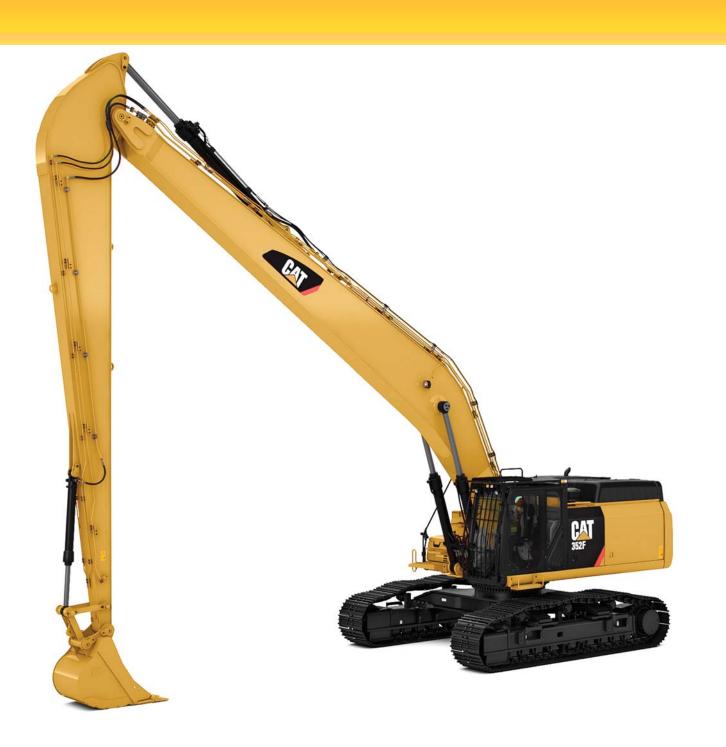
352F L

GAT®

Long Reach Excavation Hydraulic Excavator



Engine			Drive	
Engine Model	Cat® C13 A	CERT™	Maximum Travel Speed	4.7 km/h
Power – ISO 9249	304 kW	413 PS	Maximum Drawbar Pull	330 kN
Power – ISO 14396	317 kW	431 PS	Weights	
			Maximum Weight	59 400 kg

The 352F Long Reach is built to take on your up-close and far-out excavating tasks.
The 52-ton machine features a variable gauge undercarriage that retracts for transport and expands to help increase stability and lift capability, particularly helpful when you do a lot of work over the side.

Where the real power comes in is through the integrated engine, hydraulic, and work tool systems. You can move tons of material – literally – every hour, on the hour, all day long with a great deal of speed, precision, and efficiency.

When you add in a quiet operator environment that keeps you comfortable and productive, ground level service points that make your routine maintenance easy, and multiple Cat work tools that help you take on a variety of jobs, you simply won't find a better 52-ton machine.

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Following are the built-in benefits that make 352F Long Reach an outstanding performer and an excellent choice for your line of work:



Engine

- C13 ACERT engine meets EU Stage IV emission standards.
- Emissions package works behind the scenes without interrupting your job.
- Engine speed control automatically lowers rpm when the machine doesn't need it to help you save fuel.
- Three power modes high, standard, and eco and automatic engine idle shutdown help you more actively manage fuel consumption.

Hydraulics

- Major hydraulic components are located close together so shorter tubes and lines can be used, leading to less friction loss, reduced pressure drops, and more power to the ground.
- Main control valve opens slowly when the range of joystick lever movement is small and opens rapidly when movement is high, putting flow where you need it when you need it for smoother operation and greater efficiency.
- Electric boom and stick regeneration keeps oil flow at the head and rod ends of the cylinders instead of going back to the tank, resulting in less pressure loss for higher controllability, more productivity, and lower operating costs.
- Heavy lift mode increases machine system pressure to improve lift and reduces engine speed and pump flow in order to improve controllability.
- SmartBoom[™] technology reduces stress and vibrations transmitted to the machine during rock scraping, hammer work and truck loading resulting in greater productivity and fuel efficiency.

Key Features

Benefits to help get your work done efficiently and effectively



Cab

- Full-size roll-over protective structure (ROPS) cab is both quiet and comfortable.
- Automatic climate control system maintains consistent cab temperature.
- Joysticks, armrests, and seats adjust to your preference.



