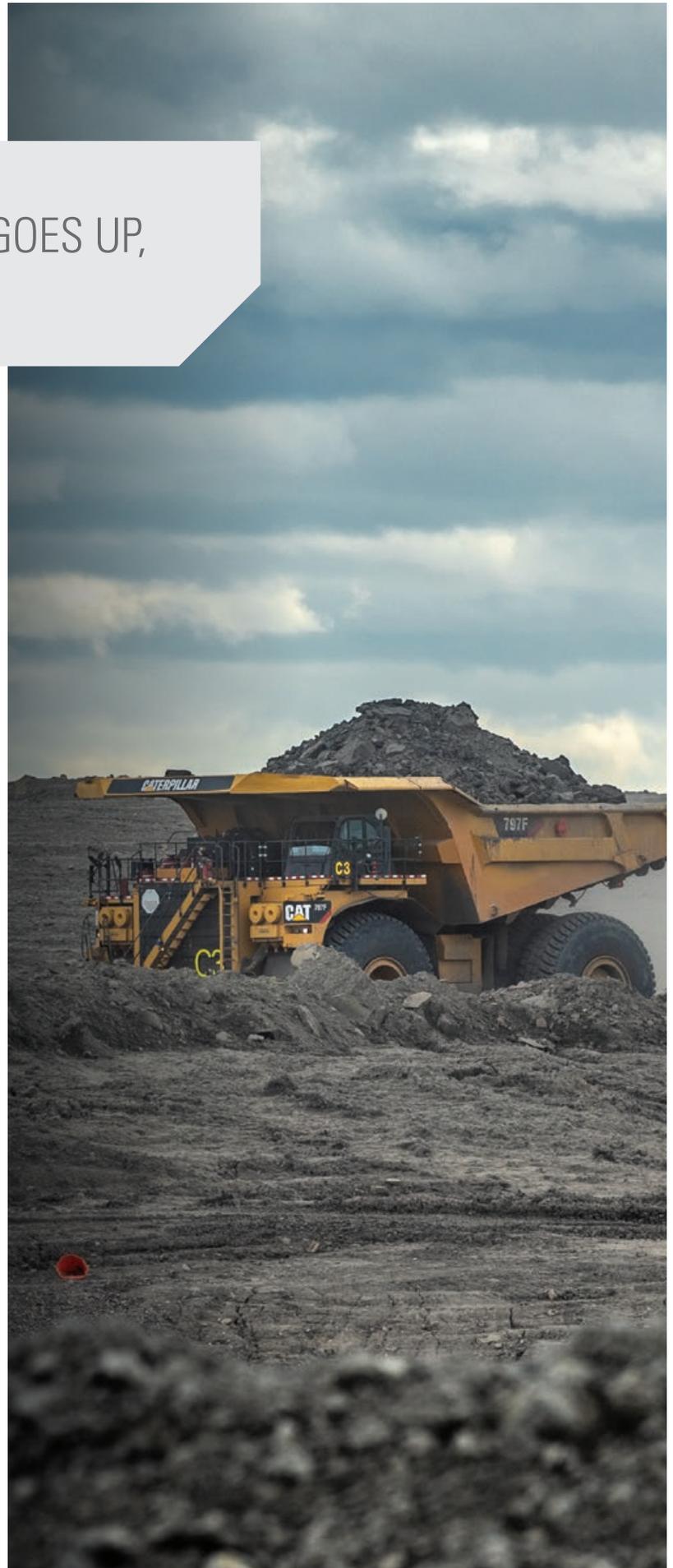


## WHEN FUEL EFFICIENCY GOES UP, COSTS GO DOWN

Aside from paying operators, fuel is often the biggest operating expense for a mining truck. That's why we've worked to make the 797F one of the most fuel-efficient trucks in the industry. We've completed multiple projects in search of new ways to reduce fuel consumption in a variety of applications such as flat hauls, high-altitude deep pits and oil sands. And we've seen improvements from 3% to 10%.

Multiple power settings allow you to operate at full power or in economy mode, so you can decide how much power you need. By flipping a switch, these modes fine-tune hydraulic and engine output to match the job at hand. Eco-mode has been shown to deliver fuel savings of up to 3.5% per cycle.

