

# Technical Manual

## ZX

### 27U-3 class

27U-3 · 27U-3F

### 30U-3 class

30U-3 · 30U-3F

### 35U-3 class

35U-3 · 35U-3F

## Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual

: Vol. No.T1ND-E

Workshop Manual

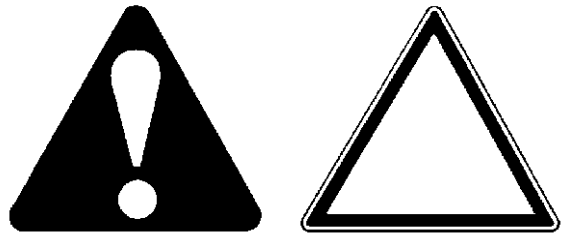
: Vol. No.W1ND-E

# SAFETY

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## RECOGNIZE SAFETY INFORMATION

- These are the **SAFETY ALERT SYMBOLS**.
  - When you see these symbols on your machine or in this manual, be alert to the potential for personal injury.
  - Follow recommended precautions and safe operating practices.



SA-688

## UNDERSTAND SIGNAL WORDS

- On machine safety signs, signal words designating the degree or level of hazard - **DANGER**, **WARNING**, or **CAUTION** - are used with the safety alert symbol.
  - **DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
  - **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
  - **CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
  - **DANGER** or **WARNING** safety signs are located near specific hazards. General precautions are listed on **CAUTION** safety signs.
  - Some safety signs do not use any of the designated signal words above after the safety alert symbol are occasionally used on this machine.
- To avoid confusing machine protection with personal safety messages, a signal word **IMPORTANT** indicates a situation which, if not avoided, could result in damage to the machine.
-  **NOTE** indicates an additional explanation for an element of information.



SA-1223

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**TECHNICAL MANUAL**

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# SECTION 1

# GENERAL

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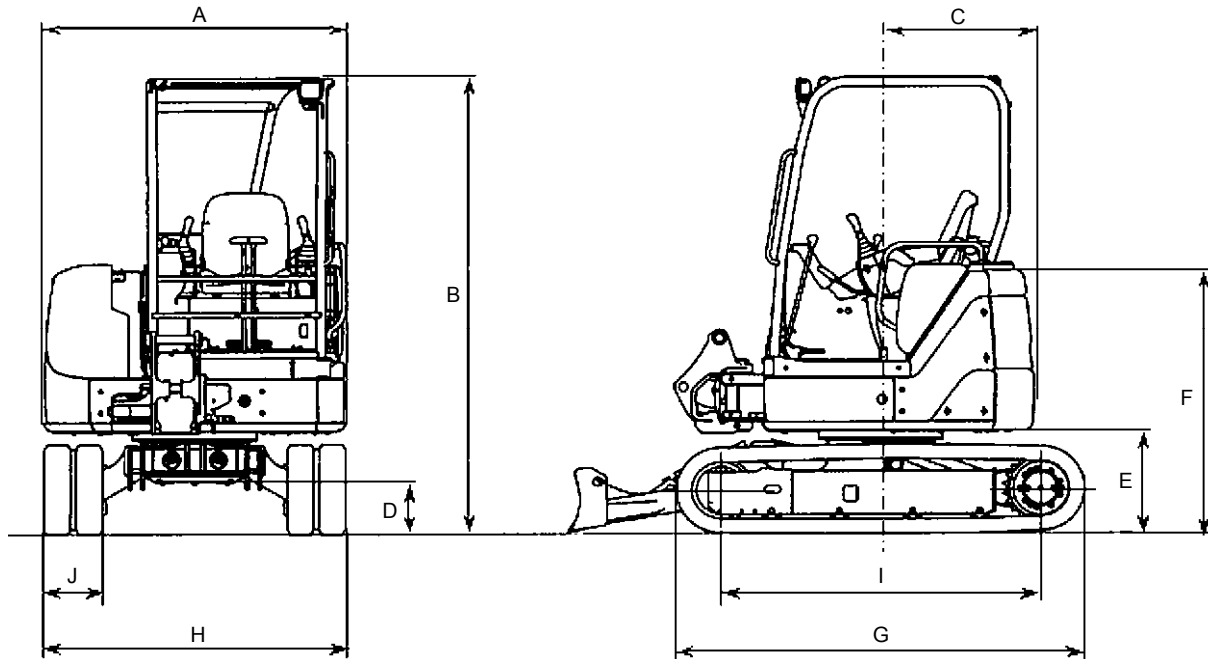
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## GENERAL / Specifications

