

Engine			
Engine Model	Cat [®] C6.6 ACERT™		
Flywheel Power	93 kW	125 hp	

- Engine ratings at 2,100 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 3000 m (9,842 ft) altitude, beyond 3000 m (9,842 ft) automatic derating occurs.

Weights				
17 000 kg	37,480 lb			
16 070 kg	35,428 lb			
18 145 kg	40,000 lb			
	17 000 kg 16 070 kg 18 145 kg			

PL61 Pipelayer

Pipelayer

Hydraulic hook and boom winches provide excellent speed capability. Counterweight and frame design provide excellent stability while offering world class visibility. **pg. 4**

Structure

Steel castings and heavy steel plates are welded to insure a rigid one-piece frame structure. Structures are designed to last throughout the extended service life of the PL61. **pg. 5**

Operator Station

The operator station offers excellent visibility and superior comfort. Optional features include a fully adjustable air suspended seat, air conditioning with enclosed cab, electrohydraulic controls, advanced monitoring system and low sound levels for comfortable operation. **pg. 6**

Serviceability and Accessibility

Grouped service points allow for efficient checks and maintenance, from the ground level. The design of the cooling package facilitates serviceability and cleaning of the radiator and cooling fan. **pg. 11**

Total Customer Support

Your Cat[®] Dealer can customize a plan for you, from PM service to total machine maintenance, allowing you to optimize your return on investment. **pg. 12**

Engineered to exceed the most demanding working conditions. The PL61's power and versatility, combined with rugged components, are designed for tough and varied conditions. This machine offers you the reliability and durability you expect from Cat Pipelayers.



Engine

The Cat[®] C6.6 engine meets worldwide emission standards while providing outstanding engine performance, fuel efficiency and long-term durability **pg. 8**

Drive Train

The hydrostatic drive with electronic control provides precise modulation for quick and smooth operation, superior maneuverability and comfortable operation, increasing productivity. **pg. 9**

SystemOne Undercarriage

Designed exclusively by Caterpillar[®] for Cat[®] Machines, SystemOne Undercarriage extends undercarriage system life, improves reliability and reduces owning and operating costs. **pg. 10**



Pipelayer

Caterpillar pipelayer system includes winch and boom, counterweight and frame.



Winches.

- Boom and hook drawworks are driven by independent hydraulic winches.
- Oil-disc brakes provide smooth operation and positive retention of boom and hook positions.
- Modular design allows fast replacement, easy field service and testing.
- High parts interchangeability between hook and boom winch assemblies.
- Infinitely variable speed controls for both boom and hook allow precise control.



Counterweight.

- Counterweight is extended hydraulically for improved load balance and clearance.
- Counterweight segments are contoured to provide a low center of gravity and enhanced forward and right side viewing area. Segments are splined to the counterweight assembly for ease of assembly and disassembly.

Drawbar.

• Able to tow wide range of attachments.



Boom.

- 5.5 m (18 ft) Boom is standard equipment with large box section.
- Replaceable, boom-mount bearings.
- High tensile strength steel construction.
- Light weight for increased payload.
- Durable for long life.

Blocks and Hook. Heavy-duty lifting components include the following:

- Hook and boom blocks with sealed roller bearings.
- Forged hook with latch and serviceable handle.
- Ductile iron sheaves.
- High performance cable for improved life, crush resistance, flexibility and strength.

Structure

The frame is engineered to handle the most demanding applications, and is built to last throughout the extended service life of the PL61.

Main Frame. The PL61 one-piece main frame is designed to absorb high impact shock loads and twisting forces. Robotic welding provides deep penetration and consistency, ensuring high quality, durability and reliability throughout the structure.

Track Roller Frame. Track roller frames feature an engineered box-section design, which provides superior strength and resistance to bending. Equalizer bars are pinned in their center to the machine main frame and at the ends to each track roller frame. Oscillation is locked out for greater stability in pipelaying applications.





Heavy Duty Components. Heavy duty radiator grill, bottom guards and fuel tank guard are available, for additional protection in severe applications.

Integrated ROPS. The cab and canopy structures provide roll-over protection for the operator.

Operator Station

The operator station is ergonomically designed to provide excellent visibility and superior comfort for maximum productivity throughout the day.



