

D7R-II



Medium Bulldozer

Joint Services
Family of Dozers



Cat® 3176C Engine

Gross Power	192 kW	258 hp
Flywheel Power	179 kW	240 hp

Weight – Standard

Winch Equipped	26 603 kg	63,060 lb
Ripper Equipped	29 801 kg	65,700 lb

MISSION CAPABLE

The Cat® D7R-II – Tested, Proven, and Reliable – Mission Capable

The **Cat D7R-II Bulldozer** is a highly productive machine. The machine is equipped with either a hydraulic winch, or a multi-shank ripper. The D7R-II provides unsurpassed operational readiness for the construction of airfields, roads, landing zones, defensive berms, anti-tank ditches, and other key military construction missions. This bulldozer can also be used to pushload scrapers, which greatly increases worksite efficiency.

The D7R-II is air transportable in the C-5 or C-17 in a drive-on, drive-off configuration. It can also be transported on the M870 or HETT trailers.

ATTACHMENTS

Each of these attachments increases the capability and versatility of the D7R-II, while adding tremendous efficiency benefits.



Bulldozer Blade

Configured with a full-width push plate for pushloading scrapers, the D7R-II blade is aggressive in penetrating and loading material, as well as designed for superior load retention. The bulldozer blade, with moldboard construction and high tensile strength, resists torsional bending and distortion while maintaining durability. Bolt-on, replaceable cutting edges protect the moldboard from wear.



Winch Equipped

The variable line pull and line speed winch is hydraulically driven for precise load control during reel in or reel out. The winch is equipped with a drawbar and three fairlead rollers. Operation of the winch is very efficient, utilizing a single lever joystick control.