Structures

- Long Reach boom and stick provide extra reach needed for deep digging and truck loading.
- Upper frame is built with special mounts to support the ROPS cab.
- Lower frame is reinforced to enhance component durability.
- Track shoes, links, rollers, idlers, and final drives are built with high-tensilestrength steel.
- Grease-lubricated track link prevents dirt and debris from entering.

- · Seats include heated and cooled options.
- LED monitor is programmable in 42 languages.
- Drink holder, storage areas, and auxiliary power outlets are in easy-to-reach areas.

Work Tools

- Multiple Cat Work Tools are available for a wide range of applications.
- Cat quick couplers allow you to switch from one tool to another in a matter of minutes.
- Cat tool control remembers pressures and flows for up to 10 tools that can be selected from the monitor so you can quickly get to work after each tool change.

Serviceability

- Routine maintenance items like grease points, fluid taps, filters, and drain tubes can be reached at ground level.
- Compartment doors are designed to prevent debris entry, and they securely latch in place to enhance ease of service.
- Side-by-side cooling system is efficient and easy to clean, and is capable of being upgraded for high-ambient conditions.

Technology Options

 Product LinkTM/VisionLink® connects you to your machine, providing access to its location, hours, fuel consumption, idle time, events, and diagnostic codes.

Engine		
Engine Model	Cat C13 A	CERT
Gross Power – SAE J1995	322 kW	438 PS
Power – ISO 9249	304 kW	413 PS
Power – ISO 14396	317 kW	431 PS
Bore	130 mm	
Stroke	157 mm	
Displacement	12.5 L	

Hydraulic System	
Maximum Flow	
Main System	770 L/min
Swing System	385 L/min
Pilot System	27 L/min
Auxiliary Circuit – High Pressure	300 L/min
Auxiliary Circuit – Medium Pressure	45 L/min
Maximum Pressure	
Equipment	35 000 kPa
Equipment (heavy lift)	38 000 kPa
Travel	35 000 kPa
Swing	27 500 kPa
Pilot System	4120 kPa
Boom Cylinder	
Bore	170 mm
Stroke	3748 mm
Stick Cylinder	
Bore	190 mm
Stroke	4306 mm
B1 Bucket Cylinder	
Bore	120 mm
Stroke	2788 mm

Drive	
Maximum Gradeability	30°/70%
Maximum Travel Speed	4.7 km/h
Maximum Drawbar Pull	330 kN

Swing Mechanism	
Swing Speed	8.7 rpm
Swing Torque	148.5 kN·m
Service Refill Capacities	
Fuel Tank Capacity	720 L
Cooling System	50 L
Engine Oil (with filter)	38 L
Swing Drive (each)	10 L
Final Drive (each)	15 L
Hydraulic System Oil (including tank)	570 L
Hydraulic Tank Oil	407 L
DEF Tank	41 L
Track	
Track Options	600 mm
•	700 mm
	900 mm
Number of Shoes (each side)	52
Number of Track Rollers (each side)	9
Number of Carrier Rollers (each side)	3
Sound Performance	
Operator Sound Pressure Level – ISO 6396:2008*	69 dB(A)
Exterior Sound Power Level –	106 dB(A)

* As per European Union Directive 2005/14/EC as amended by 2005/88/EC.

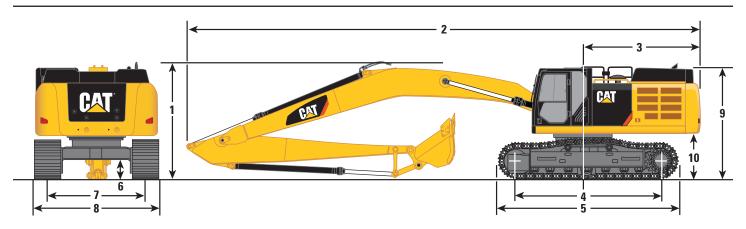
ISO 6395:2008*

- When properly installed and maintained, the cab offered by Caterpillar, when tested with doors and windows closed according to ANSI/SAE J1166 OCT98, meets OSHA and MSHA requirements for operator sound exposure limits in effect at time of manufacture.
- 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.

Standards	
Brakes	ISO 10265
Cab/FOGS	SAE J1356 ISO 10262:1998
Cab/ROPS	ISO 12117-2
DEF	ISO 22241

Dimensions

All dimensions are approximate.



