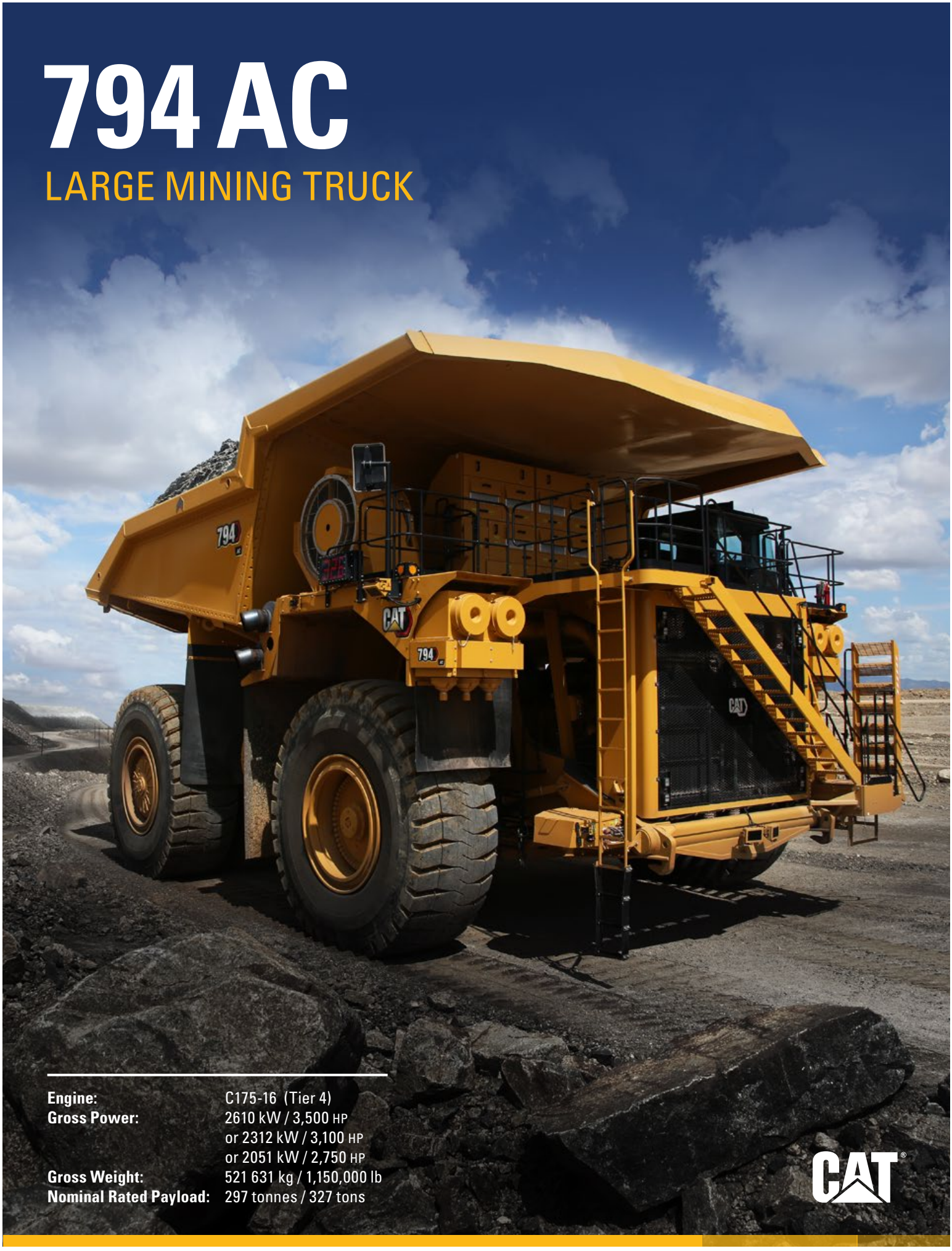
794 AC

LARGE MINING TRUCK



Engine:	C175-16 (Tier 4)
Gross Power:	2610 kW / 3,500 HP or 2312 kW / 3,100 HP or 2051 kW / 2,750 HP
Gross Weight:	521 631 kg / 1,150,000 lb
Nominal Rated Payload:	297 tonnes / 327 tons

CAT®

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.

WHAT WILL IT TAKE TO BOOST YOUR BOTTOM LINE?

The Cat® 794 AC electric drive truck delivers a full 327-ton payload, increased speed on grade, 34% more continuous retarding power than competitive trucks, superior braking performance and easier maintenance. The result? High availability, more confident operators and improved productivity.

The 794 features a proven electric drive powertrain that is Caterpillar designed, integrated and supported. Validated on sites around the world, the 794 has proven its performance in a variety of applications, making it the ideal choice for a wide variety of applications. 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.

CAT® 794 AC

BIGGER PAYLOAD.
HIGHER SPEEDS.
SUPERIOR BRAKING.

UP TO 8% BETTER PAYLOAD

+ Designed to deliver a true 297 tonnes (327 tons)
+ Lower empty weight
+ Higher-rated gross machine weight (GMW)
+ Higher-rated field payload than competitors

BETTER PRODUCTIVITY AND LOWER COST PER TON

+ Up to 8% better speed on grade
+ Faster speed on grade at any given power setting
+ Ability to haul on max 28% grade (Gradeability)
+ Lowest cost per ton – configurable to match application
+ Product health, performance monitoring and diagnostics

100% SINGLE SOURCE FROM CATERPILLAR

+ Designed, validated, and built by Caterpillar
+ Integrated systems and controls provide superior performance
  — Throttle response, slow speed controls
  — Responsive maneuvering and turning
+ Parts commonality with other Cat trucks