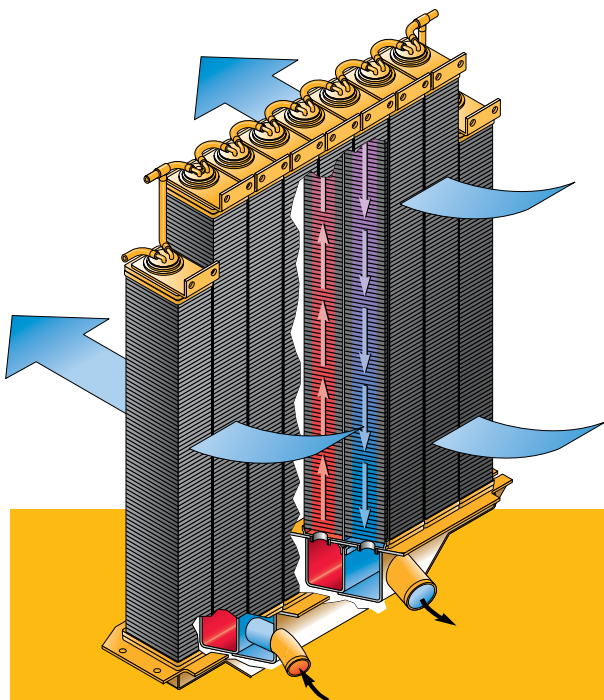
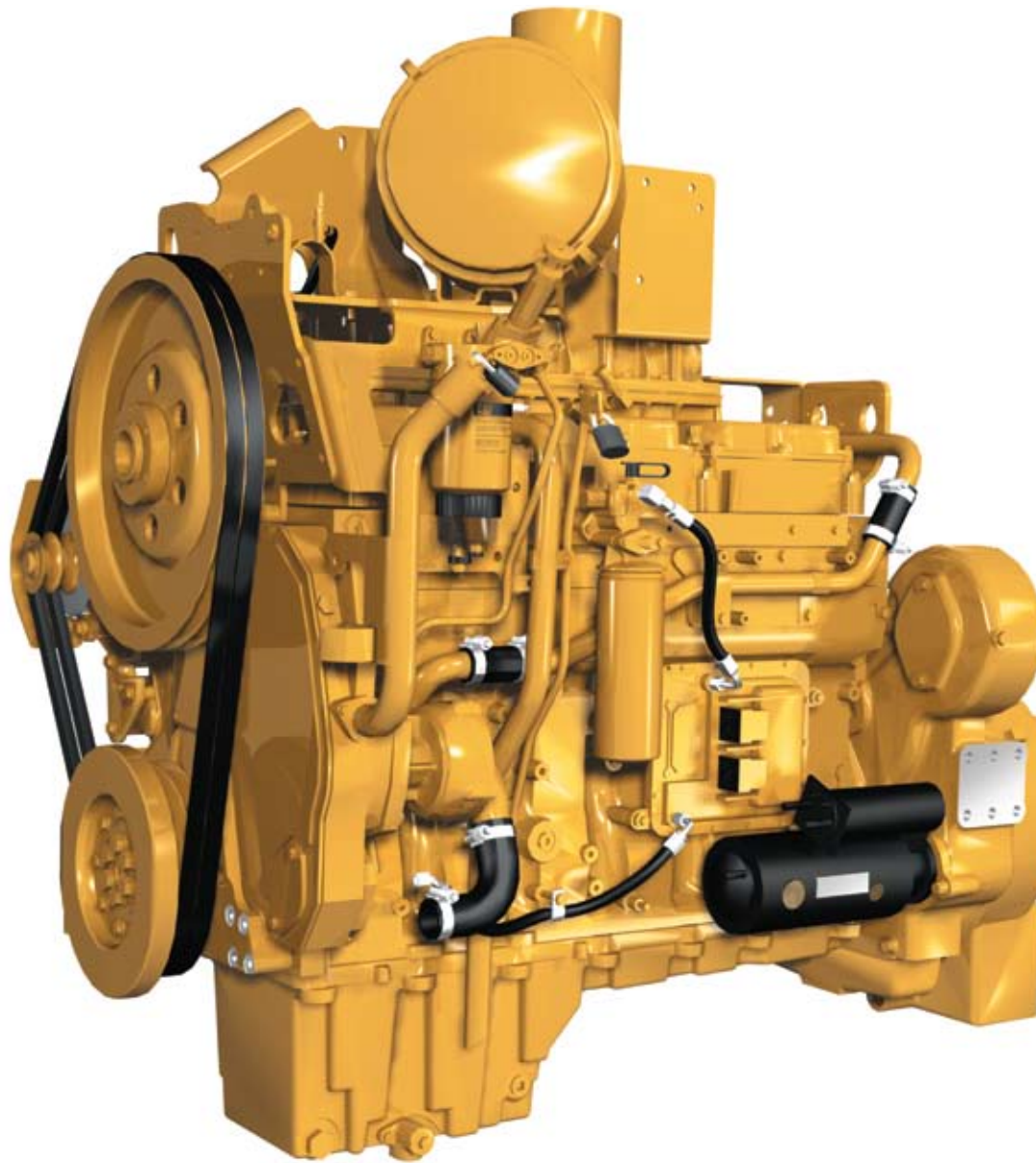
Multi-Shank Ripper

The adjustable pitch ripper, with three straight shanks, is designed to penetrate tough material fast and rip thoroughly for improved dozing. Operation of the ripper is simple with the use of a single lever joystick control.



3176C Engine. The Cat 3176C is a 10.3 L displacement, 6-cylinder, electronically governed engine. Electronic fuel injection is provided through the well-proven electronically controlled unit injection (EUI) system. A high efficiency turbocharger combined with separate circuit aftercooling provides consistent high horsepower while keeping rpm and exhaust temperatures low.

Differential Steering. Differential steering maintains power to both tracks while turning which allows greater load capacity, power and speed control. Steering and transmission control are combined in a single joystick for quick cycle times and maximum efficiency.



Planetary Powershift Transmission. The electronic planetary powershift transmission with automatic shift capability is designed and built by Caterpillar. The very responsive, speed and directional changes provide excellent cycle times and productivity.

Load Sensing Hydraulics. The D7R-II features load-sensing, pilot controlled hydraulics; which respond to operating requirements by automatically adjusting attachment hydraulic power.

Advanced Modular Cooling System (AMOCS). AMOCS features individual core modules connected to a bottom tank that permits removal of a single core without removing the entire radiator, reducing repair costs and downtime.