- + Optimized fuel calibrations are available for Tier 4, high altitude and lesser regulated applications
- + During retarding applications, the engine ECM does not inject fuel into the cylinders, resulting in exceptional fuel economy. The result is zero fuel burn during retarding
- + Fuel efficiency is further increased with the Tier 4 configuration



The 797F is one of the most versatile trucks in its size class. It has proven its ability to deliver high production in the most challenging conditions — from the extreme cold and soft underfoot conditions of the Canadian Oil Sands to high-altitude, deep copper applications in South America. The 797F is powered by the 20-cylinder, quad-turbocharged Cat C175 engine, which produces 2983 kW (4,000 hp) of power for fast acceleration. For applications that don't require the highest power, such as the flat hauls found in many coal and iron ore applications, a 2647-kW (3,550-hp) setting is available. The 797F is also available with a high altitude arrangement — a 4x4 engine configuration that prevents deration at altitude and offers simplified maintenance and repair.

## A TRUCK FOR YOUR APPLICATION



### EXCELS AT HIGH ALTITUDES

797F with 4x4 Engine  
Configuration



MORE  
PAYLOAD



GREATER  
SPEEDS



NO IMPACT ON  
FUEL BURN

# A TRUCK YOU CAN DEPEND ON

More than 20 years after the first Cat 797 went to work in the Canadian Oil Sands, that same truck is still at work. While today's 797s boast new features and enhancements that make them more productive and reliable than their predecessors, they have one very important attribute in common with that first truck: their longevity.

In the last two decades, Caterpillar has produced over 1,000 797s — and the majority are still on the job. The first 797 has logged more than 130,000 hours and there are countless others well on their way to achieving even higher hours. The 797 is the only mining truck in its size class to reach this high-hour milestone.





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## STRONG BACKBONE

The 797F is our most durable 797 ever. The frame uses a box-section design, incorporating two forgings and 14 castings in high stress areas with deep penetrating and continuous wrap-around welds to resist damage from twisting loads without adding extra weight. Over 80% of the frame is cast, not fabricated steel plate. The integral 4-Post ROPS cab provides increased strength for operator protection.

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## BUILT TO BE REBUILT

Cat trucks are designed to last over 100,000 hours, and many are going well beyond that. The frame, powertrain, engine and components are built to be rebuilt—using new, remanufactured or rebuilt parts and components—so you can take advantage of multiple lives of like-new performance at a fraction-of-new price.



# CONFIDENT OPERATORS ARE PRODUCTIVE OPERATORS

## DESIGNED FOR CONTROL

Proven Cat braking systems deliver superior control so your operators can focus on productivity. Like all Cat mechanical-drive trucks, the 797F features four-corner oil-cooled brakes and Automatic Retarder Control to improve handling and machine control so operators can work quickly and confidently.

The brakes are continuously cooled by water-to-oil heat exchangers for exceptional, non-fading braking and retarding performance. With retarding power applied to all four corners, the full weight of the truck can be applied for traction, resulting in the ability to hold a higher retarding force in poor underfoot conditions.



## DESIGNED FOR COMFORT

With two cab options, you can equip your 797F with the features you desire. All options offer an ergonomic layout, and controls, levers and switches that are positioned for ease of use. The cab includes dozens of features designed to enhance comfort and reduce fatigue, such as reduced vibration and sound, and a next generation seat that includes a height adjuster; adjustable shoulder stock to keep the seatbelt from rubbing; and seat back, side and lumbar bolsters to increase stability. The cab provides excellent all-around visibility, which is further enhanced with the optional Work Area Vision System and Cat MineStar™ Detect.



## SAFETY-INFUSED

From slip-resistant surfaces and guard rails to state-of-the-art collision avoidance technologies, the Cat 797F is infused with features to help operators feel safe and confident on the job.

Wide walkways,  
ladders and catwalk



Toe kicks

LED lights

Wide secondary  
egress ladder

- Rear service access ladder
- Service platforms
- Spring strut hoods and retention locks
- Working at heights option
- Interior work lights for better technician visibility and safety

# GET THE RIGHT BODY FOR THE JOB

Matching the truck body to the application is a critical part of achieving the best value from your 797F. Caterpillar offers lightweight and specialty bodies specifically tailored to a wide range of applications. The Caterpillar 10/10/20 payload guidelines help achieve a balance of excellent payload and safe operation.



