D8R

Track-Type Tractor

CATERPILLAR®

Engine		
Engine Model	Cat 3406C TA	
Flywheel Power	228 kW	305 hp
Gross Power	245 kW	328 hp
Weights		
Operating Weight	37 771 kg	82,850 lb
Shipping Weight	27 416 kg	60,454 lb

D8R Features

Caterpillar 3406C Engine
Meets US Tier 1, and EURO Stage 1 emissions regulations.

Drive Train
Powershift transmission, differential steering, and durable final drive.

Operator Station
Machine controls and displays are all at the operator's fingertips to maximize operator productivity and comfort.

Serviceability and Customer Support
Combining easy-access, modular components with the Caterpillar Dealer repair and rebuild capability ensures timely machine repair and minimum downtime.

Contents

The D8R combines power and efficiency with advanced technology for outstanding production at lower cost-per-yard.

The D8R's elevated sprocket increases productivity, simplifies maintenance, reduces downtime with modular components, and raises final drives and associated power train components out of the work environment.

Power Train

The 3406C engine is an excellent balance between efficiency and power.

Engine

Caterpillar 3406C engine performs at full-rated net power with a torque rise of 55%.

Regulations

The 3406C engine meets US Tier 1, and EURO Stage 1 emissions regulations for the Environmental Protection Agency, and the European Union.

Turbocharging and Aftercooling

Turbocharging and aftercooling provide high horsepower while keeping RPM and exhaust temperatures low.

Steel Spacer

A steel spacer between the block and head eliminates the need for block counterbores, extending block life.

Longer Component Life

Components live longer because oil-cooled pistons and full-length water-cooled cylinder liners provide maximum heat transfer for longer component life.

Valves

Through-hardened crankshaft journals and steel-backed, copper-bonded aluminum bearings help assure reliable performance in the toughest duty.

Dealer's Exchange Program

Cat dealer's exchange program for major engine components can cut repair time and costs.

Torque Divider

A single-stage torque converter with an output torque divider send 70% of engine torque through the converter, 30% through a direct drive shaft for greater driveline efficiency and higher torque multiplication.

Torque Converter

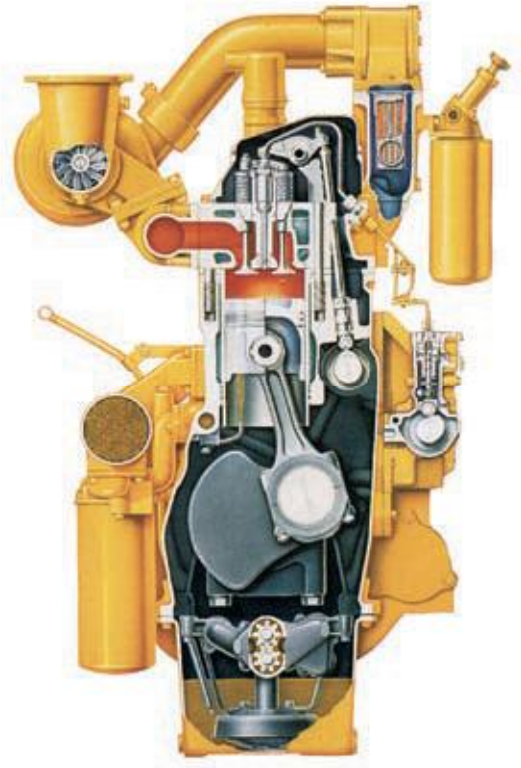
The torque converter shields the driveline from sudden torque shocks and vibration.