Boom Option	LRE Boom 11.5 m
Stick Option	LRE Stick 8.5 m
1 Shipping Height*	3530 mm
2 Shipping Length	16 460 mm
3 Tail Swing Radius	3760 mm
4 Length to Center of Rollers	4340 mm
5 Track Length	5380 mm
6 Ground Clearance (including shoe lug height)	710 mm
Ground Clearance (not including shoe lug height)	740 mm
7 Track Gauge	
Expanded	3720 mm
Retracted	3220 mm
8 Transport Width (expanded)	
600 mm Shoes	4320 mm
750 mm Shoes	4470 mm
900 mm Shoes	4620 mm
Transport Width (retracted)	
600 mm Shoes	3820 mm
750 mm Shoes	3970 mm
900 mm Shoes	4120 mm
9 Cab Height	3390 mm
10 Counterweight Clearance**	1450 mm
Bucket Type	GD
Bucket Capacity	0.93 m ³
Bucket Tip Radius	1573 mm

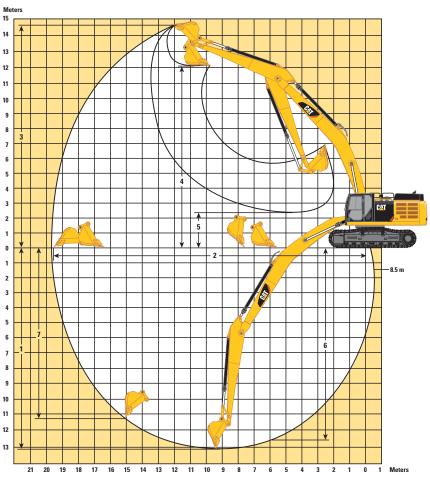
^{*}Including shoe lug height.

Dimensions may vary depending on bucket selection.

 $[\]hbox{\rm **Without shoe lug height.}$

Working Ranges

All dimensions are approximate.



Boom Option	LRE Boom 11.5 m
Stick Option	LRE Stick 8.5 m
1 Maximum Digging Depth	13 040 mm
2 Maximum Reach at Ground Level	19 640 mm
Maximum Radius of Working Equipment	19 790 mm
3 Maximum Cutting Height	14 700 mm
4 Maximum Loading Height	12 030 mm
5 Minimum Loading Height	2250 mm
6 Maximum Depth Cut for 2440 mm Level Bottom	12 600 mm
7 Maximum Vertical Wall Digging Depth	11 280 mm
Bucket Type	GD
Bucket Capacity	0.93 m^3
Bucket Tip Radius	1573 mm
Bucket Digging Force (ISO)	141 kN
Stick Digging Force (ISO)	104 kN

Dimensions may vary depending on bucket selection.

Operating Weights and Ground Pressures

			900 mm 750 mm Triple Grouser Shoes Triple Grouser S			600 mm Triple Grouser Shoes		
LRE Boom	LRE Stick	Bucket	kg	kPa	kg	kPa	kg	kPa
11.5 m	8.5 m	0.93 m ³	59 400	69	58 600	82	57 800	101

Major Component Weights

	kg
Base Machine (with boom cylinder, without counterweight, front linkage and track)	29 844
Counterweight	12 000
Boom (includes lines, pins and stick cylinder)	
LRE Boom – 11.5 m	5800
Stick (includes lines, pins, bucket linkage and bucket cylinder)	
LRE Stick – 8.5 m	3300
Track Shoe (per two tracks)	
600 mm Triple Grouser	5190
750 mm Triple Grouser	5940
900 mm Triple Grouser	6700
Bucket	
0.93 m^3	710

Base machine includes 75 kg operator weight, 90% fuel weight and undercarriage with center guard.

352F L Bucket Specifications and Compatibility

		Width	Capacity	Weight	Fill	Long Reach Excavation
	Linkage	mm	m³	kg	%	
Without Pin Grabber Coupler						
General Duty (GD)	В	1200	1.19	800	100	•
	В	1300	1.30	832	100	•
Ditch Cleaning (DC)	В	1800	1.24	740	100	•
	В	2010	1.18	800	100	•
Tilting Ditch Cleaning (TDC)	В	2010	1.15	1095	100	•
	·	Maximu	im load pin on (pa	yload + bucket)	kg	3500
With Pin Grabber Coupler						
General Duty (GD)	В	1200	1.19	800	100	•
	В	1300	1.30	832	100	•
Ditch Cleaning (DC)	В	1800	1.24	740	100	•
	В	2010	1.18	800	100	•
Tilting Ditch Cleaning (TDC)	В	2010	1.15	1095	100	•
Maximum load pin on (payload + bucket)				kg	3500	
With Quick Coupler (CW40)						
General Duty (GD)	В	1050	1.00	704	100	•
	В	1200	1.19	764	100	•
Ditch Cleaning (DC)	В	2000	1.27	696	100	•
	•	Maximum load	d with coupler (pa	yload + bucket)	kg	2345

The above loads are in compliance with hydraulic excavator standard EN474, they do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity with front linkage fully extended at ground line with bucket curled. Capacity based on ISO 7451.