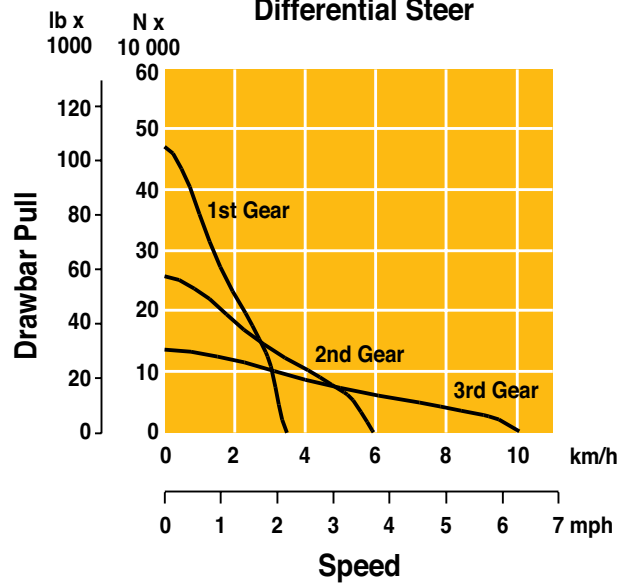
MISSION CAPABLE

The Cat® D7R-II – Tested, Proven, and Reliable – Mission Capable

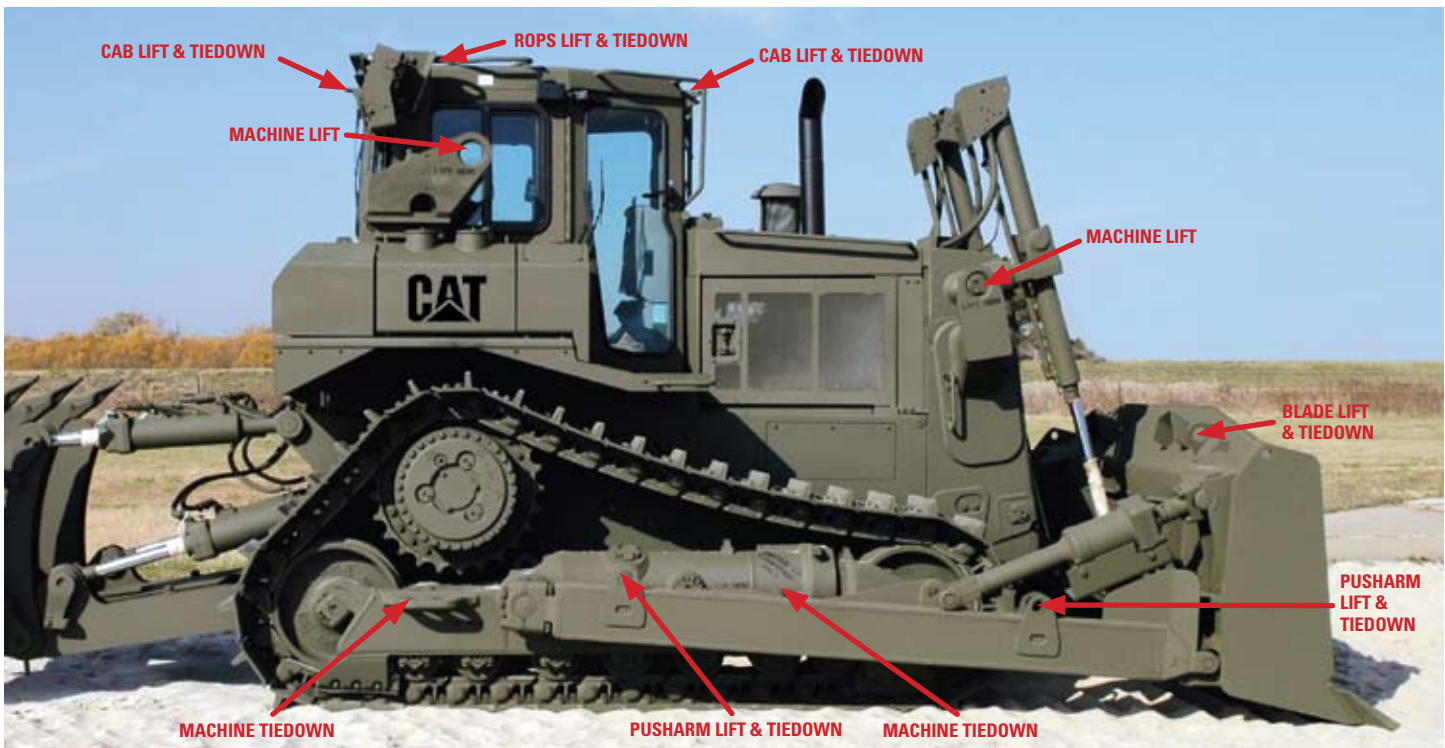
Torque Divider. A single-stage torque converter sends 70% of engine torque through a converter and 30% through a direct drive shaft for greater driveline efficiency. This provides broader range of performance in second gear dozing and scraper pushloading, as well as high torque multiplication to get heavy loads moving.

