

AD30

Underground Mining Truck



Engine

Engine Model	Cat® C15 ACERT™	
Gross Power – SAE J1995	304 kW	408 hp
Net Power – SAE J1349	281 kW	377 hp

Operating Specifications

Nominal Payload Capacity	30 000 kg	66,139 lb
Gross Machine Operating Weight	60 000 kg	132,300 lb

AD30 Features

One Supplier

Caterpillar designed and manufactured major power and drive train components for reliability and performance.

High Performance Engine

The Cat® C15 engine with ACERT Technology offers the perfect balance between power, robust design and economy.

Power Shift Transmission

Reliable and rugged design is matched to C15 engine to deliver power and efficiency for peak power train performance.

Engine/Power Train Integration

Intelligent and robust electronics integrate all power and drive train components for overall optimum performance.

Robust Braking

Cat oil-cooled multiple disc brakes offer exceptional, fade resistant braking in all haul road conditions.

Comfortable Cab

Ergonomically designed for all-day comfort, control and productivity.

Truck Body

A variety of Caterpillar designed and built bodies and liners ensure optimal performance and reliability in tough mining applications.

Enhanced Serviceability

Designed with improved serviceability points and grouped service locations so more time is spent on the haul roads.

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The AD30 underground articulated truck is designed for high production, low cost-per-ton hauling in smaller underground mining applications. Rugged construction and easy maintenance guarantee long life with low operating costs.

Engineered for performance, designed for comfort, built to last.

Power Train – Engine

The Cat C15 Engine is built for power, reliability and efficiency.

ACERT™ Technology

The Cat C15 is US EPA Tier 3 and EU Stage III compliant. It features efficient fuel management for quick response, high productivity and exceptional service life. A new, sculptured cylinder block provides greater strength and lighter weight.

High Torque Rise

The 58% torque rise provides unequalled lugging force during acceleration and less down-shifting on grade. Torque rise effectively matches transmission shift points for maximum efficiency and fast cycle times.

Turbocharged and ATAAC

Air-to-Air aftercooling provides improved fuel economy by packing cooler, denser air into cylinders for more complete combustion of fuel and lower emissions.

Mechanically Actuated, Electronic Unit Injection (MEUI)

Proven high-pressure, direct injection fuel system electronically monitors operator demands and sensor inputs to optimize engine performance.

ADEM™ IV System

Controls the fuel injector solenoids to monitor fuel injection. This system provides automatic altitude compensation, air filter restriction indication and it will not allow the engine to fire until it has oil pressure, acting as cold start protection and a form of pre-lube.

Design Construction

Caterpillar designed one-piece cast iron block provides maximum strength and durability. Two-piece articulated pistons with forged steel crowns are designed to withstand higher cylinder pressure.



Power Train – Transmission

More power to the ground for greater productivity.



Mechanical Power Train

The Cat mechanical drive power train and power shift transmission provide unmatched operating efficiency and control on steep grades, in poor underfoot conditions, and on haul roads and drives with high rolling resistance.

Transmission

The Cat four-speed planetary power shift transmission is matched with the C15 engine to deliver constant power over a wide range of operating speeds.

Robust Design

Designed for rugged underground mining conditions, the proven planetary power shift transmission is built for long life between overhauls.

Lock Up Torque Convertor

Combines maximum rimpull and cushioned shifting of torque converter drive with the efficiency and performance of direct drive. When engaged, lock-up provides superior power train efficiency by delivering more power to the wheels.

Lock-Up Clutch

Quickly releases and re-engages to reduce power train torque loads for smoother shifting, long life and a more comfortable ride.

Smooth Shifting

Individual clutch modulation provides smooth clutch engagements to optimize performance and extend clutch life.