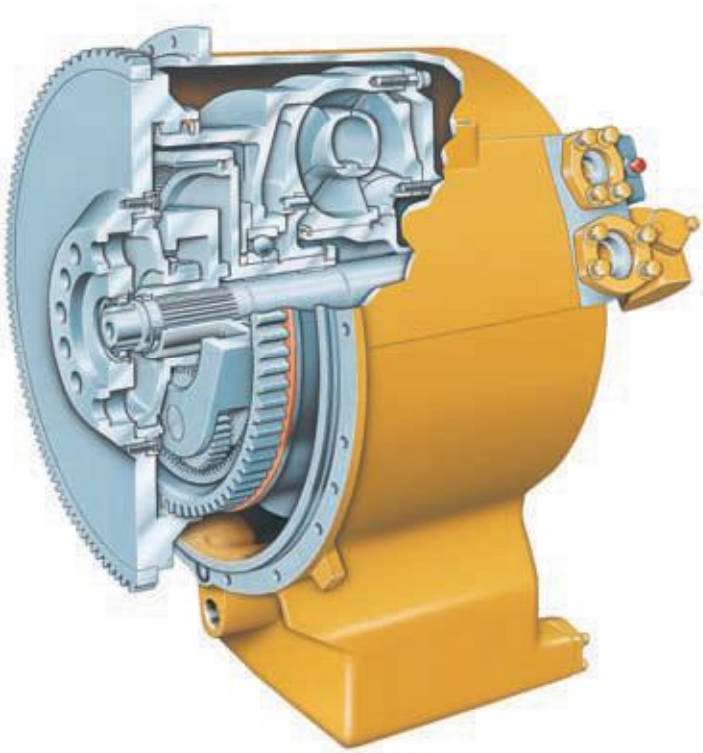
Final Drives

Elevated final drives are isolated from ground and implement induced impact loads for extended power train life.

Transmission

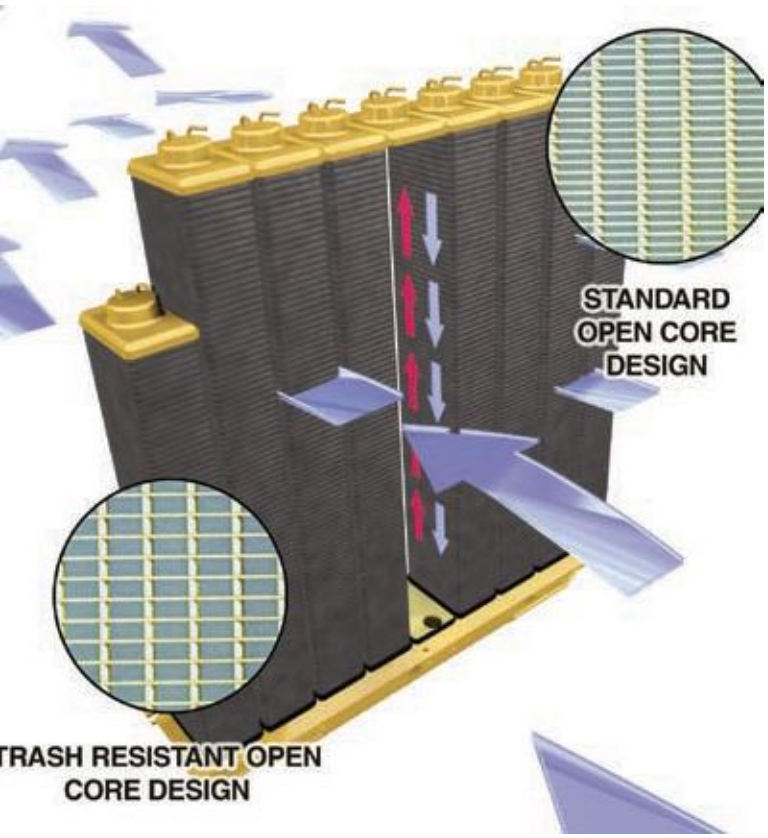
Planetary power shift transmission has 3-speeds forward and 3-speeds reverse and utilizes large diameter, high-capacity, oil-cooled clutches.





Cooling System

Superior cooling and ease of service keep the D8R producing day after day.



Cooling Capacity

Advanced Modular Cooling System (AMOCS) utilizes an exclusive two pass cooling system and increased cooling surface area to provide significantly more cooling capacity than conventional systems.

Extended Life Coolant

Caterpillar Extended Life Coolant (ELC) is now standard in all D8R tractors.

Two Pass Cooling System

Two pass cooling system circulates coolant from the sectioned bottom tank up through one side of the cooling element and down through the other side returning it to the bottom tank.

Cooling Elements

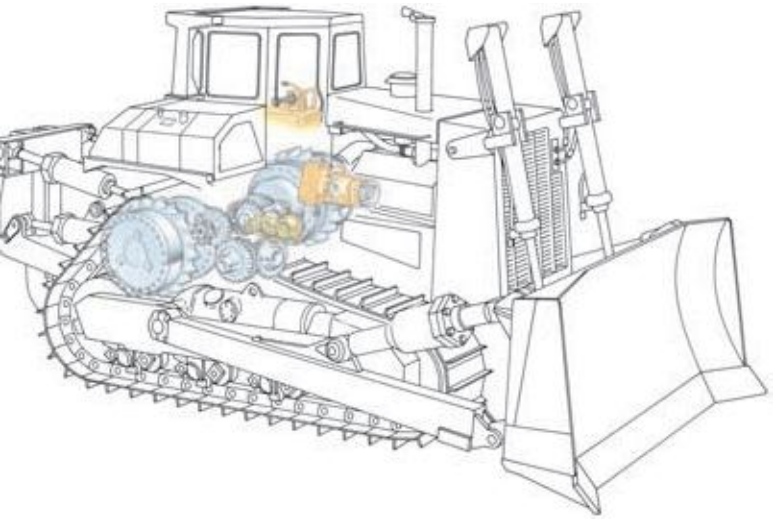
The cooling elements are individual core modules that are connected to a sectioned bottom tank.