## HIGH PERFORMANCE BODY

When you equip your 797F with a Cat High Performance (HP) body, you'll experience the benefits of a higher payload thanks to a weight reduction of 2.0-5.0 tonnes (2.2-5.5 tons) or more. The HP body features a lightweight, simplified and durable design that provides complete front machine coverage and extended overhead protection.

The HP body features robust top rail geometry with internal stiffeners and a high-visibility load placement indicator. Patented floating bolsters and spring plates improve overall durability by avoiding welds in high stress areas. In addition, the body requires only minimal liner coverage due to thicker and harder base plates. Curved front/side transitions minimize carryback.



### THE BENEFITS

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**INCREASED PAYLOAD FROM  
5.0-8.0 TONNES (5.5 -8.8 TONS)**

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**REDUCED FUEL CONSUMPTION**

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**OPTIMIZED PAYLOAD SPLITS**

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**PROVEN DESIGN**

+ Over 300 HP bodies in operations worldwide

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**EXTENDED TIRE LIFE AND  
FRONT WHEEL LIFE**

- + Reduce tire wear by 5%
  - + Reduce tire costs by 5%
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**LESS SPILLAGE**

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**MINIMIZED CARRYBACK**

### SPECIALITY BODIES

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#### OIL SANDS BODY

Specifically designed for use in challenging Canadian Oil Sands applications.

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#### HP-XL BODY

A version of the standard HP body with an extended length floor, designed to neutralize extreme forward bias loading applications.

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# MINING — FOR A — **BETTER WORLD**

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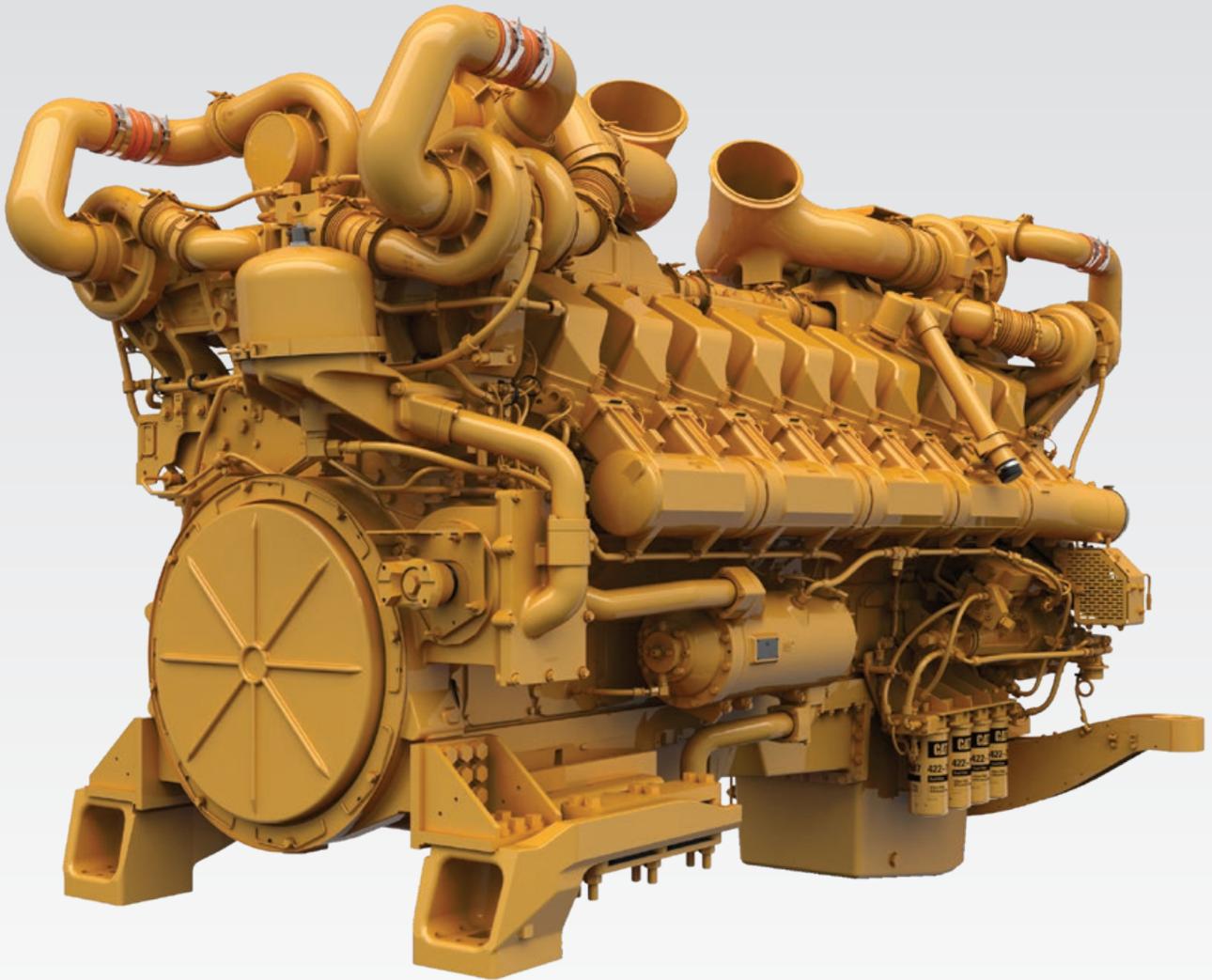
Governments and regulatory agencies mandate that you establish and follow environmentally sound policies and practices as you meet the demand for mined materials. We're focused on doing our part to make sure our trucks help you meet those regulations. Every piece of Cat equipment is designed to do better and be better — because the better we mine, the better the world can be.