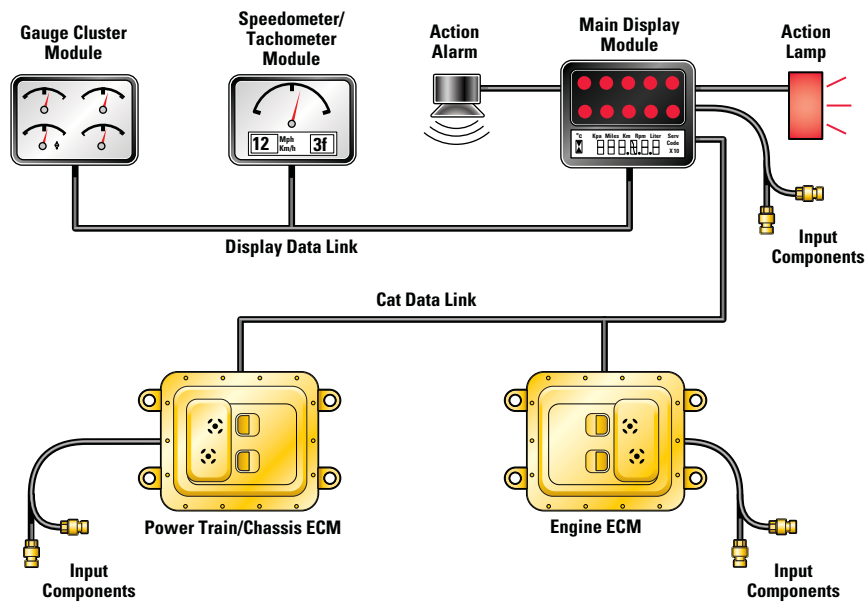
Final Drives

Cat final drives work as a system with the planetary power shift transmission to deliver maximum power to the ground. Built to withstand the forces of high torque and impact loads, final drives provide high torque multiplication to further reduce drive train stress.

Full Floating Axles

Full floating axles relieve internal stresses and increase durability. Rolled splines also provide increased service life.

CAT MONITORING SYSTEM



Engine/Power Train Integration

Intelligent electronics for overall optimal performance.

Cat Data Link

Electronically integrates machine computer systems to optimize overall power train performance, increase reliability and component life, and reduce operating costs.

- **Controlled Throttle Shifting**

Regulates engine RPM, torque converter lock-up and transmission clutch engagement for smoother shifts and longer component life.

- **Economy Shift Mode**

Decreases fuel consumption, lowers noise levels and potentially longer engine life.

- **Directional Shift Management**

Regulates engine speed to prevent damage caused by high speed directional changes.

- **Body-up Shift Inhibitor**

Prevents the transmission from shifting above a pre-programmed gear without the body fully lowered.

Electronic Technician (Cat ET)

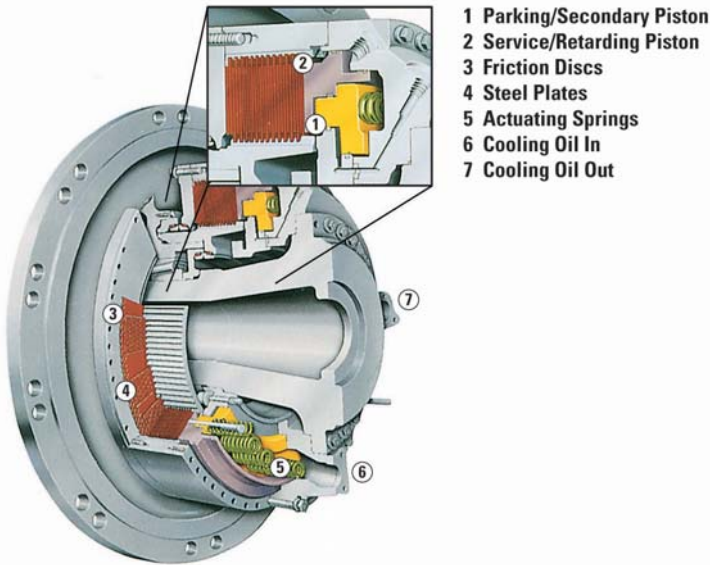
Cat ET service tool provides service technicians with easy access to stored diagnostic data through Cat Data Link to simplify problem diagnosis and increase availability.

Overspeed Protection

The transmission control electronically senses engine conditions and automatically up-shifts to prevent overspeeding.

Cat Brake System

Superior control for operator confidence.



Integrated Braking System

The Cat oil-cooled braking system delivers reliable performance and control in the most extreme underground mining conditions. The integrated system combines the service, secondary, parking brake and retarding functions in the same robust system for optimum braking efficiency.