BEST IN CLASS RETARDING AND BRAKING

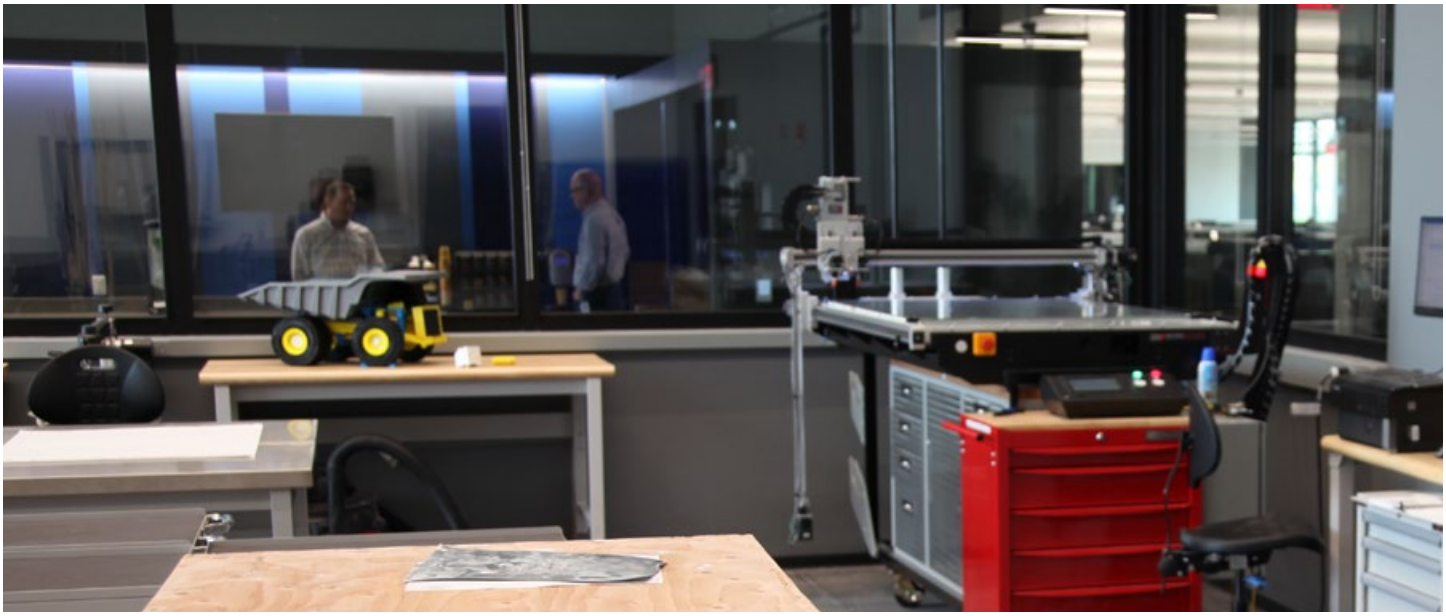
+ 34% more continuous retarding power
+ Four corner wet disc brakes with automatic slack adjusters
+ Blended service brakes with retarding for traction control
+ Slow speed blended retarding for positive stopping

PROVEN IN THE FIELD AND WORKING AROUND THE WORLD

+ Variety of applications and ores
  — Soft rock, hard rock, deep pit, and flat haul
  — Low altitude, high altitude, high ambient, and cold weather
  — Noncertified, Tier 2 equivalent, and Tier 4 emissions
+ Operating worldwide:
  — 4 Continents, 9 Countries
+ Proven 90% physical availability

LOWERING COST PER TON

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

A TRUCK FOR YOUR APPLICATION

THE 794 AC IS THE IDEAL CHOICE TO WORK IN YOUR APPLICATION AND ALONGSIDE THE FLEET YOU ALREADY OWN.

Optimized horsepower performance makes it possible for the 794 to run in all areas of the mine — from deep pits to downhill hauls; from smooth, flat roads to areas of high rolling resistance — with the same engine. While higher horsepower is available to boost productivity in deeper pits, an easy adjustment to a lower horsepower allows the 794 to better align with mixed fleets and keep fuel costs lower. This horsepower setting is configured by software and doesn't require an engine change. In addition, body choices allow you to select, design and customize options based on your application.

FASTER SPEEDS

Thanks to a significant speed advantage, the Cat 794 AC lets you move more over the course of a shift—or move the same amount of material with fewer trucks. When you're ready to go faster, horsepower can be changed with just a software adjustment over a shift change or lunch break.

OPTIMIZED PAYLOAD

The 794 AC delivers a true 297-tonne (327-ton) rated payload. It has a higher-rated field payload than competitive trucks thanks to a lower empty weight and higher-rated GMW.

INTEGRATED POWER

The Cat engine, AC drive system, hydraulics and controls have been integrated to make the 794 easy to operate, providing excellent slow speed control within the service areas and superior throttle response on acceleration to move out of the loading or dump areas. Integration of the engine and powertrain delivers low operating costs through electronically combined powertrain components.