We've designed the 797F to use less fuel, which reduces engine emissions and carbon footprint, and there is zero fuel burn during retarding. The optional Tier 4 Final engine reduces NOx and particulate matter. Rear axle filtration, extended life filters and extended maintenance intervals decrease the amount of waste contributed to the environment.

We also continue to research alternative energy sources such as biofuels and liquefied natural gas and power options like electrification and trolley to find new ways to reduce emissions. In addition, we preserve raw materials, conserve energy and reduce emissions through the Cat Reman program, which returns end-of-life components to like-new condition.



# MORE POWER, LOWER COSTS

The 797F is powered by the C175-20 engine, which contributes to overall lower operating costs thanks to:

- + Over 18 years of experience in mining applications backed by robust virtual, lab and field validation.
- + High displacement, low rpm rating and conservative horsepower ratings, which mean more time on the haul roads and less time in the shop.
- + The Cat Common Rail Fuel System, an electronically controlled system that senses operating conditions and regulates fuel delivery for optimum fuel efficiency.



## THE INDUSTRY'S BEST EMISSIONS SYSTEM

The Cat 797F is available in a fuel-efficient configuration that meets U.S. EPA Tier 4 Final emissions standards. Through over 360,000 hours of successful operation on Cat large mining trucks, the system has proven its ability to deliver with no impact on machine performance. Designed for easy serviceability with readily accessible components, the modular aftertreatment system reduces overall fluid and fuel consumption and is aligned with truck preventive maintenance intervals to maintain high availability. Lower fuel burn results in longer engine life and lower repair costs.

**OVER**  
**360,000**  
**HOURS**  
OF SUCCESSFUL  
OPERATION

# GAIN AN EDGE

WITH CAT® MINESTAR SOLUTIONS



FLEET



TERRAIN



DETECT



HEALTH



COMMAND

Whether you want to address a single challenge or make step changes in the overall safety, efficiency and productivity of your operation, Cat MineStar has a solution for you. Fleet management, guidance technologies and machine health applications allow significant improvements in your operations and maintenance organizations.

You also have the ability to further optimize your operation with Cat MineStar safety technologies and automation technologies, including fully autonomous hauling — a safety and productivity game-changer.