Auto-Shift/Auto-Kickdown. Auto-shift allows the operator to pre-select a forward and reverse gear for easy and efficient directional changes. Auto-shift settings include first forward to second reverse, second forward to second reverse and second forward to first reverse. Auto-kickdown automatically downshifts the transmission when significant load increases are detected.

Power Shift with Differential Steer



Drawbar Pull. As loads on the tractor increase, the D7R-II offers unmatched lugging capability and smooth shifting as the need occurs to change gears under varying loads.



Lift and Tiedowns. Integrated MIL-STD-209K lift and tiedown provisions are featured on the machine, cab, ROPS, push arms, and blade.

Roller Frames. Tubular Roller Frames resist bending and twisting with added reinforcement where operating loads are the highest.

Undercarriage. The Cat elevated sprocket provides optimized balance for the best possible performance. The heavy-duty, Cat designed and manufactured undercarriage performs well in a wide range of applications.

OPERATOR SAFETY/COMFORT

The Cat® D7R-II – Tested and Proven – Ready to Work

Operator Comfort. The D7R-II operator station is designed for comfort and ease of operation.

- Isolation-mounted, pressurized cab reduces noise and vibration for operator comfort.
- Low effort, pilot operated hydraulic controls reduce operator fatigue.
- Tapered hood and large single-pane door windows create excellent view of the blade.
- Low rear window allows view of the ripper tip(s).
- Work tool lockout switch prevents inadvertent operation of any hydraulic work tools.



Crew Protection Kit. The armored crew protection kit (CPK) on the D7R-II was developed with the Troop's protection and survivability in mind. The armored cab provides the operator with 360° protection, including the roof and the floor, from small arms and fragmentation threats. An emergency egress hatch is provided in the roof, and is accessible from both inside the cab by the operator and from the outside by rescue personnel. The transparent armor provides excellent operator visibility of the machine and surrounding work area. These features of the CPK allow the troops to complete missions safely and effectively.

SERVICEABILITY

The Cat® D7R-II – Tested, Proven, and Reliable – Mission Capable



Maintenance. Proper maintenance of your dozer will keep it running at top performance with minimal downtime. The D7R-II provides unmatched serviceability by offering:

- Under-hood service lamp
- Electric service center
- Easily visible sight gauges
- Left-hand side grouped engine service points
- Easy access to engine compartment on both sides
- Ecology drains for simple and clean fluid drainage
- Maintenance-free batteries
- Military sampling valves
- Modular major components



Monitoring Systems. The D7R-II dozer maximizes on-board diagnostics capability using electronic control modules (ECMs) to monitor engine and machine (transmission, hydraulic and brake) systems. Cat Electronic Technician (ET) software accesses

information from the ECMs allowing technicians to view status parameters, logged codes, active codes, perform functional tests, and record and view data logs of equipment operation. The instrument panel conveniently displays fault or event codes, while the Messenger system (mounted inside cab) provides text related to the fault code. This diagnostic capability allows Army Units to maintain dozer readiness while minimizing the maintenance burden.

Elevated Final Drive. This exclusive design isolates the final drives from implement and ground induced impact loads while keeping the final drives and sprocket teeth away from abrasive materials and moisture, resulting in longer final drive and seal life. The modular design ensures quick and easy service when required.



Remanufactured Parts. Cat engines and major components are designed to be remanufactured and provide multiple life cycles. Components are remanufactured in the factory to original specifications with necessary product updates.

Service Life Extension Program (SLEP).

The Service Life Extension Program (SLEP) is based upon a highly successful program currently in place with the DoD for the modernization of the U.S. military's construction and material handling equipment. As a result, thousands of Cat machines are now realizing a second life. The SLEP process is performed at strategically selected dealers throughout the Caterpillar worldwide dealer network.

