

# 740

Articulated Truck



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#### Cat® Engine 3406E ATAAC EUI

Gross Power 329 kW/441 hp

Flywheel Power 309 kW/415 hp

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#### Weights

Rated Payload 36.3 metric tons

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#### Body Capacities

Heaped SAE 2:1 21.9 m<sup>3</sup>

# 740 Articulated Trucks

*The 740 Caterpillar® Articulated Truck is Simply the Best.*

## Performance and Productivity – Powertrain

- ✓ The 3406E air-to-air aftercooled (ATAAC) engine delivers higher power and a more aggressive torque rise. This electronic engine provides outstanding performance and complete system integration with the transmission. **pg. 4**

## Performance and Productivity

- ✓ Cross-axle differential locking system provides full driveline locking for maximum performance in adverse conditions. New front suspension provides a smoother ride, allowing the operator to travel faster over rough terrain. **pg. 5**

## Operator Comfort

- ✓ Larger center-mounted cab, new oscillating front axle, Cat® Comfort seat, full-size trainer seat and increased storage space provide exceptional operator comfort. **pg. 6**

*Better than all the rest, the 740 offers proven reliability and durability, high performance, low fuel consumption, operator comfort and low operating costs.*



✓ *New Feature*



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### Ease of Operation

- ✓ Ergonomically designed wrap-around dash, tilt and telescoping steering wheel, easy-to-reach controls and better all-around viewing promote fast, confident machine operation. **pg. 7**

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### Durability and Reliability

- ✓ The 740 has built-in durability and reliability. Cat purpose-built articulated truck drivetrain components, redesigned front frame and hitch ensure maximum performance in the toughest applications. **pg. 8**

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### Serviceability

- ✓ Longer service intervals and easier maintenance result in better machine availability, as well as lower owning and operating costs. **pg. 9**

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### Complete Customer Support

Your Cat dealer offers a wide range of services that can be set up under a customer support agreement when you purchase your equipment. The dealer will help you choose a plan that can cover everything from machine configuration to eventual replacement. **pg. 10**



## Performance and Productivity – Powertrain

*Integrated powertrain with more power, greater performance and lower fuel consumption – the power to do more work.*



**3406E Electronic Engine.** The electronic version of this proven engine delivers higher power, durability and complete system integration of the engine and transmission for maximum efficiency.

**High Torque Rise.** Provides unequalled lugging force during acceleration, on steep grades and in tough underfoot conditions.

**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.

**Electronic Control Module (ECM).** Advanced Diesel Engine Management III (ADEM III) provides improved emissions, performance, advanced troubleshooting and diagnostic capabilities.

**Fuel Efficiency.** The electronically controlled, computer actuated unit injection fuel system has high injection pressure for complete fuel combustion, greater fuel efficiency and reduced emissions.

### **Controlled Throttle Shifting (CTS).**

CTS significantly reduces powertrain stress and clutch wear by controlling engine speed, torque converter lock up and transmission clutch engagements.

**Engine Construction.** Since 1974, the 3406 engine has been the benchmark for heavy-duty reliability and performance. The latest electronic version incorporates major updates to keep it ahead of the rest. Cylinder head with overhead camshaft and a pendulum shock absorber improve efficiency and increase reliability.

**Electronic Transmission.** The seven-speed electronic transmission is based on the proven design of the Cat 769 Off-Highway Truck. It features Individual Clutch Modulation (ICM) to ensure constant shift times even when the oil is cold.

