

D30D

Articulated Truck

CAT[®]



Cat[®] 3306 Engine

Gross power	223 kW	300 hp
Flywheel power	213 kW	285 hp
Rated payload	27 460 kg	60,535 lb
Body capacity	16.5 m³	21.6 yd³

D30D Articulated Truck

Delivers top productivity and long service life.

Drivetrain

Cat 3306 engine, purpose-built power shift transmission, torque converter, final drives and other power train components are integrated into a drivetrain that delivers maximum efficiency in the worst working conditions. **pg. 4**

Box-section Frame

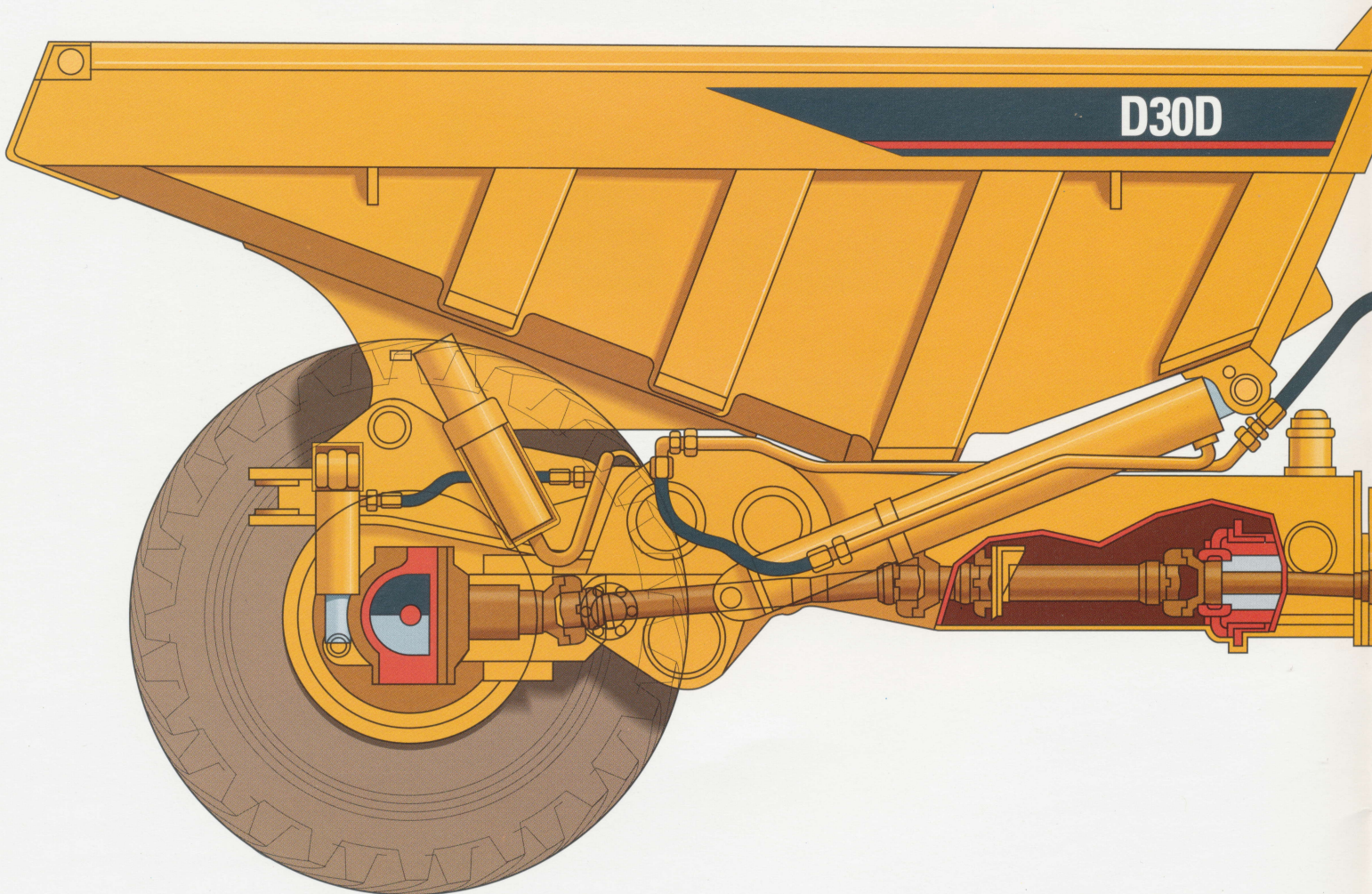
Heavy box-section front and rear frames minimize stress concentration and resist twisting. Articulating/oscillating hitch provides excellent maneuverability and assures all-wheel ground contact. **pg. 5**

Truck Body, Custom Products

The reinforced truck body is designed for easy loading by a variety of loading systems, superior load retention and clean load ejection. The D30D can be customized for specific applications. **pg. 6**

Top performance.