## AUTONOMOUS HAULAGE

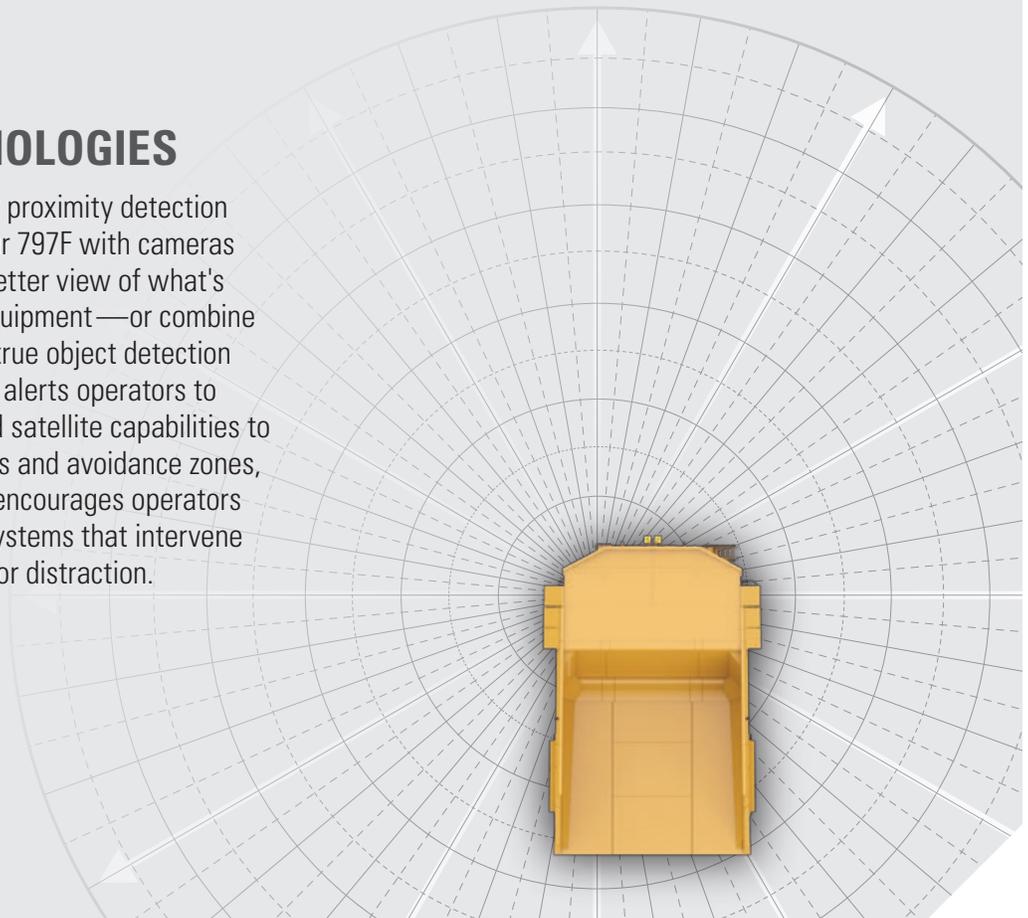
The 797F is factory-ready for MineStar Command for hauling, an autonomous hauling solution. Hundreds of autonomous Cat trucks, including 797s, are currently in service, with over 2.4 billion tonnes hauled. Command enables near-continuous utilization and has proven to increase productivity by more than 30%. Operators are completely removed from the environment for significant improvements in site safety.

**INCREASE  
PRODUCTIVITY**  
by more  
than **30%**



## SAFETY TECHNOLOGIES

With the MineStar Detect proximity detection system, you can equip your 797F with cameras to give your operators a better view of what's happening around their equipment—or combine cameras and radar into a true object detection system that automatically alerts operators to hazards. You can even add satellite capabilities to provide proximity warnings and avoidance zones, seat-belt monitoring that encourages operators to buckle up, and in-cab systems that intervene when they detect fatigue or distraction.





# PARTNERS

## IN YOUR PERFORMANCE

Our commitment to your success doesn't end when your Cat 797F begins hauling overburden or ore. We immediately start looking for ways to make that truck work more efficiently, safely and productively. From addressing performance issues, to training operators and technicians, to calibrating onboard technologies — our support of your truck productivity is ongoing.