### **Engine Compression Brake.**

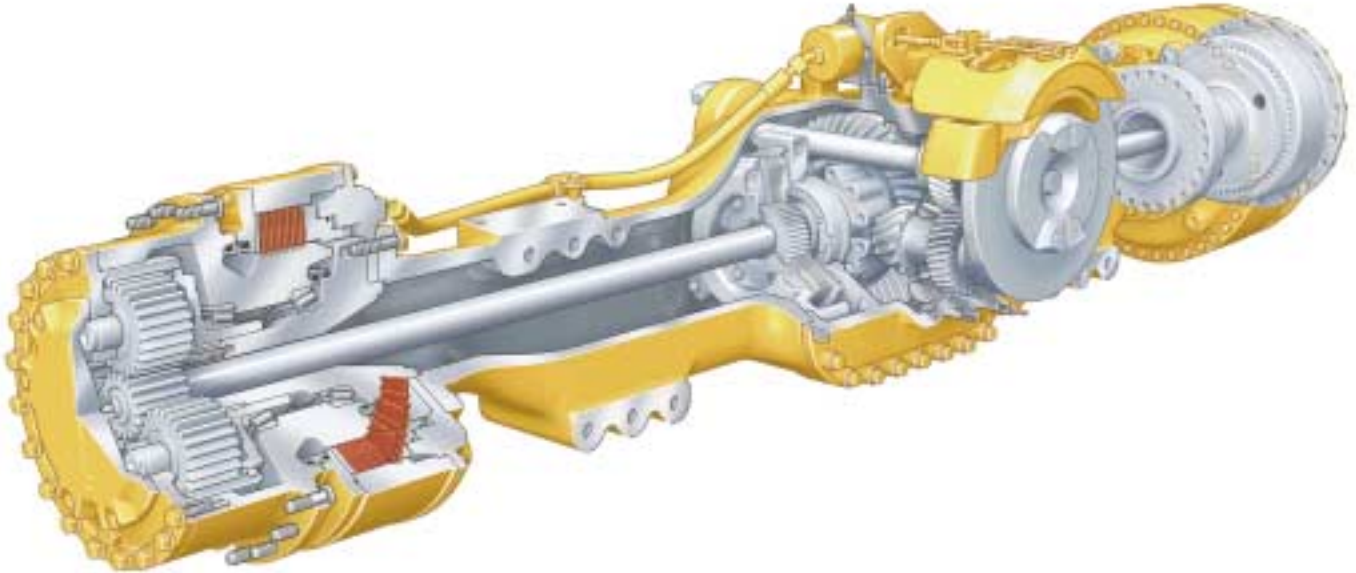
The standard Jake Brake<sup>®</sup> provides extra braking effort on downhill grades. It is an excellent match for the 3406E engine, turning it into a power-absorbing air compressor. It has very fast response time and produces no additional heat, so it can be used continuously. Four modes of operation provide an optimum match between operating conditions and retarding power.





## Performance and Productivity

*Suspension systems and traction control – delivering power to the ground in all conditions.*



**Front Suspension.** New front suspension oscillates  $\pm 6^\circ$  to provide a smoother ride, allowing the operator to travel faster over rough terrain and softening impact loads on structures and components.

**Rear Suspension.** Features a walking beam geometry that provides a stable ride for excellent load retention.

**Traction Control.** The traction control system is comprised of a wet clutched inter-axle differential and wet clutched cross-axle differentials. All differentials can be engaged and disengaged on-the-go for maximum versatility. When used together, the differentials provide 100 percent driveline locking.

**Inter-Axle Differential Lock.** Modifies torque distribution to give a fixed 50/50 torque split between tractor and trailer for excellent traction in poor underfoot conditions and on grades. It is operated by a switch in the footrest.

**Cross-Axle Differential Locks.** Provides full driveline locking – all three axles and all six wheels – for maximum performance in the most adverse conditions. Acts in unison with the inter-axle differential lock when the footswitch is actuated and the dash-mounted switch is selected.

### **Oil-Immersed, Oil-Cooled Brakes.**

Multi-plate oil-immersed brakes are fitted to both front and center axles. These brakes provide outstanding stopping capability, while maintaining maximum durability and low wear characteristics.

**Fastest Hoist Cycle Times.** Carried over from the E Series II, fast body raise and lower times mean less time spent in the dump area.

**Load-Carrying Capacity.** The 740 has a large target area to provide consistently high load-carrying capacity.

Its diverging flow design gives clean load ejection, which maximizes production and avoids the waste of material carryback.



Service brake detail

## Operator Comfort

*The operator's office – high productivity from a comfortable, motivated operator.*



**Ride Comfort.** The new front suspension with its oscillating axle and low pressure ride struts, combined with the new center-mounted cab, offers unrivaled levels of ride comfort for the operator in all driving conditions. Operators remain comfortable and productive throughout the day.

### **Spacious Two-Person Cab.**

The 740 features a large two-person cab – 41 percent larger than the E Series II – offering comfortable working space for both the operator and trainer or trainee. All 700 Family articulated trucks use the same spacious cab design.

**Cat Comfort Seat.** The new Cat Comfort air suspension seat enhances operator comfort with a dual-sided support recliner and thicker cushions. It is fully adjustable to provide an optimal driving position.

**Trainer Seat.** Full-size trainer seat features a fully padded seat with a backrest and a wide seatbelt for a secure and comfortable ride. The trainer seat is positioned next to the operator seat, giving both the operator and trainer a clear view of the instrument panel, controls and the road.