Oil-Cooled Multiple Disc Brakes

Four-wheel, forced oil-cooled, multiple disc service brakes are continuously cooled by a water-to-oil heat exchangers for exceptional, non-fade braking and retarding performance.

Brake Design

With large discs and plates for reliable, adjustment-free operation and performance. Cat oil-cooled disc brakes are completely enclosed to prevent contamination and reduce maintenance.

Long Life

An oil film prevents direct contact between the discs. This design absorbs the braking forces by shearing the oil molecules and carrying heat away to extend brake life.

Automatic Retarder Control (ARC)

Electronically controls retarding on grade to maintain optimum engine RPM and oil cooling. Additional braking may be applied using the manual retarder or the brake pedal.

Faster Speeds

ARC allows the operator to maintain optimum engine speeds for faster downhill hauls and greater productivity.

Superior Control

Automatic brake modulation offers a smoother ride and greater control, allowing the operator to concentrate on driving.

Ease of Operation

ARC increases operating ease, resulting in greater operator confidence with less fatigue.

Engine Overspeed Protection

ARC automatically activates when engine speed exceeds factory preset levels, reducing potentially damaging engine overspeeds.

Fuel Efficiency

The engine provides additional retarding by running against compression on downhill hauls. The engine ECM reduces fuel injection for exceptional fuel economy.



Operator Comfort

Ergonomically designed for all-day comfort, control and productivity.

The AD30 operator station is ergonomically designed for total machine control in a comfortable, productive and safe environment. All controls, levers switches and gauges are positioned to maximize productivity and minimize operator fatigue.

Protective Structure

Integral to the cab and frame, both the Rollover Protective Structure (ROPS) and Falling Objects Protective Structure (FOPS) are resiliently mounted to the mainframe to isolate the operator from vibration for a more comfortable ride.

Optional Enclosed Cab

Optional sound-suppressed ROPS cab provides a quiet, secure and comfortable air-conditioned working environment with fresh, pressurized, temperature-controlled air circulation.

Suspension Seat

Ergonomic, fully adjustable suspension seat provides optimal operator comfort. Thick cushions reduce pressure on lower back and thighs. Wide, retractable seat belts provide a secure, comfortable restraint.

Steering Column

Comfort wheel with tilt steering provides a comfortable driving position, secure grip and greater control.

Monitoring System

Cat Electronic Monitoring System (Cat EMS) continuously provides critical machine data to keep the machine performing at top production levels. Displays are backlit for easy viewing.

Truck Body Systems

Rugged performance and reliability in tough underground mining applications.



Cat Truck Bodies

Caterpillar offers two specific body styles for the most efficient hauling solutions at the lowest cost-per-ton.

- Dump Body
- Ejector Body

The ejector body can now be easily removed and a dump body fitted for greater machine versatility.

Body Selection

Selection of the right body depends on material, haul road, and dump conditions. The better the match of body to application, the greater the efficiency. Your Cat dealer can help you select the right body system for your site specific application.

Body Design

Cat truck bodies are designed for optimal strength, capacity and durability. With improved design and the use of Hardox steel, longer service life and lower cost per ton figures are now evident.

Body/Chassis Integration

Cat truck bodies are designed and matched with the integrated chassis system for optimum structural reliability, durability and long life.

Load Carrying Capacity

Large target area provides high load carrying capacity. Its diverging flow design gives clean load ejection, which maximizes production and avoids waste of material carryback.

Truck Payload Management System (TPMS)

The optional TPMS system calculates the payload the truck is carrying and determines truck cycle times.

Fast Hoist Cycle Times

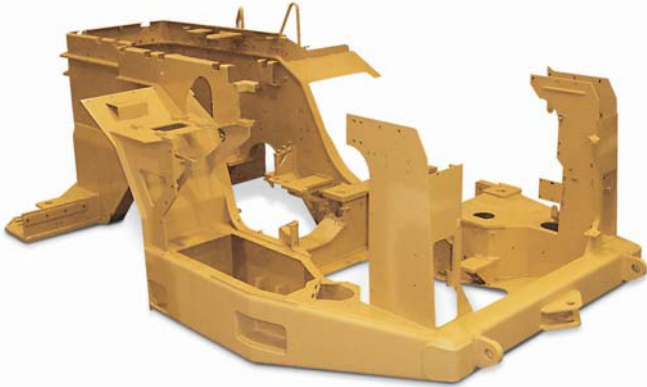
Single-stage hoist cylinders provide fast dump cycle times of 10.5 seconds for raise and 11.2 seconds for lower.