Operator Station. The operator station features an ergonomic layout emphasizing simplicity, ease of use and comfort. Standard air conditioning with enclosed cab, generous legroom and superior visibility allow the operator to focus on the job. With more glass area, the operator station provides a clear view to the surrounding work site.



Air suspended seat. The Caterpillar C500 Comfort air suspended seat is available in cloth or vinyl and is fully adjustable, for maximum operator comfort. A standard lumbar adjustment provides excellent lower back support. For comfortable operation in cold weather, a heated cloth seat is available.

Seat-mounted controls. For optimum comfort and precise control, the PL61 features ergonomically designed seat-mounted controls. Seat-mounted controls isolate vibrations from the operator, and provide independent seat and controls adjustment. Individual wrist pads and armrests can be adjusted independently for optimum comfort.

Electro-hydraulic controls. Provide quick steering response, precise hook and boom control, and comfortable, low-effort operation.



Instrument Cluster. The compact instrument cluster keeps the operator aware of all vital machine functions. The advanced monitoring system tracks machine operating conditions and informs the operator of impending problems. The monitoring system includes:

- Alert indicators: action lamp (3 warning categories), electrical system
- Indicators: parking brake, engine oil pressure, engine air filter, hydraulic oil filter, electrical preheat, operator presence, machine security system, fuel system service, implement lockout
- Gauges: hydraulic oil temperature, engine coolant temperature, fuel level
- Digital display: service hours, selected forward and reverse speeds

Brake and Decel Pedal. The PL61 features a single, combined hystat brake and decel pedal. Two braking configurations are available through this pedal:

• Transmission braking only: As the pedal is pressed, the machine will slow by braking the transmission; no engine decel will occur.

• Transmission braking and engine decel: As the pedal is pressed, the machine will slow by simultaneously braking the transmission and reducing the engine speed. When the pedal is depressed beyond the detent, the service brakes will be applied.

Speed and Direction Control.

The operator controls the speed of the machine and the direction of travel with a single joystick control located on the left console. This joystick includes a thumb wheel for precise speed control, as well as a convenient button to store and recall operator-defined, independent operating speeds for forward and reverse.

Other Cab Features. For optimum operator comfort, the PL61 operator station includes the following amenities:

- Foot rests for slope work
- Air filter
- Two 12-volt power points
- Storage compartment
- Cup holder
- Dome light
- Rearview mirror
- Radio ready factory installed components
- Rear attachment mirror

Skylight Window. The cab and canopy are equipped with a skylight window to view the boom and upper block.

Engine

The Caterpillar[®] C6.6 Diesel Engine with ACERT[™] Technology meets worldwide emissions requirements for EPA Tier 3, EU Stage IIIA and Japan Moc Step 3 engine exhaust emission regulations, while providing excellent performance.



Cat[®] C6.6 Engine with ACERT™

Technology. The Cat[®] C6.6 is a 6.6 liter (403 in³) displacement, six cylinder, inline configured engine equipped with a Caterpillar Common Rail fuel System. It uses ACERT Technology, a series of Caterpillar engineered innovations that provide advanced electronic control, precision fuel delivery and refined air management, resulting in outstanding performance and lower emissions.

Design. The C6.6 features a compact design with heavy-duty engine features for outstanding durability, reliability and performance. The C6.6 incorporates a new cross flow cylinder head design, a 4 valve head and an ADEM A4 electronic controller.

Electronic Controls. The C6.6 engines use advanced electronic controllers, which have a proven track record for performance and reliability. ADEM A4 Electronic Control Module (ECM) receives data from engine-mounted sensors and adjusts critical parameters to maintain optimum performance. These adjustments also optimize fuel economy and emissions compliance. Electronics also make engines easier to troubleshoot and repair.

Fuel Delivery. Fuel is introduced in the combustion chamber in a number of precisely controlled microbursts. Injecting fuel in this way allows for precise shaping of the combustion process. The ADEMTMA4 module directs the injectors to deliver precise quantities of fuel at exactly the right times during combustion for optimum efficiency and performance.

