



**WHEREVER  
THERE'S  
MINING,  
WE'RE  
THERE.**

UNDERGROUND MINING







# WHEREVER THERE'S **MINING,** WE'RE THERE.

---

As miners go deeper underground to provide the materials on which the world depends, they need safe, reliable equipment designed to handle demanding conditions. From the first cut to the last inch of the seam, we're committed to meeting the needs of customers in every underground application and environment. Our broad product line includes drills, loaders and trucks for hard rock applications; customized systems for longwall mining; and precision-engineered products for room and pillar operations.

Like our customers, we consider the health and safety of miners a top priority. All of our products and systems are integrated with safety features to keep people safe when they're in, on or around them. We also share the mining industry's commitment to sustainability — following environmentally sound policies and practices in the way we design, engineer and manufacture our products, and leveraging technology and innovation to develop equipment that has less impact on the environment.





# WHEREVER THERE ARE **LONGWALL** APPLICATIONS

---

Caterpillar is a leading global supplier of complete longwall systems. All over the world, our equipment and systems are meeting the demands of underground mining under the most stringent conditions. We deliver our customers' system of choice, from low to high seam heights, for the longest longwalls and highest production demands. Adapted to the mining challenges faced by our customers today, Cat® systems for longwall mining include hydraulic roof supports, high-horsepower shearers, automated plow systems and face conveyors — controlled and supported by intelligent automation. Diesel- and battery-driven roof support carrier systems complete the product range.

The quality and reliability of the automation system are key to the success of a longwall mining operation. The Cat PMC® family of Programmable Mining Controls offers one-stop shopping for all the controls, sensors and components a successful longwall system needs. And the Visualization Control Unit with V-Software offers an easy-to-learn interface that allows data to be collected, analyzed and controlled for increased production.



# SHEARERS

Nothing is more important to the productivity of a longwall than the shearer. These powerful machines operate around the clock, cutting away at the longwall. Cat shearers are built to meet the demanding requirements of constant operation, with a unique mainframe design that makes them tough during operation and flexible during rebuilds.

<b>MODEL NO.</b>	<b>SEAM RANGE</b>
<b>EL1000</b>	1.6–3.2 m (63–126 in)
<b>EL2000</b>	1.8–4.5 m (71–177 in)
<b>EL3000</b>	2.5–5.5 m (98–217 in)
<b>EL4000</b>	4.0–7.0 m (158–276 in)











# PLOW SYSTEMS

In small and medium seams, a plow system is a cost-effective alternative to a shearer. A number of features — from more power to precise cutting control features — allow Cat Automated Plow Systems to exceed the production performance of shearers in seams under 1.8 m (71 in).

<b>MODEL NO.</b>	<b>CUTTING HEIGHT</b>
<b>RHH800</b>	0.8–1.6 m (31.5–63 in)
<b>GH800</b>	1.0–2.0 m (39–79 in)
<b>GH1600</b>	1.1–2.3 m (43–91 in)





# ROOF SUPPORTS

Steep inclines, varying thickness and soft ground are just a few of the many ways in which a seam may be unpredictable. Roof supports need to be able to hold up in all of these conditions to keep the longwall productive and personnel safe.

Cat Roof Supports are customized to meet mine conditions and offer advanced automation, including underground cameras, personnel proximity detection and more. They offer high reliability and a lifetime of up to 90,000 cycles

We also sell a line of roof supports manufactured in China by Siwei, which is now a wholly owned subsidiary of Caterpillar. They offer standard manual controls with optional automation and feature standard designs for fast delivery. Siwei roof supports have a lifetime of up to 30,000 cycles to meet the needs of certain markets.

## CAT ROOF SUPPORTS

**SEAM RANGES FROM**  
0.8–7.5 m (1.8–24.5 ft)

**WIDTHS FROM**  
1.50 m | 1.75 m | 2.05 m /  
(59 in | 69 in | 81 in)

**SUPPORT CAPACITY**  
1 750 tonnes / (1,929 tons)

**LIFETIME**  
up to 90,000 cycles

## SIWEI ROOF SUPPORTS

**SEAM RANGES FROM**  
0.8–7.5 m (1.8–24.5 ft)

**WIDTHS FROM**  
1.50 m | 1.75 m | 2.05 m  
(59 in | 69 in | 81 in)

**SUPPORT CAPACITY**  
up to 1 750 tonnes / (1,929 tons)

**LIFETIME**  
up to 30,000 cycles





# CONVEYOR SYSTEMS

A productive shearer or plow is a must-have in longwall operations. But there must also be a conveyor system that can keep pace with them. Cat Armored Face Conveyors (AFC) are customized to meet each site's specific needs, delivering maximum capacity, high drive power and high reliability.