Surefooted maneuverability through its articulating/oscillating hitch make the D30D a top performer in both severe ground conditions and at high speeds on good haul roads.



Operator's Station

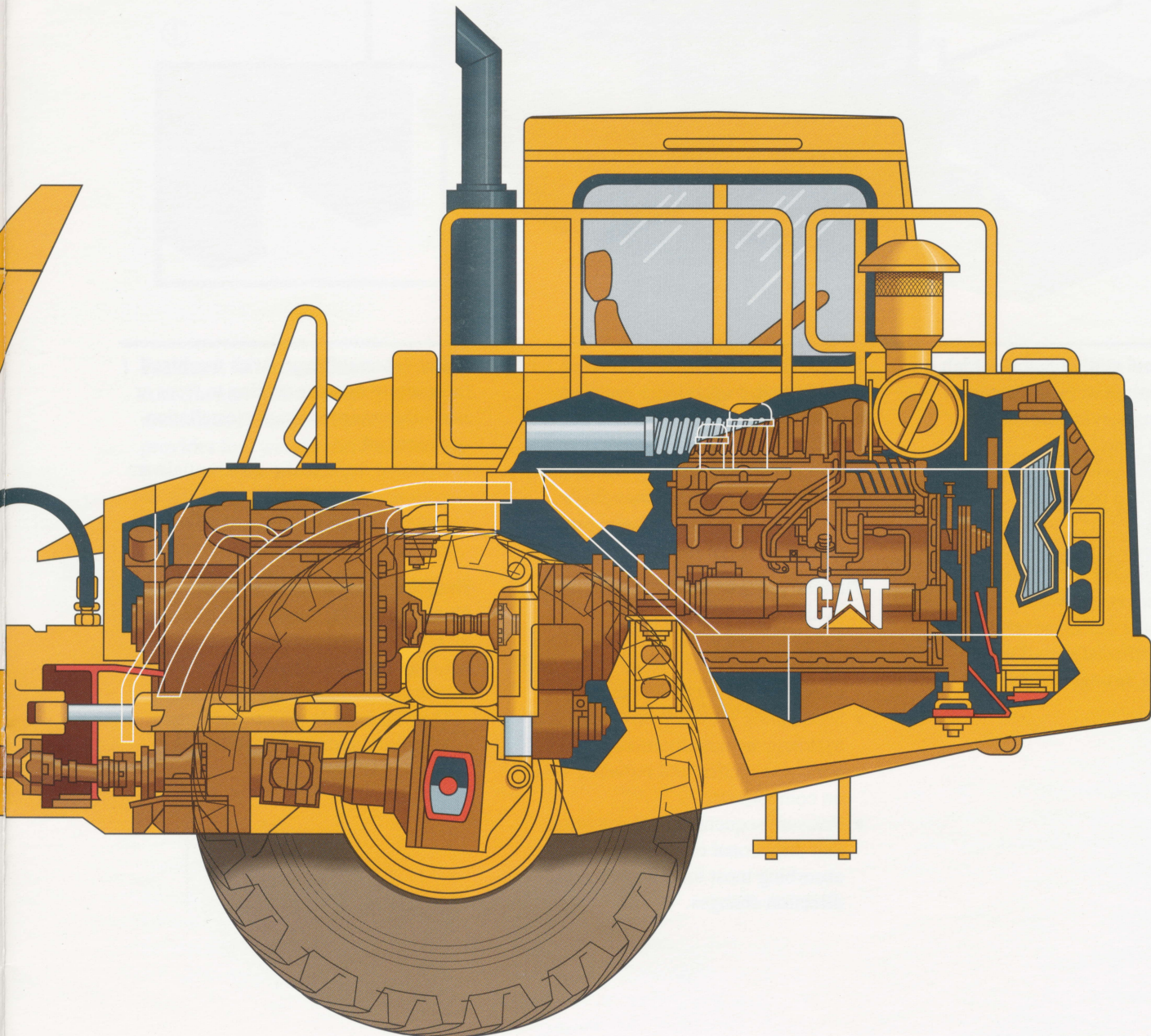
Ergonomically designed cab with convenient control placement and exceptional operator comfort promote fast, confident machine operation for top productivity. The truck is designed for ease of service. **pg. 7**

Complete Customer Support

Designed for easy maintenance and repair, the D30D is backed by Caterpillar's total commitment to customer support. **pg. 7**