Air Management. The C6.6 uses a turbocharger fitted with a smart wastegate to give precise control of the boost pressure. Over the entire engine operating ranges the result is improved: Throttle response, lower fuel consumption and optimized engine performance. A new cross-flow design in the cylinder head facilitates air movement, while tighter tolerances between the piston and cylinder liner are reducing blow by gases. **Turbocharged and Aftercooled.** A wellmatched turbocharger and air-to-air aftercooler results in higher power while keeping rpm steady and exhaust temperatures low.



Torque Rise. The direct injection electronic fuel system provides a controlled fuel delivery increase as the engine lugs back from rated speed. This results in increased horsepower below rated power. A combination of increased torque rise and maximum horsepower improves response and provides greater drawbar pull.

Cooling System. The cooling system is a single coolant unit including hydraulic oil cooler, radiator, ATAAC and fan installation. Aluminum cores and hydraulically driven demand fan provide optimum cooling and fuel efficiency.

Electric Fuel Priming Pump. A standard electric fuel priming pump is located in the primary fuel filter base above the combined water separator/primary fuel filter. A switch enables to easily prime the fuel system after a fuel filter service.

Drive Train

The PL61 features an electronically controlled hydrostatic drive system with independent power and control of each track for fast acceleration, variable speed control, and on-the-go direction changes.

Hydrostatic Drive. The electronically controlled hydrostatic drive system automatically maintains engine speed to match the power requirements of the application for peak performance. The hydrostatic drive train also offers independent power and control of each track, for fast acceleration, infinitely variable speed control and on-the-go, direction changes for each track. The operator can command smooth "power turns" or even counter-rotation of the tracks for precise steering control in tight areas. The Caterpillar hydrostatic drive system manages itself, freeing the operator to concentrate on using the Caterpillar Pipelayers superb agility, speed, and maneuverability to do more productive work.

Infinitely Variable Speed Control. Hydrostatic drive provides infinite speed selection from 0 to 10 km/h (0 to 6.2 mph) in forward and reverse. This lets the operator select the optimum speed for ground and job conditions. It also eliminates power interruption during shifting.

Ground Speed Balancing. Hydrostatic drive provides a completely "step-less" transmission of power and automatically matches travel speed and implement loads for increased efficiency and easier operation.



SystemOne Undercarriage

Exclusively for Caterpillar machines the SystemOneTM Undercarriage is a revolutionary new undercarriage system – from the ground up.



SystemOne™ Undercarriage.

Exclusively for Caterpillar machines the design extends system life and reduces operating costs.

- Long-life Sprocket. Extended life sprockets will outlast two or more tracks. The rotating bushing technology extends life.
- Guiding System. The guiding system contacts link rails instead of pin ends and helps keep the track within the roller system. The result is improved track guiding.
- Rollers. The increased flange diameter on the rollers provide optimum guiding and longer life.

- Carrier Rollers. Redesigned carrier rollers are factory sealed and serviced as a unit. The larger diameter provides extended wear to better match undercarriage system life.
- Idlers. The center tread idlers contact only the bushing – not the links – eliminating scalloping and providing more guiding to the link assembly. The idlers last longer because they contact a rotating bushing instead of a link rail.
- Cartridge Joints. Factory-sealed cartridge joints are laser welded to control end play. They offer improved seal integrity through an innovative new sealing system and do not depend on the link interface to remain sealed. As with all Cat undercarriage products, they are filled with special oils.
- May be used in any application.
- The track roller frames are welded and have a box section design, which provides strength and resistance to bending without adding extra weight.

The track adjuster and mechanical recoil spring and grease filled adjustment cylinder which allows the idler to move forward and back to maintain proper track tension as it absorbs undercarriage shock.

Undercarriage Arrangements. Narrow shipping width arrangement

• Narrow track shoes and frame provides shipping width under 3 m (9.8 ft) without disassembly.

LGP (Low Ground Pressure) arrangement

- Specially designed to work in soft underfoot conditions.
- Wide track shoes, a longer track frame and a wider gauge increase track contact area and reduce ground pressure for excellent flotation.

Complete Guarding. Caterpillar undercarriages are designed with full length guarding on top of the track roller frame. This prevents abrasive materials from being recirculated in the track.

