352F Hydraulic Excavator



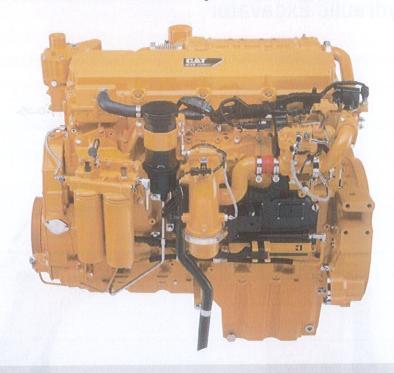
SPECIFICATIONS



Engine			Drive		
Engine Model	Cat® C13 A	CERTIM	Maximum Travel Speed	4.7 km/h	2.9 mph
Net Power - SAE J1349	311 kW	417 hp	Maximum Drawbar Pull	335 kN	75,300 lbf
			Weights		
			Maximum Weight	52 500 kg	115 700 lb

The 352F L 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.

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



Engine

- The C13 ACERT engine meets U.S. Environmental Protection Agency (EPA)
 Tier 4 Final emission standards.
- The 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.

HydraulicsMajor hydra

- 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.
- The 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, which results in less pressure loss for higher controllability, more productivity, and lower operating costs.

Contents

Key reatures	
Specifications	4
Standard Equipment	13
Optional Equipment	14
Notes	15

Key Features

Built-in benefits and available options



Cab

- The full-size roll-over protective structure (ROPS) cab is both quiet and comfortable.
- The automatic climate control system maintains consistent cab temperature.
- Joysticks, armrests, and seats adjust to your preference.
- Seats include heated and cooled options.
- The LED monitor is programmable in 42 languages.
- A drink holder, storage areas, and auxiliary power outlets are in easy-to-reach areas.



Structures

- Heavy-duty (HD) reach and mass excavation (ME) booms and sticks are available.
- HD reach booms and sticks offer you excellent all-around versatility for general excavation work like multipurpose digging and loading.
- ME booms and sticks provide higher digging forces for heavy material like rock due to special boom and stick geometry, bucket linkage, and cylinders built for greater durability.
- The upper frame is built with special mounts to support the ROPS cab.
- The 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.
- The counterweight is bolted directly to the main frame for added rigidity.

Work Tools

- Multiple Cat Work Tools designed specifically for Cat machines – 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 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.
- The side-by-side cooling system is efficient and easy to clean, and it is capable of being upgraded for high-ambient conditions.

Technology Options

- Cat Grade Control delivers 2D bucket tip elevation guidance to the cab to help you create precise planes and slopes with ease, eliminating the need for staking and checking.
- Cat AccuGrade[™] provides 3D guidance for making complex cuts and contours.
- Product LinkTM/VisionLink® connects you to your machine, providing access to its location, hours, fuel consumption, idle time, events, and diagnostic codes.

Engine Model	Cat C13 AC	CERT
Net Power – SAE J1349	311 kW	417 hp
Gross Power – SAE J1995	322 kW	432 hp
Bore	130 mm	5.12 in
Stroke	157 mm	6.18 in
Displacement	12.5 L	763 in ³
Weights		
Maximum Weight	52 500 kg	115,700 lb
• 6.9 m (22'8") Reach boom, R3.	9TB (12'10") HD st	ick, 9.0 mt

 6.9 m (22'8") Reach boom, R3.9TB (12'10") HD stick, 9.0 mt (9.9 t) counterweight, Long VG undercarriage, 3.1 m³ (4.1 yd³) bucket, 900 mm (35") triple grouser shoes.

Hydraulic System		
Main System – Maximum Flow (Total)	770 L/min	203 gal/min
Swing System – Maximum Flow	385 L/min	102 gal/min
Maximum Pressure – Equipment	35 000 kPa	5,076 psi
Maximum Pressure – Equipment (Lift mode)	38 000 kPa	5,512 psi
Maximum Pressure – Travel	35 000 kPa	5,076 psi
Maximum Pressure – Swing	27 500 kPa	3,989 psi
Pilot System – Maximum Flow	27 L/min	7.1 gal/min
Pilot System – Maximum Pressure	4120 kPa	598 psi
Boom Cylinder – Bore	170 mm	6.69 in
Boom Cylinder – Stroke	1524 mm	60.00 in
Stick Cylinder – Bore	190 mm	7.48 in
Stick Cylinder – Stroke	1758 mm	69.21 in
TB Family Bucket Cylinder – Bore	160 mm	6.30 in
TB Family Bucket Cylinder – Stroke	1356 mm	53.39 in
Drive		
Maximum Travel Speed	4.7 km/h	2.9 mph
Maximum Drawbar Pull	335 kN	75,300 lbf