Maximum Material Density

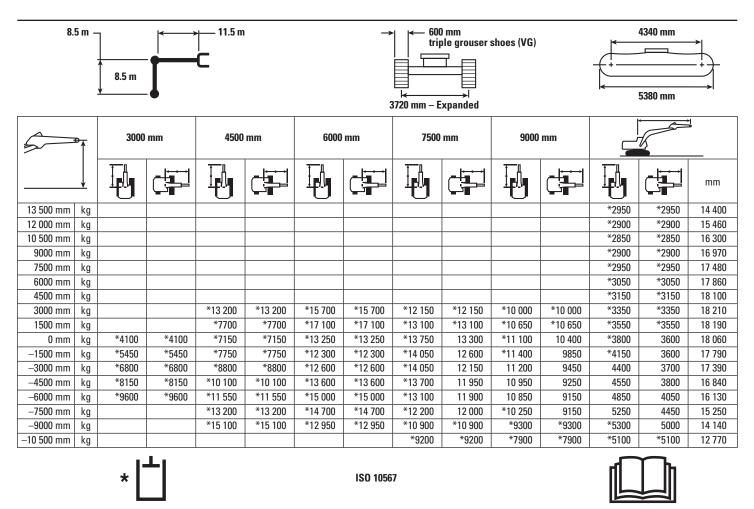
2100 kg/m³

● 1800 kg/m³

Bucket weight with long tips.

Caterpillar recommends using appropriate work tools to maximize the value customers receive from our products. Use of work tools, including buckets, which are outside of Caterpillar's recommendations or specifications for weight, dimensions, flows, pressures, etc. may result in less-than-optimal performance, including but not limited to reductions in production, stability, reliability, and component durability. Improper use of a work tool resulting in sweeping, prying, twisting and/or catching of heavy loads will reduce the life of the boom and stick.

Reach Boom Lift Capacities - Counterweight: 12.0 mt - without Bucket - Heavy Lift: On



^{*}Indicates that the load is limited by hydraulic lifting capacity rather than tipping load. The above loads are in compliance with hydraulic excavator lift capacity standard ISO 10567:2007. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Weight of all lifting accessories must be deducted from the above lifting capacities. Lifting capacities are based on the machine standing on a firm, uniform supporting surface. The use of a work tool attachment point to handle/lift objects, could affect the machine lift performance.

Lift capacity stays with ±5% for all available track shoes.

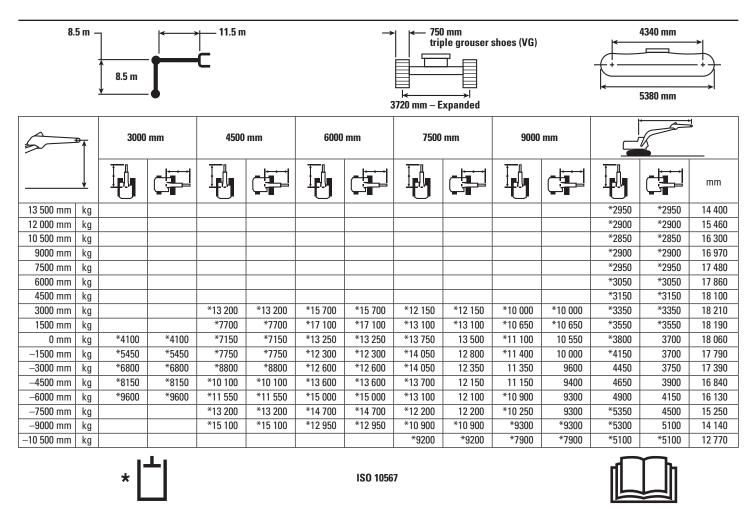
Reach Boom Lift Capacities - Counterweight: 12.0 mt - without Bucket - Heavy Lift: On