Roller Frames. Roller frames attach to the tractor by a pivot shaft and pinned equalizer bar.

Serviceability and Accessibility

Grouped service points and easy maintenance result in increased machine up-time.

Easy Diagnostics. The Compact Instrument Cluster allows for quick identification of problems and its cause, utilizing a three level warning system. This monitoring system can easily be upgraded by flashing software.

Engine Compartment. All the regular engine maintenance is made through a large, hinged door located on the left side of the machine. This compartment gives access to the engine fuel filters and water separator, the engine oil filter, the engine oil dipstick and filler, the electric fuel priming pump, and the engine air pre-cleaner and filters.



Cooling Package. Cores and fan are accessible from ground level, for easy cleaning and maintenance. Opening the radiator front grid will allow full access to the engine fan. The fan is mounted on a swing-out door that will provide access to the cores. The other side of the cores is accessible through the engine compartment.



Grouped Pressure Taps. Pressure taps allow for quick measure and troubleshooting of the hydraulic system. These pressure taps are all located in the left service access door, and are accessible from ground level.

Ecology Drains. Ecology drains provide an environmentally safer method to drain fluids. They are included on the radiator (coolant) and the hydraulic tank, and for the engine oil change. **Product Link.** This system streamlines diagnostic efforts, downtime and maintenance scheduling and costs by providing communication flow of vital machine data and location information between the dealer and the customer. Product Link provides updates on-service meter hours, machine condition and machine location.



Cat Machine Security System (MSS). MSS uses electronically coded keys selected by the customer to limit usage by individuals or time parameters. MSS deters theft, vandalism and unauthorized usage. Each machine system can store up to 255 keys and each key can be used on as many machines as desired. MSS can be controlled by a Personal Data Assistant. Field installation is available.

Total Customer Support

Your Cat[®] Dealer can customize a plan for you, from PM service to total machine maintenance, allowing you to optimize your return on investment.



Product Support. Your Cat Dealer offers a wide range of services. The dealer will help you choose a plan that can cover everything from the machine and attachment selection to replacement. This will help you get the best return on your investment.

Remanufactured Components.

Save money with remanufactured parts. You receive the same warranty and reliability as new products at a cost savings of 40 to 70 percent.

Service Capability. Whether in the dealer's fully equipped shop or in the field, you will get trained service technicians using the latest technology and tools.

Selection. Make detailed comparisons of the machines you are considering before you buy. How long do components last? What is the cost of preventive maintenance? What is the true cost of lost production? Your Cat Dealer can give you answers to these questions.

Purchase. Consider the financing options available as well as day-to-day operating costs. This is also the time to look at dealer services that can be included in the cost of the machine to yield lower equipment owning and operating costs over the long run.

Operation. Improving operating techniques can boost your profits. Your Cat Dealer has training videotapes, literature and other ideas to help you increase productivity.

Replacement. Repair, rebuild or replace? Your Cat Dealer can help evaluate the cost involved so you can make the right choice.

Maintenance. More and more equipment buyers are planning for effective maintenance before buying equipment. Choose from your dealer's wide range of maintenance services at the time of your purchase. Repair option programs guarantee the cost of repairs up front. Diagnostic programs such as Scheduled Oil Sampling and Technical Analysis help avoid unscheduled repairs.

SAFETY.CAT.COM™.

Engine

Engine Model	Cat [®] C6.6 ACERT™	
Flywheel Power	93 kW	125 hp
Net Power – Caterpillar	93.2 kW	125 hp
Net Power – ISO 9249	93.2 kW	125 hp
Net Power – EEC 80/1269	93.2 kW	125 hp
Net Power – SAE J1349	92.1 kW	123.4 hp
Bore	105 mm	4.13 in
Stroke	127 mm	5 in
Displacement	6.6 L	403 in ³

- Engine ratings at 2,100 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 3000 m (9,842 ft) altitude, beyond 3000 m (9,842 ft) automatic derating occurs.