### SPECIFICATIONS

#### ZX27U-3 class



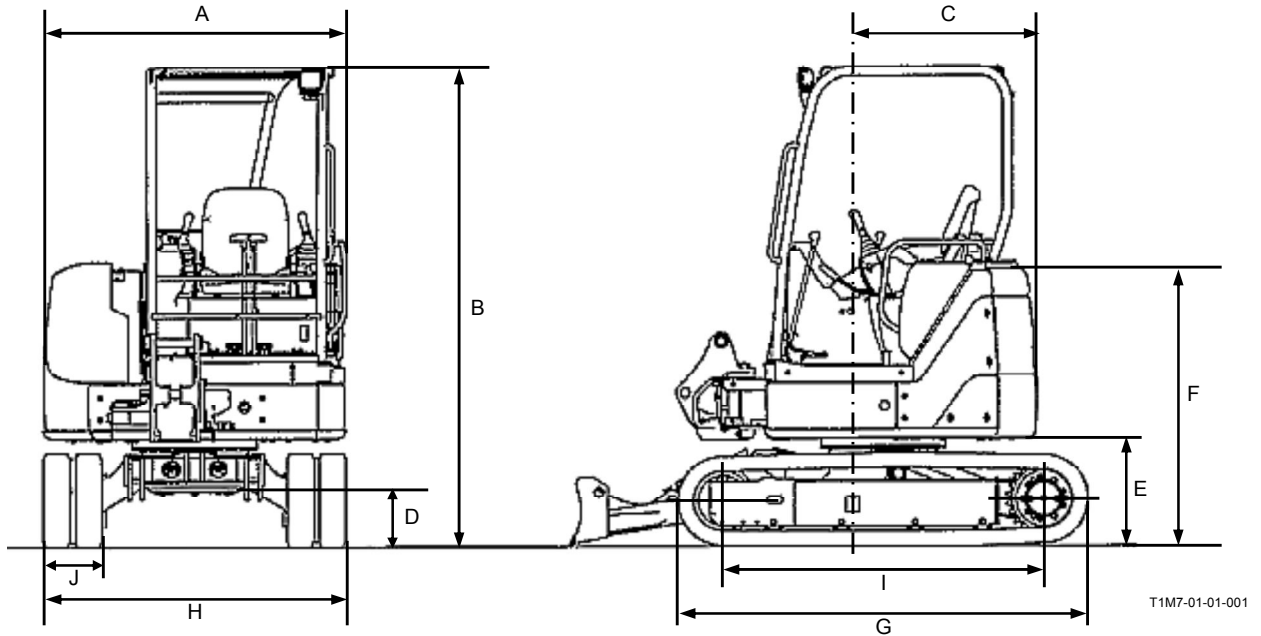
M1M7-12-002

Type	ZX27U-3 class	
	Canopy	Cab
Type of Front-End Attachment	Boom Swing Type	
Bucket Capacity (Heaped)	0.08 (0.10) m <sup>3</sup> (yd <sup>3</sup> )	
Operating Weight	2840 (6260) kg (lb)	3010 (6640) kg (lb)
Base Machine Weight	2130 (4700) kg (lb)	2300 (5070) kg (lb)
Engine	Yanmar EDM-3TNV88	
	19.7/2200 (PS/rpm) (26.8/2200)	
A: Overall Width	1550 (5'1") mm (ft-in)	
B: Overall Height	2460 (8'1") mm (ft-in)	2500 (8'2") mm (ft-in)
C: Rear-End Swing Radius	775 (2'7") mm (ft-in)	
D: Minimum Ground Clearance	320 (1'1") mm (ft-in)	
E: Counterweight Clearance	550 (1'10") mm (ft-in)	
F: Engine Cover Height	1420 (4'8") mm (ft-in)	
G: Undercarriage Length	1950 (6'5") mm (ft-in)	
H: Undercarriage Width	1550 (5'1") mm (ft-in)	
I: Sprocket Center to Idler Center	1490 (4'11") mm (ft-in)	
J: Track Shoe Width	300 (1'0") mm (ft-in) (Rubber Crawler)	
Ground Pressure	28 (0.29, 4.1) kPa (kgf/cm <sup>2</sup> , psi)	30 (0.31, 4.4) kPa (kgf/cm <sup>2</sup> , psi)
Swing Speed	9.1 (9.1) min <sup>-1</sup> (rpm)	
Travel Speed (fast/slow)	4.5/2.6 (2.8/1.6) km/h (mph)	
Gradeability	30° (tan θ = 0.58)	