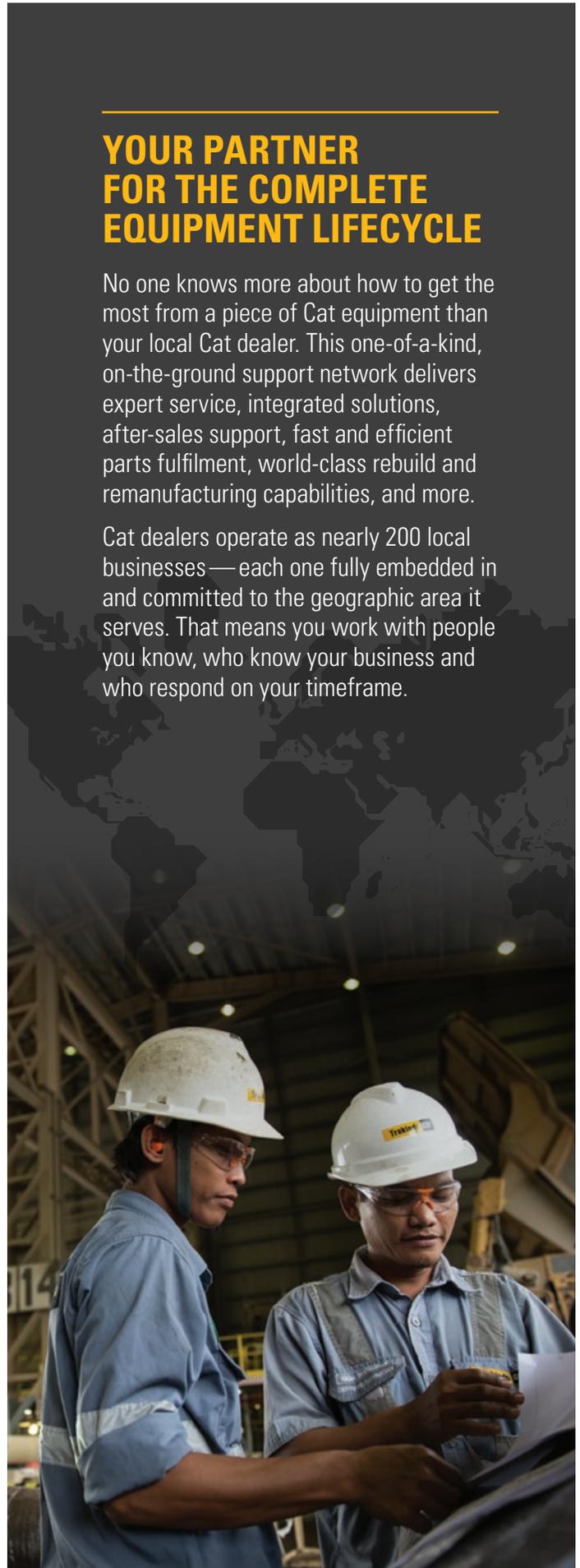
Caterpillar and Cat dealer personnel will partner with you on site to improve the performance not only of your trucks but of your overall loading and hauling operation. You'll have access to parts and service, and technicians who are focused on helping you optimize repairs to keep machines in the field rather than the maintenance shop. And we help with training to ensure your operators have the skills and knowledge they need to work as efficiently and productively as possible.

We also work alongside you to ensure you achieve maximum value throughout the life of your equipment. Together with our Cat dealer network, we customize service offerings to provide a maintenance solution that fits your operation — whether you want to perform the majority of service yourself, or you're looking for an onsite partner to manage your maintenance organization. We're also consultants who can help you make smart decisions about buying, operating, maintaining, repairing, rebuilding and replacing equipment.

## YOUR PARTNER FOR THE COMPLETE EQUIPMENT LIFECYCLE

No one knows more about how to get the most from a piece of Cat equipment than your local Cat dealer. This one-of-a-kind, on-the-ground support network delivers expert service, integrated solutions, after-sales support, fast and efficient parts fulfilment, world-class rebuild and remanufacturing capabilities, and more.

Cat dealers operate as nearly 200 local businesses — each one fully embedded in and committed to the geographic area it serves. That means you work with people you know, who know your business and who respond on your timeframe.