Ejector Body

The ejector body offers clean load ejection and the capability to work in areas with restricted overhead clearance and soft underfoot conditions.

Structures

Rugged Cat structures – the backbone of the AD30's durability.



Frame Design

The frame incorporates a box-section design with wide and stiff frame beams to handle torque loads. The frame design decreases stress in the hitch area and optimizes suspension geometry. Materials and weld joints are matched to optimize the life of the structure.

Articulating/Oscillating Hitch

The articulating hitch provides the truck with steering articulation and the oscillation ensures the truck maintains all wheel ground contact in rough terrain. Hardened steel pins, taper roller bearings and oscillating stops allows the rear frame to move independently from the front frame.

Serviceability

More time for production

Service Access

Easy access to daily service points simplifies servicing and reduces time spent on regular maintenance procedures.

Ground-Level Access

Allows convenient servicing to tanks, filters, lubrication points and compartment drains.

Diagnostics

Electronic control system enables quick diagnosis of engine conditions and effective maintenance and repairs utilizing the Cat Electronic Technician (Cat ET) Service Tool.

Air Filters

Radial seal air filters are easy to change, reducing time required for air filter maintenance.

Sight Gauges

Makes fluid level checks quick and easy. These include the hydraulic, transmission and coolant reservoirs.

Sealed Electrical Connectors

Electrical connectors are sealed to lock out dust and moisture. Harnesses are covered for protection. Wires are color and number coded for easy diagnosis and repair.

Scheduled Oil Sampling

S•O•SSM helps avoid minor repairs becoming major ones.



Customer Support

Cat® dealer services keep underground mining equipment productive.



Cat dealers offer solutions, services and products that help lower costs, enhance productivity and manage your operation efficiently. From the selection of Cat equipment until the day you rebuild, trade or sell it, the support you get from your Cat dealer makes the difference that counts.

Dealer Capability

Cat dealers will provide the level of support you need, on a global scale. Dealer expert technicians have the knowledge, experience, training and tooling to handle your repair and maintenance needs, when and where you need them.

Product Support

When Cat products reach the field, they are supported 24/7 by a worldwide network of reliable and prompt parts distribution facilities, dealer service centers, and technical training facilities to keep your equipment up and running.

Service Support

Cat equipment is designed and built to provide maximum productivity and operating economy throughout its working life. Cat dealers offer a wide range of service plans that will maximize return on your investment, including:

- Preventive Maintenance Programs
- Diagnostic Programs, such as Scheduled Oil Sampling and Technical Analysis
- Rebuild and Reman Options
- Customer Support Agreements

Technology Products

Cat dealers offer a range of advanced technology products designed to improve efficiency, productivity and lower costs.

Operator Training

Today's complex products require operators have a thorough understanding of machine systems and operating techniques to maximize efficiency and profitability. Your Cat dealer can arrange training to improve productivity, decrease downtime, reduce operating costs, enhance safety, and improve the return on investment.

Application Awareness

Application and site-specific factors, such as: material density, loading position, grades, speeds, and haul road design influence operating and maintenance costs. Your Cat dealer can provide you with the understanding to optimize productivity and the total cost of ownership.

www.cat.com

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



Safety

Designed with safety as the first priority.

Product Safety

Caterpillar continues to be proactive in developing mining machines that meet or exceed safety standards. Safety is an integral part of all machine and systems designs.

Engine Shutoff Switch

A secondary engine shutoff switch is located at ground level.

Integral ROPS Cab

The ROPS is resiliently mounted to the frame to isolate the operator from vibration for a more comfortable ride.

Brake Systems

Four corner oil-cooled multiple disc braking system provides excellent control. The service brakes and retarding system are hydraulically actuated and modulated, while the parking brake function is spring applied and fluid released. This system assures braking in the event of loss of hydraulic pressure.