NOTE: The dimensions do not include the height of the shoe lug.

## GENERAL / Specifications

### ZX30U-3 class



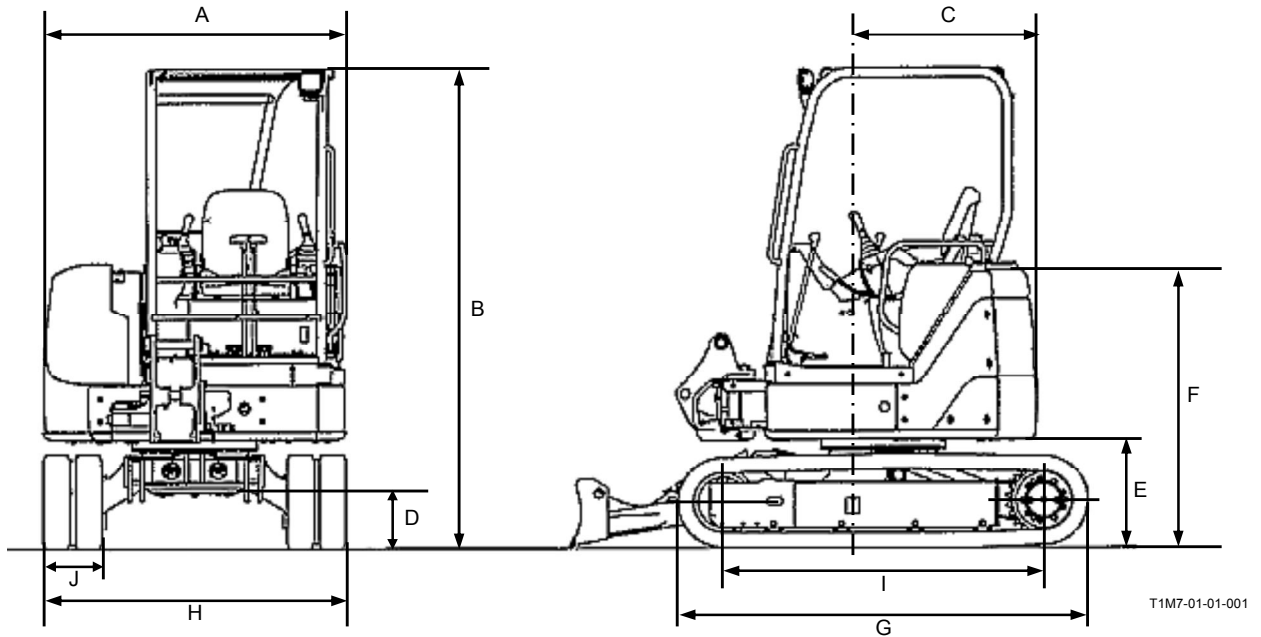
T1M7-01-01-001

Type	ZX30U-3 class	
	Canopy	Cab
Type of Front-End Attachment	Boom Swing Type	
Bucket Capacity (Heaped)	0.09 (0.12) m <sup>3</sup> (yd <sup>3</sup> )	
Operating Weight	3080 (6790) kg (lb)	3250 (7160) kg (lb)
Base Machine Weight	2300 (5070) kg (lb)	2470 (5450) kg (lb)
Engine	Yanmar EDM-3TNV88	
	21.3/2400 (PS/rpm) (29.0/2400)	
A: Overall Width	1550 (5'1") mm (ft-in)	
B: Overall Height	2460 (8'1") mm (ft-in)	2500 (8'2") mm (ft-in)
C: Rear-End Swing Radius	775 (2'7") mm (ft-in)	
D: Minimum Ground Clearance	280 (11") mm (ft-in)	
E: Counterweight Clearance	550 (1'10") mm (ft-in)	
F: Engine Cover Height	1420 (4'8") mm (ft-in)	
G: Undercarriage Length	2100 (6'11") mm (ft-in)	
H: Undercarriage Width	1550 (5'1") mm (ft-in)	
I: Sprocket Center to Idler Center	1650 (5'5") mm (ft-in)	
J: Track Shoe Width	300 (1'0") mm (ft-in) (Rubber Crawler)	
Ground Pressure	28 (0.29, 4.1) kPa (kgf/cm <sup>2</sup> , psi)	29 (0.30, 4.2) kPa (kgf/cm <sup>2</sup> , psi)
Swing Speed	9.0 (9.0) min <sup>-1</sup> (rpm)	
Travel Speed (fast/slow)	4.4/2.9 (2.7/1.8) km/h (mph)	