8.5 m 11.5 m							600 mm triple grouser shoes (VG) 3720 mm – Expanded									
5		10 500 mm		12 000 mm		13 500 mm		15 000 mm		16 500 mm		18 000 mm				* A
	<u></u>															mm
13 500 mm	kg													*2950	*2950	14 400
12 000 mm	kg							*3350	*3350					*2900	*2900	15 460
10 500 mm	kg							*4150	*4150					*2850	*2850	16 300
9000 mm	kg							*4750	*4750	*3500	*3500			*2900	*2900	16 970
7500 mm	kg					*5950	*5950	*5350	*5350	*4200	*4200			*2950	*2950	17 480
6000 mm	kg			*6750	*6750	*6150	*6150	*5700	*5700	*4800	*4800			*3050	*3050	17 860
4500 mm	kg	*8000	*8000	*7100	*7100	*6400	*6400	*5850	5650	*5400	4750	*3350	*3350	*3150	*3150	18 100
3000 mm	kg	*8500	*8500	*7450	*7450	*6650	6450	*6050	5400	5300	4550	*3700	*3700	*3350	*3350	18 210
1500 mm	kg	*8950	*8950	*7800	7350	*6900	6150	6050	5150	5150	4400	*3950	3750	*3550	*3550	18 190
0 mm	kg	*9350	8400	*8050	6950	6800	5850	5800	4950	5000	4250	*3950	3650	*3800	3600	18 060
-1500 mm	kg	9400	8000	7800	6650	6550	5600	5600	4750	4850	4100			*4150	3600	17 790
-3000 mm	kg	9050	7650	7500	6350	6350	5400	5450	4600	4750	4000			4400	3700	17 390
–4500 mm	kg	8850	7450	7350	6200	6250	5250	5350	4500	4700	3950			4550	3800	16 840
-6000 mm	kg	8750	7350	7250	6100	6150	5200	5350	4500					4850	4050	16 130
-7500 mm	kg	*8750	7350	7250	6100	6200	5200	5350	4500					5250	4450	15 250
-9000 mm	kg	*7950	7450	*6800	6200	*5750	5300							*5300	5000	14 140
-10 500 mm	kg	*6750	*6750	*5650	*5650									*5100	*5100	12 770
* - ISO 10567																

^{*}Indicates that the load is limited by hydraulic lifting capacity rather than tipping load. The above loads are in compliance with hydraulic excavator lift capacity standard ISO 10567:2007. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Weight of all lifting accessories must be deducted from the above lifting capacities. Lifting capacities are based on the machine standing on a firm, uniform supporting surface. The use of a work tool attachment point to handle/lift objects, could affect the machine lift performance.

Lift capacity stays with $\pm 5\%$ for all available track shoes.

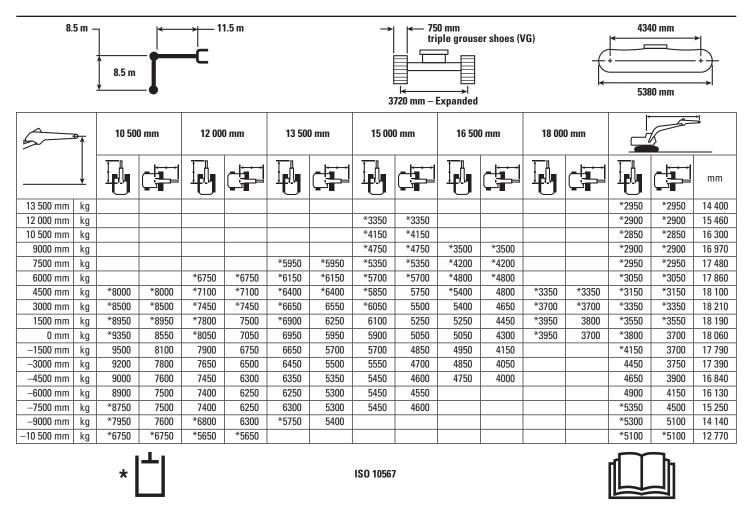
Reach Boom Lift Capacities - Counterweight: 12.0 mt - without Bucket - Heavy Lift: On



^{*}Indicates that the load is limited by hydraulic lifting capacity rather than tipping load. The above loads are in compliance with hydraulic excavator lift capacity standard ISO 10567:2007. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Weight of all lifting accessories must be deducted from the above lifting capacities. Lifting capacities are based on the machine standing on a firm, uniform supporting surface. The use of a work tool attachment point to handle/lift objects, could affect the machine lift performance.

