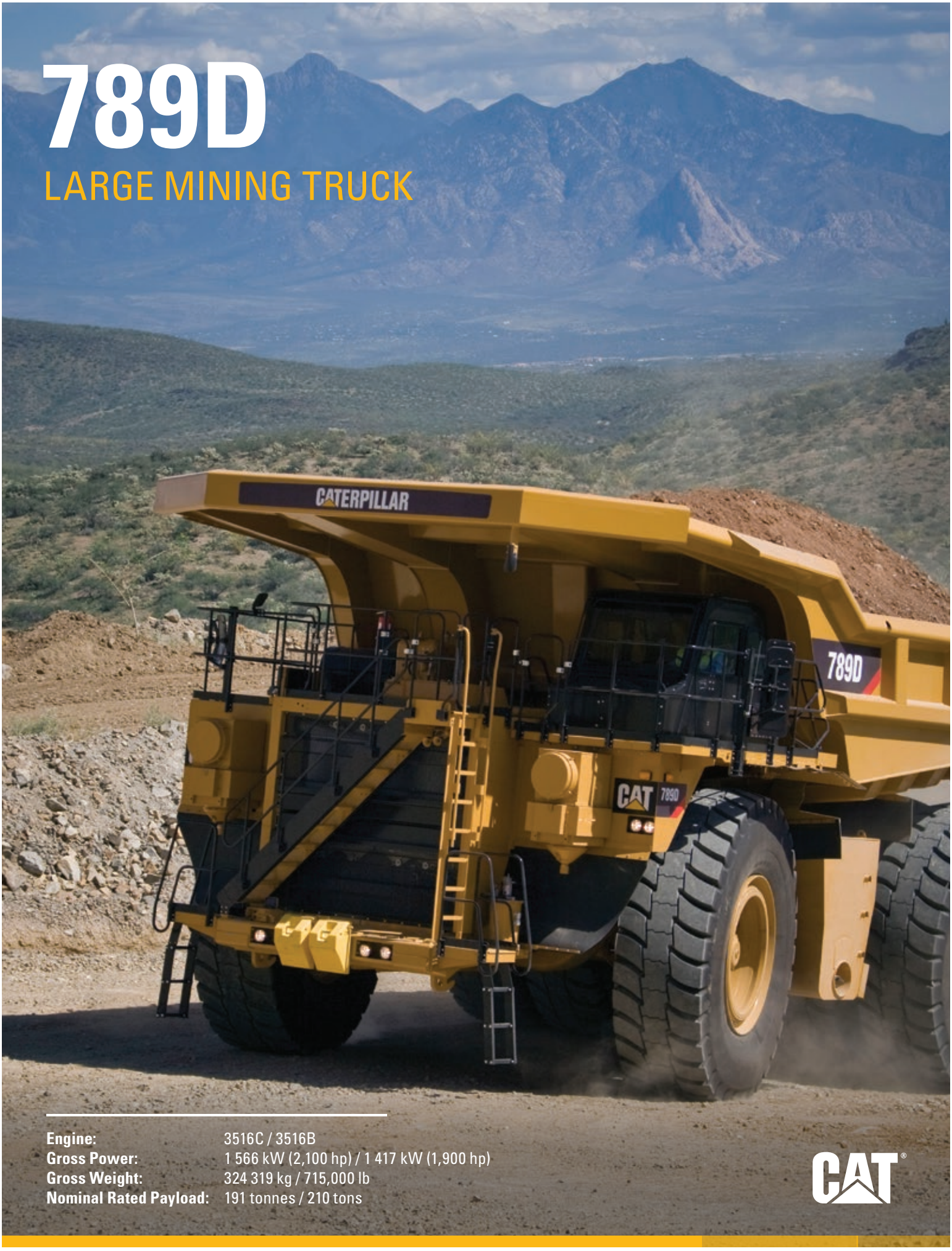
789D

LARGE MINING TRUCK



Engine:	3516C / 3516B
Gross Power:	1 566 kW (2,100 hp) / 1 417 kW (1,900 hp)
Gross Weight:	324 319 kg / 715,000 lb
Nominal Rated Payload:	191 tonnes / 210 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.

WHAT WILL IT TAKE TO BOOST YOUR BOTTOM LINE?

A truck with a tradition of proven performance in a wide variety of applications? A truck with the lowest cost per ton in its size class, for an overall reduction in your operating costs? The reliability and reduced costs that come with long life — from the engine and powertrain to the components, brakes and frame?

With the Cat® 789D, you get all of this — and more. Like faster speed on grade and a high production capability thanks to a payload advantage over the competition. Engine options to meet regulatory requirements or application-specific needs such as extreme temperatures, high altitude or areas that require sound reductions. And safety enhancements like diagonal stairways, wide walkways and optional powered access. The 789D offers the lowest cost per ton in its size class and high reliability — reducing overall costs and delivering a better bottom line to the most important mine in the world: yours.