BETTER  
LOADING  
BETTER  
HAULING  
**BETTER  
BOTTOM  
LINE**

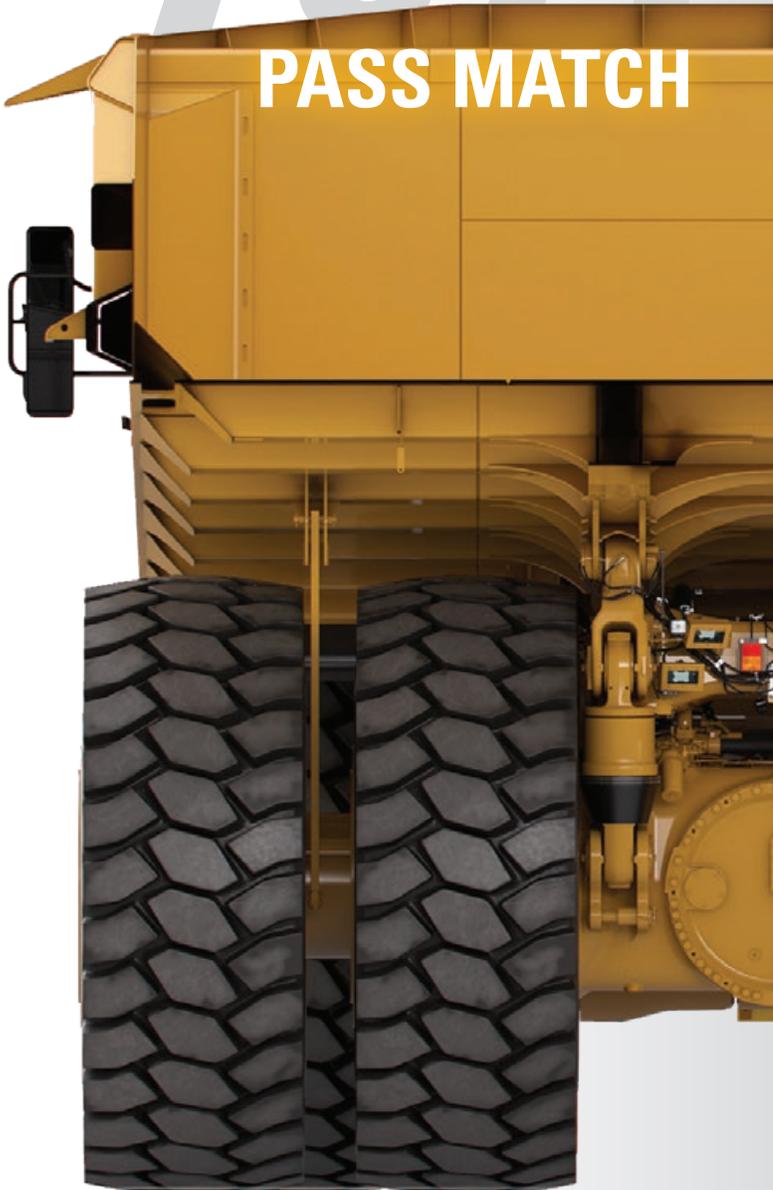
With a truck for every site or application — no matter the size class or drive system — and a broad lineup of loading tools, Caterpillar delivers a complete loading and hauling solution that delivers the lowest cost per ton.

Trucks and loaders are ideally matched to optimize the loading and hauling cycle. Whether you choose a Cat electric rope shovel, hydraulic mining shovel or large wheel loader, or a mechanical-drive or electric-drive Cat truck, you'll find they all have one thing in common: They're Caterpillar, inside and out. From iron to engines, hydraulics to electronics, software to hardware, transmissions to ground engaging tools — systems are fully integrated and work together to deliver optimized performance and a better bottom line.



# 797F

## PASS MATCH



HMS 6050



7-8

6060



6

6090 FS



4

ERS 7495 HF



4

# TECHNICAL SPECIFICATIONS

See cat.com for complete specifications.

ENGINE		
Engine Model	Cat C175-20	
Gross Power – SAE J1995:2014	2983 kW	4,000 hp
Net Power – SAE J1349:2011	2828 kW	3,793 hp
Rated Speed	1,750 rpm	
Emissions Rating	Fuel Optimized	
Bore	175 mm	6.9 in
Stroke	220 mm	8.7 in
Displacement	106 L	6,469 in <sup>3</sup>
+ Net Power advertised is the power available at the flywheel when the engine is equipped with air intake system, exhaust system, and alternator.		
+ U.S. EPA Tier 4 Final available for applicable markets.		
+ High Altitude Engine Configuration (4x4) option available.		

WEIGHTS – APPROXIMATE		
Rated Gross Machine Weight (RGMW)	623 690 kg	1,375,000 lb
Body Weight (BW)	43 000 kg	94,799 lb
Chassis Weight (CW)	215 217 kg	474,472 lb
Nominal Rated Payload (NRP)	364 tonnes	401 tons
+ Consult your tire manufacturer for maximum tire load		
+ Chassis weight with full fuel and fluids, standard & mandatory attachments, hoist, body mounting group, rims, and tires.		

WEIGHT DISTRIBUTIONS – APPROXIMATE		
Front Axle – Empty	47.2%	
Rear Axle – Empty	52.8%	
Front Axle – Loaded	33.3%	
Rear Axle – Loaded	66.7%	
+ Weight distributions optimized with Cat body.		