**Storage Space.** More storage space to create a safe, secure and uncluttered working environment.

**Heating/Ventilation/Air Conditioning.** Twelve vents provide air distribution to keep the operator comfortable and to provide rapid defrosting of all windows. Heating, air conditioning and defrosting are standard. The recirculation filter is positioned for easy servicing.

**Sound Levels.** Cab mounts are designed to reduce noise and vibration in the cab. All connections to the cab are resiliently mounted. The operator's station makes extensive use of sound-absorbing and barrier materials to keep sound levels low.

**Steering Column.** Offers telescoping and tilting features to provide a comfortable driving position.



## Ease of Operation

*Designed for simple, easy operation, the 740 allows the operator to focus on production.*

**Ergonomic Layout.** The controls and layout of the cab are designed to make it as easy to operate as your car. Quick, easy to read and simple to operate, the controls and gauges on the 740 allow the operator to concentrate on production.

**Dash.** The wrap-around dash puts all controls within easy reach of the operator. It provides an automotive feel with the industrial strength you would expect from Caterpillar.

**Viewing Area.** The low sloping hood, made possible by placing much of the cooling package behind the cab, gives the operator excellent all-around visibility. The larger glass area and central operator position further enhance visibility, resulting in more operator confidence and faster cycle times.

**Differential Lock Controls.** The switch for the inter-axle differential lock has been positioned in the operator's footrest for ease of operation. An additional dash-mounted switch is all that is required to select full driveline lock-up. Disengaging the foot switch disengages all differential locks immediately.



### Transmission and Hoist Levers.

The hoist lever has been redesigned and relocated to provide easy and comfortable operation. The transmission lever continues to offer excellent comfort along with controls for top gear limit, transmission hold and neutral lock.

**Suspended Pedals.** New suspended pedals are easier to operate and reach, while creating more leg and foot room. They also make for easier cleaning of the cab floor by keeping the pedals out of the dirt.

### Electronic Monitoring System (EMS III).

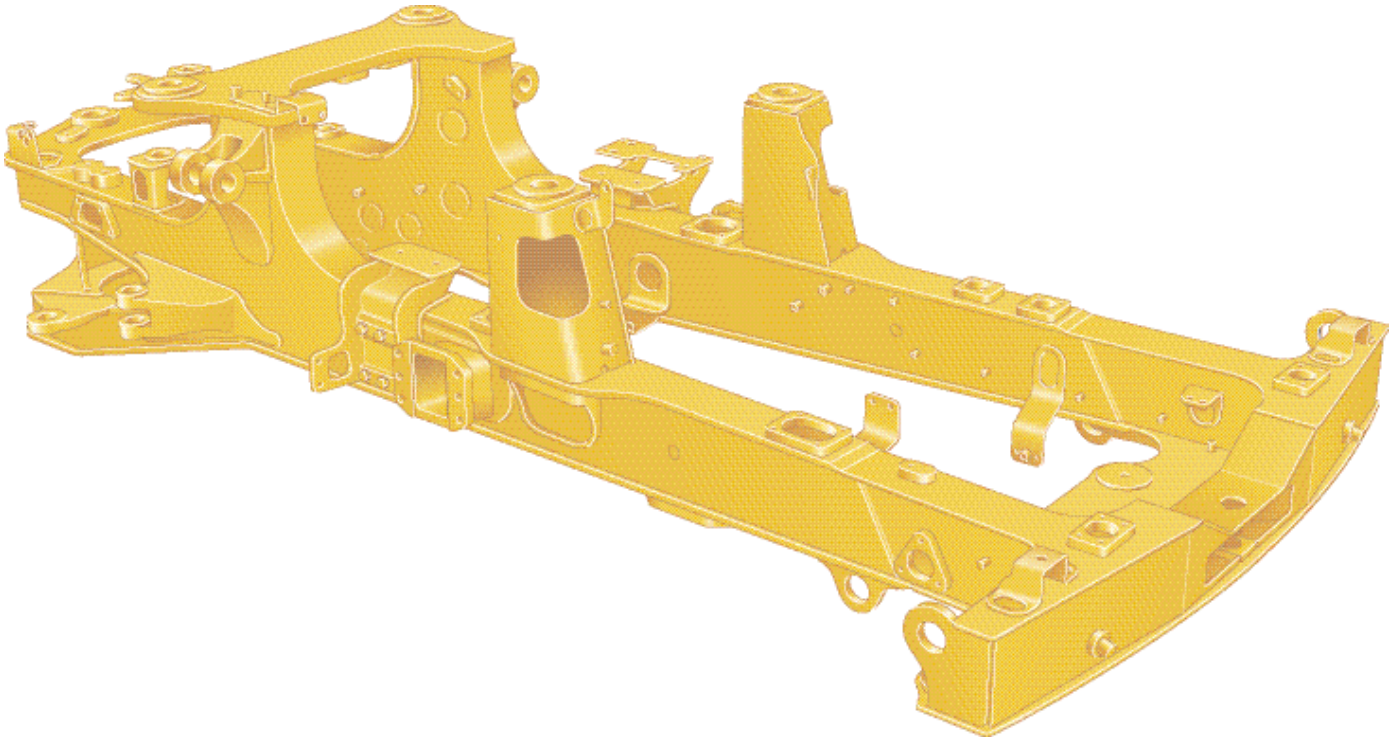
Constantly monitors critical machine functions, alerts operators to potentially damaging problems before failures occur, and indicates when certain functions are in use. EMS III offers added memory and improved performance. It is also flashable, allowing the software to be easily updated. The system continues to use three levels of alert.