CAT® 789D

PROVEN PERFORMANCE.
LOW OPERATING COSTS.
LONG LIFE.

SETTING THE BAR
IN ITS SIZE CLASS

10-15% COST PER TON ADVANTAGE OVER COMPETITION (DEPENDING ON APPLICATION)

VERSATILITY

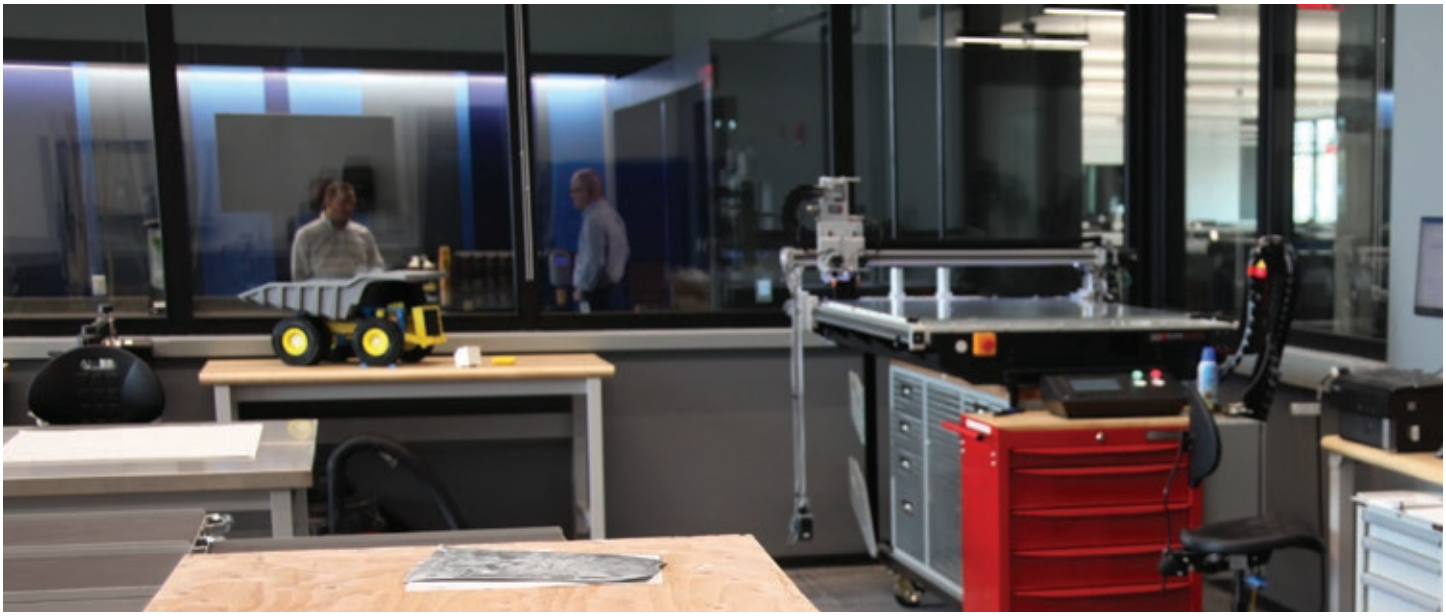
+ Options: Engines, tires
+ Application-specific capabilities: extreme ambient, high altitude, extra quiet

PROVEN

+ Most popular 191-tonne (210-ton) truck in the mining industry
+ 80% of the industry
+ Delivering results for decades
+ Easy to operate and maintain

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

HAUL MORE

EVERY LOAD AND EVERY CYCLE

OPTIMIZED PAYLOAD

Contradicting a common belief that bigger is better, the 789D has a weight advantage over larger trucks so you can haul more with every load. The 789D also delivers a 10-15% cost per ton advantage over competitive trucks, depending on application.

PROVEN PERFORMANCE

The 789D is the most popular 191-tonne (210-ton) truck in the mining industry—and for good reason. The 789 is a tried and true performer that has been delivering results on mine sites around the world for decades. Developed specifically for high production mining applications, the 789D simply does its job, no matter the application or conditions.

FAST SPEEDS

The 789D delivers a faster speed on grade than competitive trucks, reducing cycle times and lowering overall costs. The 3500 series engines are 16-cylinder, four-stroke designs that use long, effective power strokes for more complete fuel combustion and optimum efficiency. The 23% net torque rise provides unequaled lugging force during acceleration, on steep grades and in rough underfoot conditions. Torque rise effectively matches transmission shift points for maximum efficiency and fast cycle times. And expanded tire options allow mines to take advantage of higher speeds, particularly in flat long-haul high-speed applications.