Suspension And Steering

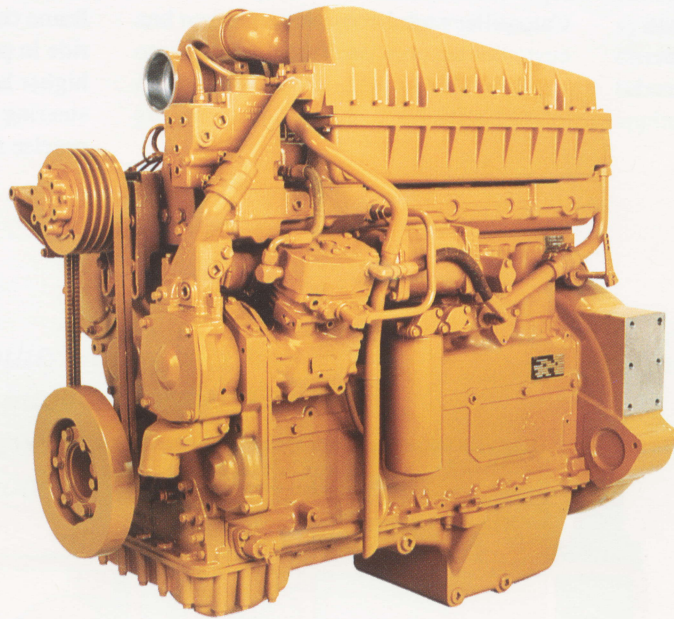
The D30D's nitrogen-over-oil suspension system, combined with full-frame oscillation, provides a smooth ride in poor underfoot conditions and at higher hauling speeds. Articulated steering provides excellent control and precise machine positioning. **pg. 8**



✓ *New feature*

Drivetrain

Cat drivetrain components provide superior efficiency for maximum productivity.



Cat 3306 diesel engine features high, 10.5 liter displacement and low rpm rating for long service life and low maintenance costs.

- Four-stroke cycle design provides long, effective power strokes for more complete fuel combustion.
- Direct-injection fuel system delivers efficient, precise fuel metering.
- 42% torque rise provides unequalled lugging force during acceleration.
- Meets all off road emissions regulations through 1998.

Torque converter multiplies torque for high rimpull.

- Allows fast acceleration and delivers exceptional pull through soft underfoot conditions.
- Automatic lock-up permits fuel-efficient, direct-drive hauling in all gears.

Planetary power shift transmission provides smooth shifts.

- Large-diameter, perimeter-mounted clutches with heat-treated steel clutch plates deliver maximum durability.
- Modulating pressure valve regulates hydraulic actuation pressures, easing clutches together and reducing shocks on components.
- Pressure sequencing valve assures that directional clutches engage last, absorbing most torque loads from direction changes.

Axles. Integral flanges with machined faces allow direct mounting to front or rear subframes for simple installation and removal.

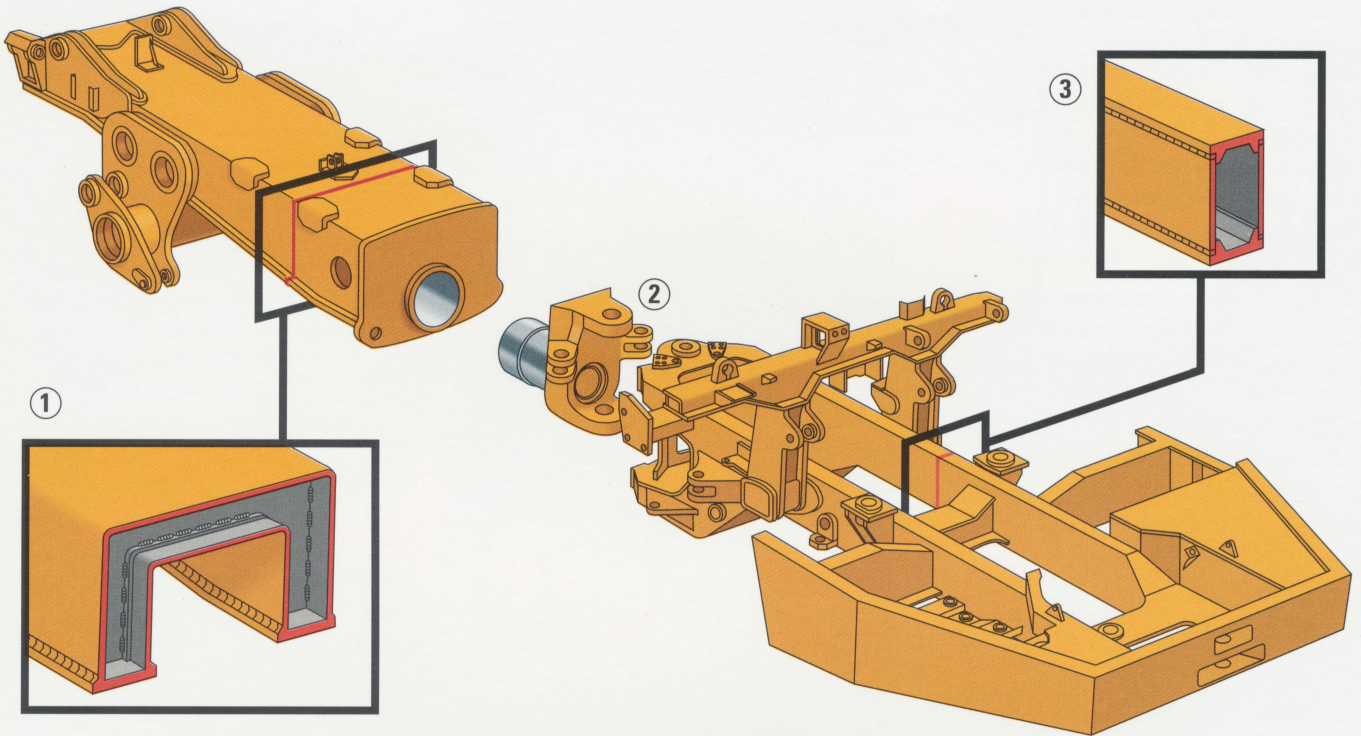
- Optional limited-slip differentials are available for both axles to automatically compensate for slip and spin in extremely poor underfoot conditions.