Gradeability	30° (tan θ = 0.58)	

NOTE: The dimensions do not include the height of the shoe lug.

## GENERAL / Specifications

### ZX35U-3 class



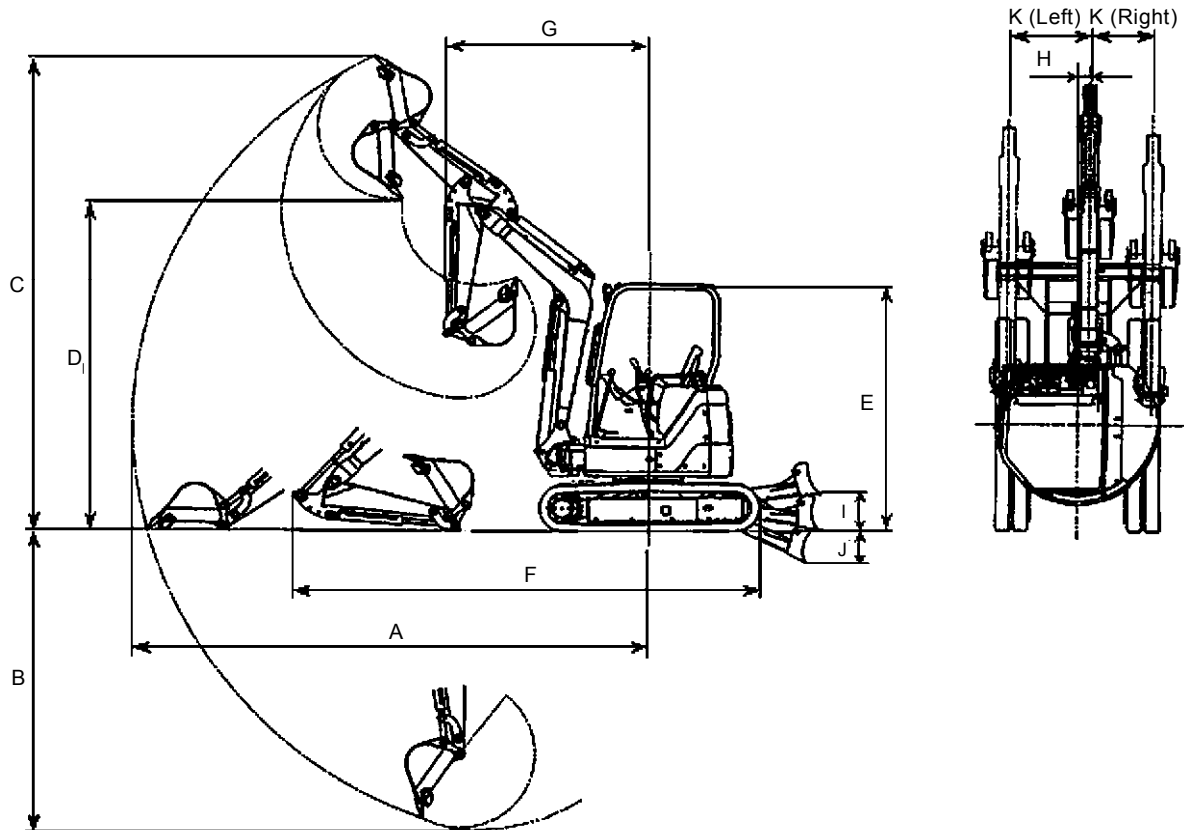
Type		ZX35U-3 class	
		Canopy	Cab
Type of Front-End Attachment		Boom Swing Type	
Bucket Capacity (Heaped)	m <sup>3</sup> (yd <sup>3</sup> )	0.11 (0.14)	
Operating Weight	kg (lb)	3520 (7760)	3690 (8130)
Base Machine Weight	kg (lb)	2650 (5840)	2820 (6220)
Engine	kW/min <sup>-1</sup> (PS/rpm)	Yanmar EDM-3TNV88 21.3/2400 (29.0/2400)	
A: Overall Width	mm (ft-in)	1550 (5'1")	
B: Overall Height	mm (ft-in)	2460 (8'1")	2500 (8'2")
C: Rear-End Swing Radius	mm (ft-in)	870 (2'10")	
D: Minimum Ground Clearance	mm (ft-in)	280 (11")	
E: Counterweight Clearance	mm (ft-in)	550 (1'10")	
F: Engine Cover Height	mm (ft-in)	1420 (4'8")	
G: Undercarriage Length	mm (ft-in)	2100 (6'11")	
H: Undercarriage Width	mm (ft-in)	1740 (5'9")	
I: Sprocket Center to Idler Center	mm (ft-in)	1650 (5'5")	
J: Track Shoe Width	mm (ft-in)	300 (1'0") (Rubber Crawler)	
Ground Pressure	kPa (kgf/cm <sup>2</sup> , psi)	32 (0.33, 4.6)	33 (0.34, 4.8)
Swing Speed	min <sup>-1</sup> (rpm)	9.0 (9.0)	
Travel Speed (fast/slow)	km/h (mph)	4.4/2.9 (2.7/1.8)	
Gradeability		30° (tan θ = 0.58)	