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

MORE MOVED
PER DAY =

MORE PROFIT PER YEAR

OVER 6% FASTER SPEED ON GRADE

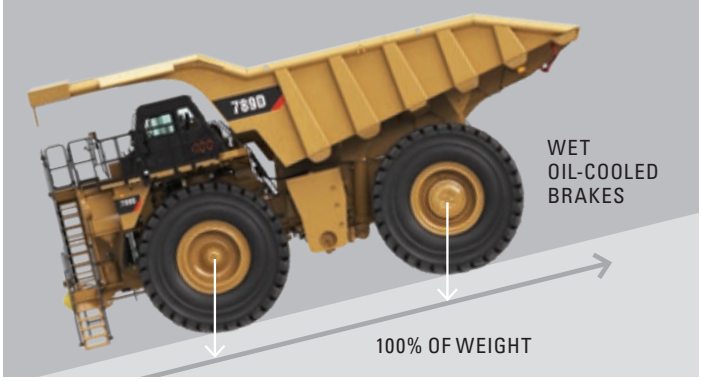
TONS / TONNES PER HOUR

MILES / KILOMETERS

CONFIDENT OPERATORS ARE PRODUCTIVE OPERATORS

DESIGNED FOR CONTROL

The 789D offers superior braking and retarding control for increased operator confidence. Caterpillar's patented mining truck brakes are without question the most respected and trusted in the industry. The oil-cooled, multiple disc brakes provide immediate, fade-resistant braking and retarding. The 789D has a true four-corner braking and retarding system proven in thousands of Cat mining trucks under every conceivable condition. 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 three cab options, you can equip your 789D with the features you desire. All options offer an ergonomic layout, excellent all-around visibility, and controls, levers, switches and gauges that are positioned for ease of use. The cab includes dozens of features designed to enhance comfort and reduce fatigue, such as an air suspension seat, reduced vibration, automatic climate control and sound suppression.

SAFETY-INFUSED

From slip-resistant surfaces and guard rails to state-of-the-art collision avoidance technologies, the Cat 789D is infused with features to help operators feel safe and confident on the job.

- Powered Access option
- Body raised indicator
- Body retaining cable
- Reverse neutralizer when dumping
- Optional integrated Object Detection System

A TRUCK FOR YOUR APPLICATION

The 789D is one of the most versatile and reliable trucks in its size class. It performs well in every condition and works on mines of every size and type thanks to multiple engine configurations, application-specific capabilities and tire options.

The 789D is powered by the Cat 3500 series engine, which has proven its ability to deliver high power and reliability in the most demanding mining applications. Two engine options help you meet regulatory requirements or application-specific needs. The mechanical drive powertrain and power shift transmission provide unmatched efficiency and control on steep grades, in poor underfoot conditions and on haul roads with high rolling resistance.

Application-specific capabilities are available for extreme ambient conditions and high-altitude applications, while an extra quiet configuration reduces spectator sound levels. In addition, larger tire options have been designed into the 789D. Applicable hauling conditions will benefit from increased tire life or significant reduction in tire costs.

MORE TIME HAULING, LESS TIME SERVICING

The 789D was designed to reduce the time you spend on regular maintenance procedures. Enhanced serviceability and long service intervals help increase machine availability and productivity.

Features include:

+ 500-hour service intervals
+ Ground-level access to tanks, filters, drains and engine shutdown
+ Easier access to daily service points as well as major components
+ Maintenance platform with access to engine, steering hydraulic tank and battery compartment
+ Autolube automatic lubrication system
+ VIMS onboard diagnostic systems, which continuously monitor all critical machine functions and components to help locate faults quickly for faster repair
+ Optional fast fill service center, which enables high-speed fuel and oil exchange
+ Disconnect valves that are conveniently located throughout the hydraulic systems for easy pressure testing
+ Sealed electrical connectors to lock out dust and moisture
+ Individual cylinder heads that are interchangeable for easy removal and visual inspection

A TRUCK YOU CAN DEPEND ON

The 789D has been a dependable performer on mine sites for decades, delivering high availability, reliability and reduced costs that come with long life—from the engine and powertrain to the components, brakes and frame. Component life is further enhanced thanks to the standard rear-axle continuous filtration feature, which operates when the engine is running. Cleaner oil helps promote longer lubrication that leads to longer life.

STRONG BACKBONE

The 789D frame uses a box-section design, incorporating two forgings and 21 castings in high stress areas with deep penetrating and continuous wrap-around welds to resist damage from twisting loads without adding extra weight. The mild steel frame provides flexibility, durability, and resistance to impact loads. The integral 4-post ROPS cab provides increased strength for operator protection.

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.

BUMPER-TO-BUMPER
CATERPILLAR

The individual components, software, systems and engine that go inside a Cat 789D 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 lower cost per ton.

ENGINE/POWERTRAIN INTEGRATION

This integration electronically combines critical power train components to work more intelligently and to optimize overall truck performance.