Swing Speed	8.7 rpm	Sale Valley
Swing Torque	148.5 kN·m	109,500 lbf-f
Service Refill Capacities		
Fuel Tank Capacity	720 L	190 gal
Cooling System	50 L	13.2 gal
Engine Oil (with filter)	38 L	10 gal
Swing Drive (each)	10 L	2.6 gal
Final Drive (each)	15 L	4.0 gal
Hydraulic System (including tank)	570 L	150.6 gal
Hydraulic Tank	407 L	107.5 gal
DEF Tank	41 L	11 gal
Track		
Number of Shoes (each side)		
Long Variable Gauge Undercarriage	52	
Number of Track Rollers (each side)		
Long Variable Gauge Undercarriage	9	
Number of Carrier Rollers (each side)		
Long Variable Gauge Undercarriage	3	

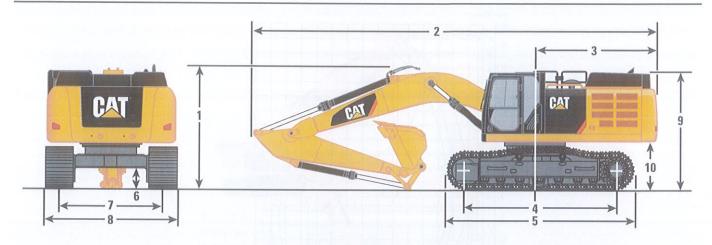
Sound Performance	
Operator Noise (Closed) – ISO 6396	69 dB(A)
Spectator Noise – ISO 6395	106 dB(A)

- 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
Cab/ROPS	ISO 12117-2

Dimensions – Long VG Undercarriage

All dimensions are approximate.

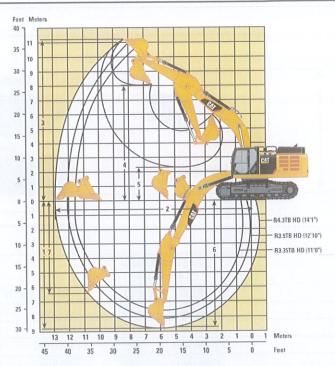


	Long Read 7.4 m (2	Reach Boom 6.9 m (22'8")				
Stick	R4.3TB HD (14'1")		R3.9TB HD (12'10")		R3.35TB HD (11'0")	
1 Shipping Height to Boom	3650 mm	12'0"	3650 mm	12'0"	3550 mm	11'8'
Shipping Height with Handrail	3520 mm	11'7"	3520 mm	11'7"	3520 mm	11'7'
2 Shipping Length	12 370 mm	40'7"	11 890 mm	39'0"	11 820 mm	38'9'
3 Tail Swing Radius	3760 mm	12'4"	3760 mm	12'4"	3760 mm	12'4'
4 Length to Center of Rollers	4340 mm	14'3"	4340 mm	14'3"	4340 mm	14'3'
5 Track Length	5380 mm	17'8"	5380 mm	17'8"	5380 mm	17'8'
6 Ground Clearance				THE REAL PROPERTY.		
Including Shoe Lug Height	710 mm	2'4"	710 mm	2'4"	710 mm	2'4"
Not Including Shoe Lug Height	740 mm	2'5"	740 mm	2'5"	740 mm	2'5"
7 Track Gauge (Expanded)	2890 mm	9'6"	2890 mm	9'6"	2890 mm	9'6"
Track Gauge (Retracted)	2390 mm	7'10"	2390 mm	7'10"	2390 mm	7'10'
8 Transport Width (Expanded)						
600 mm (24") Shoes	3490 mm	11'5"	3490 mm	11'5"	3490 mm	11'5'
750 mm (30") Shoes	3640 mm	11'11"	3640 mm	11'11"	3640 mm	11'11
900 mm (35") Shoes	3790 mm	12'5"	3790 mm	12'5"	3790 mm	12'5'
Transport Width (Retracted)						1313
600 mm (24") Shoes	3000 mm	9'10"	3000 mm	9'10"	3000 mm	9'10'
750 mm (30") Shoes	3240 mm	10'8"	3240 mm	10'8"	3240 mm	10'8'
900 mm (35") Shoes	3290 mm	10'10"	3290 mm	10'10"	3290 mm	10'10
9 Cab Height	3370 mm	11'1"	3370 mm	11'1"	3370 mm	11'1'
Cab Height with Top Guard	3540 mm	11'7"	3540 mm	11'7"	3540 mm	11'7'
10 Counterweight Clearance*	1430 mm	4'8"	1430 mm	4'8"	1430 mm	4'8"