Undercarriage

40	
7	
2000 mm	79 in
2645 mm	104 in
560 mm	22 in
760 mm	30 in
610 mm	24 in
3 m ²	4,650 in ²
4 m ²	6,200 in ²
3.2 m ²	4,960 in ²
56.3 kPa	8.2 psi
43.4 kPa	6.3 psi
54.1 kPa	7.8 psi
	40 7 2000 mm 2645 mm 560 mm 610 mm 3 m ² 4 m ² 3.2 m ² 56.3 kPa 43.4 kPa 54.1 kPa

Weights

Operating Weight – Narrow Shoes	17 000 kg	37,480 lb
Shipping Weight – Narrow Shoes	16 070 kg	35,428 lb
Operating Weight – LGP	17 800 kg	39,242 lb
Shipping weight – LGP	16 870 kg	37,192 lb

Pipelaying Equipment

Lift Capacity	18 145 kg	40,000 lb
Boom Length	5.49 m	18 ft
Hook Winch Drum Diameter	216 mm	8.5 in
Boom Winch Drum Diameter	245 mm	9.63 in
Hook Winch Flange Diameter	398 mm	15.5 in
Boom Winch Flange Diameter	372 mm	14.63 in
Hook Winch Drum Length	254 mm	10 in
Boom Winch Drum Length	254 mm	10 in
Hook Winch Capacity – 16 mm (% in) Diameter	72.85 m	239 ft
Boom Winch Capacity – 16 mm (½ in) Diameter	49.38 m	162 ft
Hook w/Wire Rope Installed – 16 mm (% in) Diameter	49.38 m	162 ft
Boom w/Wire Rope Installed – 16 mm (% in) Diameter	25.91 m	130 ft
Boom Line Speed	46 m/min	151 ft/min
Bare Drum Hook Speed (Lo)	33 m/min	108 ft/min
Bare Drum Hook Speed (Hi)	69.5 m/min	228 ft/min
2 Part Line Hook Speed (Lo)	16.5 m/min	54 ft/min
2 Part Line Hook Speed (Hi)	34.8 m/min	114 ft/min
3 Part Line Hook Speed (Lo)	11 m/min	36 ft/min
3 Part Line Hook Speed (Hi)	23.2 m/min	76 ft/min
Removable Counterweight – Number of Segments	14	
Removable Counterweight – Each ($ imes$ 7)	67.7 kg	149 lb
Removable Counterweight – Each ($ imes$ 9)	114.8 kg	253 lb
Total Weight Extendable	1231 kg	2,714 lb

Hydraulic Controls

Туре	piston type, two section	piston type, variable, two section	
Output – Maximum	540 L/min	142 gal/min	
Relief Valve Setting – Counterweight	17 237 kPa	2,500 psi	

Service Capacities

Fuel Tank	295 L	77.9 gal
Crankcase (with Filter)	16.5 L	4.35 gal
Final Drives (each)	23 L	6 gal
Cooling System	24.4 L	6.4 gal
Hydraulic Tank	58 L	15.3 gal



Specified Equipment

 Diameter wire rope 	16 mm	5/8 in
Rope minimum	183.3 kN	41,200 lb
breaking strength		
• 3 part load line		
• 3 part boom line		
Counterweight extended	1231 kg	2,714 lb
Standard boom	5.49 m	18 ft
 Total operating weight 		
Narrow	17 000 kg	37,480 lb
LGP	17 800 kg	39,242 lb

A Lift capacity at tipping point – ISO 8813

B Rated load capacity – ANSI/ASME B30.14

C Working range – ANSI/ASME B30.14

Meters

Dimensions

All dimensions are approximate.



Tractor Dimensions		Narrow		LG	LGP	
1	Track gauge	2000 mm	79 in	2000 mm	79 in	
2	Width of tractor (standard shoes)	2560 mm	101 in	2760 mm	109 in	
3	Width of tractor counterweight/boom removed	2917 mm	115 in	3117 mm	123 in	
4	Width of tractor (counterweight retracted)	3000 mm	118 in	3200 mm	126 in	
5	Width of counterweight extended	4426 mm	175 in	4414 mm	174 in	
6	Machine height (tip of winch)	2454 mm	97 in	2454 mm	97 in	
7	Drawbar height	483 mm	19 in	483 mm	19 in	
8	Length of track on ground	2645 mm	104 in	2645 mm	104 in	
9	Operating length	3784 mm	149 in	3784 mm	149 in	
10	Height of machine					
	Height of top of stack	2914 mm	115 in	2914 mm	115 in	
	Height to the top of the ROPS canopy/cab	2958 mm	116.5 in	2958 mm	116.5 in	
11	Grouser height	48 mm	1.9 in	48 mm	1.9 in	
12	Ground clearance (per SAE J1234)	360.4 mm	14.2 in	360.4 mm	14.2 in	
13	Boom height [at SAE 1.22 m (4 ft) overhang]	6175 mm	243 in	6175 mm	243 in	