Final drives are outboard-mounted, planetary design to lessen torque loads on other drivetrain components.

- Large-capacity, tapered roller bearings in wheels and Caterpillar Duo-Cone seals deliver maximum reliability under severe working conditions.

Box-section Frame

The strong backbone of a Caterpillar articulated truck.



1 Enclosed, full box-section rear frame construction with internal bracing minimizes stress concentration, provides low weight and long service life.

- Body hoist and rear suspension pivots are positioned to minimize stress concentration.

2 Articulating/oscillating hitch allows articulated steering and ensures all-wheel ground contact.

- Eliminates torsional stress between front and rear frames.

- Steel alloy forged tube and cast head are robotically welded for unmatched strength and durability in extreme duty applications.
- Connecting pins are tapered, widely spaced, and use spherical bearings for long service life.
- Two large-diameter, high-density nylon bushings in hitch tube allow oscillation and carry high vertical and longitudinal load stresses. Bushings are long for extended journal life and grooved for better lubrication and reduced wear.

- Hitch is rebuildable for lower operating cost in high hour operations.

3 Front frame features internally braced, heavy, deep box-section construction with integral bumper for exceptional strength. Roll-section design contributes to increased durability.

Truck Body

Designed for easy loading, superior load retention and clean load ejection.

Large body volume and low center of gravity result in high material capacity, excellent stability and easy loading from a variety of loading systems.

- Wide body provides a large target area for quick loading.
- Wide body design, combined with flat floor, promotes smooth, controlled material flow for clean load ejection.
- Compact dimensions increase versatility. Excellent for working in confined areas such as under hoppers.
- Thick sidewall, front and bottom plates, manufactured from high yield steel, assure maximum body durability.
- Closely spaced, wrap-around ribs cushion and reinforce the body against loading shocks.
- 18° ducktail design provides superior load retention on steep operating grades.
- Provision for exhaust heat to body is standard.
- Integral spill plate aids load retention.



Custom Products

Caterpillar can customize your articulated truck to meet your special needs.

Special machine configurations can be made to suit your specific applications, in addition to the standard range of optional equipment. These include:

- Low-profile trucks for tunneling and mining operations.

- Heavy duty bodies manufactured with thicker plates.
- Transverse steering to precisely position the machine.

Contact your Caterpillar dealer for details on matching your D30D articulated truck to your special application.

Operator's Station

Control, comfort and confidence contribute to top productivity.

Sound-suppressed ROPS cab is resiliently mounted for reduced vibration and noise. Tilts to rear for easy service access.

- Cab provides excellent viewing area with laminated windshield, tinted side and rear windows for confident operation. Windshield wipers and washers are standard.
- Air circulation system delivers filtered, pressurized, temperature-controlled air. An integral air conditioner is available.
- Electronic Monitoring System constantly monitors critical machine functions and alerts operator to problems before catastrophic failures occur.
- Four-way adjustable air suspension seat and tilt steering wheel for maximum operator comfort.
- Wide, retractable seat belt for positive, comfortable restraint.