^{*}Without shoe lug height.

Working Ranges – Long VG Undercarriage

All dimensions are approximate.



(2.71) (10.71) (10.71) (10.71) (10.71)		Long Reach Boom 7.4 m (24'3") R4.3TB HD (14'1") R3.9TB I		Reac 6.9 m		
Stick	R4.3TB HI			R3.9TB HD (12'10")		D (11'0")
1 Maximum Digging Depth	8790 mm	28'10"	8060 mm	26'5"	7510 mm	24'8"
2 Maximum Reach at Ground Level	12 940 mm	42'5"	12 120 mm	39'9"	11 710 mm	38'5"
3 Maximum Cutting Height	11 320 mm	37'2"	10 880 mm	35'8"	10 970 mm	36'0"
4 Maximum Loading Height	8020 mm	26'4"	7570 mm	24'10"	7580 mm	24'10
5 Minimum Loading Height	2370 mm	7'9"	2350 mm	7'9"	2900 mm	9'6"
6 Maximum Depth Cut for 2440 mm (8'0") Level Bottom	8660 mm	28'5"	7920 mm	26'0"	7360 mm	24'2"
7 Maximum Vertical Wall Digging Depth	6400 mm	21'0"	5810 mm	19'1"	5680 mm	18'8"

Operating Weights and Ground Pressures

900 mm (35") Triple Grouser Shoes			750 mm (30") Triple Grouser Shoes		4") r Shoes
kg (lb)	kPa (psi)	kg (lb)	kPa (psi)	kg (lb)	kPa (psi)
	ELECTRICAL STREET		Company of the Company		8 Dale St
			T.E.		
52 900 (116,600)	61 (8.8)	52 200 (115,100)	73 (10.6)	51 500 (113,500)	90 (13.1)
					NJ Electric
52 500 (115,700)	61 (8.8)	51 700 (114,000)	72 (10.4)	51 100 (112,700)	89 (12.9)
52 300 (115,300)	61 (8.8)	51 500 (113,500)	72 (10.4)	30 900 (68,100)	54 (7.8)
	kg (lb) 52 900 (116,600) 52 500 (115,700)	kg (lh) kPa (psi) 52 900 (116,600) 61 (8.8) 52 500 (115,700) 61 (8.8)	kg (lh) kPa (psi) kg (lb) 52 900 (116,600) 61 (8.8) 52 200 (115,100) 52 500 (115,700) 61 (8.8) 51 700 (114,000)	kg (lb) kPa (psi) kg (lb) kPa (psi) 52 900 (116,600) 61 (8.8) 52 200 (115,100) 73 (10.6) 52 500 (115,700) 61 (8.8) 51 700 (114,000) 72 (10.4)	kg (lb) kPa (psi) kg (lb) kPa (psi) kg (lb) 52 900 (116,600) 61 (8.8) 52 200 (115,100) 73 (10.6) 51 500 (113,500) 52 500 (115,700) 61 (8.8) 51 700 (114,000) 72 (10.4) 51 100 (112,700)

Major Component Weights

kg	lb
Carry History S	restricted to
27 000	59,500
	HAMBET
9000	19,800
5190	11,400
4630	10,200
2990	6,600
2760	6,100
2540	5,600
5290	11,700
5940	13,100
6700	14,800
2440	5,400
	27 000 9000 5190 4630 2990 2760 2540 5290 5940 6700

All weights are rounded up to nearest 10 kg and lb except for buckets. Kg and lb were rounded up separately so some of the kg and lb do not match. Base machine includes 75 kg (165 lb) operator weight, 90% fuel weight, and undercarriage with center guard.