<b>LINE PAN MODEL</b>	<b>PRODUCTION AVERAGE PER HOUR</b>
<b>PF3</b>	1 300 tonnes / 1,433 tons
<b>PF4</b>	1 800 tonnes / 1,984 tons 2 500 tonnes / 2,756 tons 3 500 tonnes / 3,858 tons
<b>PF5 &amp; PF6</b>	2 500 tonnes / 2,756 tons 3 500 tonnes / 3,858 tons 5 000 tonnes / 5,512 tons
<b>PF7</b>	6 200 tonnes / 6,800 tons

# CST DRIVE SYSTEMS

In a high-performance longwall, the conveyor system has to adjust quickly to carry huge loads and respond to load changes. Cat CST drive systems feature no-load motor startup, AFC soft start and synchronized heavy-load startup to allow accurate load-sharing between up to three drive motors with excellent, extremely fast overload protection.

<b>MODEL NO.</b>	<b>MAXIMUM INSTALLED POWER*</b>
<b>CST30</b>	500 kW (800 hp)
<b>CST45 V</b>	1050 kW (1700 hp)
<b>CST65</b>	1200 kW (1950 hp)
<b>CST115</b>	1800 kW (2850 hp)

\* kW 1500 rpm @ 50 Hz (hp 1800 rpm @ 60Hz)











# ROOF SUPPORT CARRIERS

Roof supports make a longwall move more efficiently by minimizing unprofitable relocation time. With a variety of battery- and diesel-powered equipment across a wide range of dimensions and carrying capacity, Cat Roof Support Carriers can set up and move roof supports in any situation — while keeping operators out of hazardous areas.

<b>MODEL NO.</b>	<b>CARRY CAPACITY</b>
<b>SH620</b>	20 tonnes / 22 tons
<b>SH630</b>	32.6 tonnes / 36 tons
<b>SH640D</b>	40 tonnes / 44 tons
<b>SH650</b>	45 tonnes / 50 tons
<b>SH650 VFD</b>	45 tonnes / 50 tons
<b>SH650 D</b>	45 tonnes / 50 tons
<b>SH660 D</b>	55 tonnes / 60 tons
<b>SH660 HD</b>	60 tonnes / 66 tons
<b>SH680</b>	72 tonnes / 80 tons
<b>SH150</b>	50 tonnes / 55 tons
<b>Shield Trailer</b>	





# WHEREVER THERE ARE **ROOM & PILLAR** APPLICATIONS

Caterpillar offers a broad line of Room & Pillar products that have undergone extensive redesign and re-engineering to deliver the highest performance available in the marketplace. Our products are precision-engineered for productivity — from our heavy-duty feeder breakers, innovative roof bolters and seamless line of continuous miners, to a complete offering of haulage products that includes customizable continuous haulage systems, high-capacity face haulers and a broad range of battery- and diesel-powered utility vehicles.





# CONTINUOUS MINERS

In Room & Pillar operations, continuous miners lead the way—and Cat Continuous Miners are up to the challenge. With best-in-class installed power, they can cut through even the hardest coal. They feature a wide range of sizes that allows them to work in seams of any height. With precise cutting depths and serviceability upgrades, these machines are designed to handle the stress of these challenging applications.

MODEL NO.	LOAD RATE
CM210	up to 11 tonnes/minute (12 tons/minute)
CM220	up to 18 tonnes/minute (20 tons/minute)
CM230	up to 23 tonnes/minute (25 tons/minute)
CM235	up to 29 tonnes/minute (32 tons/minute)
CM240	up to 23 tonnes/minute (25 tons/minute)
CM340	up to 35 tonnes/minute (39 tons/minute)
CM345N	up to 35 tonnes/minute (39 tons/minute)
CM445	up to 35 tonnes/minute (39 tons/minute)
CM845	up to 32 tonnes/minute (36 tons/minute)



# FACE HAULERS

Room & Pillar operations require flexible, maneuverable haulage products to keep coal moving smoothly and quickly from the continuous miner. To meet this need, Caterpillar offers a line of high-capacity, highly reliable and efficient face haulers. With both battery- and diesel-powered vehicles, there's a Cat Face Hauler for every mine, during any stage of life.