Complete Customer Support

When you buy a Cat machine, you also get Caterpillar's total commitment to customer support.

Caterpillar components are designed for long life and rebuild; however, when repair parts are necessary, most Cat parts are immediately available from any dealer. Cat dealers rely on our worldwide computer network to find parts instantly and minimize machine downtime. Many components are economically available as Caterpillar Remanufactured Products.

Machine management services. Cat dealers help manage your equipment investment with:

- Effective preventive maintenance programs.
- Diagnostic programs such as Scheduled Oil Sampling and Technical Analysis.
- Information to make the most cost-effective repair option decisions.
- Customer meetings; training for operators and mechanics.
- Equipment selection software.

Flexible financing. Your dealer can arrange affordable financing for the entire Caterpillar line. Talk to your dealer to learn how terms can be structured to meet your cash flow requirements.

Suspension and Steering

Unique front-axle suspension system, coupled with full-frame oscillation, provides a smooth ride.



Suspension.

Front axle is mounted on a swinging cradle subframe arrangement which pivots on the front frame to allow movement in vertical plane.

- Two large-bore, long-stroke cylinders with variable-rate cushioning provide excellent dampening.
- Nitrogen accumulator absorbs hauling and loading shocks transmitted by oil from the suspension cylinders.
- Automatic self-leveling systems monitor and hydraulically adjust levels to maintain correct ride height, compensate for differences between loaded and unloaded operation.

Rear axle is similar to, but independent of, the front suspension.

- Two large-displacement, interconnected nitrogen accumulators provide dual-rated system to absorb hauling and loading shocks, yet provide optimum suspension performance whether loaded or unloaded.

Steering.

Outstanding maneuverability in forward or reverse, plus all-wheel drive, eases entry into loading area, resulting in minimal waiting and reduced cycle times.

- Double-acting, cushioned steering cylinders articulate the machine to left or right.

Engine

Four-stroke cycle, in-line six cylinder, 3306 turbocharged and aftercooled diesel engine.

Ratings at 2200 rpm*	kW	hp
Gross power	223	300
Net power	213	285
Maximum torque @ 1400 rpm		
	1310 N•m	963 lb-ft

The following ratings apply at 2200 rpm when tested under the specific standard conditions for the specified standard:

Net Power	kW	hp	PS
ISO 9249	223	300	—
EEC 80/1269	223	300	—
SAE J1349	—	—	—
DIN 70020	—	—	—

Dimensions

Bore	121 mm	4.75 in
Stroke	152 mm	6.0 in
Displacement	10.5 liters	638 cu in

*Power rating conditions

- based on standard air conditions of 25°C (77°F) and 99 kPa (29.32" Hg) dry barometer
- used 35° API gravity fuel having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 30°C (86°F) [ref. a fuel density of 838.9 g/L (7.001 lb/gal)]
- net power advertised is the power available at the flywheel when the engine is equipped with fan, alternator, air cleaner and muffler
- no derating required up to 3477 m (11,400 ft) altitude

Features

- direct-injection fuel system with individual adjustment free injection pumps and nozzles
- one-piece cylinder head with cast intake manifold
- three-ring aluminum alloy pistons
- heat resistant sil-chrome steel intake and stellite-faced exhaust valves
- forged steel connecting rods
- cast cylinder block with replaceable wet liners
- induction-hardened, forged crankshaft
- direct-electric 24-volt starting and charging system
- two 12-volt, 172 amp-hour, maintenance-free batteries
- 45-amp alternator
- tube-type, water-cooled oil cooler
- vertical-flow, steel-fin, tube-type radiator
- dry-type, radial-seal air cleaner with primary and secondary elements

Transmission

Five-speed planetary, remotely mounted from engine.

Maximum travel speeds (loaded):*

		km/h	mph
Forward	1	6	4
	2	11	7
	3	18	11
	4	32	20
	5	52	32
Reverse	1	6	4
	2	21	13

*Speeds are for truck equipped with 26.5R25 tires.

Features

- large-diameter clutch packs for maximum leverage
- planetary design for minimum tooth loading
- modulated control for smooth shifts
- integral drop box with lockable planetary inter-axle differential
- single-stage torque converter with free-wheeling stator, 2.35:1 stall torque ratio and automatic lock-up in each gear
- torque converter matched to engine and transmission for high efficiency hauling and reduced shock loads to drivetrain

Tires and Wheels

Four wide-base, low-pressure 29.5R25 radial tires on 20-stud rims.

Features

- large-diameter, fully interchangeable tires provide good flotation, reduce rolling resistance and wear, and allow good ground clearance
- four-wheel drive design reduces tire scrubbing

Brakes

Meet SAE J1473 OCT90 and ISO 3450-1985 standards.

