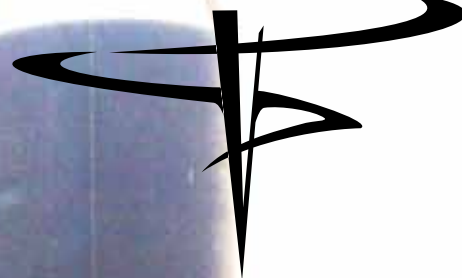




FOUNDATION EQUIPMENT



# EK250

ON CAT336  
(NEXT GEN)





### ROTARY:

- **Robust design**, with 2 slewing bearings on top and bottom.
- Power-shift for **High spin-off speed (120rpm)** for quick discharge of soil.
- **3 operation speeds** and 3 spinoff speeds for high torque and high speeds.
- **Exchangeable keys**, bolted. No need to rebuild keys by welding inside the rotary.
- Quick disconnects for easy removal of rotary for transport.

# EK250

Mounted on  
CAT336  
(NEXT GEN)

## CONTROL SYSTEM:

- Touch Screen Display
- Measurements:
  - Torque and rotary speeds / Main Winch pulling force / Crowd force
  - Drilling depth Mast inclination X/Y axis
- Automatic functions:
  - Auto-level of mast
  - Rotary automatic gear shifting
  - Main Winch automatic gear shifting
  - Drill Lock / Auto Crowd / Return to Center
- Maintenance and data logging





# APPLICATIONS

## APPLICATIONS:

- Conversion to Short Mast and Mid Mast options available.
- Easy Conversion to from kelly to "Bottom Drive CFA" up to 32in diam.

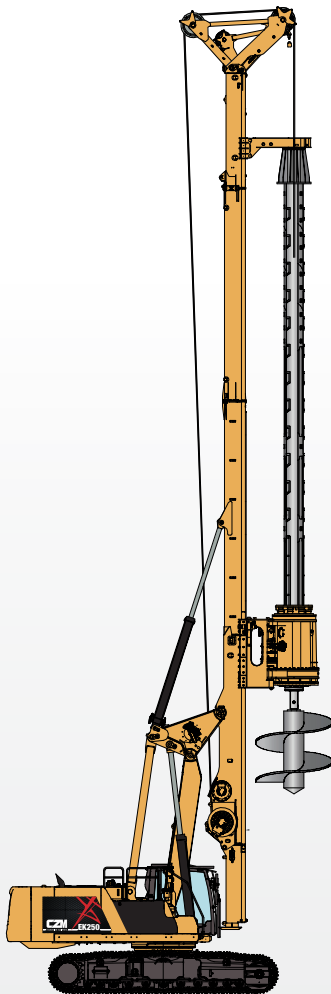
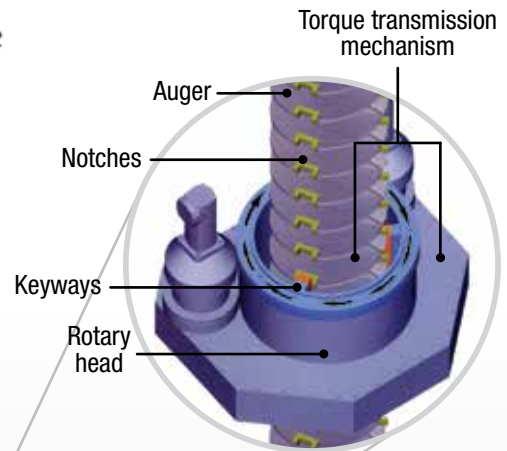
## MAIN WINCH:

- **Special groove** for better cable winding and longer cable life.
- **2 gears** allows for both **high speed** and **high pulling force**.
- Automatic down the hole winch stop.
- Free willing winch during crowd operation.