NOTE: The dimensions do not include the height of the shoe lug.

## GENERAL / Specifications

### WORKING RANGES

#### ZX27U-3 class



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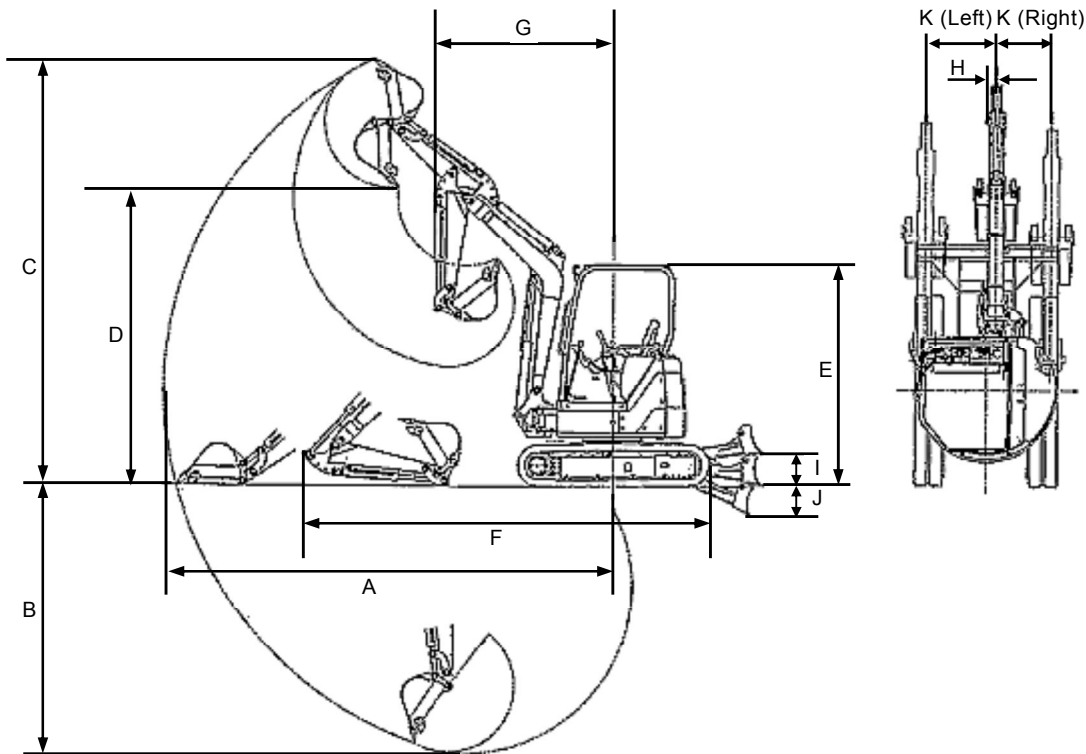
Item	Category	ZX27U-3 class			
		Canopy		Cab	
		1.17 m Arm	1.47 m Arm	1.17 m Arm	1.47 m Arm
A: Maximum Digging Reach	mm (ft-in)	4670 (15'4")	4920 (16'2")	4670 (15'4")	4920 (16'2")
B: Maximum Digging Depth	mm (ft-in)	2590 (8'6")	2890 (9'6")	2590 (8'6")	2890 (9'6")
C: Maximum Cutting Height	mm (ft-in)	5760 (18'11")	4550 (14'11")	4280 (14'1")	4350 (14'3")
D: Maximum Dumping Height	mm (ft-in)	4080 (13'5")	3300 (10'10")	3030 (9'11")	3120 (10'3")
E: Overall Height (Rubber Crawler)	mm (ft-in)	2460 (8'1")		2500 (8'2")	
F: Overall Length	mm (ft-in)	4200 (13'9")	4280 (14'1")	4200 (13'9")	4280 (14'1")
G: Minimum Swing Radius	mm (ft-in)	1960 (6'5")	2040 (6'8")	2050 (6'9")	2100 (6'11")
H: Boom-Swing Pivot Offset Distance	mm (ft-in)	100 (4")			
I: Blade Bottom Highest Position (above ground level)	mm (ft-in)	360 (1'2")			
J: Blade Bottom Lowest Position (below ground level)	mm (ft-in)	315 (1'0")			
K: Offset Distance	mm (ft-in)	L 705 (L 2'4") R 640 (R 2'1")		L 705 (L 2'4") R 600 (R 2'0")	
Maximum Boom-Swing Angle		L 72°/R 62°		L 62°/R 62°	