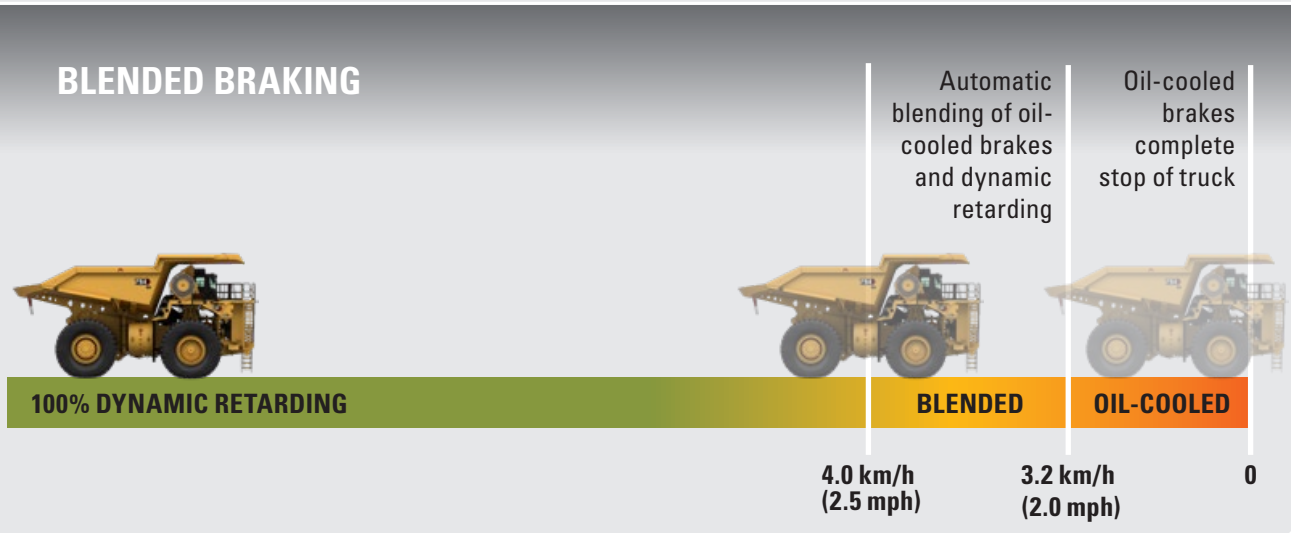
CONFIDENT OPERATORS ARE PRODUCTIVE OPERATORS

DESIGNED FOR CONTROL

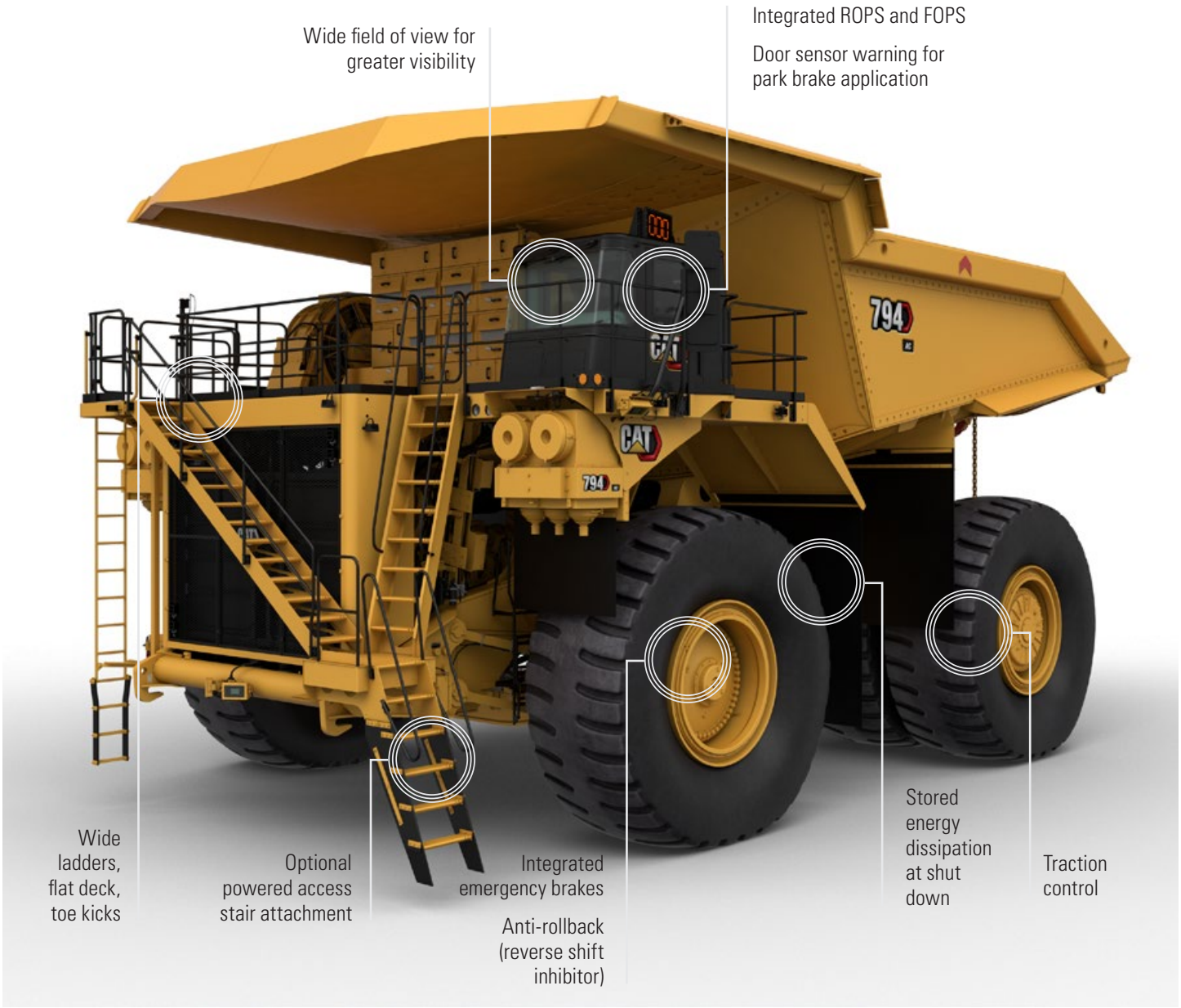
Proven Cat braking systems deliver superior control so your operators can focus on productivity. The 794 AC has the best braking in its class. It features four-corner wet disc brakes with blended mechanical service brakes and dynamics for greater operator confidence. Automatic Retarding Control makes retarding easier and more efficient and helps ensure the truck remains in the dynamic retarding envelope.

+ Automatic four-corner blended braking with dynamics during low speed / stopping improves handling and machine control
+ Brake temperature monitoring ensures component life and alerts operators if they are exceeding retarding capability
+ The spring-applied secondary parking brake systems enhance safety

The front and rear brakes are designed with large discs and plates for reliable and adjustment-free operation. They're enclosed and sealed to prevent contamination and provide long life while providing exceptional braking at all speeds.



SAFETY-INFUSED



DESIGNED FOR COMFORT

The large, spacious cab is designed for all-day comfort, control and productivity. It features an ergonomic layout, excellent all-around visibility, 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 automatic climate control, 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.