Operator Present System

Automatically engages parking brake, neutralizes steering, implement and transmission control, and shuts down the engine in the event operator fails to apply the park brake prior to exiting the cab.

Standard Safety Features

Anti-Skid upper deck surfaces, upper deck handrails, 3-point cabin and machine access, push out safety glass, steering frame lock, rear window guard, body retaining pins, automatic retarder control, exhaust heat shielding and firewall, hitch hydraulic hoses – burst protection sleeves, tailgate retaining pins (ejector body), hot and cold side of engine.

SAFETY.CAT.COM™

AD30 Underground Articulated Truck Specifications

Engine

Engine Model	Cat® C15 ACERT™	
Gross Power – SAE J1995	304 kW	408 hp
Net Power – SAE J1349	281 kW	377 hp
Net Power – ISO 9249	281 kW	377 hp
Net Power – 80/1269/EEC	281 kW	377 hp
Bore	137.2 mm	5.4 in
Stroke	171.5 mm	6.8 in
Displacement	15.2 L	928 in ³

- Power ratings apply at a rated speed of 1,800 rpm when tested under the reference conditions for the specified standard.
- Ratings based on SAE J1995 standard air conditions of 25° C (77° F) and 100 kPa (29.61 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).
- Engine derate will commence at an altitude of 2743 m (8,999 ft).
- Compliant with U.S. Environmental Protection Agency Tier 3 emissions standards.

Operating Specifications

Nominal Payload Capacity	30 000 kg	66,139 lb
Gross Machine Operating Weight	60 000 kg	132,300 lb

Weights

Empty	28 870 kg	63,647 lb
Front Axle	19 479 kg	42,944 lb
Rear Axle	9391 kg	20,704 lb
Loaded	60 000 kg	132,277 lb
Front Axle	26 513 kg	58,451 lb
Rear Axle	33 487 kg	73,826 lb

Weight Distribution

Front Axle	67.5%
Rear Axle	32.5%
Front Axle	44.2%
Rear Axle	55.8%

Transmission

Forward 1	6.8 km/h	4.2 mph
Forward 2	12.3 km/h	7.6 mph
Forward 3	22.3 km/h	13.9 mph
Forward 4	40.8 km/h	25.4 mph
Reverse 1	7.8 km/h	4.8 mph

- Maximum travel speeds with standard 26.5 × R25 tires.

Final Drives

Differential Ratio	3.38:1
Final Drive Ratio	4.76:1
Total Reduction Ratio	16.13:1

- Fully floating axles.

Body Hoist

Raise	10.5 Seconds
Lower	11.2 Seconds
Total Cycle Time	21.7 Seconds

Body Capacities

Body 1	17.5 m ³	22.9 yd ³
Body 2	11.3 m ³	14.8 yd ³
Body 3	14.4 m ³	18.8 yd ³
Wide Body	16.8 m ³	21.9 yd ³
Ejector Body	15.2 m ³	19.9 yd ³
Ejector Body	17.3 m ³	22.6 yd ³

- Heaped SAE 2:1.

Turning Dimensions

Outside Clearance Radius	8571 mm	337.4 in
Inner Clearance Radius	5030 mm	198 in
Axle Oscillation	10 Degrees	
Articulation Angle	42.5 Degrees	

Service Refill Capacities

Engine Crankcase with Filter	34 L	9 gal
Transmission	67 L	18 gal
Hydraulic Tank	330 L	87 gal
Cooling System	74 L	20 gal
Front Differentials and Final Drives	56 L	15 gal
Rear Differentials and Final Drives	56 L	15 gal
Fuel Tank	500 L	132 gal