## Durability and Reliability

*High availability leads to high productivity. Excellent durability keeps ownership costs low.*



**Front Frame.** New front frame design features a large box section and wide, stiff frame beams to handle torque loads. The divergent frame design decreases stress in the hitch area and optimizes suspension geometry. The design incorporates advanced technologies such as Finite Element Analysis to optimize the frame before the first machines are ever built. The frame design makes maximum use of robotic welding for increased durability.

**Rear Frame.** Twin-box construction developed for the E-Series II trucks and proven in countless applications throughout the world. The design minimizes stress concentrations and provides low weight with long service life.

**Castings.** Both front and rear frames make extensive use of heavy-duty steel castings to handle stress concentrations.

**Suspension.** New front suspension provides unparalleled ride quality. It also protects the truck from the most adverse road conditions by absorbing shock loads that would otherwise reach the frame.

**Articulated/Oscillating Hitch.** The articulating hitch provides the truck with steering articulation, and the oscillation ensures all-wheel ground contact in rough terrain.

**Hitch Construction.** New two-piece bolted hitch features a strong and durable cast steel head bolted to a hard-wearing forged steel tube. The hitch tube has hardened bearing areas and a hardened thrust face for reduced maintenance and longer life.

### Cat Powertrain Components.

All major components have been purpose-designed for earthmoving applications. In fact, many of the major components have been designed specifically for articulated trucks.





## Serviceability

*More time on production, less time and money spent on servicing.*

**Extended Service Intervals.** Increased engine oil change and hydraulic oil change intervals.

**Test and Lube Points.** Test points are grouped together behind the cab and are accessible from the ground. Lube points are grouped at the rear of the front frame and the front of the rear frame.

**Service Points.** Engine and transmission dipstick and fill caps, air and fuel filters and the fuel-priming pump are all mounted on the left side of the engine under the hood. Coolant level indicator and fill cap are outside the cab.

**Radiator.** The radiator package is located behind the cab, which provides improved access to both inlet and outlet sides of the radiator. The ATAAC radiator is located at the front of the truck.

**Extended Life Coolant.** Extends the change interval and improves component life by reducing aluminum corrosion.

**Hood.** The hood is raised and lowered electrically, minimizing operator effort when servicing the machine. A manual override is also provided.

**Electrical Service Center.** Located inside the cab, this service center provides a power port, diagnostic connector and Cat Data Link connector.



**Cat Data Link Connector.** The Cat Data Link connector provides a plug-in using a laptop computer with Electronic Technician (ET) software. The Cat Data Link port performs programming functions on all electronic controls.

**Service Access.** The cab tilts to the side to provide easier access underneath, which simplifies servicing of the transmission, drive shafts and hydraulic pumps. Accessibility to machine electrical and hydraulic interfaces has also been improved. They are located on the right side of the cab, behind a removable cab body panel.

**Truck Transport.** The new suspension system eliminates the need to lower the suspension when transporting the truck, reducing maintenance and downtime.

**Output Transfer Gear.** The OTG provides lubrication of all bearings and clutches using a distributed-pressure lubricated and filtered system, which replaces the previous splash-lubricated system on the E Series II. Better lubrication and filtration reduce service and repair. In addition, improved lip seals on output yokes decrease the chance of leaks.

## Complete Customer Support

*Cat dealer services help you operate longer with lower costs.*



**Selection.** Make detailed comparisons of the machines you are considering before you buy. What are the job requirements, machine attachments and operating hours? What is your need for machine availability and do you have the proper loading tool match? Your Cat dealer can help.