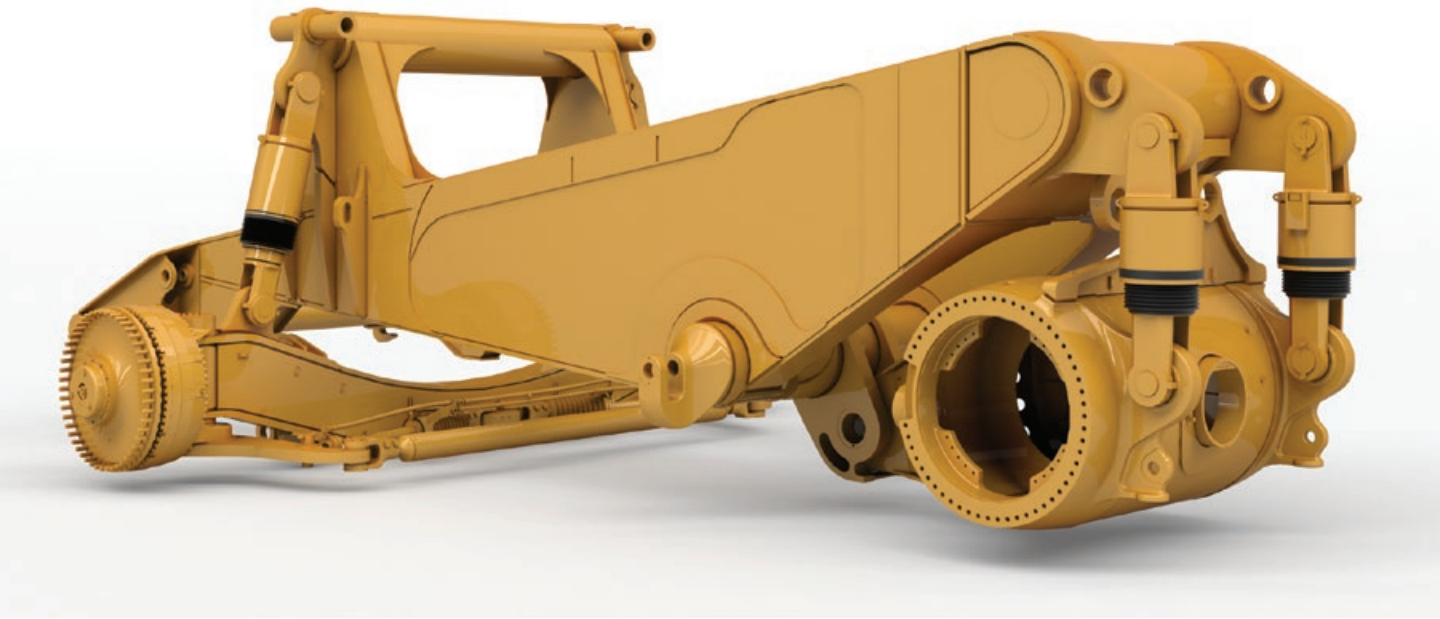
A TRUCK YOU CAN DEPEND ON

The Cat 794 AC takes the best from its predecessors to deliver a truck that is long-lasting, easy to service and reliable. Built on a legacy, the 794's rolling chassis design is backed by unprecedented levels of virtual and in-iron validation.

STRONG BACKBONE

The 794 features a straight frame rail design—a scalable concept that has been used since 1990 and boasts over 19 million hours. The design eliminates the bends and breaks that can occur at stress concentrations.

+ The box section construction uses Caterpillar proprietary steel specification, which has very low sulfur content and provides excellent welding characteristics, plus outstanding durability.
+ Deep section main rails in critical areas of the frame lower stress levels, resulting in increased frame life.
+ The tubular center cross beam with hoist cylinder and axle box attachment provides robust performance. The axle box attachment is integrated into the cross member and the bearing and pin are replaceable.
+ The rear axle mounts to the frame with a nosecone joint, which is another legacy design. The axle uses a replaceable spherical bearing and hardened pin. The independent front axle ensures wheel alignment does not change under load. The front axle features interchangeable front suspension cylinders.



BUILT TO BE REBUILT

Cat trucks are designed to last over 100,000 hours, and many are going well beyond that. The frame, power train, 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.

DESIGNED TO LAST
—OVER—
100,000
HOURS

BUMPER-TO-BUMPER CATERPILLAR

The individual components, software, systems and engine that go inside a Cat 794 AC 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 body to bumper, engines to electronics, can be fully optimized to deliver the lowest cost per ton.

PROVEN ELECTRIC DRIVE AND POWERTRAIN

The Cat AC electric drive powertrain is designed, integrated and supported by Caterpillar and works seamlessly with the C175 engine and machine hydraulics. The engine, drive system and chassis are jointly tuned and leverage Caterpillar leadership in electric power generation along with the proven components of EMD locomotives.

+ The proprietary AC drive inverter offers lower weight and longer life. It's pressurized and filtered to reduce maintenance and uses an evaporative cooled modular IGBT proven in EMD locomotives.
+ The radial retarder grid was also proven in locomotive applications. It features an AC electric motor that requires no regular motor maintenance. It is quieter, weighs less and offers better visibility than box grids.
+ AC Drive dynamic retarding delivers continuous retarding power, and the AC electric motor reduces maintenance.
+ State-of-the-art high voltage IGBTs deliver maximum AC drive system efficiency.
+ The variable hydraulic blower fan provides optimized cooling even at idle for increased component performance and life.
+ The dual bearing brushless alternator delivers long life and less maintenance, with no shimming required.
+ Thermal sensors on the alternator and motor bearings / motor windings result in better prognostics for longer life and lower cost.