Service brake features

- foot-operated, all-wheel drum brake system with independent front and rear circuits and air tanks
- self-adjusting, wedge-type brakes are air and hydraulic operated on both axles
- system air dryer is standard

Secondary brake features

- independent, hand-operated, all-wheel backup system with separate air tank

Parking brake features

- hand-operated, spring-applied/pressure released
- acts on shaft in transmission transfer box

Service Refill Capacities

	L	Gallons
Fuel tank	450	120
Cooling system	70	18.5
Hydraulic system	200	54
Engine crankcase	34	9
Transmission	35	9.3
Final drives/differentials:		
front axles	43	11
rear axle	43	11
Hitch tube	2	.5

Operating Weights

Estimated.

	Empty		Rated Load		Loaded	
	kg	lb	kg	lb	kg	lb
Front axle	14 440	31,840	7155	15,770	21 595	47,610
Rear axle	7250	15,980	20 305	44,765	27 555	60,150
Total	21 690	47,320	27 460	60,535	49 150	108,360

Body Capacities

Capacities to SAE J1363 JAN 85, rounded accordingly.

	m ³	yd ³
Struck	12.5	16.4
Heaped SAE 2:1	16.5	21.6

Body Hoist

Two flex-free, single-stage, double-acting hoist cylinders.

Features

- cylinders positioned within body profile for maximum protection
- 60° hoist angle with power up and down for clean load ejection and fast dump cycles
- power up, 12 seconds; power down, 7 seconds

ROPS/FOPS Cab

Caterpillar cab and Rollover Protective Structure (ROPS).

Features

- meets OSHA and MSHA limits for operator and sound exposure with doors and windows closed (according to ANSI/SAE J1166 MAY90)
- ROPS meets the following criteria:
 - SAE J1040c APR88
 - ISO 3471-1986
- also meets the following criteria for Falling Object Protective Structure:
 - SAE J231 JAN81
 - ISO 3449-1984

Steering

Articulated-frame, hydraulic steering.

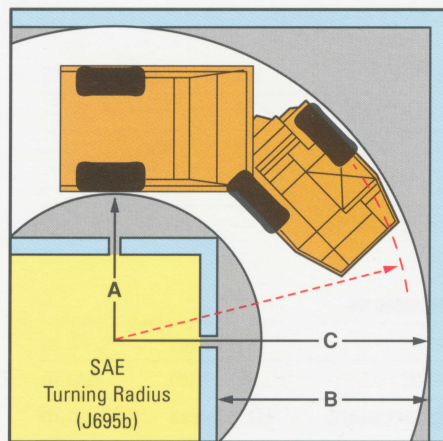
Features

- double-acting, cushioned steering cylinders articulate machine 45° left or right
- dedicated, variable-displacement pump provides flow-amplified steering circuit capacity of 190 liters/min (50 gpm)
- standard ground-driven supplementary steering system meets SAE J1511 OCT90 and ISO 5010-1984