+ Cat Data Link electronically integrates machine computer systems to optimize overall powertrain performance, increase reliability and component life, and reduce operating costs.
+ Electronic Technician service tool provides service technicians with easy access to stored diagnostic data through the Cat Data Link to simplify problem diagnosis and increase machine availability.
+ Integrated Braking Control (IBC) integrates Hydraulic Automatic Retarder Control and Traction Control into one system for optimum performance and efficiency.
+ Body-up Reverse Neutralizer automatically shifts the transmission to neutral if the hoist lever is activated while transmission is shifted in reverse.
+ Controlled Throttle Shifting regulates engine rpm during shifting to reduce powertrain stress and clutch wear by controlling engine speed, torque converter lock-up and transmission clutch engagement for smoother shifts and longer component life.

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 789D. Caterpillar offers a variety of application-specific body options that yield a payload ranging from 177 to 188 tonnes (195 to 207 tons). The Caterpillar exclusive 10/10/20 payload guidelines help achieve a balance of excellent payload and safe operation.

HIGH PERFORMANCE BODY

When you equip your 789D 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. 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.

BODY STYLE OFFERINGS

HIGH PERFORMANCE BODY

A new lightweight design that provides durability along with a higher payload.

MINE SPECIFIC BODY (MSD II)

For mature mines with good operational and maintenance practices, the lighter weight MSD II body is available in several sizes. It is a customer / site specific body that is designed to maximize performance.

COMBINATION BODY

This is a multi-purpose, high volume body for light density, well fragmented material. Based on the dual slope design for applications that require a flexible body to haul light ore (such as coal) and light, well fragmented overburden.

GATELESS COAL BODY

This specialized high-volume body, available in several sizes, is targeted at dedicated coal haulage applications with minimal impact.

DUAL SLOPE BODY

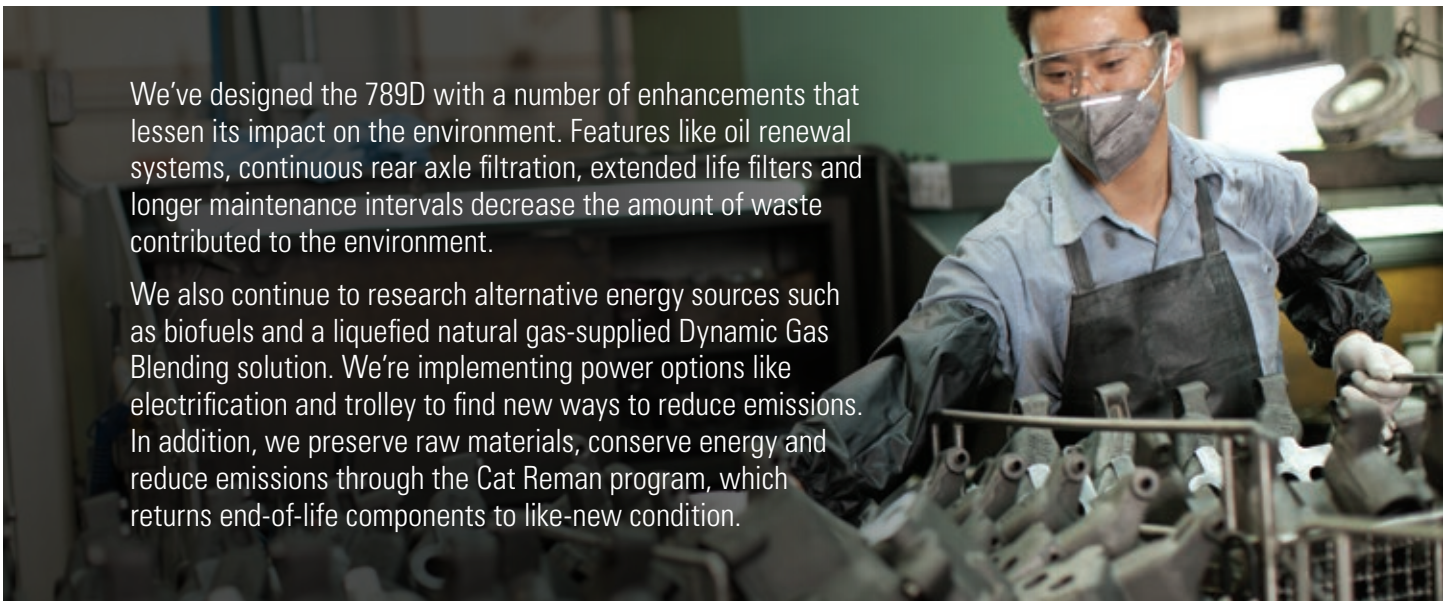
The original standard body, the Dual Slope body provides excellent load retention, maintains a low center of gravity with optimum load distribution, reduces shock loading and is available in lined and unlined configurations.

CUSTOM BODY OPTIONS

A variety of options including tail extensions, sideboards, tumble bars, rock boxes and rock shedders are available to maintain rated payload, reduce spillage and improve hauling efficiencies.