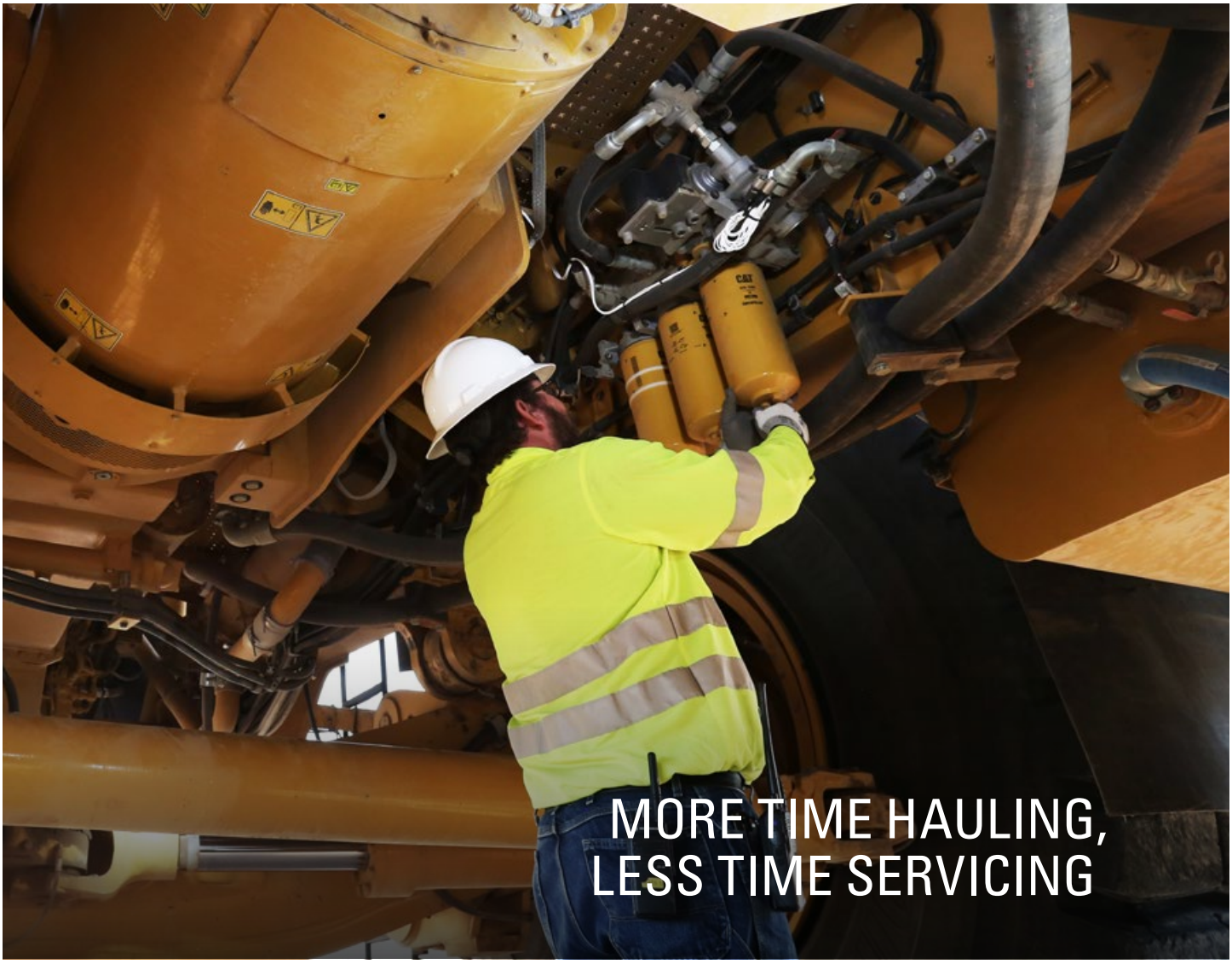
GET THE RIGHT BODY FOR THE JOB

Integral to the truck, the body is designed to fit with the chassis and work as part of the truck system. Caterpillar bodies are sized to meet the payload requirements without compromise to vehicle balance, braking or control.

HIGH-EFFICIENCY DUMP BODY

The high-efficiency (HE) dump body is lightweight, simplified and durable. Featuring a unique minimal structure design, the HE body provides long life while minimizing weight for increased payload. The HE body is sized and configured to meet the specific needs of the mine, dictated by fragmentation, abrasion, cohesion and the loading tool.

+ The structural perimeter beam—along with curved floor, front wall and canopy— provides the natural strength and stiffness required to successfully operate in diverse mining applications.
+ Higher-strength base plates allow for a minimal wear package, resulting in lower weight.
+ The patented designs of the floating bolster and spring plate improve overall durability by allowing structural flexibility and avoiding welds in high stress areas.



MORE TIME HAULING, LESS TIME SERVICING

The 794 AC was designed to reduce the time you spend on regular maintenance procedures. Enhanced serviceability and long service intervals help increase machine availability and productivity.

The standard Product Link™ Elite monitoring system delivers critical health and payload information in real-time, keeping performance at optimum levels and allowing advanced troubleshooting and planning to lower maintenance costs.

Features include:

+ Open engine access and platforms for service of engine, generator and inverter
+ Ground level filters and service
+ Component layout with minimized hydraulics, all hydraulic lines on one side and electric wiring on the other side
+ Separate traction motors, brakes and final drives for ease of service
+ Modular component design that allows for easy removal and installation
+ AC grid blower motor designed for longer life and less maintenance
+ Pressurized and filtered AC drive inverter that requires less maintenance
+ Sealed & pressurized cabinets, which require no cleaning
+ 1,000-hour oil change interval with Tier 4 configuration

MINING — FOR A — BETTER WORLD

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.

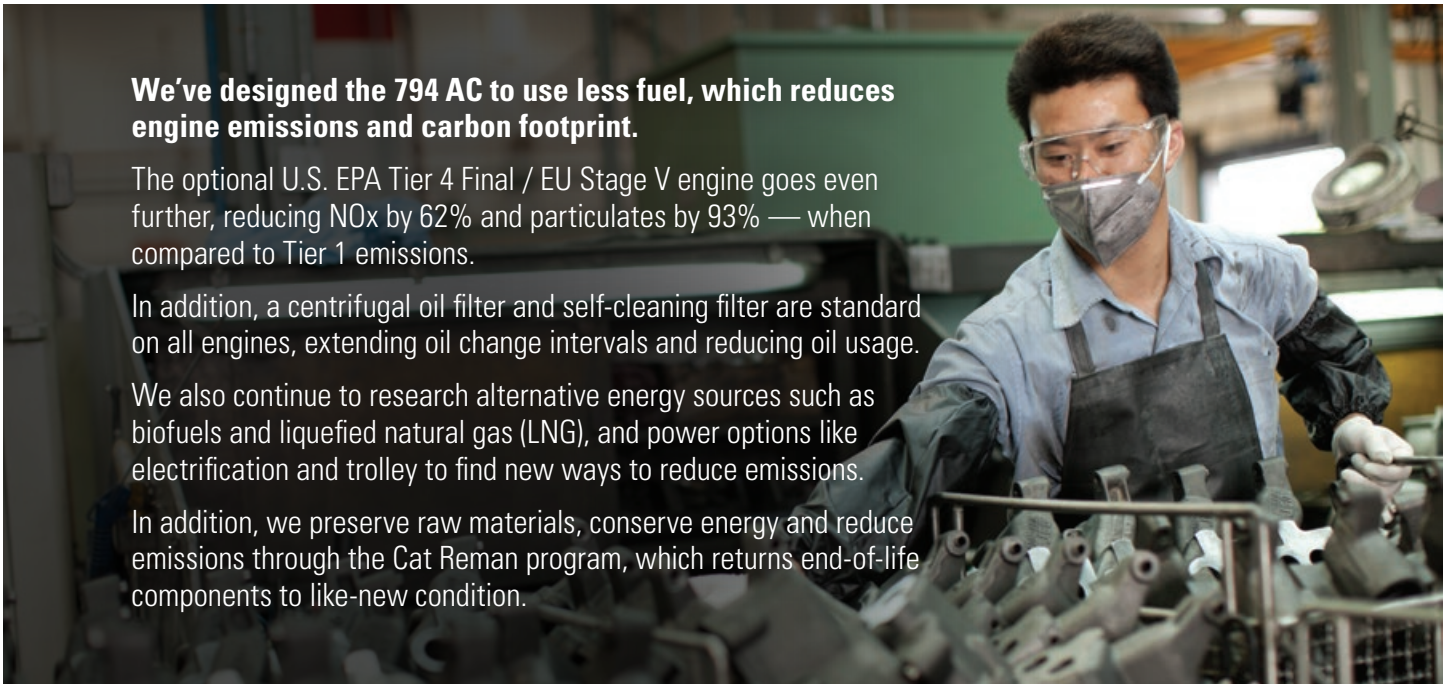
We've designed the 794 AC to use less fuel, which reduces engine emissions and carbon footprint.

