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## 375-375L CAT - Hydraulic Excavator

## Cat<sup>®</sup> Turbocharged ATAAC

 3406C Engine
 19 kW (428 hp)

 Travel Speed
 4.4 km/h (2.7 mph)

 Drawbar Pull
 546 kN (122,800 lb)

Operating Weights 375 **81,190 kg (178,800 lb)** 375 L **82,380 kg (181,500 lb)** 



## **Caterpillar Engine**

Flywheel power at 1800 RPM.....319 kW (428 HP) Kilowatts (kW) is the International System of Units equivalent to horsepower.

Net power at the flywheel of the machine engine is based on standard air conditions of 25° C (77° F) and 99 kPa (29.32 Hg) dry barometer. Power is based on using 35° API gravity fuel having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 30° C (86° F) [ref. a density of 838.9 g/L (7.001 lb/U.S. gal)]. 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 2300 m (7,550 ft) altitude.

Caterpillar four-stroke-cycle, 3406C turbocharged ATAAC diesel engine with six cylinders, 137 mm (5.4") bore, 165 mm (6.5") stroke and 14.6 liters (893 in 3) displacement.

Direct-injection fuel system with injection pump. Cam-turned and tapered, aluminum-alloy pistons have three rings each and are oil cooled. Connecting rods are tapered.

Uniflow cylinder head design eliminates crossover manifold piping. Internal fuel, oil and water passages used instead of external lines. Deep-skirted, cast cylinder block. Induction-hardened, forged crankshaft. Steel camshaft is fully journaled at every block bulkhead. Oscillating roller followers and short pushrods for precision engine timing. Four alloy-steel valves per cylinder.

Direct-electric, 24-volt starting system with a 75-amp alternator, 7.5 kW starter and two 12-volt, 210-amphour batteries.



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#### Hydraulic System

Two variable-displacement, axial-piston pumps power the boom, stick, bucket and travel. A third pump powers the swing circuit. One, single-section, gear-type pump powers the pilot circuit.

#### Main system:

#### Maximum pressure:

Implements	

#### Pilot system:

Maximum flow	50 liters/min (13.2 GPM)
Maximum pressure	

#### Cylinders, bore and stroke:

Boom (2	2) <b>200</b> x 1967 mm (	(7.87" x 77.4")	
Stick (1		8.66" x 89.06")	)

Bucket (1):

Snubbers are used at the rod ends of the boom cylinders and at both ends of the stick cylinder.

#### **Controls**

Two joystick hand levers actuate boom, stick, bucket and swing (SAE pattern.)

Right lever: Move forward and backward to lower and raise boom. Move left and right to control bucket curl and dump. Button on top is automatic engine control system's manual switch. Operator can increase or decrease engine speed by pushing the button.

Left lever: Move forward and backward to move stick out and in. Move left and right to control direction of swing. Button on top controls horn.

Oblique movement of either lever operates two functions simultaneously. Manually applied lever onleft console cuts off pilot pressure for joysticks and travel controls and electrical power for engine starting circuit.

Monitor panel contains switches for power mode selector, automatic engine control, lights, windshield wiper, windshield washer, travel speed selector and alarm cancel. Blind switch for troubleshooting also is located on monitor panel.



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#### <u>Steering</u>

Two rocker pedals with detachable hand levers control steering and travel functions. Controls are pilot-operated for reduced efforts. Left pedal and lever control left track; right pedal and lever control right track. When idlers are in front: (1) Pushing both pedals or levers forward moves the excavator straight ahead.

(2) Rocking both pedals or pulling both levers backward moves the excavator straight back.

(3) Moving one pedal or lever more than the other, either forward or backward, results in a gradual turn.

(4) Moving one pedal or lever forward and the other pedal or lever backward counter-rotates the tracks for spot turns.

#### <u>Brakes</u>

Two wet, multiple-disc brakes are used on the final drive input shafts. Spring-applied, hydraulically released. Actuating a travel control simultaneously releases the brakes. When the controls are released, the brakes automatically apply.

#### **Drive**

Fully hydrostatic drive. Each track is driven by an independent, two-speed, axial-piston hydraulic motor. Triple-reduction, planetary final drives are splash lubricated. Track motors, brakes and final drives are integrated in the track roller frame for protection against contact damage.

#### <u>Track</u>

Caterpillar designed and built, track-type undercarriage unique to excavators. Robotwelded, U-shaped track roller frames with hydraulic adjusters. Sealed and lubricated rollers and idlers. Sealed track with double-grouser shoes. Self-cleaning, apex shoes available.