The SLEP efforts have proven to be a great value for the DoD. The fact that this work can be done at the Caterpillar dealer sites saves the Government millions in shipping costs.

BEFORE...

A Cat D7G Dozer enters SLEP in extremely poor condition.



AFTER...

A Cat D7G Dozer exits SLEP with new serial number and an 18-month warranty.

Worldwide Locations. The Caterpillar global network of authorized dealers supports the U.S. Military in every corner of the globe. With heavy construction equipment dealers located in over 200 countries, Caterpillar's support organization provides global coverage.



Service Capabilities. Cat field service technicians have the experience and tools necessary to service your machine on-site. Field service trucks are fully loaded with state-of-the-art tools and diagnostic equipment as well as specifications and schematics for every Cat machine. Technical experts at the dealership and Caterpillar are available to provide assistance to field service technicians when needed. When on-site repair isn't enough, Cat dealerships are fully-equipped to service your bulldozer quickly.

Dealer Support. The Caterpillar global network of authorized dealers is the best in the world at providing support to keep your equipment up and running. With 99.7% of parts shipped within 24 hrs, Cat Dealers are supporting the Family of Dozers.

OPERATING SPECIFICATIONS

Engine

Model	Cat® 3176C	
Gross Power	192 kW	258 hp
Flywheel Power	179 kW	240 hp
Net Power - Cat	179 kW	240 hp
Net Power - ISO 9249	179 kW	240 hp
Net Power - SAE J1349	177 kW	238 hp
Net Power - EU 80/1269	179 kW	240 hp
Net Power - DIN 70020	248 PS	
Bore	125 mm	4.9 in
Stroke	140 mm	5.5 in
Displacement	10.3 L	629 in ³

- Engine Ratings at 2100 RPM
- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- No derating required up to 2286 m (7500 ft) altitude, beyond 2286 m (7500 ft) automatic derating occurs.

Transmission

Forward 1	3.5 kph	2.1 mph
Forward 2	6.1 kph	3.7 mph
Forward 3	10.5 kph	6.5 mph
Reverse 1	4.5 kph	2.8 mph
Reverse 2	7.8 kph	4.8 mph
Reverse 3	13.5 kph	8.4 mph

Weights

Winch Equipped	28 603 kg	63,060 lb
Ripper Equipped	29 801 kg	65,700 lb

Service Refill Capacities

Fuel Tank	479 L	126.5 gal
Cooling System	77.4 L	20.4 gal
Engine Crankcase	31 L	8.2 gal
Power Train	178 L	47 gal
Final Drives (each)	13 L	3.4 gal
Roller Frames (each)	24.6 L	6.5 gal
Attachment Hydraulic System (Tank Only)	54 L	14.3 gal
Pivot Shaft Compartment	1.9 L	0.5 gal

Hydraulic Controls – Pump

Pump Capacity	7000 kPa	1,015 psi
Pump Output (Differential Steering)	295 L/min	77.9 gal/min
Lift Cylinder Flow	180 L/min	47.6 gal/min
Tilt Cylinder Flow	80 L/min	21.1 gal/min
Ripper Cylinder Flow	180 L/min	47.6 gal/min

- Pump speed at 2231 RPM
- Pump specifications at rated engine speed

Hydraulic Controls – Main Relief Valve Settings

Differential Steering	42 000 kPa	6,092 psi
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Hydraulic Controls – Maximum Operating Pressure

Bulldozer	22 800 kPa	3,307 psi
Tilt Cylinder	17 225 kPa	2,498 psi
Ripper (Lift)	22 750 kPa	3,300 psi
Ripper (Pitch)	22 750 kPa	3,300 psi
Steering	38 000 kPa	5,511 psi

Multi-Shank Ripper

Type	Adjustable Parallelogram	
Beam width	2210 mm	87 in
Beam cross section	343 x 279 mm	13.5 x 11 in
Maximum penetration	748 mm	29.4 in
Maximum clearance raised (shank tip)	757 mm	29.8 in
Number of pockets	3	
Maximum penetration force	8664 kg	19,100 lb
Maximum pryout force	17 138 kg	38,513 lb
Weight - with one shank	3307 kg	7,431 lb
Weight - 3 shanks	3607 kg	8,091 lb