Standard Equipment

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

ELECTRICAL Alarm, back up Alternator, 95 amp Batteries, heavy duty, 900 CCA Converter, 12V, 15 amp Diagnostic connector Lights, halogen (four front, two rear) Horn Starter, 24 volt OPERATOR ENVIRONMENT Canopy Seat, vinyl, air suspension Seat belt, retractable Electro-hydraulic controls, adjustable seat mounted Foot rests Compact instrument cluster including: Gauges for engine coolant temperature, hydraulic oil temperature and fuel level 12 indicators Digital display (ground speed, engine RPM and hour meter) Rotary throttle switch Electronic travel speed limiter Independent forward/reverse speed settings Mirror, rearview Auxiliary mirror for rear hitch/attachment 12V radio ready Power ports, 12V (2) Coat hook Storage compartment Cup holder Heavy duty rubber floor mat PIPELAYER Boom, 5.49 m (18 ft) Counterweight, extendable segmented 1231 kg (2,714 lb) Hydraulics, pipelayer system

POWER TRAIN Engine, Cat C6.6 with ACERT Technology Turbocharged and aftercooled Common Rail Fuel system Aluminum bar plate cooling system (radiator, power train, aftercooler) Hydraulic demand fan Air cleaner with pre-cleaner, automatic dust ejection and under-hood intake Electric fuel priming pump with integrated fuel/water separator Dual path, electronic control, closed-loop hydrostatic transmission Under-hood muffler Starting aid, ether injection Antifreeze, extendable life coolant -37° C (-35° F) **UNDERCARRIAGE** Scrapers, idler SystemOneTM undercarriage Sprocketed center tread idlers Lifetime lubricated track rollers (7) and idlers Carrier rollers Track, 40 sections Standard configuration, 560 mm (22") MS LGP configuration, 760 mm (30") Adjustable idler height position Hydraulic track adjusters OTHER STANDARD EQUIPMENT Fuel tank and guard Hinged crankcase guard Lockable engine enclosures Idler guards Hinged radiator grill and swinging fan Front pull device Rigid drawbar Ecology drains (engine oil, power train and implement oil and engine coolant) Swing-out radiator fan S•O•SSM ports (engine, power train, hydraulics and engine coolant)

Optional Equipment

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

POWER TRAIN Oil change, high speed Fan, demand, reversing Antifreeze, extended life coolant, -50° C (-58° F) UNDERCARRIAGE Track pairs, std track, 610 mm (24 in) MS **OPERATOR ENVIRONMENT** ROPS cab with sliding side windows and air conditioning Windshield washers and wipers Cat Comfort cloth air suspended seat with adjustable armrests Canopy, heated Cab, polycarbonate windows Seat, vinyl, air suspension Seat, cloth, air suspension, heated **GUARDS** Fuel tank, heavy duty Grill, radiator, heavy duty Crankcase, heavy duty Track guiding, center Track guiding, long

Track guiding, moderate service

STARTING AIDS Batteries, heavy duty Heater, engine coolant, 120V Heater, engine coolant, 240V OTHER ATTACHMENTS Certification Group Fuel tank, fast fuel Enclosure, sound suppression LGP arrangement, wider frame Machine Security System Caterpillar Product Link Rotating beacon FIELD INSTALLED ATTACHMENTS Radio

Notes

Notes

PL61 Pipelayer

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

> © 2007 Caterpillar All Rights Reserved Printed in U.S.A.

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

CAT, CATERPILLAR, SAFETY.CAT.COM, ACERT, SystemOne, their respective logos, "Caterpillar Yellow" and the POWER EDGE trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

AEHQ5938 (12-07)