Servicing

The servicing of the AMOCS can be performed without tilting the radiator guard.

Differential Steering

Uses hydraulics instead of friction to steer.



Uninterrupted Power

Differential steering delivers uninterrupted power to both tracks to help maintain blade loads, reduce cycle times and provide enhanced side slope capability.

Steering

Steer and change directions easily with one hand.

Turning

A planetary differential turns the machine by speeding up one track and slowing the other while maintaining full power.

Tiller Control

Allows the operator to work more precisely in close areas, around structures, obstacles, grade stakes or on fine grades.

Efficient in Soft Underfooting

Tracks can power through turns to keep loads moving and maintain traction.

Hydraulic System

Efficient hydraulic systems devote one pump solely to power implements.

Hydraulics

Adjustable for efficiency.

Monitor Hydraulic Power

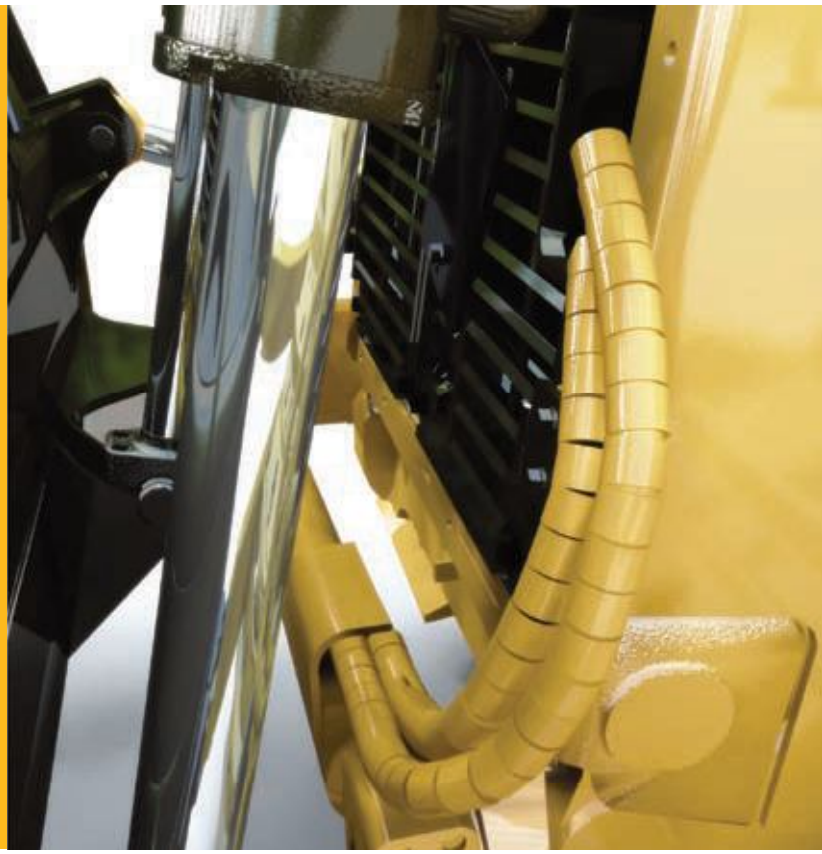
Load-sensing hydraulics utilize a feedback loop from the implement valve to the implement pump to continually monitor the hydraulic power requirements of the implement.

Pump Output

During normal blade or ripper corrections, pump output increases and decreases to provide precise power for dozing or ripping.

Increased Machine Production

Lower pump requirements reduce engine power requirements for the hydraulics, making more drawbar power available for increased machine production.



Structures

Durable design and construction for the most demanding applications.

Mainframe

The D8R mainframe is built to absorb high impact shock loads and twisting forces.

Frame Rails

Frame rails are a full box section, designed to keep components rigidly aligned.

Steel Castings

Heavy steel castings give added strength to the main case, equalizer bar saddle, front cross member and tag-link trunnion.

Durability

The top and bottom rails are continuous rolled sections, with no machining or welding to provide superior mainframe durability.

Final Drives

The main case elevates the final drives well above the ground level work area to protect them from impact loads, abrasion and contaminants.

Track Roller Frame Alignment

A pivot shaft and pinned equalizer bar maintain track roller frame alignment.