Tires

Tire Size	26.5 × R25 MS VSNT E4
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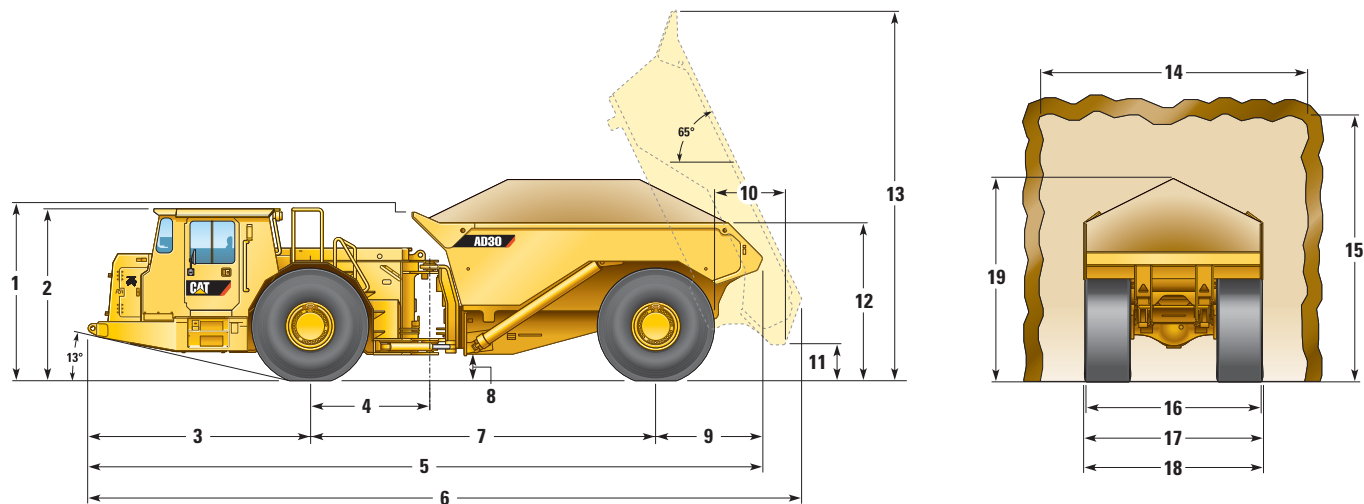
ROPS

ROPS Standards

- ROPS (Roll Over Protection Structure) for cab offered by Caterpillar meets ISO 3471, SAE J1040, AS2294.2, EN13510 ROPS Criteria.
- FOPS (Falling Objects Protection Structure) meets ISO 3449, SAE J231, AS2294.3, EN13627 FOPS Criteria.

Dimensions

All dimensions are approximate.



	266-1996		266-2003		266-1999		379-9887 (Wide Body)		351-1325 (Ejector)		380-0093 (Ejector)	
Body Capacity	11.3 m ³	14.8 yd ³	14.4 m ³	18.8 yd ³	17.5 m ³	22.9 yd ³	16.8 m ³	21.9 yd ³	15.2 m ³	19.9 yd ³	16.8 m ³	21.9 yd ³
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
1 Overall Height – Body Empty	2600	102.4	2600	102.4	2722	107.2	2547	100.3	2934	115.5	2934	115.5
2 Height to Top of ROPS	2600	102.4	2600	102.4	2600	102.4	2600	102.4	2600	102.4	2600	102.4
3 Front Axle to Front Bumper	3345	131.7	3345	131.7	3345	131.7	3345	131.7	3345	131.7	3345	131.7
4 Centerline of Front Axle to Centerline of Hitch	1800	70.9	1800	70.9	1800	70.9	1800	70.9	1800	70.9	1800	70.9
5 Overall Length	10 118	398.3	10 153	399.7	10 160	400.0	10 455	411.6	10 393	409.2	10 393	409.2
6 Maximum Overall Length	10 697	421.1	10 743	423.0	10 830	426.4	10 830	426.4	10 393	409.2	10 393	409.2
7 Wheelbase	5200	204.7	5200	204.7	5200	204.7	5200	204.7	5200	204.7	5200	204.7
8 Ground Clearance	400	15.7	400	15.7	400	15.7	400	15.7	400	15.7	400	15.7
9 Rear Axle to Tail	1573	61.9	1608	63.3	1615	63.6	1910	75.2	1848	72.8	1848	72.8
10 Rear Wheel to Body Raised	1075	42.3	1061	41.8	1058	41.7	1180	46.5	1848	72.8	1848	72.8
11 Dump Clearance**	594	23.4	558	22.0	547	21.5	270	10.6	703	27.7	703	27.7
12 Loading Height	2285	90.0	2385	93.9	2560	100.8	2295	90.4	2616	103.0	2791	109.9
13 Overall Height – Body Raised	5608	220.8	5602	220.6	5838	229.8	5485	216	—	—	—	—
14 Tunnel Clearance Width*	4000	157.5	4000	157.5	4000	157.5	4000	157.5	4000	157.5	4000	157.5
15 Tunnel Clearance Height*	4000	157.5	4000	157.5	4000	157.5	4000	157.5	4000	157.5	4000	157.5
16 Overall Tire Width	2650	104.3	2650	104.3	2650	104.3	3000	118.1	2650	104.3	2650	104.3
17 Overall Width Including Body	2690	105.9	2690	105.9	2840	111.8	3040	119.7	2898	114.1	2898	114.1
18 Overall Width Excluding Body	2690	105.9	2690	105.9	2690	105.9	2690	105.9	2690	105.9	2690	105.9
19 Height to Top of Load (SAE 2:1)	2953	116.3	3051	120.1	3264	128.5	3040	119.7	3284	129.3	3459	136.2