	375	375L
Number of shoes, each side	47	51
Number of track rollers, each side	8	9
Overall track length	5845 mm (19'2'')	6360 mm (20'10'')
Gauge (Extended)	3510 mm (11'6'')	3510 mm (11'6'')
Gauge (Retracted)*	2750 mm (9')	2750 mm (9')
Widths of available shoes Double grouser Single grouser	610 mm (24") 750 mm (30") 900 mm (36") 610 mm (24")	610 mm (24") 750 mm (30") 900 mm (36") 610 mm (24")
Ground clearance	890 mm (2'11")	890 mm (2'11")
*Retracted gauge for 900 mm (36") shoes is 2940 mm (9'8").		



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#### Swing Mechanism

Two fixed-displacement, axial-piston motors power swing mechanism. Triple-planetary, double-reduction gear sets drive pinion. Pinions are enclosed in grease bath to keep contaminants out and to extend service intervals. Releasing swing control cuts hydraulic power to swing motors and acts as a brake. Moving swing lever in opposite direction also will stop the swing. Automatic swing brake is spring applied and hydraulically released. Automatic, oil-disc brake applies four seconds after swing control is released. Shipping lock pins upperstructure to carbody to prevent rotation during transport.

#### Service Refill Capacities

	Liters	U.S. Gallons
Fuel Tank	990	261.1
Cooling System	95	25.1
Lubrication:		· · ·
Engine oil	65	17.1
Swing drives (each)	13.5	3.6
Final drives (each)	25	6.6
Hydraulic system (includes tank)	995	262.9
Hydraulic Tank	780	206.1

#### Major Component Weights

Upperstructure (without counterweight and front linkage)	19 450 kg (42,800 lb)
Counterweight	11 790 kg (26,000 lb)

#### Undercarriage

Standard (with 750 mm/30'' shoes)	
Track Roller Frame (each)	
Long (with 900 mm/36" shoes)	
Track Roller Frame (each)	

#### Boom (includes pins and lines, three cylinders)

Reach 8800 mm/28'10"	9410 kg (20,700 lb)
General Purpose 8400 mm/27'6"	
Mass excavation 7250 mm/23'10"	

#### Stick

Stick nomenclature consists of three elements. The first element is a letter that indicates which boom the stick will fit. The second element is a number. It indicates the length in meters. The third element is a letter. It tells which family of buckets will fit the stick. For example, the R4.4H stick is a 4.4 meter stick which fits the reach boom and uses "H" family buckets.



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For Reach 8800 mm (28'10'') Boom*	
R5.5H (18'1")	2560 kg (7,800 lb)
R4.4H (14'5")	3230 kg (7,100 lb)
General Purpose 8400 mm (27'6") Boom*	
R5.5H (18'1")	3560 kg (7,800 lb)
R4.4H (14'5'')	3230 kg (7,100 lb)
R3.4J (11'2")	2980 kg (6,600 lb)
R2.9J (9'7'')	2890 kg (6,400 lb)
For Mass excavation 7250 mm (23'10") Bo	xom*
M4.1J (13'7'')	3260 kg (7,200 lb)
MB.4J (11'2")	2970 kg (6,500 lb)
M2.9J (9'7'')	2890 kg (6,400 lb)
*includes pins and lines	

Configuration	375*	375 L**
Reach Excavator (Reach boom)		
Shipping Weight:		
Stick R5.5H, with 2.8 m3 (3.75 yd3) T bucket 🥣	78 400 kg (172, 700 lb) 🦷 👔	81 470 kg (179,400 lb)
R4.4H, with 3.8 m3 (5.00 yd3) T bucket	78 680 kg (173,300 lb)	81 750 kg (180, 100 lb)
General Purpose (General Purpose boom)	S	
Shipping Weight:		
Stick R5.5H, with 2.8 m3 (3.75 yd3) T bucket	78 290 kg (172,400 lb)	81 350 kg (179,200 lb)
R4.4H, with 3. <mark>8 m</mark> 3 (5.00 yd3) T bucket	78 570 kg (173, 100 lb)	81 630 kg (179,800 lb)
R3.4J, with 3.8 m3 (5.00 yd3) HD bucket	79 700 kg (175,500 lb)	82 760 kg (182,300 lb)
R2.9J, with 4.4 m3 (6.00 yd3) HD bucket	80 160 kg (176,600 lb)	83 220 kg (183,300 lb) 🧹
Mass Excavator (Mass excavator boom)		
Shipping Weight:		
Stick M4.1J, with 3.8 m3 (5.00 yd3) HD bucket 🛛 🔬 🦳 🛀	80 300 kg (176,900 lb)	83 370 kg (183,600 lb)
MB.4J, with 4.4 m3 (6.00 yd3) HD bucket	80 560 kg (177,400 lb)	83 620 kg ( <mark>184,2</mark> 00 lb)
M2.9J, with 5.4 m3 (7.00 yd3) HD bucket	80 820 kg (178,000 lb)	83 900 kg (184,800 lb)

Note: Shipping weights include: lubricants, coolant, 10% fuel, bucket linkage, specified bucket and long tips. For operating weight add 630 kg (1,390 lb).