NOTE: The dimensions do not include the height of the shoe lug.



## GENERAL / Specifications

### ZX30U-3 class



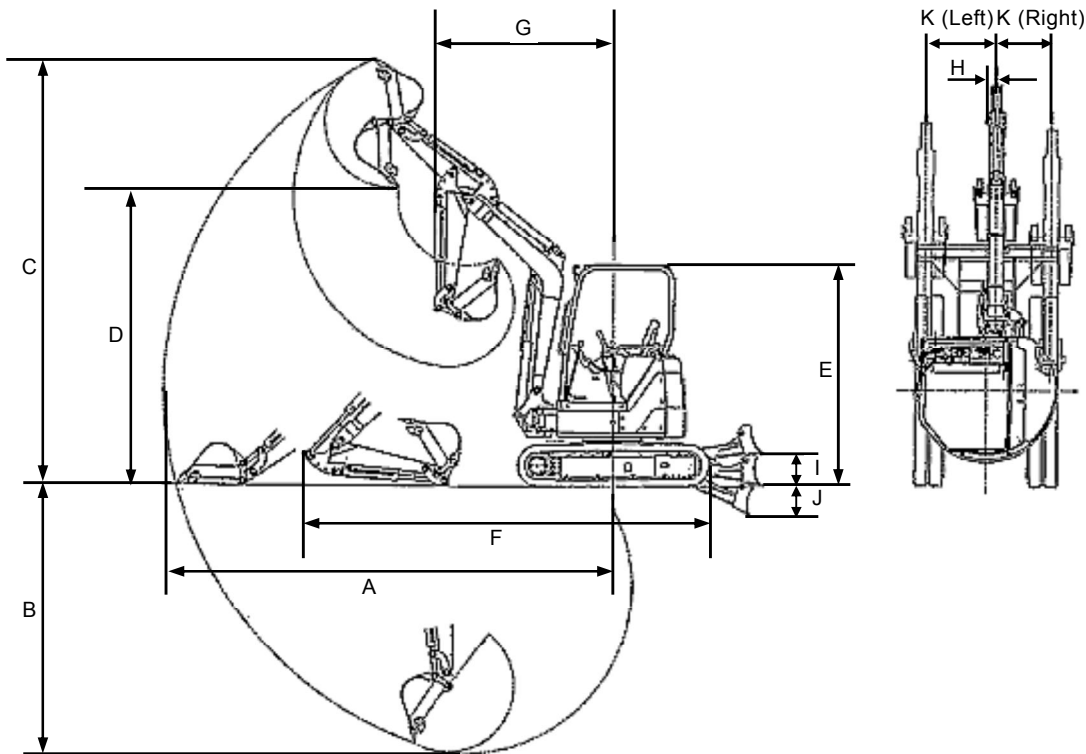
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Category		ZX30U-3 class			
		Canopy		Cab	
Item		1.17 m Arm	1.52 m Arm	1.17 m Arm	1.52 m Arm
A: Maximum Digging Reach	mm (ft-in)	4890 (16'1")	5170 (17'0")	4890 (16'1")	5170 (17'0")
B: Maximum Digging Depth	mm (ft-in)	2780 (9'1")	3130 (10'3")	2780 (9'1")	3130 (10'3")
C: Maximum Cutting Height	mm (ft-in)	4620 (15'2")	4700 (15'5")	4430 (14'6")	4470 (14'8")
D: Maximum Dumping Height	mm (ft-in)	3210 (10'6")	3310 (10'10")	3040 (10'0")	3100 (10'2")
E: Overall Height (Rubber Crawler)	mm (ft-in)	2460 (8'1")		2500 (8'2")	
F: Overall Length	mm (ft-in)	4450 (14'7")	4560 (15'0")	4450 (14'7")	4560 (15'0")
G: Minimum Swing Radius	mm (ft-in)	1950 (6'5")	2080 (6'10")	2140 (7'0")	2180 (7'2")
H: Boom-Swing Pivot Offset Distance	mm (ft-in)	100 (4")			
I: Blade Bottom Highest Position (above ground level)	mm (ft-in)	360 (1'2")			
J: Blade Bottom Lowest Position (below ground level)	mm (ft-in)	320 (1'1")			
K: Offset Distance	mm (ft-in)	L 705 (L 2'4") R 640 (R 2'1")		L 705 (L 2'4") R 600 (R 2'0")	
Maximum Boom-Swing Angle		L 72°/R 62°		L 62°/R 62°	