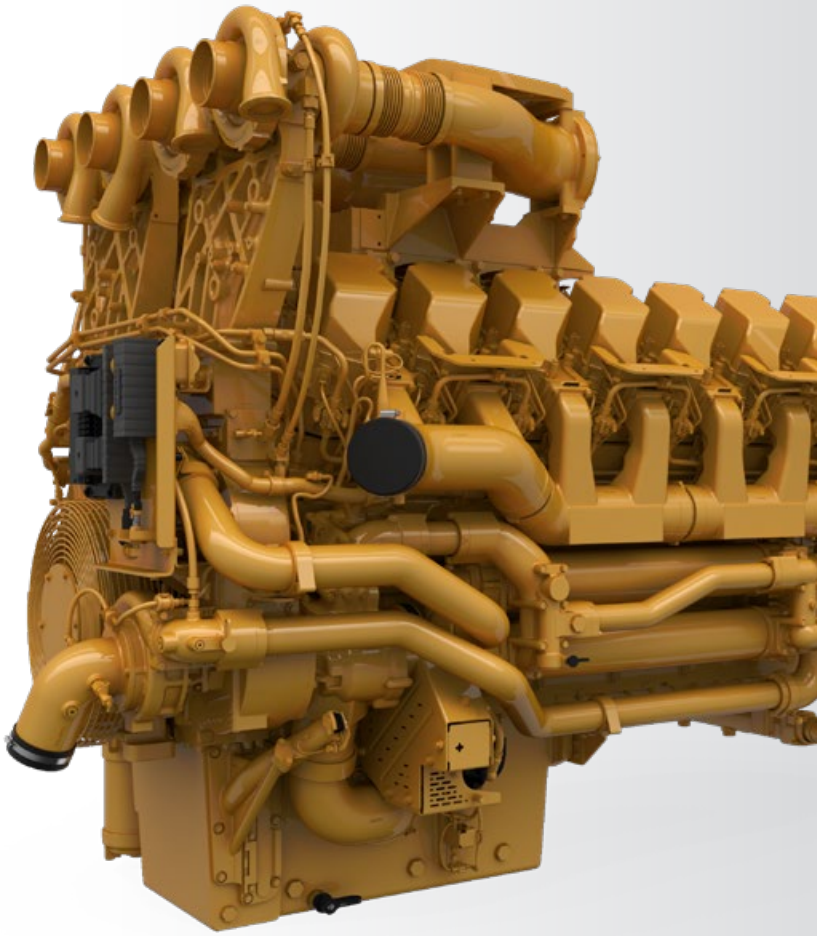
The optional U.S. EPA Tier 4 Final / EU Stage V engine goes even further, reducing NOx by 62% and particulates by 93% — when compared to Tier 1 emissions.

In addition, a centrifugal oil filter and self-cleaning filter are standard on all engines, extending oil change intervals and reducing oil usage.

We also continue to research alternative energy sources such as biofuels and liquefied natural gas (LNG), 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

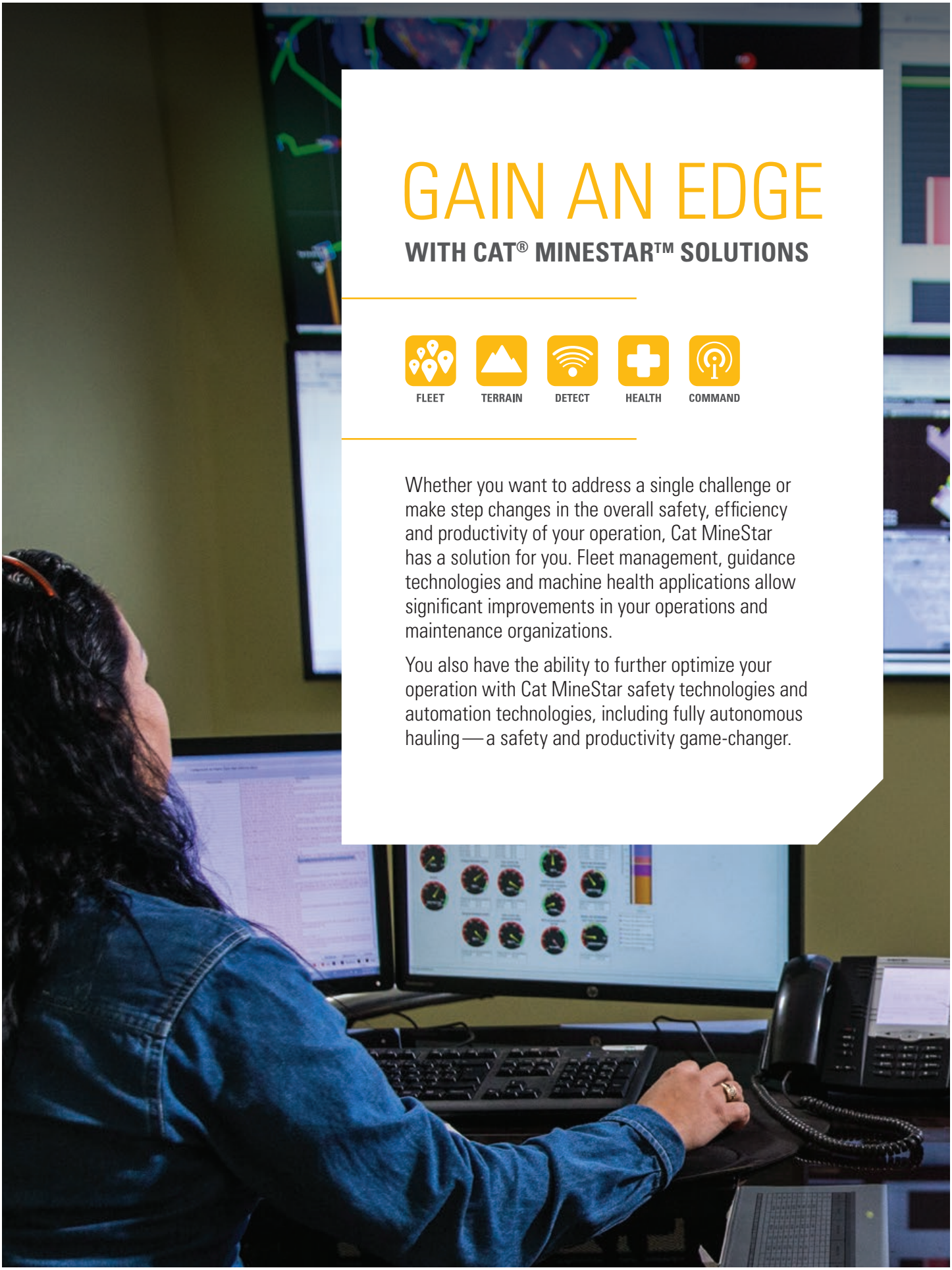
The 794 AC is powered by the C175-16 engine, which is available with three horsepower options and can be configured for US EPA Tier 2 and Tier 4 regulations. More than 5,300 C175 engines are in operation around the world, with more than 63 million hours of run time.