Bucket and Stick Forces

(\$4) m n 009	Long Reach Boom 7.4 m (24'3")			Reach Boom 6.9 m (22'8")			
Stick		R4.3TB HD (14'1")		R3.9TB HD (12'10")		R3.35TB HD (11'0"	
TB Linkage						New York College	Anti-Striket
General Duty							
Bucket Digging Force (SAE)	THE RESIDENCE			237 kN	53,300 lbf	237 kN	53,300 lbf
Stick Digging Force (SAE)				180 kN	40,500 lbf	195 kN	43,800 lbf
Heavy Duty			THE TABLE	dez es			CITY (USA)
Bucket Digging Force (SAE)	The State of	234 kN	52,610 lbf	235 kN	52,830 lbf	235 kN	52,830 lbf
Stick Digging Force (SAE)		167 kN	37,540 lbf	179 kN	40,240 lbf	195 kN	43,840 lbf
Severe Duty							
Bucket Digging Force (SAE)		228 kN	51,260 lbf	229 kN	51,480 lbf	229 kN	51,480 lbf
Stick Digging Force (SAE)		166 kN	37,320 lbf	178 kN	40,020 lbf	193 kN	43,390 lbf
Extreme Duty							
Bucket Digging Force (SAE)		228 kN	51,260 lbf	229 kN	51,480 lbf	229 kN	51,480 lbf
Stick Digging Force (SAE)		166 kN	37,320 lbf	178 kN	40,020 lbf	193 kN	43,390 lbf

352F L Attachment Guide*

		Width		Capacity		Weight		Fill	Long Reach Boom	Reach Boom	
	Linkage	mm	in	m ³	yd ³	kg	lb	%	R4.3 HD (14'1")	R3.9 HD (12'10")	R3.35 HD (11'0")
Buckets – with Pin Grat	ber Coupler										
General Duty (GDC)	ТВ	900	36	1.23	1.60	1441	3,176	100	•	•	•
	ТВ	1200	48	1.80	2.36	1676	3,694	100	•	•	•
	TB	1350	54	2.10	2.74	1792	3,950	100	•	•	•
	TB	1500	60	2.39	3.13	1943	4,282	100	0	•	•
	ТВ	1700	68	2.78	3.64	2128	4,690	100	0	•	Θ
	TB	1850	74	3.08	4.04	2254	4,968	100	0	Θ	0

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.

Bucket weight with long tips.

Maximum Material Density:

- 2100 kg/m³ (3,500 lb/yd³)
- 1800 kg/m³ (3,000 lb/yd³)
- → 1500 kg/m³ (2,500 lb/yd³)
- 1200 kg/m³ (2,000 lb/yd³)

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.

352F Work Tool Offering Guide*

Boom Type	Long Reach Boom HD	Reach Boom HD		
Stick Size	R4.3 HD (14'1")	R3.9 HD (12'10")	R3.35 HD (11'0")	
Hydraulic Hammer	H160E s H180E s **	H160E s H180E s **	H160E s H180E s	
Multi-Processor	MP30 CC Jaw ** MP30 CR Jaw ** MP30 PP Jaw ** MP30 PS Jaw ** MP30 S Jaw ** MP30 TS Jaw **	MP30 CC Jaw MP30 CR Jaw MP30 PP Jaw ** MP30 PS Jaw MP30 S Jaw MP30 TS Jaw **	MP30 CC Jaw MP30 CR Jaw MP30 PP Jaw MP30 PS Jaw MP30 S Jaw MP30 TS Jaw **	
Pulverizer	P235 **	P235	P235	
Demolition and Sorting Grapple	G330	G330	G330	
Mobile Scrap and Demolition Shear	S340B *** S365C # S385C #	S340B *** S365C # S385C #	S340B ** S365C # S385C #	
Orange Peel Grapple	game of grand and an order			
Diamona				

Rippers

Center-Lock Pin Grabber Coupler

Dedicated Quick Coupler

These work tools are available for the 352F. Consult your Cat dealer for proper match.