FINAL DRIVES		
Differential Ratio	1.276:1	
Planetary Ratio	16.67:1	
Total Reduction Ratio	21.26:1	
+ Double reduction, planetary with full floating axles.		

TRANSMISSION		
Forward 1	10.7 km/h	6.6 mph
Forward 2	14.4 km/h	8.9 mph
Forward 3	19.3 km/h	12.0 mph
Forward 4	26.1 km/h	16.2 mph
Forward 5	35.0 km/h	21.8 mph
Forward 6	47.3 km/h	29.4 mph
Forward 7	63.6 km/h	39.5 mph
Reverse	11.9 km/h	7.4 mph
Top Speed – Loaded	63.6 km/h	39.5 mph

SUSPENSION		
Effective Cylinder Stroke – Front	99.1 mm	3.9 in
Effective Cylinder Stroke – Rear	93.2 mm	3.7 in
Rear Axle Oscillation	±3.96 degrees	
+ Self-contained nitrogen/oil cylinders, rear strut pin-to-pin mounting, top & bottom double shear clevis attachments		

BODY HOISTS		
Pump Flow – High Idle	1140 L/min	317 gal/min
Relief Valve Setting – Raise	24 200 kPa	3,510 psi
Body Raise Time – High Idle	25 sec	
Body Lower Time – Float	18 sec	
Body Power Down – High Idle	18 sec	
+ Twin, two-stage hydraulic cylinders with snubbing valve.		

BRAKING SYSTEM		
Front Wet Disc Brake Surface Area	132 259 cm <sup>2</sup>	20,500 in <sup>2</sup>
Rear Wet Disc Brake Surface Area	198 388 cm <sup>2</sup>	30,750 in <sup>2</sup>
Standards (Service and Secondary)	ISO 3450:2011	
+ Service Brakes: Four-Corner, Wet Disc, Oil Cooled, Hydraulically Actuated		
+ Parking Brake: Four-corner, Multi-disc, Spring applied, Hydraulically Released		
+ Anti-Lock Brake System (ABS) optional with CMD package		

CAPACITY – HP BODY – 100% FILL FACTOR		
Struck	172 m <sup>3</sup>	225 yd <sup>3</sup>
Heaped (SAE 2:1)	252 m <sup>3</sup>	330 yd <sup>3</sup>
+ Consult your local Cat dealer for truck body recommendations.		

SERVICE REFILL CAPACITIES		
Fuel Tank	7570 L	2,000 gal
Fuel Tank	5110 L	1,350 gal
Fuel Tank	3785 L	1,000 gal
Fuel Tank (Tier 4)	4542 L	1,200 gal
Diesel Exhaust Fluid (DEF) Tank	379 L	100 gal
Cooling System	1160 L	306 gal
Crankcase	390 L	103 gal
Front Wheels, Each	61 L	16 gal
Final Drives, Differentials	1250 L	330 gal
Steering Tank	370 L	95 gal
Steering System (Includes Tank)	355 L	94 gal
Brake/Hoist Tank	770 L	203 gal
Brake/Hoist System (Includes Tank)	1850 L	489 gal
Torque Converter Sump	303 L	80 gal
Torque Converter/Transmission System (Includes Sump)	629 L	166 gal

TIRES & RIMS	
Tires	59/80R63
Rims	44" x 63"
+ Quick Change Rims optional.	
+ Caterpillar recommends the customer evaluate all job conditions and consult tire manufacturer for proper tire selection and TKPH (TMPH) capabilities.	

CAB	
Air Conditioning (HFC - 134A refrigerant)	24,300 Btu/hr
Heater / Defroster	38,900 Btu/hr
+ Ambient capabilities down to -30°C (-22°F) for heater/defroster and up to 50°C (122°F) for air conditioning.	
+ The operator sound pressure level, 76 dB(A), complies with ISO 6394:2008 and ISO 6396:2008.	
+ ROPS (Rollover Protective Structure) meets ISO 3471:1994 criteria.	
+ FOPS (Falling Objects Protective Structure) meets ISO 3449:1992 Level II criteria.	

STEERING		
Steer Angle	40 degrees	
Turning Diameter (ISO 7457:2009)	37.4 m	122.7 ft
Steering Standards	ISO 5010:2007	



# 797F LARGE MINING TRUCK

For more complete information on Cat products, dealer services and industry solutions, visit us at [www.cat.com](http://www.cat.com)

PEDJ0473-03

Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Cat dealer for available options.

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