## KELLY BAR:

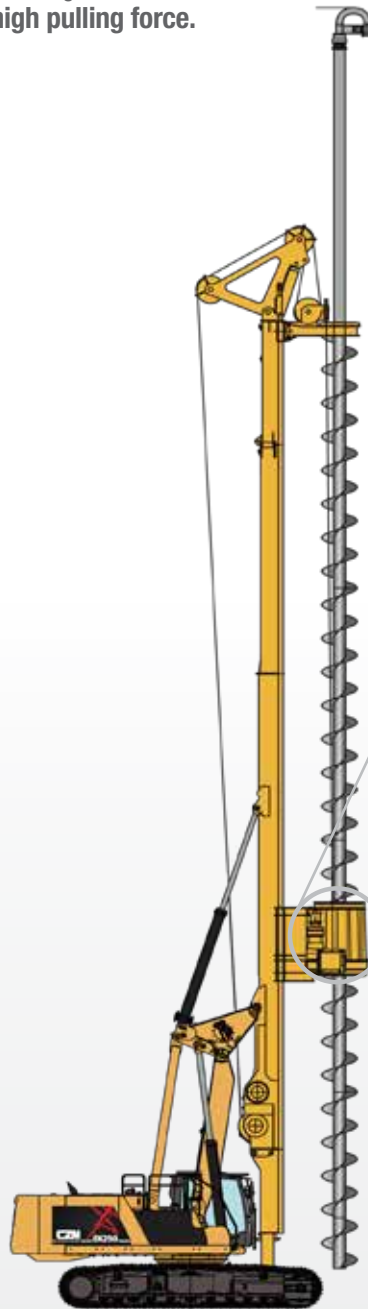
- **Large inner passage** on rotary allows for **large diameter pipes** (19in) and **thicker keys**.
- Thick Keys made of Wear resistant materials – **Hardox 450**.

## BOTTOM DRIVE CFA



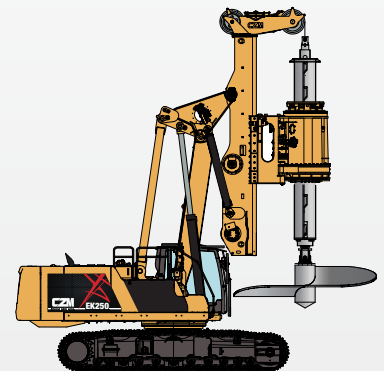
### DRILL SHAFT PILE

Depth (std.): 160 ft / 48.7 m  
Depth (max.): 200 ft / 61 m  
Diameter (max.) without foot mast shoe: 156 in / 4,000 mm



### CONTINUOUS FLIGHT AUGER PILE

Depth (max.) only with Auger: 102 ft / 31 m  
Diameter (max.): 32 in / 800 mm



### SHORT MAST VERSION

Depth (std.): 72 ft / 22 m  
Diameter (max.) without foot mast shoe: 156 in / 4,000 mm

# TECHNICAL SPECIFICATIONS

## KELLY BAR STANDARD MAST APPLICATION

Max. Drilling Depth (standard version - interlocking kelly bar)	160 ft	48.7 m
Max. Drilling Depth (interlocking kelly bar)	200 ft	61 m
Max. Drilling Diameter (without foot mast)	156 in	4,000 mm
Max. Drilling Diameter (with foot mast)	100 in	2,540 mm

## KELLY BAR SHORT MAST APPLICATION

Max. Drilling Depth (interlocking kelly bar) standard	72 ft	22 m
Max. Drilling Diameter (without foot mast)	156 in	4,000 mm
Max. Drilling Diameter (with foot mast)	100 in	2,540 mm

## ROTARY HEAD

Max. torque (nominal)	234,500 lbf.ft	31,800 kgf.m
Working speed	8-23 rpm	8-23 rpm
Spin off speed	40-98 rpm	40-98 rpm

## CROWD SYSTEM

Cylinder Pull-down force (nominal)	73,326 lbf	33,000 kgf
Cylinder Pull-up force (nominal)	81,814 lbf	37,000 kgf
Cylinder stroke	19 ft 8 in	6,000 mm

## MAIN WINCH

Max. pull-force effective (1st layer)	58,700 lbf	26,500 kgf
Max. pull-force effective (1st layer - 2nd speed)	54,200 lbf	24,000 kgf
Line speed (1st layer)	175 ft/min	54 m/min
Max. line speed (2nd speed)	245 ft/min	75 m/min
Cable diameter	1 1/8 in	28 mm
Drum diameter (1st layer)	22 5/16 in	566 mm

## AUXILIARY WINCH

Max. pull-force effective (1st layer)	22,000 lbf	10,000 kgf
Cable diameter	3/4 in	19 mm
Drum diameter (1st layer)	16.5 in	420 mm

## MAST INCLINATION

Backward	15°	15°
Forward	5°	5°
Sideways	7° / 7°	7° / 7°

## DIESEL ENGINE CAT336 NEXT GEN (CAT® C9.3 ACERT™)\*

Exhaust Emission Standard	EPA Tier 4 Final	EPA Tier 4 Final
Gross Power – SAE J1995	314 hp	234 kW
Displacement	568 in³	9.3 L
Fuel tank	158 gal	600 L