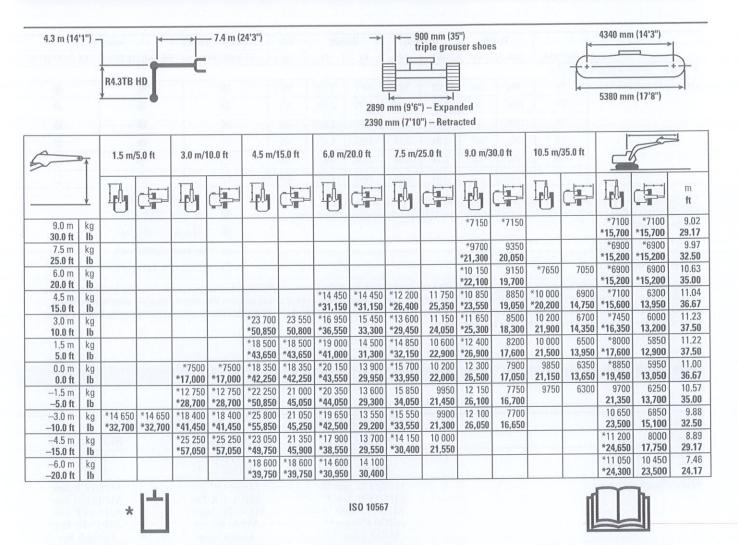
#Boom mount

^{*} Matches are dependent on excavator configurations. Consult your Cat dealer for proper work tool match.

^{**} Pin-on or dedicated coupler

^{***} Pin-on only

Long Reach Boom (Long VG Undercarriage) Lift Capacities — Counterweight: 9.0 mt (9.9 t) — Heavy Lift: On

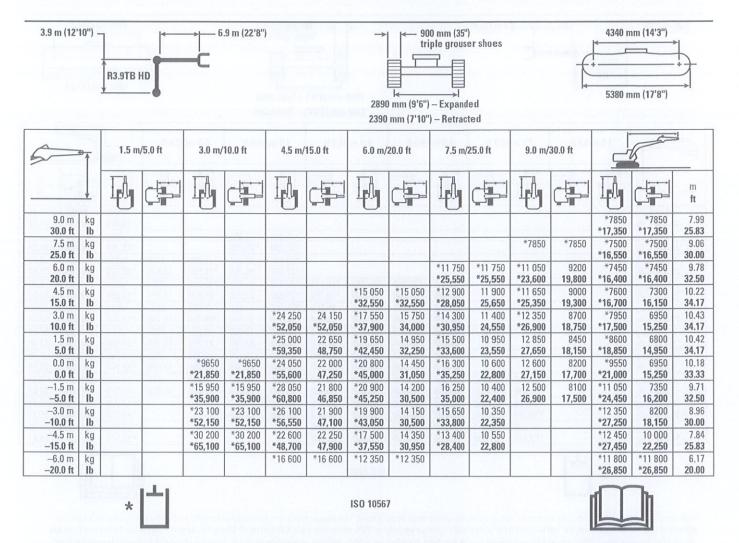


^{*}Indicates that the load is limited by hydraulic lifting capacity rather than tipping load. The above loads are in compliance with hydraulic excavator lift capacity standard ISO 10567:2007. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Weight of all lifting accessories 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.

Always refer to the appropriate Operation and Maintenance Manual for specific product information.

Reach Boom (Long VG Undercarriage) Lift Capacities – Counterweight: 9.0 mt (9.9 t) – Heavy Lift: On

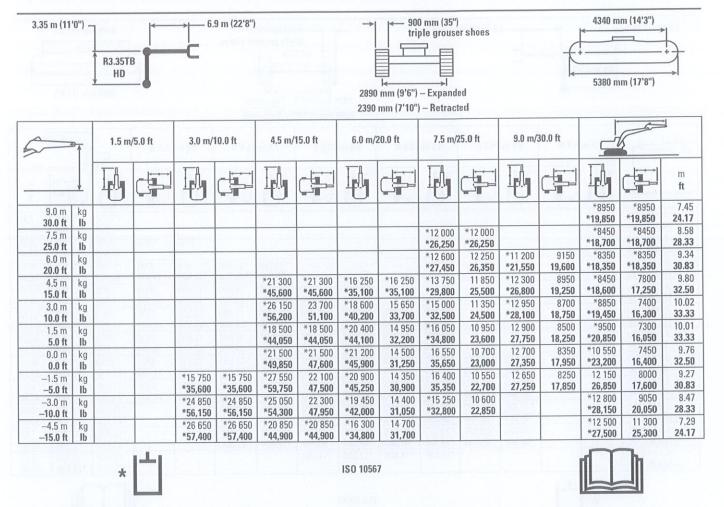


^{*}Indicates that the load is limited by hydraulic lifting capacity rather than tipping load. The above loads are in compliance with hydraulic excavator lift capacity standard ISO 10567:2007. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Weight of all lifting accessories 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.