\* Weights shown are for machines equipped with 750 mm (30") shoes.

\*\* Weights shown are for machines equipped with 900 mm (36") shoes.

See table below for weight differences for optional track shoes.

Weight Difference	$\sim$
375	375 L
870 kg (1,900 lb)	NA
–970 kg (–2,100 lb)	–2190 kg (–4,800 lb)
Standard	–1060 kg (–2,300 lb)
+1040 kg (+2,300 lb)	Standard
	<b>375</b> 870 kg (1,900 lb) 970 kg (2,100 lb) Standard



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Optional Equipment		n h
oplies	Boom, Reach Sticks: R5.5H 5500 mm (18'1''). R4.4H 4400 mm (14'5'').	
dipsur	Boom, General Purpose Sticks: R5.5H 5500 mm (18'1"). R4.4H 4400 mm (14'5"). R3.4J 3400 mm (11'2"). R2.9J 2925 mm (9'7").	
	Boom, Mass excavation. Sticks: M4.1J 4100 mm (13'6'').	Guards: Falling object.
Auxiliary boom lines:	MB.4J 3400 mm (11'2'').	Front cab.
R-boom	M2.9J 2925 mm (9'7'').	Full length, track guiding
M-boom. G.P. Boom	Bucket linkage:	(two-piece). Sprocket end.
Auxiliary stick lines:	H-family.	Heavy lift.
R5.5H.	J-family.	Lubrication system, on board.
R4.4H.	Buckets (see chart).	Sun screen.
R2.9J.		
M4.1J.	Tips and sidecutters.	Track shoes:
M2.9J.	Check valves, boom lowering.	610 mm (24") double grouser.
	Cold weather starting kit.	750 mm (30") double grouser.
Auxiliary hydraulic arrangement:	Counterweight removal system.	900 mm (36") double grouser.
one-way flow.	Fast fill fuel system.	610 mm (24") single grouser.
one-/two-way flow.	Fast fill oil system.	(375 only)

#### **Undercarriage**

Track Gauge	Track Length
The 375 L has a 2750 mm (9')* track gauge, when retracted, to allow easier transport. The extended gauge is 3510 mm (11'6''). *2940 mm (9'8'') with 900 mm (36'') shoes.	The 375 has a standard undercarriage length of 5845 mm (19'2") from end-to-end. It provides a stable work platform for many applications around the world and is well-suited to hard or rock underfoot conditions. The 375 L has an undercarriage length of 6360 mm (20'10") end-to-end which provides additional flotation in soft underfoot conditions.



## **Bucket Options**

	Capac	ity*	Width		Tip Ra	dius	Weigh w/o ti		Teeth
	m3	yd3	mm	in	mm	in	kg	lb	Qty
H Buckets									
	2.4	3.25	1380	54	2290	90.2	2120	4,670	4
	2.8	3.75	1535	60	2290	90.2	2300	5,070	5
Trenching	3.8	5.00	1990	78	2290	90.2	2880	6,340	6
Rock Ripping	1.5	2.00	1990	47	2137	84.1	2840	6,260	6
J Buckets				S					
Heavy Duty	4.4	6.00	2390	94	223	4 88.0	445	50 9,800 🦰 🔪	7
	5.4	7.00	2390	94	235	0 92.5	480	0 10,570	7
V-Edge Mass Exc	4.0	5.25	2260	89			413	30 9,100	6

\*Capacities based on SAE J296. Some calculations of capacity fall on borderlines. Rounding may allow two buckets to have the same English rating but different metric ratings.

## ARRANGEMENTS

#### 375/375 L Reach Excavator

- Reach boom, measuring 8800 mm (28'10"), maximizes digging depth and reach.
- Choice of two sticks allows reach boom to meet machine's potential in a wide range of applications.
- R5.5H stick, 5500 mm (18'1") long, maximizes the working envelope of the machine and uses "H" family buckets.
- R4.4H stick, at 4400 mm (14<sup>5</sup>) provides improved lifting capacity and allows use of larger "H" family buckets with higher material densities while still providing good reach and digging depth.