**Custom Products.** The 740 is compatible with a wide range of Caterpillar and auxiliary equipment manufacturers' specialized products. This multi-purpose hauling system was designed for use with a common tractor and a variety of trailer options to suit different market segments such as waste, forestry, tunneling, earthmoving and agriculture.

**Purchase.** Look past the initial price, look at the value the 740 offers. Consider the resale value, compare productivity and day-to-day operating costs and fuel consumption. Consult your local Cat dealer for financing options.

**Operation.** For the best operating techniques to increase productivity and your profit, turn to your Cat dealer for the latest training literature and trained staff.

**Maintenance.** Repair option programs guarantee the cost of repairs up front. Diagnostic programs such as S•O•S<sup>sm</sup> and Technical Analysis help you avoid unscheduled repairs.

**Replacement.** Repair or rebuild? Caterpillar trucks are designed for longer life with rebuildable components. Your Cat dealer can help you evaluate the cost involved so you can make the right choice.

**Product Support.** The 740 offers easy maintenance with combined service points and extended service intervals to keep the machine running longer. Your local Cat dealership will be with you every step of the way with its unsurpassed worldwide parts support, trained technicians and customer support agreements.

**Warranty.** Your local Cat dealer is there to support and protect you. Extended warranty options are also available.





## Engine

### Cat 3406E ATAAC EUI

Rating	1900 rpm
Gross Power	329 kW/441 hp
Flywheel Power	
ISO 9249	309 kW/415 hp
EEC 80/1269	309 kW/415 hp
Bore	137 mm
Stroke	165 mm
Displacement	14.64 liters

- The 740 meets Stage II emission specifications for Europe through 2005.
- No engine derating required below 2438 m.

## Weights

Rated Payload	36.3 metric tons
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## Transmission

Forward	km/h
1	9.3
2	12.8
3	17.0
4	22.5
5	30.5
6	40.6
7	55.1
Reverse	13.4

## Body Capacities

Heaped SAE 2:1	21.9 m <sup>3</sup>
Struck	16.5 m <sup>3</sup>
Heaped SAE 1:1	27.3 m <sup>3</sup>

## Body Hoist

Raise time	12 Seconds
Lower time	7 Seconds

## Operating Weights

Empty	kg
Front axle	19 060
Center axle	7075
Rear axle	6415
Total	32 550
Rated Load	
Front axle	4541
Center axle	15 878
Rear axle	15 878
Total	36 287
Loaded	
Front axle	23 592
Center axle	22 953
Rear axle	22 293
Total	68 838

## Body Plate Thickness

Front	8 mm
Scow	16 mm
Side	12 mm
Base	16 mm

## Service Refill Capacities

	Liters
Fuel Tank	560
Cooling System	80
Hydraulic System	233
Engine Crankcase	38
Transmission	72
Final Drives/Differential	80
Output Transfer Gear	21

## Sound Levels

Interior Cab	77 dB(A)
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## Standards