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.

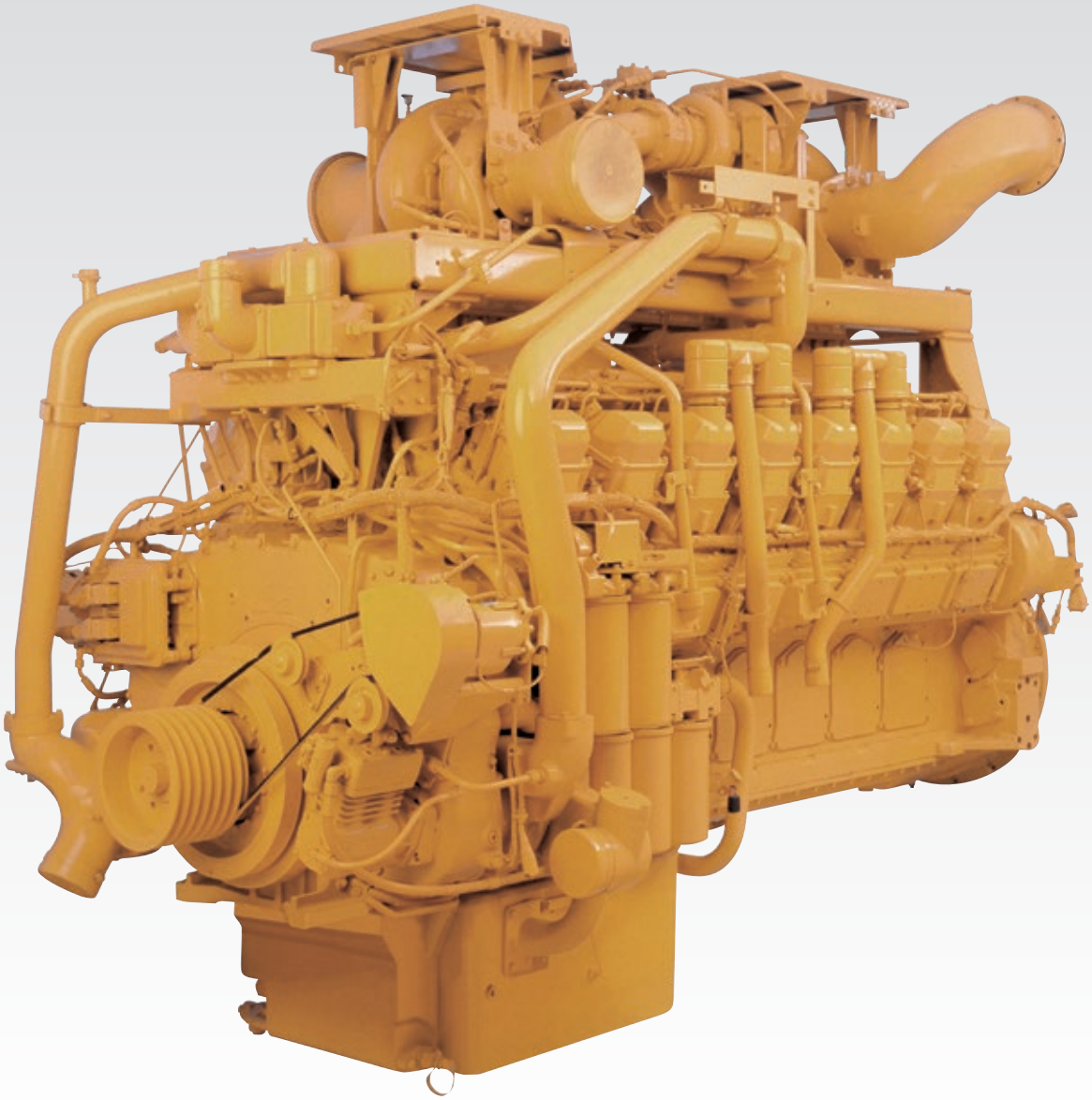


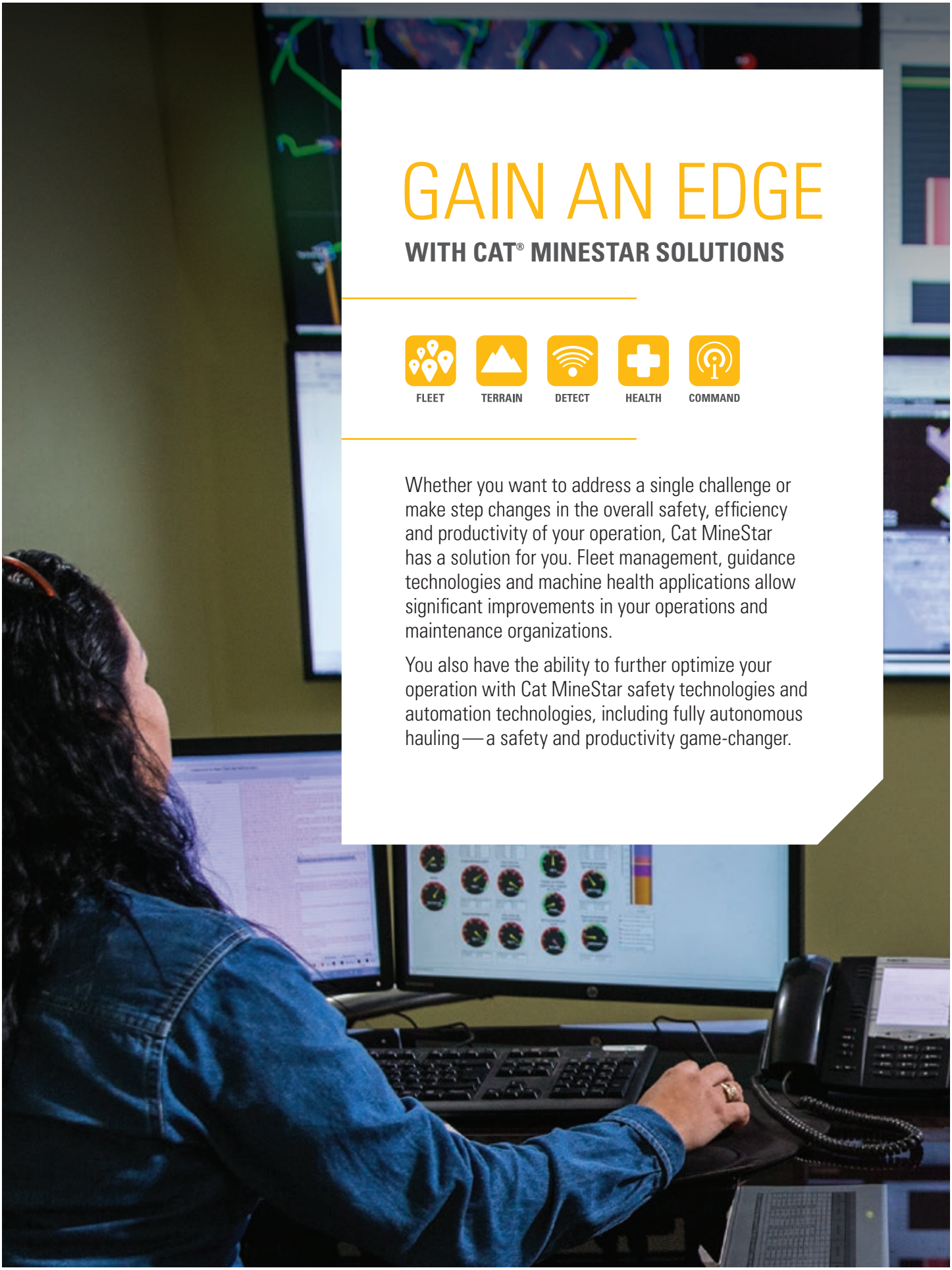
We've designed the 789D with a number of enhancements that lessen its impact on the environment. Features like oil renewal systems, continuous rear axle filtration, extended life filters and longer maintenance intervals decrease the amount of waste contributed to the environment.

We also continue to research alternative energy sources such as biofuels and a liquefied natural gas-supplied Dynamic Gas Blending solution. We're implementing 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 789D comes with two engine options: the Cat 3516B and 3516C EUI. Both of these quad turbocharged diesel engines deliver high power and reliability in the world's most demanding mining applications. The engines are 16-cylinder, four-stroke designs that use long, effective power strokes for more complete fuel combustion and optimum efficiency. High displacement, low rpm rating, and conservative horsepower ratings mean more time on the haul roads and less time in the shop.