Always refer to the appropriate Operation and Maintenance Manual for specific product information.

Reach Boom (Long VG Undercarriage) Lift Capacities – Counterweight: 9.0 mt (9.9 t) – 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.

Always refer to the appropriate Operation and Maintenance Manual for specific product information.

Standard Equipment

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

ENGINE

- · Cat C13 ACERT diesel engine
- · Biodiesel capable up to B20
- · Meets Tier 4 Final emission standards
- · 2300 m (7,500 ft) altitude capability
- · Electric priming pump
- · Automatic engine speed control
- · Standard, economy and high power modes
- · Two-speed travel
- · 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
- 2×6 micron main filters
- · 1×10 micron primary fuel line filter

HYDRAULIC SYSTEM

- · Regeneration circuit for boom and stick
- · Reverse swing dampening valve
- · Automatic swing parking brake
- · High-performance hydraulic return filter

CAB

- Pressurized operator station with positive filtration
- · Mirror package
- · Sliding upper door window
- · Glass-breaking safety hammer
- Removable lower windshield within cab storage bracket
- · Coat hook
- · Beverage holder
- · Literature holder
- · Radio with MP3 auxiliary audio port
- · Two stereo speakers
- · Storage shelf suitable for lunch or toolbox
- Color LCD display with warning, filter/ fluid change, and working hour information
- · Adjustable armrest
- · Height adjustable joystick consoles
- · Neutral lever (lock out) for all controls
- Travel control pedals with removable hand levers
- Two power outlets, 10 amp (total)
- Laminated glass front upper window and tempered other windows

UNDERCARRIAGE

- · Grease Lubricated Track GLT4
- · Towing eye on base frame
- · Heavy-duty track rollers
- · Track motor guards

ELECTRICAL

- 80 amp alternator
- · Circuit breaker

LIGHTS

- · Boom light
- · Cab lights with time delay
- · Exterior lights integrated into storage box

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
- · Rearview camera

352F Optional Equipment

Optional Equipment

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

ENGINE

- · Electric refueling pump with auto shut off
- Starting kit, cold weather, -32° C (-26° F)
- · Jump start receptacle
- · Quick drains, engine and hydraulic oil

HYDRAULIC SYSTEM

- · Control pattern quick-changer, two way
- · Additional circuit
- · Boom and stick lines
- · High-pressure line
- · Medium-pressure line
- Cat quick coupler line high- and medium-pressure capable
- · Quick coupler for high pressure
- · Tool control system

CAB

- · Cab hatch emergency exit
- Seat, high-back air suspension with heater and cooling
- · Seat, high-back air suspension with heater
- · Seat, high-back mechanical suspension
- Sunscreen
- · Windshield wiper, lower with washer
- · AM/FM radio
- · Air pre-filter
- Travel alarm
- · Left foot switch
- · Left pedal
- · Straight travel pedal

UNDERCARRIAGE

- · Long VG undercarriage:
- -600 mm (24") double grouser shoes, PPR2
- -750 mm (28") triple grouser shoes, PPR2
- -900 mm (35") triple grouser shoes, PPR2
- · Guard, full length
- · Guard, heavy-duty bottom
- · Center track guiding guard
- · Segmented (3 piece) track guiding guard
- · Fabricating idler
- · Casting idler

COUNTERWEIGHT

- 8.6 mt (9.4 t) with counterweight removal device
- 9.0 mt (9.9 t)

FRONT LINKAGE

- · Bucket linkage
- -TB family without lifting eye
- · Long Reach boom
- -7.4 m (24'3") boom
- -R4.3TB (14'1") stick
- · Reach boom
- -6.9 m (22'8") boom
- -R3.9TB (12'10") stick
- -R3.35TB (11'0") stick

LIGHTS

- · Working lights, cab mounted with time delay
- · HID lights, cab mounted with time delay
- · Halogen boom lights
- · HID boom lights

SECURITY

- · FOGS, bolt-on
- · Guard, cab front, mesh
- · Guard, vandalism

TECHNOLOGY

- · Cat Grade Control Depth and Slope
- · Product Link