Brakes	ISO 3450-1998
Cab/FOPS	ISO 3449-1992 Level II
Cab/ROPS	ISO 3471-1994

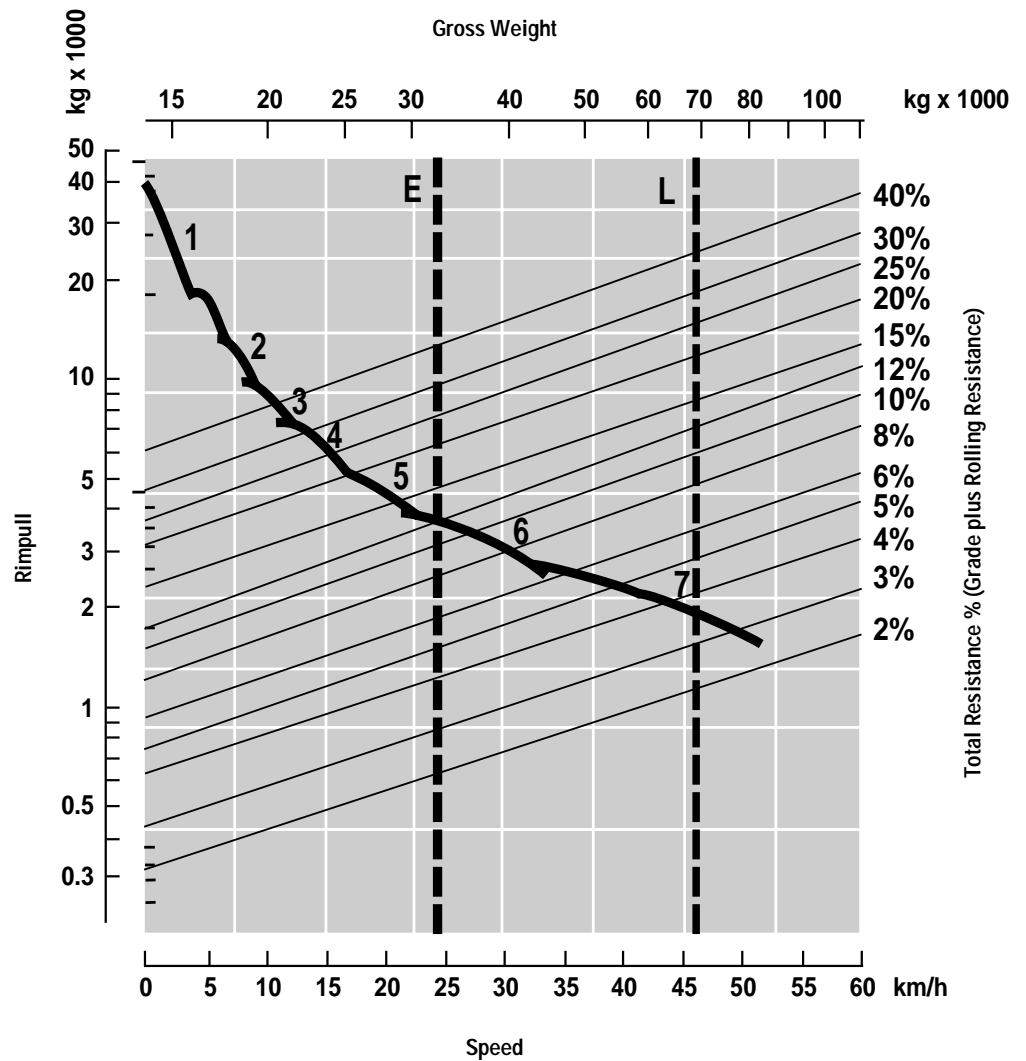
## Optimal Loader/Truck Pass Matching

Hydraulic Excavators		375 L ME	365B L ME	345B L ME
Loader Capacity (metric tons) – 50 min/h		900-1125	750-1100	665-805
Passes		4	5	6
Wheel Loaders	988G	980G	972G	966G
Loader Capacity (metric tons) – 50 min/h	565-790	590-650	490-565	400-535
Passes	3-4	4	5	5-6

An optimum system match gives you a major productivity advantage. The 740 is an excellent match for the Cat 345B L, 365B L and 375 L Hydraulic Excavators; and 972G, 980G and 988G Wheel Loaders. Thus results in increased production and lower system costs per unit of volume moved.