Tag-link Construction

Tag-link construction brings the blade closer to the machine for more precise dozing and load control.

Tag-link Design

Tag-link design provides solid lateral stability and better cylinder positions for constant pryout independent of blade height.

Undercarriage

An elevated sprocket design means excellent traction, durability and ride.

Design

Suspended undercarriage design absorbs impact loads to reduce the shock loads transferred to the undercarriage.

Suspension

Bogie suspension conforms closely to the ground to provide more ground contact, especially in hard, uneven terrain.

Roller Frames

Roller frames are tubular, to resist bending and twisting, with added reinforcement where operating loads are the highest.

Non-suspended Undercarriage

Non-suspended undercarriage, without bogies, is available for applications involving moderate-impact, or highly abrasive materials.

Track

Sealed and lubricated track. Permanently coats the track pin with a sealed-in lubricant, minimizing metal-to-metal contact.

SystemOne™ Undercarriage

Designed for reliability and durability.

Optional SystemOne™ undercarriage offers a variety of features and benefits improving mechanical availability, overall performance of the undercarriage, wear life, and most importantly productivity. This enhanced version of SystemOne™ also addresses issues like thrust wear, sprocket segment retention, and dry joints.

Lower cost-per-hour

Reduces costs up to 50% due to longer life of undercarriage and reuse of idlers and segments.

Machine Speed

SystemOne™ allows travel at a faster speed, particularly in reverse. 2nd and 3rd gear reverse do not have to be locked out to manage bushing wear. Also, elimination of scalloping maintains a comfortable ride that decreases operator fatigue, and allows for higher working speed which increases overall productivity.

Operator Efficiency

Smoother ride because no more link scalloping wear reduces operator fatigue and better operator efficiency.

Machine Availability/Lower Downtime

More hours between UC replacements means reduced downtime.

Machine Productivity

Higher average machine speed, better operator efficiency and better machine availability/lower downtime results in increased machine productivity.

Operator Station

Designed for comfort and ease of operation.

View
Clear full-circle view.

Operation
Comfortable, non-tiring operation.

Controls
Low effort controls are easily accessible and provide sure, precise maneuvering with less operator fatigue.

Seat
The Caterpillar Comfort Series Seat is fully adjustable and designed for comfort and support.

Control Lever Restraints
Implement control lever restraints, when engaged, prevent inadvertent movement of control lever.

Tiller Control
Dual twist tiller controls the direction and degree of turns, forward-reverse shifting and gear selection with one control.

Electronic Monitoring System (EMS) and Gauge Group
Monitors coolant, oil temperature, and fuel level.

Work Tools

Tailored to fit many applications.

Bulldozers
The 8SU blade and the 8U blade make full use of the D8R's power.

Rippers
Single and multi-shank rippers are made to penetrate tough material fast and rip thoroughly.

Custom Products
In addition to the standard range of optional equipment, there are special attachments and machine configurations to suit particular customer needs.

Serviceability

Ease of service and maintenance gives you more time on the job.

Servicing

Built-in servicing ease. Less service time means more working time.

Ecology Drains

Ecology drains provide an environmentally safer method to drain fluids.

Filters

Spin-on fuel and engine oil filters save changing time.

Cooling

AMOCS individual cooling elements allow radiator servicing without major component removal, saving considerable time and cost.

Diagnostic Connector

A diagnostic connector allows the Cat Dealer's electronic test instrument to quickly troubleshoot the electrical system.

Disconnect Fittings

Quick disconnect fittings allow for fast diagnosis of the power train and implement oil systems.

Support

Unrivaled dealer commitment.

Quality

Dealers committed to fast, quality customer support.

Response

Dealer service response extends to programs such as Custom Track Service (CTS), Scheduled Oil Sampling (SOS), and guaranteed maintenance contracts that get peak life and performance from your machine.

Experts

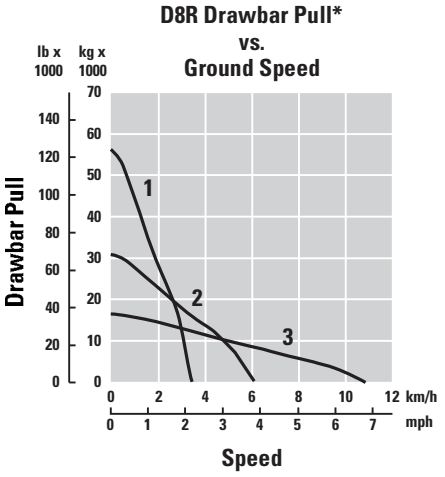
Your dealer is also expert at arranging affordable lease, rental or purchase financing for all Caterpillar products.