Winch Specifications

Winch Model	PA110VS Variable Speed	
Weight	1894 kg	4176 lb
Winch and Bracket Length	1461 mm	57.5 in
Winch Case Width	1171 mm	46.1 in
Increased Tractor Length - STD	742 mm	29.2 in
Flange Diameter	610 mm	24 in
Drum Width	337 mm	13.3 in
Drum Diameter	318 mm	12.5 in
Cable Size	25 mm	1.0 in
Cable Length	53 m	175 ft
Oil Capacity	15.1 L	4 gal

Bulldozer Blade Specifications

Blade Capacity (SAE J1265)	6.86 m ³	8.98 yd ³
Width (over end bits)	3693 mm	12 ft 1 in
Height	1524 mm	5 ft
Digging Depth	527 mm	20.7 in
Ground Clearance	1145 mm	45 in
Maximum Tilt	799 mm	31.4 in
Weight (with push plate)	2173 kg	4,790 lb

Standards

ROPS/FOPS

- ROPS (Rollover Protective Structure) offered by Cat for the machine meets ROPS criteria SAE J395, SAE 1040 MAY94, AND ISO 3471-1994.
- FOPS (Falling Object Protective Structure) meets ISO 3449-1992 Level II.

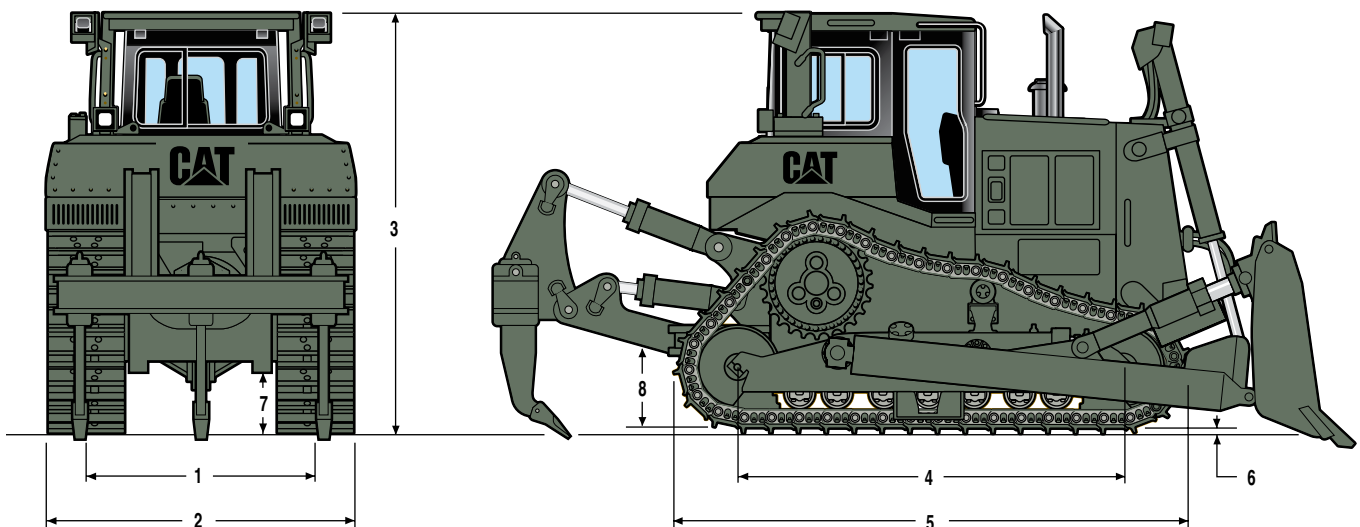
CAB

- The operator sound exposure Leq (equivalent sound pressure level) measured according to the work cycle procedures specified in ANSI/SAE J1166 OCT 98 is 83 dB(A), for cab offered by Cat, when properly installed and maintained and tested with the doors and windows closed.
- Hearing protection may be needed when operating with an open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in noisy environment.
- The exterior sound pressure level for the standard machine measured at a distance of 15 meters according to the test procedures specified in SAE J88 APR 95, mid-gear-moving operation, is 86 dB(A).

BRAKES

- Brakes meet the standard SAE J/ISO 10265 MARCH99.