# 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 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.



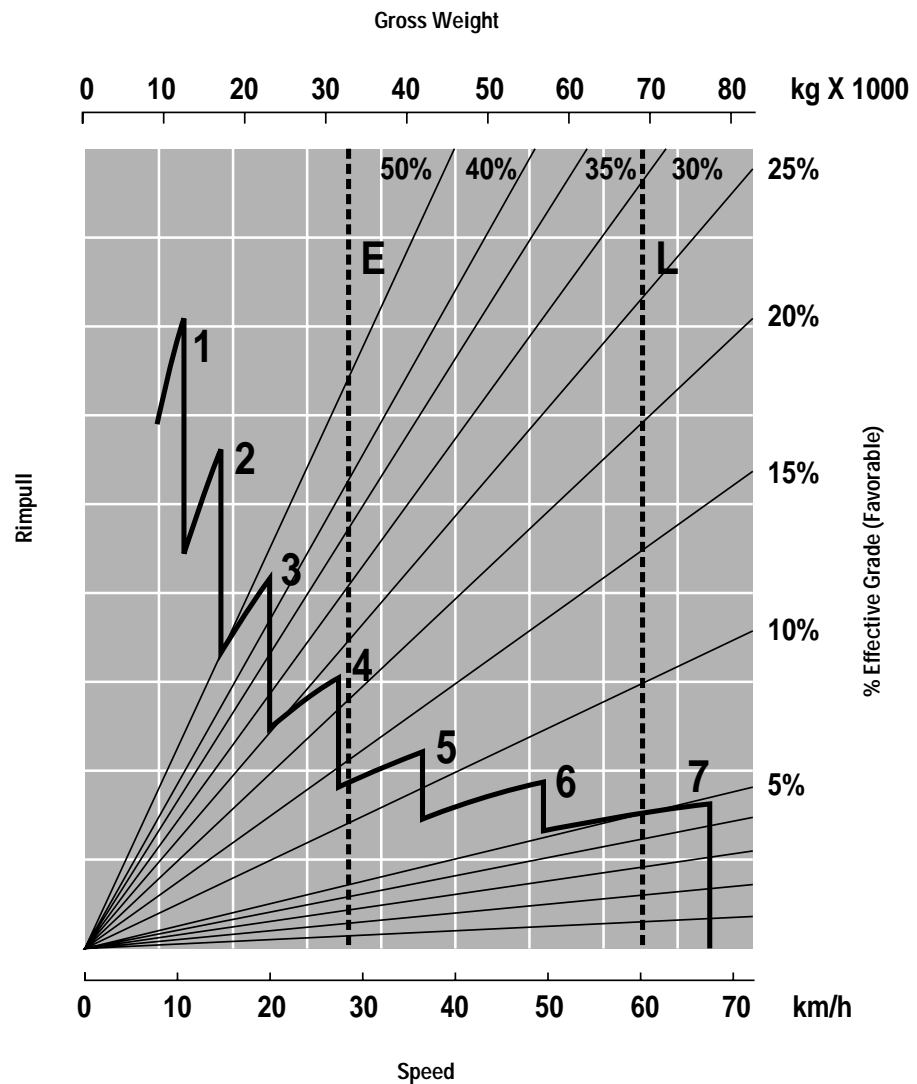
E – Empty 32 550 kg  
L – Loaded 68 838 kg

1 – 1st Gear  
2 – 2nd Gear  
3 – 3rd Gear  
4 – 4th Gear  
5 – 5th Gear  
6 – 6th Gear  
7 – 7th Gear



# Retarding Performance

To determine performance, read from Gross Weight down to % Effective Grade. Effective Grade equals actual % favorable grade plus 1% for each 10 kg/metric 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.