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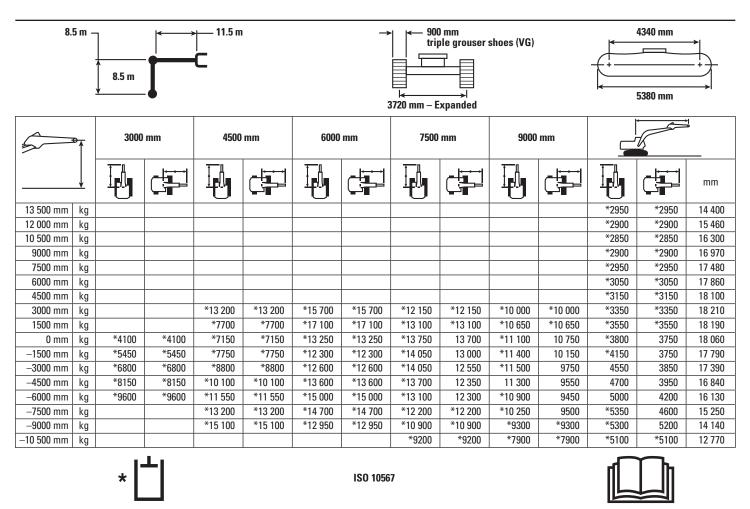
Reach Boom Lift Capacities - Counterweight: 12.0 mt - without Bucket - Heavy Lift: On



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Reach Boom Lift Capacities - Counterweight: 12.0 mt - without Bucket - Heavy Lift: On



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Lift capacity stays with ±5% for all available track shoes.

Reach Boom Lift Capacities - Counterweight: 12.0 mt - without Bucket - Heavy Lift: On

8.5 m 11.5 m							900 mm triple grouser shoes (VG) 3720 mm – Expanded								4340 mm 5380 mm			
5		10 500 mm		12 000 mm		13 500 mm		15 000 mm		16 500 mm		18 000 mm				† P		
	<u></u>															mm		
13 500 mm	kg													*2950	*2950	14 400		
12 000 mm	kg							*3350	*3350					*2900	*2900	15 460		
10 500 mm	kg							*4150	*4150					*2850	*2850	16 300		
9000 mm	kg							*4750	*4750	*3500	*3500			*2900	*2900	16 970		
7500 mm	kg					*5950	*5950	*5350	*5350	*4200	*4200			*2950	*2950	17 480		
6000 mm	kg			*6750	*6750	*6150	*6150	*5700	*5700	*4800	*4800			*3050	*3050	17 860		
4500 mm	kg	*8000	*8000	*7100	*7100	*6400	*6400	*5850	5850	*5400	4900	*3350	*3350	*3150	*3150	18 100		
3000 mm	kg	*8500	*8500	*7450	*7450	*6650	*6650	*6050	5600	5500	4700	*3700	*3700	*3350	*3350	18 210		
1500 mm	kg	*8950	*8950	*7800	7600	*6900	6350	*6200	5350	5300	4550	*3950	3850	*3550	*3550	18 190		
0 mm	kg	*9350	8700	*8050	7200	7050	6050	6000	5100	5150	4400	*3950	3750	*3800	3750	18 060		
-1500 mm	kg	*9550	8250	8050	6850	6800	5800	5800	4950	5000	4250			*4150	3750	17 790		
-3000 mm	kg	9350	7950	7750	6600	6600	5600	5650	4800	4900	4150			4550	3850	17 390		
-4500 mm	kg	9150	7700	7600	6450	6450	5450	5550	4700	4850	4100			4700	3950	16 840		
-6000 mm	kg	9050	7600	7500	6350	6400	5400	5500	4650					5000	4200	16 130		
-7500 mm	kg	*8750	7650	*7500	6350	6400	5400	*5500	4700					*5350	4600	15 250		
-9000 mm	kg	*7950	7750	*6800	6450	*5750	5500							*5300	5200	14 140		
-10 500 mm	kg	*6750	*6750	*5650	*5650									*5100	*5100	12 770		
		*	1					ISO 10567	1									

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Lift capacity stays with $\pm 5\%$ for all available track shoes.