D8R Track-Type Tractor Specifications

Engine

Engine Model	Cat 3406C TA	
Flywheel Power	228 kW	305 hp
Gross Power	245 kW	328 hp
Net Power – Caterpillar	228 kW	305 hp
Net Power – ISO 9249	228 kW	305 hp
Net Power – SAE J1349	226 kW	302 hp
Net Power – EU 80/1269	228 kW	305 hp
Net Power – DIN 70020	317 PS	
Net Power – ISO 1585	228 kW	305 hp
Bore	137 mm	5.4 in
Stroke	165 mm	6.5 in
Displacement	14.6 L	893 in^3

Power Shift with Differential Steer



1 – 1st Gear
2 – 2nd Gear
3 – 3rd Gear

Service Refill Capacities

Fuel Tank	625 L	165 gal
Cooling System	92 L	24.3 gal
Engine Crankcase	32.5 L	8.6 gal
Power Train	144 L	38 gal
Final Drives (each)	14 L	3.6 gal
Roller Frames (each)	65 L	17.2 gal
Pivot Shaft Compartment	40 L	10.6 gal
Implement Hydraulic System Tank Only	72 L	19 gal

Weights

Operating Weight	37 771 kg	82,850 lb
Shipping Weight	27 416 kg	60,454 lb

Dimensions

Ground Clearance	528 mm	21 in
Track Gauge	2082 mm	81.9 in
Width without Trunnions (Standard Shoe)	2642 mm	8 ft 8 in
Overall Length Basic Tractor	4554 mm	14 ft 11 in

Undercarriage

Shoes/Side	44	
Pitch	216 mm	8.5 in
Ground Clearance	528 mm	20.8 in
Track Gauge	2082 mm	81.97 in
Length of Track on Ground	3206 mm	10 ft 6 in
Ground Contact Area	3.58 m^2	5,554 in^2

- Pitch listed is for standard undercarriage. For SystemOne undercarriage, the pitch is 218 mm (8.6 in).

Hydraulic Controls

Bulldozer Relief Valve Setting	24 100 kPa	3,500 psi
Tilt Cylinder Relief Valve Setting	24 100 kPa	3,500 psi
Ripper (Lift) Relief Valve Setting	24 100 kPa	3,500 psi
Ripper (Pitch) Relief Valve Setting	24 100 kPa	3,500 psi
Tank Capacity	72 L	19 gal

Transmission

1 Forward	3.5 km/h	2.2 mph
2 Forward	6.2 km/h	3.9 mph
3 Forward	10.8 km/h	6.7 mph
1 Reverse	4.7 km/h	2.9 mph
2 Reverse	8.1 km/h	5 mph
3 Reverse	13.9 km/h	8.6 mph