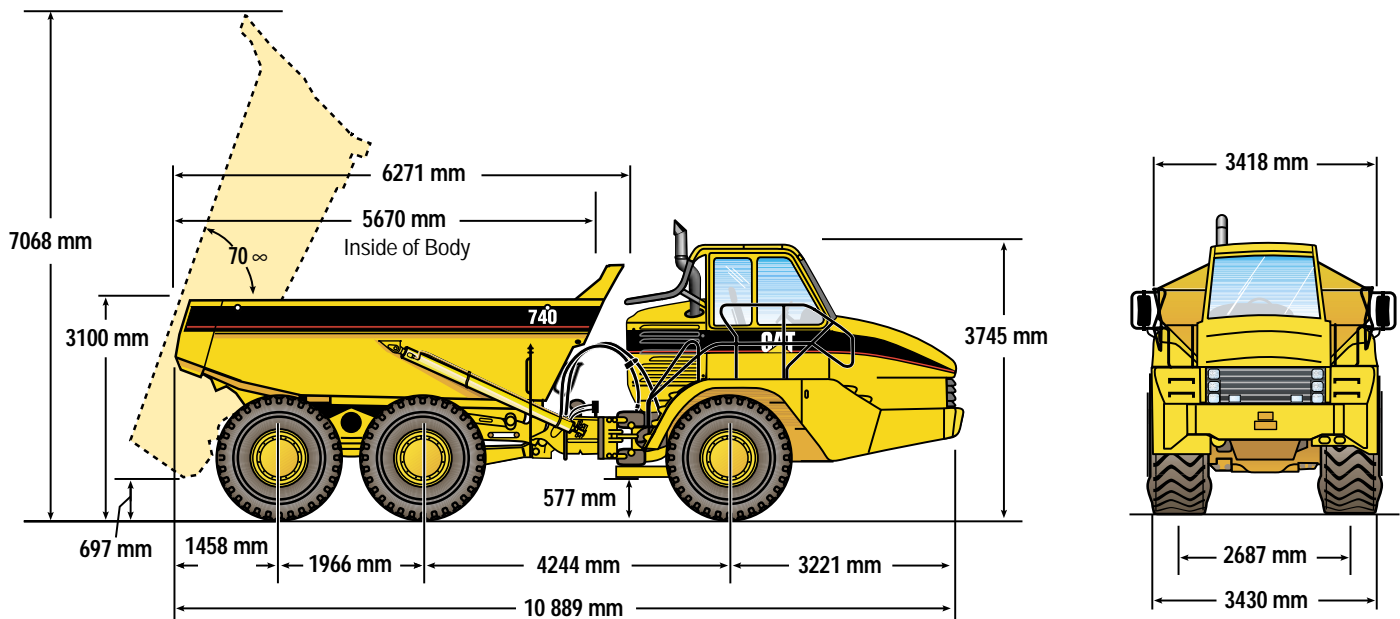


E – Empty 32 550 kg  
L – Loaded 68 838 kg

1 – 1st Gear  
2 – 2nd Gear  
3 – 3rd Gear  
4 – 4th Gear  
5 – 5th Gear  
6 – 6th Gear  
7 – 7th Gear

## Dimensions

All dimensions are approximate.

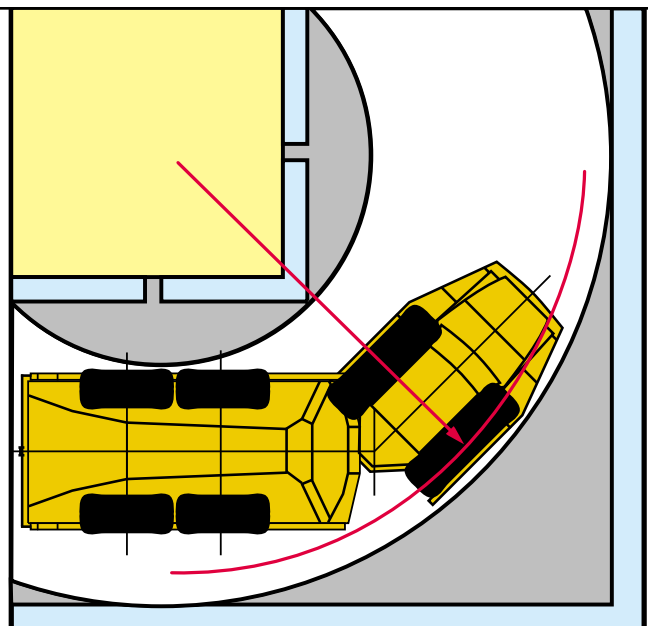


## Turning Circle

Dimensions are for machines equipped with 29.5R25 tires.

### Turning dimensions

Steer angle – left/right	45°
SAE turning radius	8138 mm
Clearance radius	8595 mm
Inside radius	4101 mm
Aisle width	5694 mm





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## Standard Equipment

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

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Air conditioning with R134A refrigerant	Mirrors, left and right	S•O•S <sup>sm</sup> sampling valves
Air vents, adjustable	Mud flaps, body mounted	Spillguard: front, integral part of fabricated body
Back up alarm	Radio ready	Starting receptacle, electric, remote
Body, includes exhaust heat routing	ROPS/FOPS cab with full instrumentation including:	Storage – two cup holders, under seat storage, door pocket, behind seat storage, coat hook.
Differentials, clutched cross-axle for all axles	– Electronic Monitoring System panel: alternator, coolant temperature, brake oil pressure, engine oil pressure, low fuel indicator	Sun visor
Electrical system: 24 volt, 2.5A 24 to 12 volt converter	– Gauges: fuel (in cab), torque converter temperature.	Supplemental steering
Engine compression brake	– Indicator lights: direction, hazard, headlights, high beam only, cross axle differential lock-up, parking brake, transmission/torque converter lock-up	Tires, 29.5R25, radial, Michelin XADN and Goodyear RL2+
Ether start ready	– Meters: service hour meter, speedometer, tachometer	Toolbox, lockable
Glass windows, toughened and tinted, front and rear	Seat, Caterpillar Comfort seat with air suspension	Tow pins front and rear
Guards: rear window and radiator, crankcase and axle	Seat, padded companion/trainer	Vandalism protection: lockable caps for fuel tank, hydraulic oil tank and radiator
Headlights, four with dimmer switch	Seatbelts, two retractable	Windows opening side, tinted
Heater and defroster with three-speed fan		Windshield wiper and washer, intermittent (front)
Horn, electric		
Lights: cab interior, front, side, rear, two reversing/working lights, two stop/tail lights		

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## Optional Equipment

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

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Body connection for exhaust heat	Tires, low profile
Body liners	Tool kit
Ether start canister	Wiper/washer, rear window intermittent
Sound suppression spectator	Heated rearview mirrors
Tailgates:	
– Scissor-type	
– Underslung	

# 740 Articulated Truck

HEHM5436 (07/2001) hr

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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