* Clearance dimensions are for reference only.

** Measurement taken with tailgate down for ejector body.

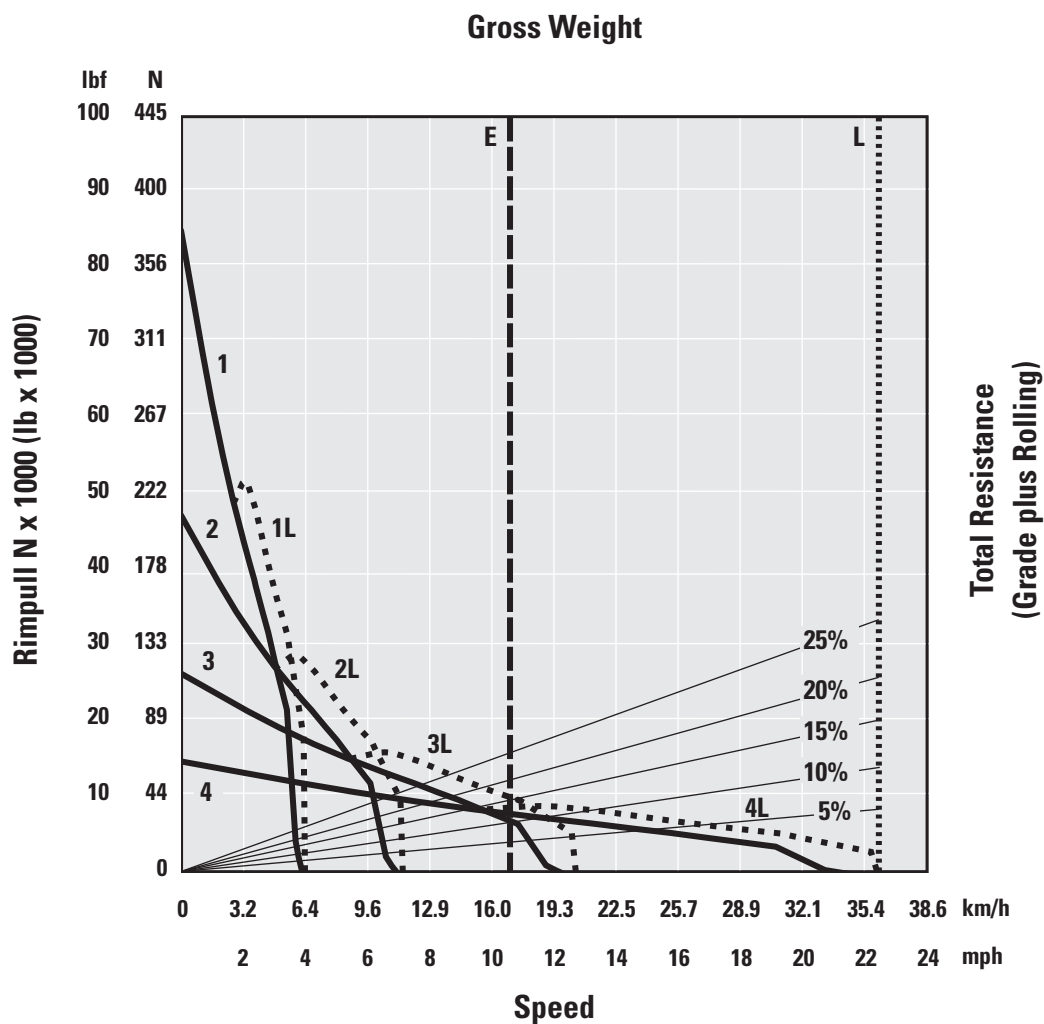
AD30 Underground Articulated Truck Specifications