Turning Circle

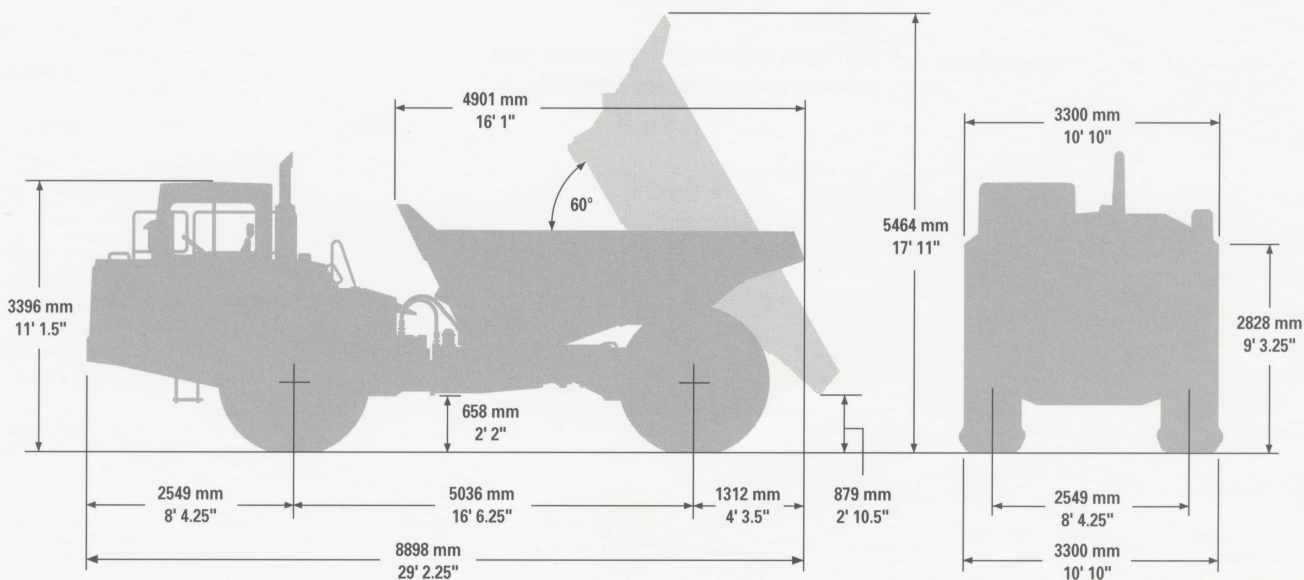
Turning dimensions

	m	ft in
A	3.87	12' 8.5"
B	5.38	17' 7.5"
C	8.18	26' 10.5"
SAE Radius		
J695B FEB84	7.80	25' 7"



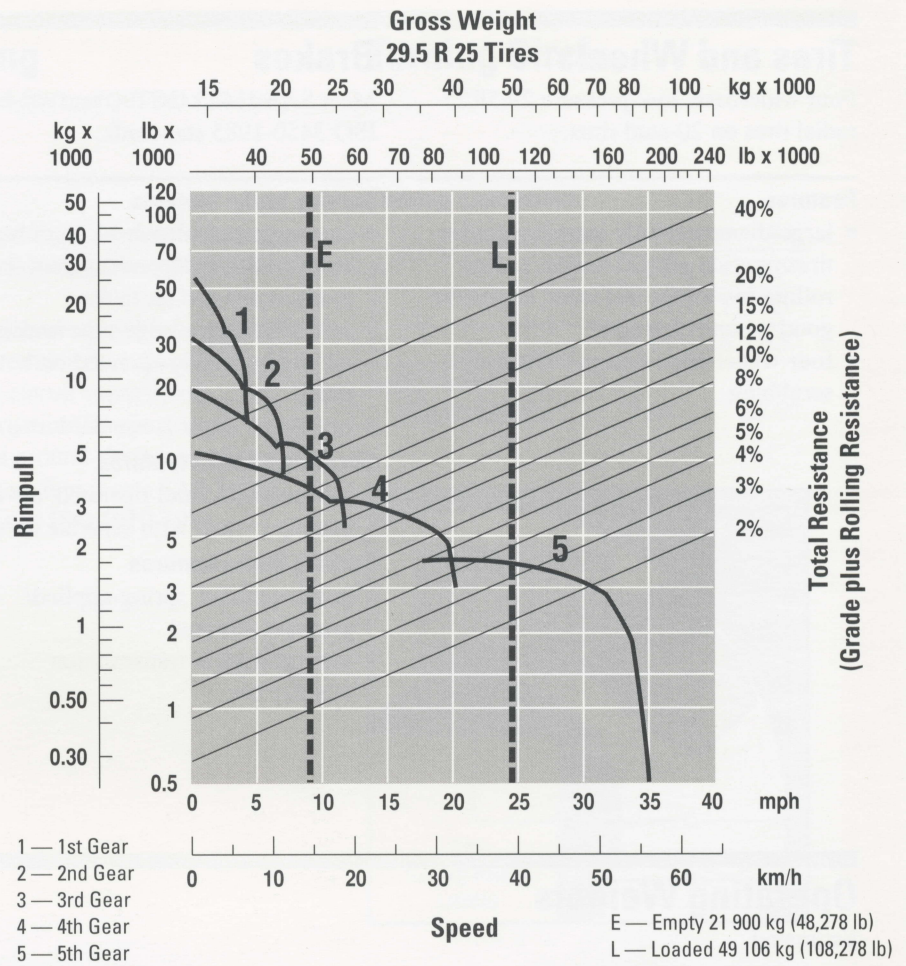
Dimensions

(approximate)