MODEL NO.	CAPACITY
FH110	9 tonnes (10 tons)
FH120	17 tonnes (19 tons)
FH125 D	20 tonnes (22 tons)

## CONTINUOUS HAULAGE SYSTEMS

The fastest cutting equipment can move only as fast as the haulage system behind it—so providing the quickest haulage possible is essential to a mine's productivity. Customizable Cat Continuous Haulage systems can be tailored to any site's specific projection, and offer a number of advantages over cable-driven haulers.

MODEL NO.	CAPACITY
FH330	1 200 tonnes / h (1,320 tons / h)
FH336	1 800 tonnes / h (1,984 tons / h)











# FEEDER BREAKERS

Coal rarely comes off the face at the right size and shape to be sent to the surface. That's where the feeder breaker comes in—making sure coal is broken down to size before it gets fed onto the belt system. Cat Feeder Breakers can be tailored to meet any requirements for breaking and sizing. With high capacity and heavy-duty frame construction, these machines are a good fit for any mine.

<b>MODEL NO.</b>	<b>CAPACITY</b>
<b>FB75</b>	717 tonnes/h (790 tons / h)
<b>FB85</b>	835 tonnes/h (920 tons / h)
<b>FB110</b>	1 088 tonnes/h (1,200 tons / h)
<b>FB140</b>	1 361 tonnes/h (1,500 tons / h)





# SCOOPS

Whether it's removing overburden, transporting equipment or grading a road, it takes a dedicated set of utility vehicles to meet the miscellaneous needs of a mine. Cat Scoops have the flexibility, power and durability to meet these challenges. With battery-powered and diesel options, as well as numerous attachments, these sturdy machines can quickly adapt to any conditions.

<b>MODEL NO.</b>	<b>PAYLOAD CAPACITY</b>
<b>SU482</b>	6.4 tonnes (7 tons)
<b>SU482 DN</b>	6.8 tonnes (7.5 tons)
<b>SU488 LHD</b>	9.1 tonnes (10 tons)
<b>SU488L</b>	9.1 tonnes (10 tons)
<b>SU488 DN</b>	14.5 tonnes (16 tons)
<b>SU488</b>	14.5 tonnes (16 tons)
<b>SU488 DM</b>	14.5 tonnes (16 tons)
<b>SU488 D</b>	14.5 tonnes (16 tons)



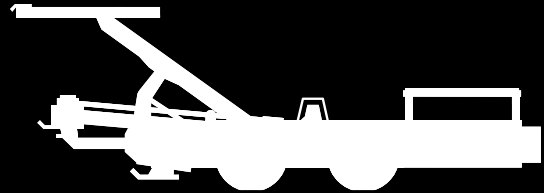


# LOAD HAUL DUMP VEHICLES

With a cab and control system designed specifically to access low-seam operations, these machines set the bar in the sub-10 market, without sacrificing operator comfort or safety. Capable of carrying loads up to 15 tonnes (16.5 tons), Cat LHD vehicles are well-suited to working in areas where other equipment solutions are not.

<b>MODEL NO.</b>	<b>LOAD CAPACITY</b>
<b>CL106</b>	6 tonnes (6.6 tons)
<b>CL110</b>	10 tonnes (11 tons)
<b>CL115</b>	13.5 tonnes (15 tons)
<b>CL210</b>	10 tonnes (11 tons)
<b>CL210B</b>	10 tonnes (11 tons)
<b>CL215</b>	15 tonnes (16.5 tons)
<b>CL215B</b>	15 tonnes (16.5 tons)