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	imate)		
	R5.5H	R4.4H	
Stick	5500 mm (18'1'')	4400 mm (14'5'')	
Shipping height *	5310 mm (17'5")	4690 mm (15'5")	
Shipping length	14 650 mm (48'1")	14 710 mm (48'3")	
*Shipping he	ight with stick removed is approxima	tely (12'2'')	



# 375 Reach Excavator Working

Ranges

Stick	R5.5H 5500 mm (18'1'')	R4.4H 4400 mm (14'5'')
Bucket	2.8 m3 (3.75 yd3)	3.8 m3 (5.00 yd3)
A Maximum digging depth	10 840 mm (35'7")	9740 mm (32'0'')
B Maximum reach at ground level	15 960 mm (52'4")	14 780 mm (48'6'')
C Maximum cutting height	14 500 mm (47'7")	13 610 mm (44'8")
D Maximum loading height	10 350 mm ( <mark>33'11</mark> ")	9550 mm (31'4'')
E Minimum loading height	2460 mm (8'1")	3560 mm (11'8'')
<b>F</b> Maximum digging depth at		
2440 mm (8') level bottom	10750 mm (35'3")	9630 mm (31'7")
G Maximum vertical wall digging depth	9390 mm (30'10'')	7790 mm (25'7")
Bucket forces	282 kN (63,400 lb)	281 kN (63,200 lb)



#### 375/375 L General Purpose Excavator

- General Purpose boom, measuring 8400 mm (27'6") used where a balance between digging envelope and force levels/bucket capacity are required. Most common in general construction applications.
- Choice of Four sticks allows general purpose boom to meet machine's potential in a wide range of applications. R5.5H stick, 5500 mm (18'1") long, maximizes working envelope and uses "H" family buckets. R4.4H stick, at 4400 mm (14'5") also uses "H" family buckets, with larger bucket capacities.
   R3.4J stick, 3400 mm (11'2") offers a good mix of reach, depth, bucket capacity, forces and lifting capacity. Uses "J" family buckets.

R2.9J stick, 2925 mm (9'7") maximizes forces and lift capacity where reach and depth are of less importance. Also uses "J" family buckets.



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Dimensions (approxi	imate) 🦰	<u>O</u>		
Stick	R5.5H 5500 mm (18'1")	<b>R4.4H</b> 4400 mm (14'5'')	R3.4J 3400 mm (11'2'')	R2.9J 2925 mm (9'7'')
Shipping height *	5920 mm (19'5'')	5240 mm (17'2'')	5010 mm (16'5")	4720 mm (15'6'')
Shipping length	14 080 mm (46'2'')	14 290 mm (46'11")	14 300 mm (46'11'')	14 330 mm (47'0'')
4 3650 mm (12' 2")	300 mm (14' 1") 470 mm (11' 5") 3290 mm (10' 10") 510 mm (11' 6") (11' 6") (13' 6") s	pproximately 3650 mm (12'2'') *4200 mm (13' 9") 4600 mm (15'1 5120 mm (16'1 5840 mm (19'2 6360 mm (20'1 * Varies with stic	Shoe width Shipping w	

Stick	R5.5H 5500 mm (18'1'')	R4.4H 4400 mm (14'5'')	R3.4J 3400 mm (11'2'')	R2.9J 2925 mm(9'7'')
Bucket	2.8 m₃ (3.75 yd₃)	3.8 m; (5.00 yd;)	_3.8 m₃ (5.00 yd₃)	3.8 m₀ (5.00 yd₃)
A Maximum digging depth	10 580 mm (34'9'')	9480 mm (31'1'')	8500 mm (27'11'')	8030 mm (26'4'')
<b>B</b> Maximum reach at ground			•	
level	15 680 mm (51'5'')	14 480 mm (47 <mark>'</mark> 6'')	13 690 mm (44'11'')	13 260 mm (43'6'')
C Maximum cutting height	14 530 mm (47'8'')	13 570 mm(44'6'')	13 480 mm (44'3'')	13 320 mm (43'8'')
D Maximum loading height	10 310 mm (33'10'')	9440mm (31'0'')	9270 mm (30'5'')	9090 mm (29 <mark>'10'')</mark>
E Minimum loading height	2120 mm (7'0'')	3220 mm (10'7'')	4200 mm (13'10'')	4670 mm(15'4'')
F Maximum digging depth at				5
2440 mm (8') level bottom	10 480 mm (34'5'')	9370 mm (30'9'')	8370 mm (27'6'') 🛛 💊	7880 mm (25'10")
G Maximum vertical wall				
digging depth	9310 mm ( <mark>3</mark> 0'7'')	7950mm (26'1'')	7380 mm (24'3'')	6940 mm (22'9'')
Bucket forces	282 kN (63,400 lb)	281 kN (63,200 lb)	371 kN (83,400 lb)	370 kN (83,200 lb)