GAIN AN EDGE

WITH CAT® MINESTAR SOLUTIONS

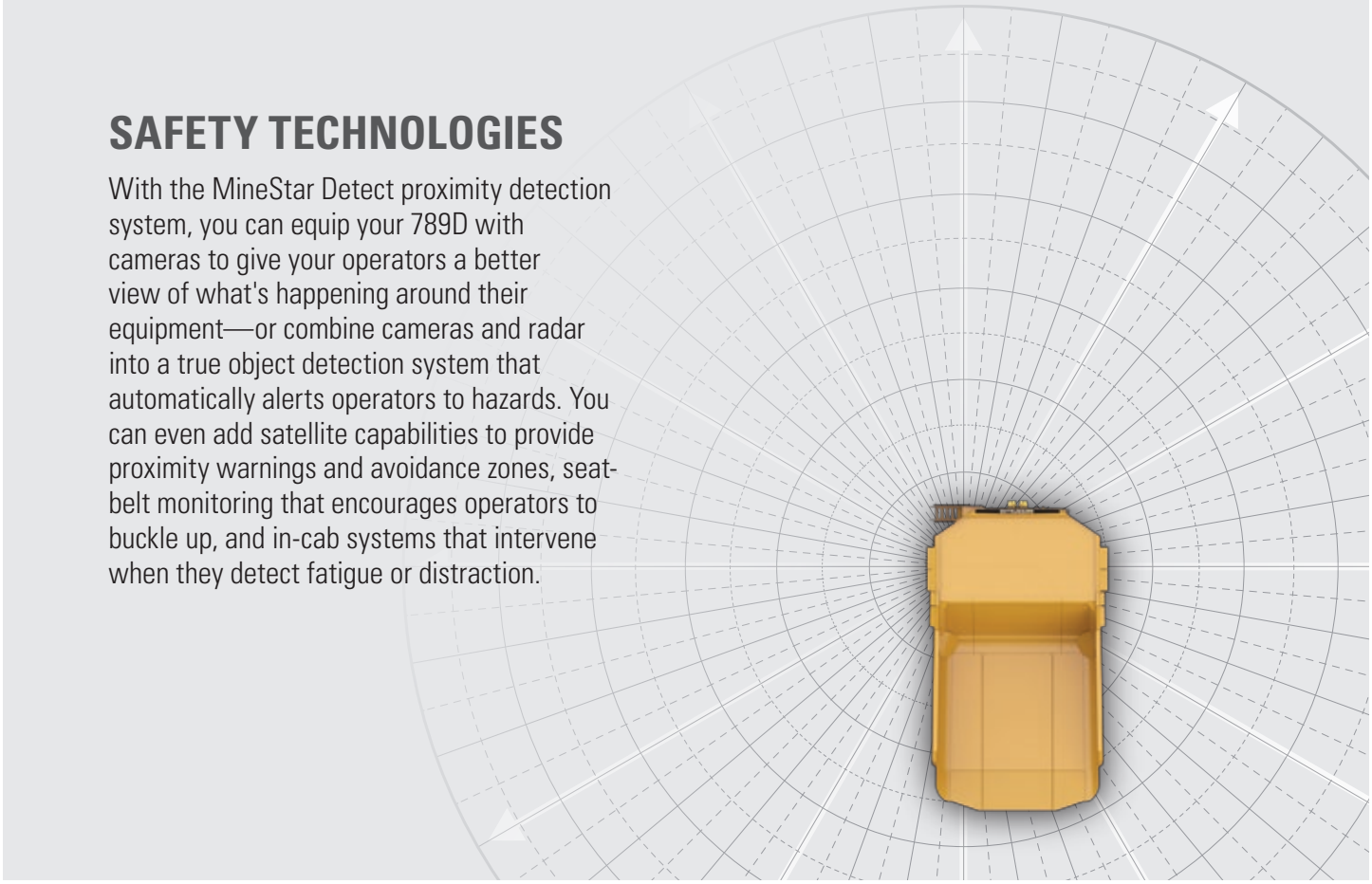
FLEET TERRAIN DETECT HEALTH COMMAND

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.

SAFETY TECHNOLOGIES

With the MineStar Detect proximity detection system, you can equip your 789D 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 789D 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.

789D

PASS MATCH

LWL	993		7
	994		4-5
HMS	6030		6
	6040		5
	6050		4
	6060		3-4
ERS	7295		3
	7395 HR		3
	7495 HD		3

TECHNICAL SPECIFICATIONS

See cat.com for complete specifications.

ENGINE		
Engine Model	3516C – HD	
Gross Power	1566 kW	2,100 hp
Rated Net Power (ISO 9249)	1468 kW	1,969 hp
Bore	170 mm	6.7 in
Stroke	210 mm	8.3 in
Displacement	78.1 L	4,766 in^3

OPTIONAL ENGINE		
Engine Model	3516B EUI	
Gross Power	1417 kW	1,900 hp
Rated Net Power (ISO 9249)	1335 kW	1,791 hp
Bore	170 mm	6.7 in
Stroke	190 mm	7.5 in
Displacement	69 L	4,211 in^3

+ Power ratings apply at 1,750 rpm when tested under the specific conditions for the specifi ed standard.
+ Ratings based on SAE J1995 standard air conditions of 25° C (77° F) and 99 kPa (29.32 Hg) barometer. Power based on fuel having API gravity of 35 at 16° C (60° F) and an LHV of 42 780 kJ/kg (18,390 BTU/lb) when engine used at 30° C (86° F).
+ 3516B engine, (STANDARD) no derate required up to 2300 m (7,500 ft) altitude.
+ 3516C engine, (EPA/ARB Flexibility) no engine derate required up to 2743 m (9,000 ft).
+ 3516C engine, (STANDARD) no engine derate required up to 3658 m (12,000 ft).
+ Where applicable, the 3516C engine, (EPA/ARB Flexibility) arrangement is compliant with U.S. Environmental Protection Agency regulations.