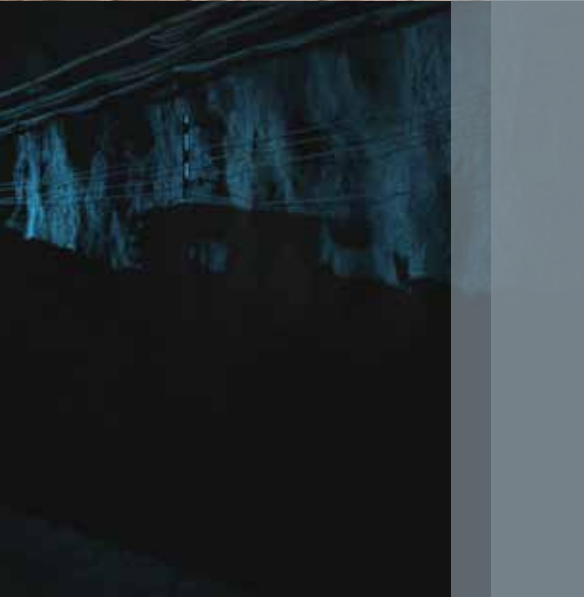
# ROOF BOLTERS

Production machines are essential in Room & Pillar operations—cutting coal and moving it out of the mine for processing. But it's the roof bolter that makes it possible for them to do their jobs. Using a series of powerful bolts, these machines create self-supporting roofs for Room & Pillar mining operations.

<b>MODEL NO.</b>	<b>OPTIMAL SEAM HEIGHT</b>
<b>RB120</b>	0.8–2.1 m (32–83 in)
<b>RB220</b>	0.8–2.4 m (32–96 in)
<b>RB230</b>	1.22–3.6 m (47–144 in)



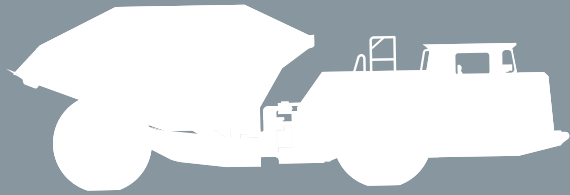




# WHEREVER THERE ARE **HARD ROCK** APPLICATIONS

---

Underground hard rock mining is a demanding application for any equipment. Cat underground loaders, trucks, continuous haulage systems and drills stand the test of time in a wide range of difficult conditions. They incorporate the latest technology and are proven to deliver productivity, reliability and operator comfort. Safety is also an important element in our underground mining machine design philosophy. Products are engineered with safety in mind.



# UNDERGROUND TRUCKS

Hard rock operations require a truck that can operate in confined spaces without sacrificing efficiency, capacity or operator comfort. With a fuel-efficient engine and the most durable components in the industry, Cat Underground Trucks offer a reliable haulage solution and a low cost per ton. They also offer payload capacities up to 60 tonnes (66.0 tons), to keep up with the production requirements of even the largest underground operations.

<b>MODEL NO.</b>	<b>PAYLOAD CAPACITY</b>
<b>AD30</b>	30 tonnes (33.1 tons)
<b>AD45B</b>	45 tonnes (49.6 tons)
<b>AD55</b>	55 tonnes (60.6 tons)
<b>AD60</b>	60 tonnes (66.0 tons)









# UNDERGROUND LOADERS

In order to keep material moving, hard rock mines need a quick, precise method of loading material. Cat Underground Loaders have the necessary strength and durability to work in tough conditions, but it's their precise controls and efficient operation that set them apart. The power shift transmission delivers smooth, responsive tramming performance for new industry standards in comfort and efficiency.

<b>MODEL NO.</b>	<b>RATED PAYLOAD</b>
<b>R1300G</b>	6.8 tonnes (7.5 tons)
<b>R1600G</b>	10.2 tonnes (11.2 tons)
<b>R1700G</b>	12.5 / 14.0 tonnes (13.8 / 15.4 tons)
<b>R2900G</b>	17.2 tonnes (19 tons)
<b>R3000H</b>	20 tonnes (22 tons)





# ROCK FLOW SYSTEM

For hard rock mining companies looking to increase production beyond what is possible using discontinuous material haulage, Caterpillar has developed the Cat Rock Flow System—a continuous haulage technology for block caving operations that delivers significant increases in productivity and safety at a lower cost.

Rock flow is achieved when there is continuous caving, removal from the drawpoint, breaking and conveying. The Cat Rock Flow System comprises several components, all centrally controlled from a remote location: the Rock Feeder to remove ore from the drawpoint; the Rock Mover—a special hard rock production conveyor—to feed ore into a crusher; and automation to control and smooth the production process.