+ 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, which provides optimal fuel delivery to reduce both fuel consumption and emissions output.
+ Enhanced serviceability, with inlet manifolds and turbochargers that are located outside of the engine's V, giving the service technicians more space to work on top of the engine and within the engine bay.
+ The Enhanced Engine Oil Filtration (EEOF) package, which eliminates the need for an engine oil filter change and reduces oil usage.

THE INDUSTRY'S BEST EMISSIONS SYSTEM

The Cat 794 AC is available in a fuel-efficient configuration that meets U.S. EPA Tier 4 Final emissions standards. Through over 150,000 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
150,000
HOURS
OF SUCCESSFUL OPERATION



GAIN AN EDGE

WITH CAT® MINESTAR™ SOLUTIONS

FLEET TERRAIN DETECT HEALTH COMMAND

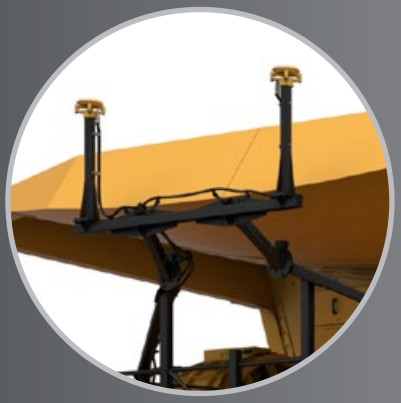
Whether you want to address a single challenge or make step changes in the overall safety, efficiency and productivity of your operation, Cat MineStar has a solution for you. Fleet management, guidance technologies and machine health applications allow significant improvements in your operations and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

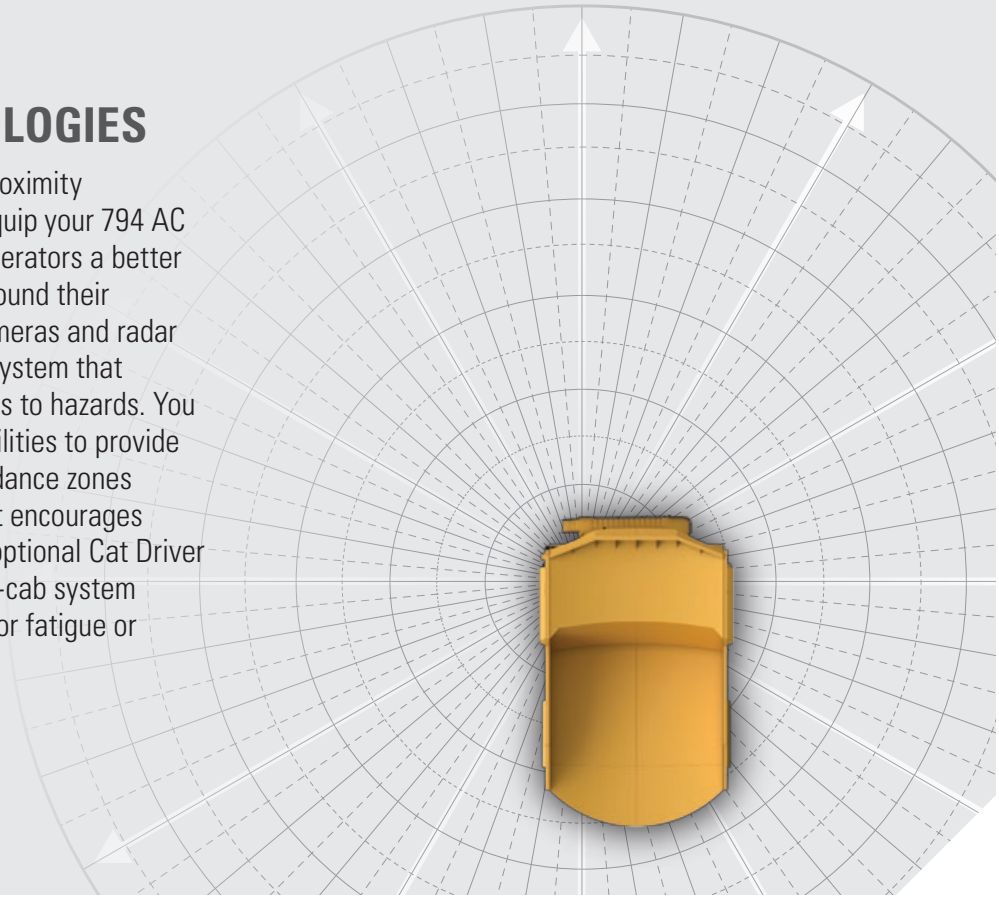
The 794 AC is factory-ready for MineStar Command for hauling, an autonomous hauling solution. Hundreds of autonomous Cat trucks are currently in service, with over 3 billion tonnes hauled. Command enables near continuous utilization and has proven to increase productivity up to 30%. Operators are completely removed from the environment for significant improvements in site safety.