WEIGHTS – APPROXIMATE		
Gross Machine Operating Weight (GMW)	324 319 kg	715,000 lb
Body Weight Range	23 920-45 547 kg	52,850-100,414 lb
Empty Operating Chassis Weight (EOCW)	99 129 kg	218,542 lb

+ Body weight varies depending on how body is equipped.
+ Estimated weight of debris is not included in operating chassis weights.
+ Chassis weight includes standard rims and tires, all operating fluid levels full, 100% fuel in standard tank and standard mandatory attachments.

OPERATING SPECIFI CATIONS		
Nominal Rated Payload	191 tonnes	210 tons
Standard MSD Body (SAE 2:1)	130 m^3	170 yd^3
Standard X Body (SAE 2:1)	123 m^3	161 yd^3
Standard Dual Slope Body (SAE 2:1)	108 m^3	141 yd^3
Standard Combi Body (SAE 2:1)	153 m^3	200 yd^3
Standard Gateless Coal Body (SAE 2:1)	191 m^3	250 yd^3

+ Refer to the Cat Mining Truck 10-10-20 payload policy for maximum gross machine weight limitations.

TRANSMISSION		
Forward 1	12.6 km/h	7.8 mph
Forward 2	17.1 km/h	10.6 mph
Forward 3	23.1 km/h	14.4 mph
Forward 4	31.2 km/h	19.4 mph
Forward 5	42.3 km/h	26.3 mph
Forward 6	57.2 km/h	35.5 mph
Reverse	11.8 km/h	7.3 mph

+ Maximum travel speeds with standard 37.00-R57 tires.

FINAL DRIVES	
Differential Ratio	2.35:1
Planetary Ratio	10.83:1
Total Reduction Ratio	25.46:1

+ Double-reduction, planetary, with full floating axles.

SUSPENSION		
Effective Cylinder Stroke – Front	105 mm	4.0 in
Effective Cylinder Stroke – Rear	93 mm	3.5 in
Rear Axle Oscillation	± 5.6°	

BRAKES		
Brake Surface – Front	81 693 cm^2	12,662 in^2
Brake Surface – Rear	116 283 cm^2	18,024 in^2
Standards	SAE J1473 OCT90 ISO 3450:1996	

+ Gross Machine Operating Weight is 324 319 kg (715,000 lb).

BODY HOISTS		
Pump Flow – High Idle	731 L/min	193 gal/min
Relief Valve Setting – Raise	17 238 kPa	2,500 psi
Body Raise Time – High Idle	18.9 Seconds	
High Idle Body Lower Time – Float	17.3 Seconds	
High Idle Body Lower Time – Power	15.6 Seconds	

WEIGHT DISTRIBUTIONS – APPROXIMATE	
Front Axle – Empty	46%
Rear Axle – Empty	54%
Front Axle – Loaded	33%
Rear Axle – Loaded	67%

TIRES	
Standard Tires	37.00-R57
Optional Tires	40.00-R57

+ Productive capabilities of the 789D truck are such that, under certain job conditions, TKPH (TMPH) capabilities of standard or optional tires could be exceeded and, therefore, limit production.
+ Caterpillar recommends the customer evaluate all job conditions and consult the tire manufacturer for proper tire selection.

SERVICE REFILL CAPACITIES		
Fuel Tank (standard)	2082 L	550 gal
Fuel Tank (optional)	3785 L	1,000 gal
Cooling System	725 L	192 gal
Crankcase	291 L	77 gal
Differential and Final Drives	583 L	154 gal
Steering System	189 L	50 gal
Brake/Hoist System	909 L	241 gal
Transmission Tank	76 L	20 gal

ROPS

ROPS Standards
+ ROPS (Rollover Protective Structure) for cab offered by Caterpillar meets ISO 3471:2008 ROPS criteria.
+ FOPS (Falling Objects Protective Structure) meets ISO 3449:2005 Level II FOPS criteria.

SOUND

Sound Standards
+ The operator sound pressure levels are measured according to work cycle procedures specified in ISO 6394:2008 and ISO 6396:2008 is 78 dB(A).
+ The exterior sound power level for the standard machine is tested using ISO 6393:2008 and ISO 6395:2008 procedures is 121 dB(A).
+ Hearing protection may be needed when operating with an open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in a noisy environment.

STEERING		
Steering Standards	SAE J1511 OCT90 ISO 5010:1992	
Steering Angle	36.07°	
Turning Diameter on Front Wheel	27.53 m	90.32 ft
Vehicle Clearance – Turn Circle	30.23 m	99.18 ft

+ Gross Machine Operating Weight is 324 319 kg (715,000 lb).

789D LARGE MINING TRUCK

For more complete information on Cat products, dealer services and industry solutions, visit us at www.cat.com

PEDJ0461

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

CAT®