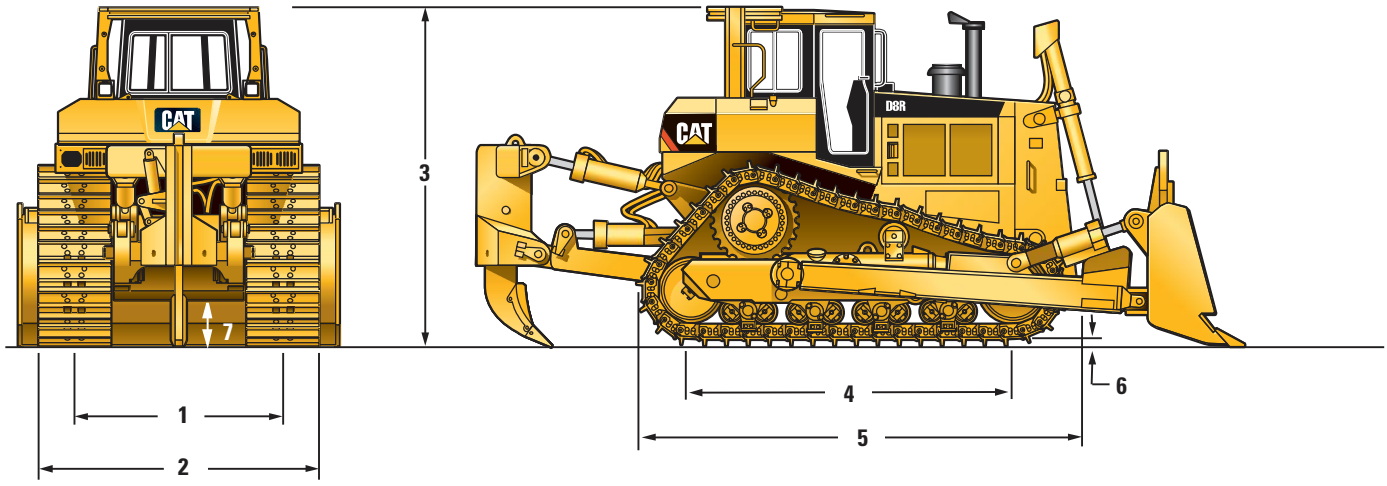
Winches

Weight	1878 kg	4,140 lb
Oil Capacity	81 L	21.5 gal
Increased Tractor Length	163 mm	6.33 in
Winch Case Width	1220 mm	48 in
Drum Width	310 mm	12.42 in
Flange Diameter	550 mm	21.5 in
Drum Capacity – 24 mm (1 in)	25 m	1 ft
Drum Capacity – 29 mm (1.13 in)	29 m	1 ft 2 in
Drum Capacity – 32 mm (1.25 in)	73 m	239 ft

D8R Track-Type Tractor Specifications

Dimensions

(approximate)



Tractor Dimensions

		Standard		Non-Suspended		LGP	
1	Track Gauge	2082 mm	6 ft 10 in	2082 mm	6 ft 10 in	2337 mm	7 ft 8 in
2	Width of Tractor						
	Over Trunnions	3050 mm	10 ft 0 in	3050 mm	10 ft 0 in	3370 mm	11 ft 1 in
	Without Trunnions (std. shoe width) (965 mm/38 in shoe LGP)	2642 mm	8 ft 8 in	2642 mm	8 ft 8 in	3302 mm	10 ft 10 in
3	Machine Height from Tip of Grouser:						
	Stack	3505 mm	11 ft 6 in	3499 mm	11 ft 6 in	3499 mm	11 ft 6 in
	OROPS	3509 mm	11 ft 6 in	3503 mm	11 ft 6 in	3503 mm	11 ft 6 in
	EROPS	3498 mm	11 ft 6 in	3492 mm	11 ft 5 in	3492 mm	11 ft 5 in
	Drawbar Height (grouser tip to center of clevis)	754 mm	2 ft 6 in	748 mm	2 ft 5 in	748 mm	2 ft 5 in
	From Ground Face of Shoe	676 mm	2 ft 3 in	673 mm	2 ft 2 in	673 mm	2 ft 2 in
4	Length of Track on Ground	3206 mm	10 ft 6 in	3258 mm	10 ft 8 in	3258 mm	10 ft 8 in
5	Length of Basic Tractor (trunnion to tip of rear grouser)	4554 mm	14 ft 11 in	4554 mm	14 ft 11 in	4554 mm	14 ft 11 in
	With the following attachments add:						
	Drawbar	406 mm	1 ft 3 in	406 mm	1 ft 3 in	406 mm	1 ft 3 in
	Ripper-Single Shank (with tip at ground line and pinned in top hole)	1519 mm	5 ft 0 in	1519 mm	5 ft 0 in	N/A	
	Ripper-Multi-Shank (with tip at ground line)	1613 mm	5 ft 4 in	1613 mm	5 ft 4 in	N/A	
	Winch	163 mm	6 in	163 mm	6 in	N/A	
	SU Blade	1844 mm	6 ft 6 in	1844 mm	6 ft 6 in	N/A	
	U Blade	2241 mm	7 ft 4 in	2241 mm	7 ft 4 in	N/A	
	A Blade	2027 mm	6 ft 8 in	2027 mm	6 ft 8 in	N/A	
	SU LGP Blade	N/A		N/A		1727 mm	5 ft 8 in
6	Height of Grouser	78 mm	3 in	78 mm	3 in	78 mm	3 in
7	Ground Clearance	528 mm	1 ft 9 in	519 mm	1 ft 8 in	519 mm	1 ft 8 in
Track Pitch		216 mm	8.5 in	216 mm	8.5 in	216 mm	8.5 in
Number of Shoes per Side		44		44		44	
Standard Shoe		560 mm	22 in	560 mm	22 in	965 mm	38 in
Ground Contact Area (standard shoe)		3.58 m^2	5554 in^2	3.63 m^2	5632 in^2	6.3 m^2	9746 in^2
Ground Pressure		0.92 kg/cm^2	13.1 psi	0.87 kg/cm^2	12.4 psi	0.54 kg/cm^2	7.6 psi

Rippers

Hydraulic tip adjustment cylinders vary shank angle to aid penetration and help lift and shatter rock.