352F L Long Reach Excavation Standard Equipment

Standard Equipment

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

ENGINE

- Cat C13 ACERT diesel engine
- Biodiesel capable, up to B20
- Meets EU Stage IV emission standards
- 2300 m altitude capability
- Electric priming pump with switch
- Automatic engine speed control
- Standard, economy and high power modes
- · Air cleaner
- Side-by-side cooling system
- · Radial seal air filter
- Primary filter with water separator and water separator indicator switch
- Fuel differential indicator switch in fuel line

HYDRAULIC SYSTEM

- Regeneration circuit for boom and stick
- Reverse swing dampening valve
- Automatic swing parking brake
- High-performance hydraulic return filter
- Capability of installing additional auxiliary circuits
- Boom and stick lowering control devices with SmartBoom

CAB

- Parallel wiper and washer
- Mirrors
- Pressurized operator station with positive filtration
- Laminated glass front upper window and tempered other windows
- Sliding upper door window (left-hand cab door)
- · Openable skylight
- Interior
- -Glass-breaking safety hammer
- -Coat hook
- Beverage holder
- Literature holder
- -Interior lighting
- -AM/FM radio mounting (DIN size)
- -Two 12V stereo speakers
- -Storage shelf suitable for lunch or toolbox
- -Power supply with 12V, two power outlets (10 amp)
- Thumb wheel modulation joystick for use with combined auxiliary control
- -Sunscreen
- Air conditioner, heater and defroster with climate control
- Seat
- Adjustable high back, heated and ventilated seat with air suspension
- -Seat belt, 51 mm
- Adjustable armrest
- Height adjustable joystick consoles
- Neutral lever (lock out) for all controls
- Travel control pedals with removable hand levers
- Capability of installing two additional pedals
- -Two speed travel
- -Floor mat, washable
- Monitor
- -Clock
- Video ready
- Color LCD display with warning, filter/fluid change, and working hour information
- Language display (full graphic and full color display)
- Machine condition, error code and tool mode setting information
- Start-up level check for engine oil, engine coolant and hydraulic oil
- Warning, filter/fluid change and working hour information
- Fuel consumption meter

FRONT LINKAGE

- Long Reach Excavation boom, 11.5 m
- Long Reach Excavation stick, 8.5 m
- B1 Bucket linkage (with lifting eye)

COUNTERWEIGHT

• 12 mt

UNDERCARRIAGE

- · Grease Lubricated Track with PPR2
- Towing eye on base frame
- Heavy-duty track rollers and idlers
- Track motor guards
- Heavy-duty bottom guard
- Swivel guard

ELECTRICAL

- 80 amp alternator
- · Circuit breaker
- · Standard battery

LIGHTS

- · Cab and boom lights with time delay
- Exterior lights integrated into storage box

SAFETY AND SECURITY

- Cat one key security system
- · Door locks
- Cap locks on fuel and hydraulic tanks
- Lockable external tool/storage box
- Signaling/warning horn
- · Secondary engine shutoff switch
- Openable skylight for emergency exit
- · Rear vision camera
- Capability to connect a beacon
- · Bolt on FOGS capability
- Safety hammer for breaking cab glass

INTEGRATED TECHNOLOGIES

- Product Link
- · Rear vision camera

352F L Long Reach Excavation Optional Equipment

Optional Equipment

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

ENGINE

- Jump start receptacle
- Quick drains, engine and hydraulic oil (QuickEvacTM)

HYDRAULIC SYSTEM

- HP hydraulic lines for boom and stick
- MP hydraulic lines for boom and stick
- QC hydraulic lines for boom and stick
- Universal QC Control

ELECTRICAL

- Cold weather starting package, 240V, -32° C
- Travel alarm
- Electric refueling pump with auto shut off with storage box

CAB

- · Windshield
- -70-30 split, sliding, removable lower windshield with in cab storage bracket
- -One-piece, fixed
- Cab front rain protector

TRACK

- 600 mm triple grouser shoes
- 750 mm triple grouser shoes
- 900 mm triple grouser shoes

GUARDS

- FOGS (Falling Object Guard system) including overhead and windshield guards
- · Track guiding guards
- -Full length (2 piece)
- -Segmented (3 piece)

LIGHTS

- Cab working lights, halogen
- Boom working lights, halogen

SAFETY AND SECURITY

• FOGS, bolt-on

Notes

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

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