DIMENSIONS



1 Track Gauge	1981 mm	78"
2 Width of Tractor		
Over Trunnions	2869 mm	9'5"
Without Trunnions	2540 mm	8'4"
3 Machine Height from tip of Grouser:		
Stack	3353 mm	11'0"
EROPS	3359 mm	11'2"
4 Length of Track on Ground	2878 mm	114"
5 Length of Basic Tractor	4736 mm	15'6"
With the following attachments add to tractor length:		
Ripper (with tip at ground line)	1196 mm	3'11"
Ripper (with tip fully raised)	992 mm	3'3"
Winch	77 mm	3"
Bulldozer Blade	1301 mm	4'3"
6 Height of Grouser	71 mm	2.8"
Ground Contact Area	3.2 m ²	5016 in ²
Number of Track Shoes per side	40	40
7 Ground Clearance	416 mm	16.4"
Standard Track Shoe Width	560 mm	22"
Ground Pressure	0.766 kg/cm ²	10.9 psi
8 Drawbar Height (grouser tip to center of clevis)	634 mm	24.9"
Pitch	216 mm	8.5"
Track Rollers/Side	7	7

Standard equipment may vary. Consult Caterpillar Defense & Federal Products for details.

Electrical

Alternator, 95-amp brushless
 Alarm, backup
 Batteries, 2 maintenance free 12V (24V system), HD
 Converter, 12V, 10 amp with 2 power outlets
 Horn, forward warning
 Lights, 4 front, 2 rear, with guards

Operator Environment

Air conditioner, heater and defroster
 Armrests, adjustable
 Cab, sound suppressed
 Differential steering control with touch shift
 Distance travel indicator, electronic
 Electronic Monitoring System (EMS) with coolant temperature, power train oil, hydraulic oil and fuel gauge, tachometer, odometer, gear indicator and diagnostic functions
 Hour meter, electronic
 Mirror, rearview
 Pedal, decelerator
 Pilot operated hydraulic controls with electronic deactivation switch
 Seat, adjustable contour suspension (gray vinyl)
 Seat belt, retractable 76 mm (3")
 Wipers, intermittent

Powertrain

3176C diesel engine with EUI
 (electronic unit injection)
 Advanced Modular Cooling System (AMOCS)
 Air filter with electronic service indicator
 Coolant, extended life
 Fan, blower, direct drive
 Final drives, 3 planet double reduction planetary
 Fuel priming pump

Muffler with mitered stack
 Parking brake, electronic
 Precleaner with strata tube dust ejector
 Prescreener
 Shift management:
 Automatic directional and downshift
 Controlled throttle, load compensating
 Starting aid, automatic ether
 Torque divider
 Transmission, electronically controlled – 3F/3R speeds
 Turbocharger, waste gate
 Water separator

Undercarriage

Track adjuster, hydraulic
 Idlers, lifetime lubricated
 Track rollers, lifetime lubricated
 End track guiding guards
 Sprocket rim segments, replaceable

Other Standard Equipment

CD-ROM parts book
 Engine enclosures, perforated
 Guards, hinged bottom
 Hood, perforated
 Hydraulics, load sensing, dozer lift and tilt
 Oil cooler, hydraulic
 Radiator doors, hinged fan blast deflector
 Tool box
 Vandalism protection for all compartments
 Messenger: electronic monitoring and display system

MILITARY MODIFICATIONS

- **C17 and C5 RO/RO Air Transportable**
- **Armored Cab (Optional)**
- **Removable Cab, ROPS, Blade and Pusharms for Transport**
- **NATO Start Receptacle**
- **MIL-STD-209K Lift and Tie Down Provisions**
- **Fresh Water Fordable to 30" Depth (Standard)**
- **Fresh Water Fording Kit to 60" Depth (Optional)**
- **Rifle Bracket**
- **Arctic Kit for Cold Start (-40° F) (Optional)**
- **CARC or Special Paint**
- **NATO-STANAG-4019 Towing Lugs**
- **Keyless Engine Start Switch**
- **Military Oil Sampling Valves**
- **Fire Extinguisher**
- **Military Data Plates**

All dimensions are approximate. Dimensions may vary with configuration. Specific military service configurations are available upon request.

For more information visit: **www.catdfp.com**