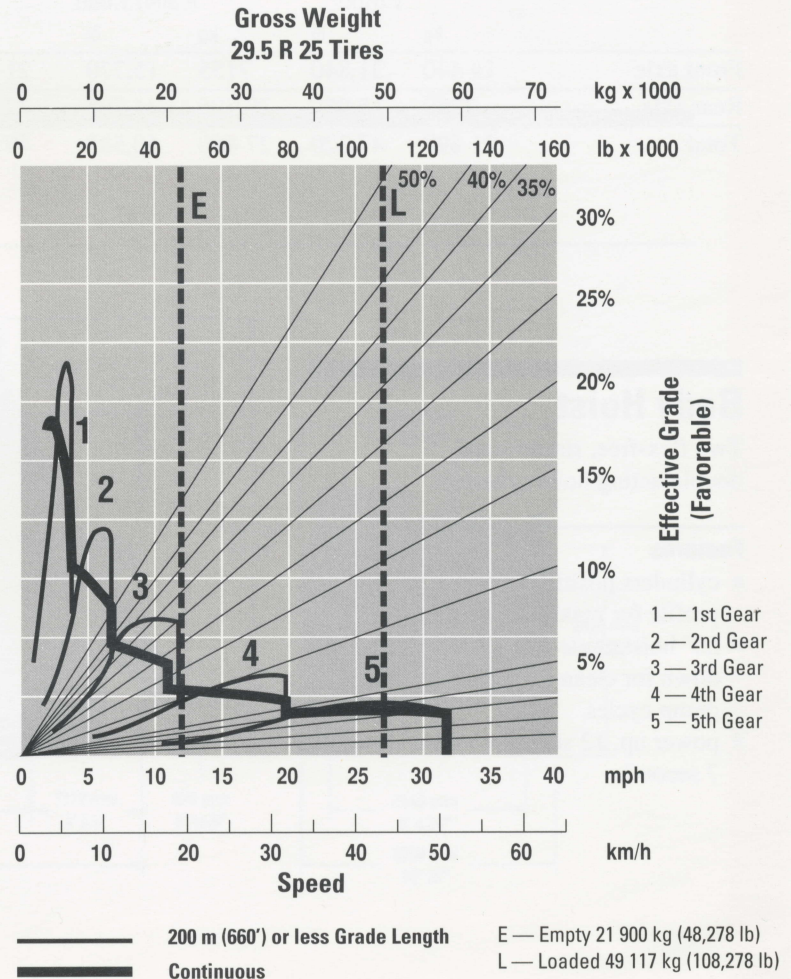
Gradeability/Speed/Rimpull

To determine performance, read from Gross Weight down to % Total Resistance. Total Resistance equals actual % grade plus 1% for each 10 kg/metric ton (20 lb/ton) of Rolling Resistance. From this point, read horizontally to the curve with the highest attainable speed range. Then, go down to Maximum Speed. Usable Rimpull depends on traction available.



Retarding Performance

To determine performance, read from Gross Weight down to % Effective Grade. Effective Grade equals actual % favorable grade minus 1% for each 10 kg/metric ton (20lb/ton) of Rolling Resistance. From this point, read horizontally to the curve with the highest attainable speed range. Then, go down to Maximum Speed. Retarding effect on these curves represents full application of the retarder.



Standard Equipment

Standard and optional equipment may vary. Consult your Caterpillar dealer for specifics.

Air vents, adjustable, 5
Back up alarm
Battery tray, sliding
Differentials, limited slip
Electrical system, 24-volt
Ether starting aid
Grill, radiator protection

Guards:

crankcase and axle
front light
rear window

Headlights, four, with dimmer switch
Heater/defroster with three-speed fan

Horn, electric

Lights:

cab interior
front, side mounted
rear, working
reversing, two
stop/tail, two

Mirrors, left and right
Oil sampling valves
Retarder, hydraulic, torque converter mounted
ROPS/FOPS cab, with tinted glass all around
Seat, air suspension
Seat belt, retractable
Spill plate, front, integral part of fabricated body
S•O•S oil sampling valves
Sun visor
Supplemental steering, ground driven
Tires, four 29.5R25, radial
Tool box, lockable
Tow pins, front and rear
Windows, tinted/laminated, opening, both sides
Windshield wiper and washer, two-speed

Cab instrumentation includes:
air pressure gauges, two
service hour meter
speedometer
tachometer
torque converter temperature gauge
indicator lights
direction/hazard
headlights
inter-axle differential lock-up
parking brake
transmission/torque converter lock-up
Electronic Monitoring System panel
coolant temperature
engine oil pressure
brake air pressure
parking brake on
alternator
low fuel
air pressure
torque converter oil temperature

Optional Equipment

Optional equipment may vary. Consult your Caterpillar dealer for specifics.

Air conditioner with R134A refrigerant
Body connection for exhaust heat
Body liners, rock wear plates
Sound suppression, spectator
Starting receptacle, electric, remote
Tool kit
Vandalism protection: lockable caps for fuel tank, hydraulic oil tank and radiator
Wiper/washer, rear window, two-speed

D30D Articulated Truck



AEHQ5226 (12-96)
(Replaces AEHQ7055-01)

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

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