Gradeability/Speed/Rimpull

To determine gradeability performance: Read from gross weight down to the percent of total resistance. Total resistance equals actual percent grade plus rolling resistance as a general guide use 2% for rolling resistance in underground application or refer to the Caterpillar Performance Handbook. From the total resistance point, read horizontally to the curve with the highest obtainable gear, then down to maximum speed. Usable rimpull will depend upon traction available and weight on drive wheels.

—— Typical Field Empty Weight

..... Loaded Weight



- 1 – 1st Gear
- 2 – 2nd Gear
- 3 – 3rd Gear
- 4 – 4th Gear

- E – Empty 28 870 kg (63,647 lb)
- L – Loaded 60 000 kg (132,277 lb)

AD30 Standard Equipment

Standard equipment may vary. Consult your Cat dealer for details.

ELECTRICAL

Reversing Alarm
Reversing Lights
Headlights with Dimmer Switch
Rear Work Light (Cab Mounted)
Cat Electronic Monitoring System (Cat EMS)
Ground Level Disconnect Switch (2 Post)
Jump Start Receptacle
Brake and Tail Light
Ground Level Shutdown Switch
Corrosive Protection Spray
24V Electric Starting

OPERATOR ENVIRONMENT

Cab ROPS/FOPS Operator Station
Suspension Operator Seat with Retractable Seat Belt
Tilt/Telescopic Steering Wheel
Turn Signal Indicators
Rear View Mirrors
Trainer/Passenger Seat and Seat Belt
Operator Presence System Includes ABA
Residual Brake Pressure Warning Light

POWER TRAIN

6 Cylinder C15 ACERT ATAAC
Diesel Engine
Long Life Coolant
Automatic Brake Retarder Control
All Wheel Disc Brakes (Oil Cooled)
Parking Brakes (Four Wheels)
Autoshift Transmission 4 Speed Forward/
1 Speed Reverse
Torque Converter with Automatic Lockup
Control Throttle Shifting
Programmable Ground Speed Limiting
Programmable Gear Blockout with Tray Up
Engine Air Intake Precleaner
Four Wheel Drive

OTHER STANDARD EQUIPMENT

Belly Guards
26.5 × R25 VSNT Radial Tires
5 piece, Tubeless Rims (set of 4)
Front Spill Guard for Body
Front and Rear Tow Pin
Articulated and Oscillated Hitch
Exhaust Catalytic Converter/Muffler
Tray-Up Alarm
Firewall
Centralized Lubrication Points
Frame Lifting Lugs
Exhaust Covers
Dump Body (14.4 m³, 18.8 yd³)
Oil Sample Adaptors
Residual Brake Pressure Warning Light
Radiator Cap Manual Release

AD30 Optional Equipment

Optional equipment may vary. Consult your Cat dealer for details.

Air Conditioned Cab, (ROPS/FOPS)

Windshield Wiper Washer
Window, Sliding, Operator
Heater, Cabin

Bodies

Body, (11.3 m³, 14.8 yd³)
Body, (17.5 m³, 22.9 yd³)
Ejector, (15.2 m³, 19.9 yd³)
Body Liners, Heavy Duty
Wide Body (16.8 m³, 21.9 yd³)
Ejector (17.3 m³, 22.6 yd³)

Secondary Steering, Ground Driven

Camera/Monitor, Reversing
Fast Fill System
Coolant
Engine
Fuel
Hydraulic
Transmission

Fire Suppression System

Fire Extinguisher, Hand Held
EAM, (Electronic Access Module)
TPMS, (Truck Payload Measurement System)
Brake Oil Pressure Gauges
Service Tools
Custom Products

AD30 Underground Articulated Truck

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

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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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