		Single Shank	Single Shank, Deep Ripping Arrangement	Multi-Shank Arrangement
Overall Beam Width	mm	–	–	2464
	ft/in	–	–	8'1"
Maximum Penetration Force* (shank vertical)	kN	124.9	122.6	118.5
	lb	28,060	27,560	26,628
Pryout Force	kN	281.4	281.4	303.2
	lb	63,237	63,237	68,128
Maximum Penetration (standard tip)	mm	1158	1602	786
	ft/in	3'10"	5'3"	2'7"
Maximum Clearance Raised (under tip, pinned in bottom hole)	mm	670	840	624
	in	26	33	24.5
Number of Shank Holes (vertical adjustment)		3	3	2
Weight (without hydraulic controls)	kg	4140	4378	4100
	lb	9,119	9,643	9,031
Total Operating Weight (with 8 SU blade and ripper)**	kg	37 875	38 113	37 835
	lb	83,500	84,024	83,394

*Multi-Shank Ripper Forces measured with Center Tooth installed.

**Operating weights are calculated based on suspended undercarriage configuration found in the weights section (see page 11).

Note: Single shank, deep ripping arrangement weight includes required pin puller.

Hydraulic Controls

Complete system consists of pump, tank with filter, oil cooler, valves, lines, linkage and control levers.

Steering – Piston-type Pump Geared from Flywheel		
Output at 2,500 rpm and 38 000 kPa (3,774 psi)	300 liters/min	79 gpm
Implements – Piston-type Pump Geared from Flywheel		
Output at 2,100 rpm and 7000 kPa (1,000 psi)	239 liters/min	63 gpm
Tilt Cylinder Rod End Flow	130 liters/min	34 gpm
Tilt Cylinder Head End Flow	160 liters/min	42 gpm
Reservoir		
Tank Capacity	72 liters	19 gal
Control Valve Positions		
Bulldozer	raise, hold, lower, float	
Tilt Cylinder	tilt right, hold, tilt left	
Ripper (Lift)	raise, hold, lower	
Ripper (Pitch)	extend, hold, retract	
Relief Valve Settings		
Bulldozer	24 100 kPa	3,500 psi
Tilt Cylinder	24 100 kPa	3,500 psi
Ripper (Lift)	24 100 kPa	3,500 psi
Ripper (Pitch)	24 100 kPa	3,500 psi

D8R Track-Type Tractor Specifications

Winch Specifications

Weight	1878 kg	4,140 lb
Increased Tractor Length	163 mm	6.4 in
Winch Case Width	1220 mm	48 in
Flange Diameter	550 mm	21.5 in
Drum Width	310 mm	12.5 in
Drum Diameter	305 mm	12 in
Recommended Cable Size	25 mm	1.00 in
Optional Cable Size	29 mm	1.13 in
Drum Capacity – Recommended Cable	73 m	239 ft
Drum Capacity – Optional Cable	58 m	190 ft
Oil Capacity	81 L	21.5 gal
Maximum/ferrule size (OD × Length)	60 mm × 70 mm	2.38 in × 2.75 in

Bulldozers

Blade		8 SU	8 U	8 A	8 SU LGP
Blade Capacity	m^3	8.7	11.7	4.7	8.5
	yd^3	11.4	15.3	6.1	11.1
Width	mm	3937	4262	4978	4400
	ft/in	12'11"	14'0"	16'4"	14'5"
Height	mm	1690	1740	1174	1612
	ft/in	5'7"	5'9"	3'10"	5'3"
Digging Depth	mm	582	582	628	582
	in	22.9	22.9	24.7	22.9
Ground Clearance	mm	1231	1231	1308	1231
	ft/in	4'0"	4'0"	4'4"	4'0"
Maximum Tilt	mm	951	1028	729	914
	ft/in	3'1"	3'5"	2'5"	3'0"
Weight*	kg	4570	5135	5099	4850
	lb	10,074	11,320	11,241	10,694

Features

- Cutting edges are DH-2 steel and end bits are DH-3 steel for maximum durability.
- Dozer lift cylinders mount to top corners of radiator guard to improve mechanical advantage.
- Single lever controls all blade movements.
- Angle dozer available with two tilt cylinders, which replace the two tilt braces.

* Does not include hydraulic controls, but includes blade tilt cylinder.