INCREASE PRODUCTIVITY
up to **30%**



SAFETY TECHNOLOGIES

With the MineStar Detect proximity detection system, you can equip your 794 AC 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 and seat-belt monitoring that encourages operators to buckle up. The optional Cat Driver Safety System (DSS) is an in-cab system that intervenes when operator fatigue or distraction are detected.



PARTNERS
IN YOUR PERFORMANCE

Our commitment to your success doesn't end when your Cat 794 AC begins hauling 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.

794 AC

PASS MATCH

6050

6

6060

5

6090 FS

3

7295

4

7395 HR

4

7495 HD

3

TECHNICAL SPECIFICATIONS

See cat.com for complete specifications.

ENGINE		
Engine Model	Cat C175-16	
Gross Power – SAE J1995:2014	2610 kW	3,500 hp
Net Power - SAE J1349:2011	175 mm	6.9 in
Rated Speed	1,800 rpm	
Emissions Rating	Fuel Optimized	
Bore	175 mm	6.9 in
Stroke	220 mm	8.7 in
Displacement	85 L	5,187 in^3

+ Net Power advertised is the power available at the flywheel when the engine is equipped with air intake system, exhaust system, and alternator.
+ Fuel optimized selectable power ratings: 2312 kW/3,100 hp; 3688 kW/2,750 hp
+ U.S. EPA Tier 4 Final/EU Stage V available for applicable markets with additional 3688 kW/2,750 hp selectable power rating
+ High Altitude Engine Configuration option available with additional 2312 kW/3,100 hp selectable power rating

WEIGHTS – APPROXIMATE		
Rated Gross Machine Weight (RGMW)	521 631 kg	1,150,000 lb
Chassis Weight (CW)	193 338 kg	426,237 lb
Body Weight (BW)	29 187 kg	64,346 lb
Nominal Rated Payload (NRP)	297 tonnes	327 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.
+ Refer to Cat Mining Truck 10/10/20 Overload Policy (AEXQ0250) for maximum gross machine weight limitations.

WEIGHT DISTRIBUTIONS – APPROXIMATE	
Front Axle – Empty	49%
Rear Axle – Empty	51%
Front Axle – Loaded	33%
Rear Axle – Loaded	67%

AC DRIVE SYSTEM		
Total Reduction Ratio	35:1	
Top Speed - Loaded	60 km/h	37 mph
Generator/Alternator	Cat brushless, engine mounted, dual bearing	
Controls IGBT	Cat IGBT Inverter Technology, air cooled, pressurized cabinet with filtration	
Wheel Motor	Cat AC induction, rear axle mounted	
Cooling System	Cat variable speed, hydraulically driven cooling system	

TIRES
53/80 R63
36" x 63" Rims

+ Quick Change Rims optional.
+ Caterpillar recommends the customer evaluate all job conditions and consult tire manufacturer for proper tire selection and TKPH (TMPH) capabilities.

BRAKING SYSTEM		
Service Brakes: Four-Corner, Wet Disc, Oil Cooled, Hydraulically Actuated		
Front Wet Disc Brake Surface Area	131 473 cm^2	20,378 in^2
Front Wet Disc Brake Surface Area	131 473 cm^2	20,378 in^2
Rear Wet Disc Brake Surface Area	198 388 cm^2	30,750 in^2
Standards (Service and Secondary)	ISO 3450:2011	
Parking Brake: Four-corner, Multi-disc, Spring applied, Hydraulically Released		
Load Brake - Rear service brakes		
Dynamic Retarding Power - Continuous	4086 kW	5,480 hp

WEIGHT DISTRIBUTIONS – APPROXIMATE	
Front Axle – Empty	49%
Rear Axle – Empty	51%
Front Axle – Loaded	33%
Rear Axle – Loaded	67%

BODY HOISTS		
Twin, two-stage hydraulic cylinders with snubbing valve.		
Pump Flow – High Idle	910 L/min	240 gal/min
Relief Valve Setting – Raise	20 884 kPa	3,029 psi
Body Raise Time – High Idle	23.5 Seconds	
Body Lower Time – Float	21.4 Seconds	
Body Power Down – High Idle	17.5 Seconds	

+ Twin, two-stage hydraulic cylinders mounted inside main frame; double-acting cylinders in both stages.
+ Power raise in both stages; power down in both stages possible.
+ Automatic body-lower modulation reduces impact on frame.

CAPACITY – HE BODY – 100% FILL FACTOR		
Struck	108-133 m^3	142-175 yd^3
Heaped (SAE 2:1)	180-222 m^3	236-290 yd^3

+ Consult your local Cat dealer for body recommendations.

SERVICE REFILL CAPACITIES		
Fuel Tank	4922 L	1,300 gal
Fuel Tank (Tier 4)	3785 L	1,000 gal
Diesel Exhaust Fluid (DEF) Tank (Tier 4)	378 L	100 gal
Cooling System	799 L	211 gal
Crankcase	310 L	82 gal
Front Wheels, each	28 L	7 gal
Final Drives, each	254 L	67 gal
Hydraulic Tank	1121 L	296 gal
Hydraulic System (includes tank)	1458 L	385 gal
Grease Tank Capacity	41 kg	90 lb

CAB	
Air Conditioning (HFC - 134A refrigerant)	21,600 Btu/hr
Heater / Defroster	24,600 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, 75 dB(A), complies with ISO 6394 and ISO 6396.
+ ROPS (Rollover Protective Structure) meets ISO 3471:2008 criteria for operator and ISO 13459:2012 for trainer.
+ FOPS (Falling Objects Protective Structure) meets ISO 3449:2005 Level II for operator and ISO 13459:2012 Level II for trainer.

STEERING		
Steer Angle	39 degrees	
Turning Diameter (ISO 7457:2009)	32.4 m	106.3 ft
Steering Standards	ISO 5010:2007	

794 AC LARGE MINING TRUCK