#### 375/375 L Mass Excavator

 Mass excavation boom, measuring 7250 mm (23'10'), is designed to operate with significantly higher bucket sizes and digging forces.

Boom is shorter...keeps working area closer to the machine.

Thicker, heavier steel plates are used in the box-section...steel forgings are used in high-stress areas at boom foot, boom nose and boom cylinder mounts.

- Shorter boom and heavier construction allow maximum stick and bucket forces and large bucket sizes.
- Choice of three sticks allows the mass excavation boom to perform exceptionally well in both general and mass excavation applications.

M4.1 stick, at 4100 mm (13'6") long, balances reach and digging depth with bucket capacities and digging forces. It is ideal for general excavation work with mass excavation boom..uses "J" family buckets.

MB.4J stick, measuring 3400 mm (11'2") long, is designed primarily for mass earthmoving with larger buckets than the M4.1J stick. Its working envelope is large enough to perform general excavation applications...also uses "J" family buckets.

M2.9J stick, at 2925 mm (9'7") long, provides highest productivity in mass excavation applications. It



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delivers highest stick forces and works with the largest buckets in the 375 Excavator line. Equipped with the M2.9J stick, the 375 Mass Excavator can effectively compete with 90 to 100-ton machines...also uses "J" family buckets.

Shipping Dimensions (approximate)						
	M4.1J	M3.4J	M2.9J (375)	M2.9J (375 L)		
Stick	4100 mm (13'6")	3400 mm (11'2'')	2925 mm (9'7'')	2925 mm (9'7'')		
Shipping height *	5050 mm (16'7'')	4890 mm (16'5")	4740 mm (15'7'')	5110 mm (16'9'')		
Shipping length	13 160 mm (43'2")	13 140 mm (43'1")	13080 mm (42'11")	13 210 mm (48'1")		
*Shinning hei	pht with stick removed is a	nprovimately (12'2'')				

Shoe width 750 mm/30" 900 mm/36" 4300 mm Shipping width 3500 mm/11'6" 3840 mm/12'7" (14' 1") 3470 mm (11' 5") \*4200 mm (13' 9") Shipping Height 3650 mm 3290 mm (12' 2") (10' 10") 3510 mm 4600 mm (15'1") (11' 6") 5120 mm (16'10")\* 4120 mm 5840 mm (19'2") (13' 6") 6360 mm (20'10")\*\* - • Shipping Length \* Swing Tail Radius Varies with stick \*\*Long undercarriage

#### Mass Excavator Working Ranges

	M4.1J	MB.4J	M2.9J
Stick	4100 mm (13'6'')	3400 mm (11'2'')	2925 mm (9'7")
Bucket	3.8 m3 (5.00 yd3)	4.4 m3 (6.00 yd3)	4.4 m3 (6.00 yd3)
A Maximum digging depth	8110 mm (26'7")	7410 mm (24'4'')	6940 mm (22'9'')
<b>B</b> Maximum reach at ground			
level	13 080 mm (42'11'')	12 420 mm (40'9'')	12 000 mm (39'4'')
<b>C</b> Maximum cutting height	12 950 mm (42'6'')	12 6 <mark>10 mm (</mark> 41'5'')	12 450 mm (40'10'')
D Maximum loading height	8760 mm (28'9'')	8 <mark>430 mm</mark> (27'8'')	8260 mm (27'1'')
E Minimum loading height	2730 mm (9'0'')	3430 mm (11'3'')	3910 mm (12'10'')
F Maximum digging depth at 2440 mm (8') level bottom	7590 mm (24'8'')	6890 mm (22'7'')	6410 mm (21')
G Maximum vertical wall digging			
depth	6830 mm (22'5")	6150 mm (20'2'')	5780 mm (18'11'')
Bucket forces	372 kN (83,500 lb)	371 kN (83,400 lb)	370 kN (83,200 lb)
Stick forces	258 kN (58,000 lb)	291 kN (65,300 lb)	313 kN (70,300 lb)

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