<b>MODEL NO.</b>	<b>CAPACITY</b>
<b>Rock Feeder (RF300)</b>	300 tonnes/h (331 tons/h)

<b>MODEL NO.</b>	<b>PERFORMANCE</b>
<b>Rock Mover (RM900)</b>	900 tonnes/h (992 tons/h)
	<b>DRIVE POWER</b>
	2 × 75 kW (2 × 102 hp)
	<b>CHAIN SPEED</b>
	0.15 m/sec (29.5 fpm)







# WHEREVER THERE ARE **BULK MATERIALS** TO HANDLE

---

Belt conveyor systems are the product of choice for bulk material handling in a number of applications, including overburden removal, commodity mining and coal handling. Cat Belt Conveyors are versatile systems, with multiple drive options, discharge units and tail loading sections available in different configurations, and various take-up design options. Whether customers choose our pre-engineered solutions or work in partnership with us to customize a system for their exact specifications, every belt terminal group is developed and supported by an experienced team of engineers who supervise installation.





# BELT SYSTEMS

Cat belt systems and belt products take on the world's toughest jobs in underground mining applications. Commonly referred to as belt terminal groups, our systems typically include a drive, remote discharge, take-up and loading section. Cat rolls, idlers and structure support the conveyor belt, and our engineered class conveyor pulleys transfer power and are designed for maximum stability.

## UNDERGROUND IDLERS

---

<b>Roll Diameter</b>	CEMA C and D; 10, 13 and 15 cm (4, 5 and 6 in)
	CEMA E; 15.2–17.8 cm (6–7 in)
<b>Belt Width</b>	45.7–243.8 cm (18–96 in)

---

## ENGINEERED CLASS PULLEYS

---

<b>Belt Width</b>	Up to 2 400 mm (96 in)
-------------------	------------------------





# WHEREVER THERE'S A NEED FOR M O R E

Caterpillar offers more equipment for mining than any other manufacturer. But the power of Caterpillar is more than iron. It's our technologies, which are improving the way mines manage equipment health, and keep people safe. It's the end-to-end services we provide, like power, rail and financing. It's our knowledge and expertise, which we leverage to create a unique mix of solutions to meet site-specific needs. And it's the unparalleled support that Caterpillar and Cat dealers provide after our machines go to work.







# CAT MINESTAR™ SYSTEM

Cat MineStar System, our comprehensive suite of mining technology products, consists of a number of configurable capability sets that allow customers to scale the system to their needs.

Our technology products for the underground mining industry continue to grow, with a number of offerings currently available in the Detect, Health and Command capability sets.

Detect enhances operators' awareness of the immediate environment around their manned or remotely controlled equipment. On a longwall system, Detect offers multiple camera views that span the face and monitor people working in the area. Locator tags are programmed per individual job role to enable automatic shutdown when safety zones are breached by unauthorized tagged personnel. It can also provide valuable personnel location information.

Health delivers critical event-based machine condition and operating data for the entire fleet. It includes comprehensive equipment health and asset monitoring capabilities with a wide range of diagnostic, analytic and reporting tools.

Command enables remote control, semi-autonomous and autonomous systems for mobile mining equipment. Command for underground automates the tramming and dumping component of an underground loader's load-haul-dump cycle. Command for longwall delivers semi-autonomous control for plows via a remote operator station. Semi-autonomous control for shearers is currently under development.



FLEET



TERRAIN



DETECT



HEALTH



COMMAND

# CAT DEALER NETWORK

---

The Cat product line is unmatched in the industry. But one of our biggest differentiators isn't our products themselves; it's the way they're distributed and supported. When it comes to service and support, the global Cat dealer network is unparalleled.

This one-of-a-kind, on-the-ground support network delivers expert service, integrated solutions, after-sales support, fast and efficient parts fulfillment, world-class remanufacturing capabilities and more. Dealers partner with customers to help them improve operations, maximize machine productivity and minimize costs.

Cat dealers operate as nearly 200 local businesses — each one fully embedded in and committed to the geographic area it serves. That means our customers work with people they know, who know their business, respond on their timeframe and care about making their community a better, safer place to live and work.