D8R Standard Equipment

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

Advanced Modular Cooling System (AMOCS)
Adjustable Contour Series Suspension Seat
Air Cleaner
Air cleaner service indicator
Alternator, 50-amp
Back up alarm
Back up alarm
Batteries (4), 12-volt, 3000CCA
Blower fan
Decelerator and hand throttle lever
24-volt direct electric starting
Ecology drain on engine oil, engine coolant, torque converter, transmission, power train oil, and hydraulic system
Electric hour meter
Electric Monitoring System (EMS)
Ether starting aid
Front pull device
Fuel priming pump
Hinged extreme service crankcase guard
Hinged radiator and blast deflector guards
Horn
Hydraulic control, three valve
Hydraulic track adjusters
Implement control lever boots
Lifetime Lubricated rollers and idlers
Lighting system, Halogen (two lights forward in fender, two rear on fuel tank)
Load sensing hydraulics
Muffler
Pinned equalizer bar
Powershift transmission
Pre-cleaner with dust ejector
Prescreener
Rain cap
Rearview mirror
Replaceable sprocket rim segments
ROPS/FOPS canopy (USA)
Sealed and Lubricated Track
Seat belt (retractable)
Starting receptacle
Suspension-type undercarriage with eight roller track frames
Track guiding guards
Two-piece master links
560 mm (24") PPN moderate service tracks
Vandalism protection includes cap locks for fuel tank, engine oil filler, radiator filler and dip stick, plus battery box locks (two) and left hand service area cover lock

D8R Optional Equipment

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

	kg	lb
Air conditioner (R134a)	57	125
Air conditioner, fender mounted	160	351
Air conditioner, ROPS mounted	154	339
Angle dozer tilt cylinders	311	685
Bulldozers:		
Rock guard and wear plate (8SU blade only)	552	1,214
Rock guard (8U blade only)	115	253
Pushplate (8SU blade only)	234	515
Cab, FOPS sound suppressed, with ROPS rollbar (includes heater, cab accessory group and mirror)	550	1,210
Canopy, ROPS/FOPS, includes mirror (standard, USA)		
Counterweight:		
*Rear mounted (basic)	2335	5,137
*Rear mounted (additional weight)	572	1,258
Engine enclosure	57	126
Fan, reversible	6	13
Fast-fill fuel system	7.5	16.5
Fast oil change system for quick service to engine and transmission	5	11
Guards		
Fuel and hydraulic tank	256	563
Power bottom guard	70	154
Rear power train	129	284
Radiator, hinged, heavy duty	148	326
Rear tractor	74	163
Heaters		
Fuel	5	12
Engine coolant	2	4.4
Laminated Thermo-shield	11	24
Light, rear (for use with ripper)	1	2.2

	kg	lb
Operator arrangement, modified (improved viewing area and comfort for smaller operators)	25	54
Radiator core protector grid	11	25
Rigid drawbar	288	634
Rear screen (with cab)	86	190
Rear screen (with canopy)	65	143
*Rippers		
Single shank – Standard arrangement	4085	9,005
Single shank – Deep ripping (includes shank, pin puller)	4260	9,391
Multi-shank (includes one shank)	4213	9,287
Ripper shank (for multi-shank ripper)	332	733
Sweeps, logging	310	682
Tracks, pair, Heavy Duty Sealed and Lubricated:		
610 mm (24") PPR MS/TRAP	31	68
610 mm (24") PPR ES/TRAP	3	7
610 mm (24") PPR CHOPPER	495	1,091
610 mm (24") PPR ES	285	628
610 mm (24") PPR MS	100	221
660 mm (26") PPR MS/TRAP	144	318
660 mm (26") PPR ES/TRAP	93	205
660 mm (26") PPR ES	405	893
660 mm (26") PPR MS	201	443
710 mm (28") PPR MS/TRAP	243	536
710 mm (28") PPR MS	301	664
810 mm (32") PPR MS/TRAP	423	933
965 mm (38") PPR MS/PPR	777	1,713
965 mm (38") PPR MS/TRAP	714	1,574

	kg	lb
Undercarriage SystemOne™		
610 mm (24 in) Extreme and Super Extreme Service		
660 mm (26 in) Extreme and Super Extreme Service		
711 mm (28 in) Extreme and Super Extreme Service		
965 mm (38 in) Extreme Service		
Roller Options		
Carrier rollers (one per side)		
Seals, arctic idler/ roller		
Track roller guard (non suspended)	299	660
Custom Arrangements		
Hydraulic scraper towing arrangement	91	200
LGP gauge arrangement	70	154
Non-suspended		
Sound suppression arrangement	236	520
*Waste handling arrangement	817	1,800
*Winch arrangement	1878	4,140
*Woodchip arrangement		

* A rear attachment and/or counterweight is recommended for improved balance and performance.

MS = Moderate Service
ES = Extreme Service
PPR = Positive Pin Retention
TRAP = Trapezoidal
CHOPPER = Waste Disposal

Notes

Notes

D8R Track-Type Tractor

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

AEHQ6045 (03-2009)
Replaces AEHQ5058-03

CATERPILLAR®