NOTE: The dimensions do not include the height of the shoe lug.

## GENERAL / Specifications

### ZX35U-3 class



T1M7-01-01-002

Category		ZX35U-3 class			
		Canopy		Cab	
Item		1.32 m Arm	1.72 m Arm	1.32 m Arm	1.72 m Arm
A: Maximum Digging Reach	mm (ft-in)	5210 (17'1")	5520 (18'1")	5210 (17'1")	5520 (18'1")
B: Maximum Digging Depth	mm (ft-in)	3050 (10'0")	3450 (11'4")	3050 (10'0")	3450 (11'4")
C: Maximum Cutting Height	mm (ft-in)	4870 (16'0")	4950 (16'3")	4710 (15'5")	4760 (15'7")
D: Maximum Dumping Height	mm (ft-in)	3470 (11'5")	3570 (11'9")	3320 (10'11")	3390 (11'2")
E: Overall Height (Rubber Crawler)	mm (ft-in)	2460 (8'1")		2500 (8'2")	
F: Overall Length	mm (ft-in)	4650 (15'3")	4780 (15'8")	4650 (15'3")	4780 (15'8")
G: Minimum Swing Radius	mm (ft-in)	2070 (6'10")	2170 (7'1")	2230 (7'4")	2300 (7'7")
H: Boom-Swing Pivot Offset Distance	mm (ft-in)	100 (4")			
I: Blade Bottom Highest Position (above ground level)	mm (ft-in)	370 (1'3")			
J: Blade Bottom Lowest Position (below ground level)	mm (ft-in)	390 (1'3")			
K: Offset Distance	mm (ft-in)	L 705 (L 2'4") R 640 (R 2'1")		L 705 (L 2'4") R 600 (R 2'0")	
Maximum Boom-Swing Angle		L 72°/R 62°		L 62°/R 62°	

NOTE: The dimensions do not include the height of the shoe lug.

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