NEARLY  
**200**  
**DEALERS**

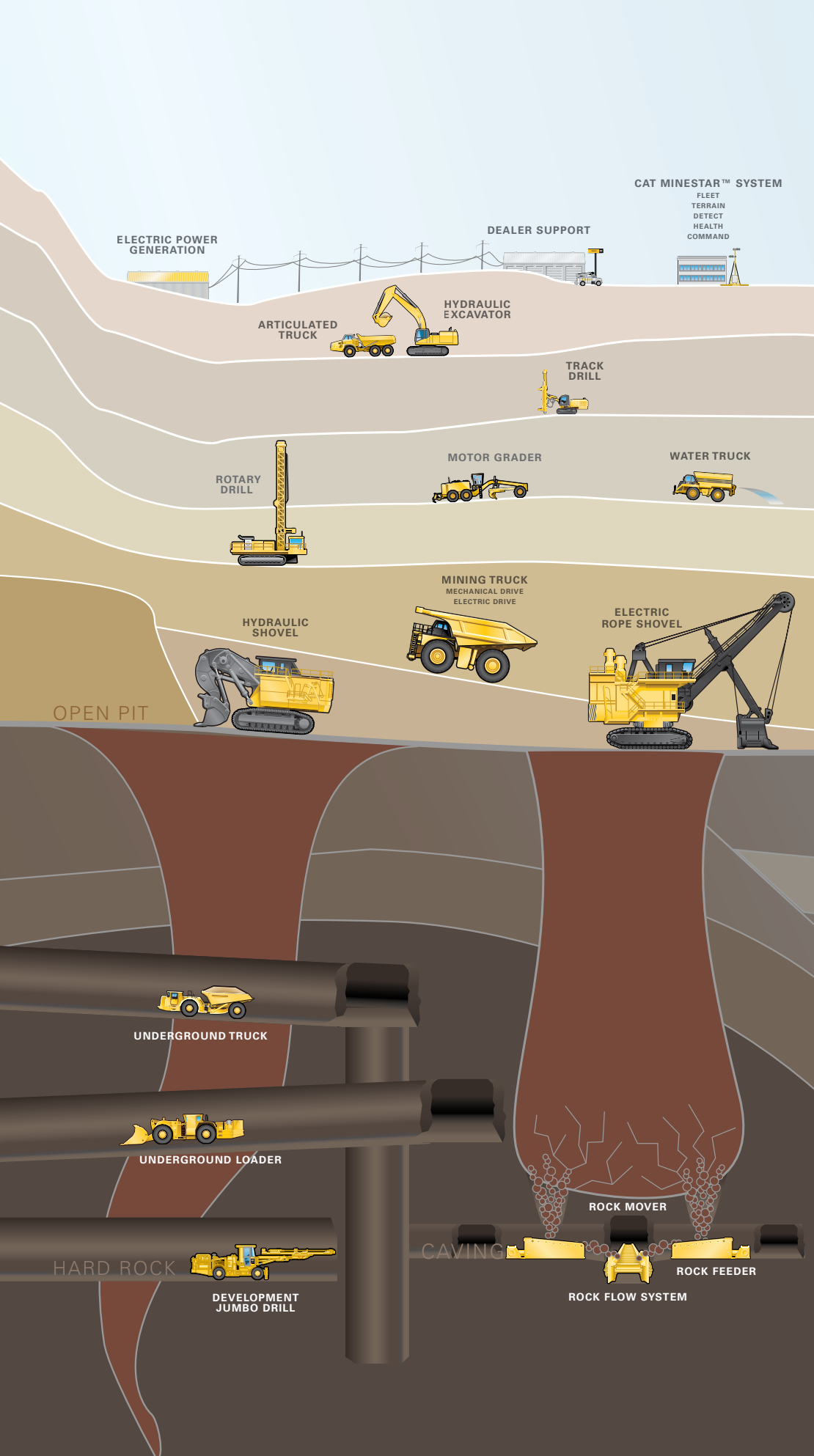
MORE THAN  
**1,000**  
**LOCATIONS**

MORE THAN  
**140,000**  
**EMPLOYEES**









# BROADEST PRODUCT LINE IN THE MINING INDUSTRY

Caterpillar gives the mining industry access to the broadest line of underground and surface mining equipment in the world—from one source. And behind the great products are the people. A team with over 100 years of experience, innovation and entrepreneurship. And one focus: helping mining customers succeed.



WHEREVER  
THERE'S  
LONGWALL  
**HARD  
ROCK**  
ROOM &  
**PILLAR**  
MINING

**WE'RE  
THERE**

UNDERGROUND MINING

[MINING.CAT.COM](http://MINING.CAT.COM)