## HYDRAULIC SYSTEM

Main circuit pressure (max.)	5,076 psi	350 bar
Main circuit Flow rate (max.)	127 gal/min	480 L/min
Hydraulic oil tank (CAT + additional)	67.4 gal	255 L

## AUXILIARY HYDRAULIC SYSTEM

Pump Displacement	3.66 in³	60 cc3
Auxiliary circuit flow rate (max.)	29 gal/min	108 L/min

## UNDERCARRIAGE

Track length	19 ft 8 in	6,000 mm
Length to center of rollers	16 ft 5 in	5,000 mm
Transport position width (retracted)	9 ft 10 in	3,000 mm
Operation position width (extended)	14 ft 1 in	4,300 mm
Track shoes width	32 in	800 mm
Max. drawbar pull	51,930 lbf	23,100 kgf
Max. travel speed	3.1 mph	5 km/h

## TRANSPORT

Overall Height (Standard Mast)	11 ft 2 in	3,400 mm
Overall Height (Short Mast)	12 ft	3,650 mm
Transport Length (Standard Mast)	57 ft 9 in	17,605 mm
Transport Length (Short Mast)	42 ft 11 in	13,090 mm
Transport Width (Standard Mast / Short Mast)	9 ft 10 in	3,000 mm
Max. Transport Weight (Standard Mast)	164,700 lb	74,900 kg
Min. Transport Weight (Standard Mast)	117,000 lb	53,200 kg
Min. Transport Weight (Short Mast)	107,000 lb	48,600 kg

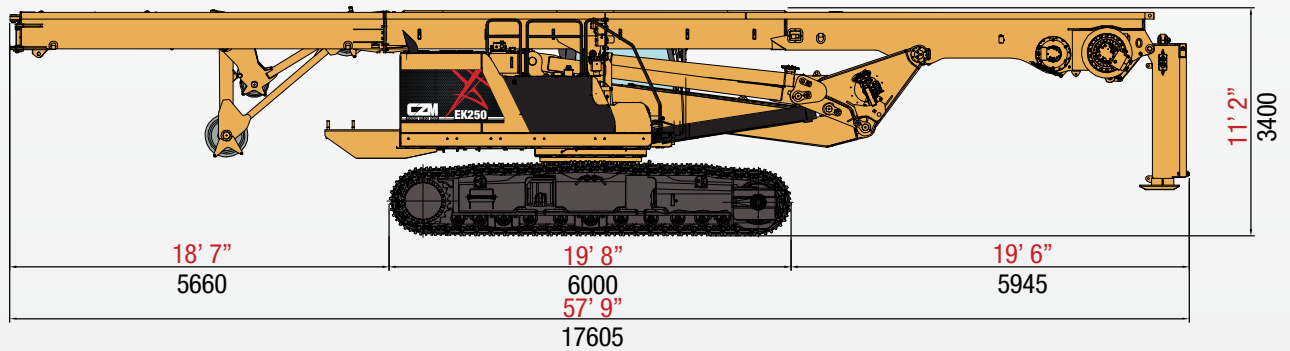
## GENERAL DATA

Overall height (Working position; Standard mast)	83 ft	25,295 mm
Overall height (Working position; Short mast)	31 ft	9,450 mm
Operation weight (Standard mast)	190,000 lb	86,400 kg
Operation weight (Short mast)	172,000 lb	78,200 kg

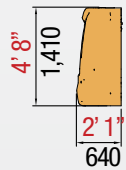
# GENERAL DIMENSIONS



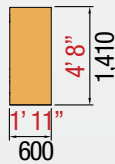
# TRANSPORT POSITION GENERAL DIMENSIONS



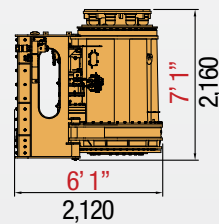
Weight: 117,000 lb / 53,200 kg (removing Rotary, Lower Mast and Counterweights)



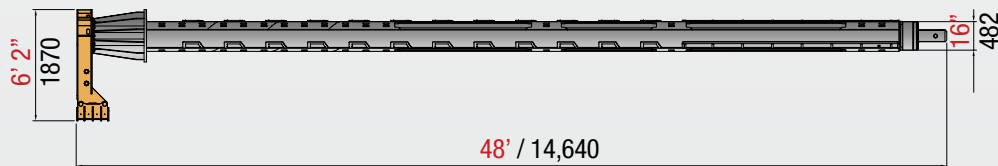
Width: 9 ft 10 in / 3,000 mm  
Weight: 18,700 lb / 8.5 ton



Width: 9 ft 10 in / 3,000 mm  
Weight: 10,000 lb / 4.5 ton



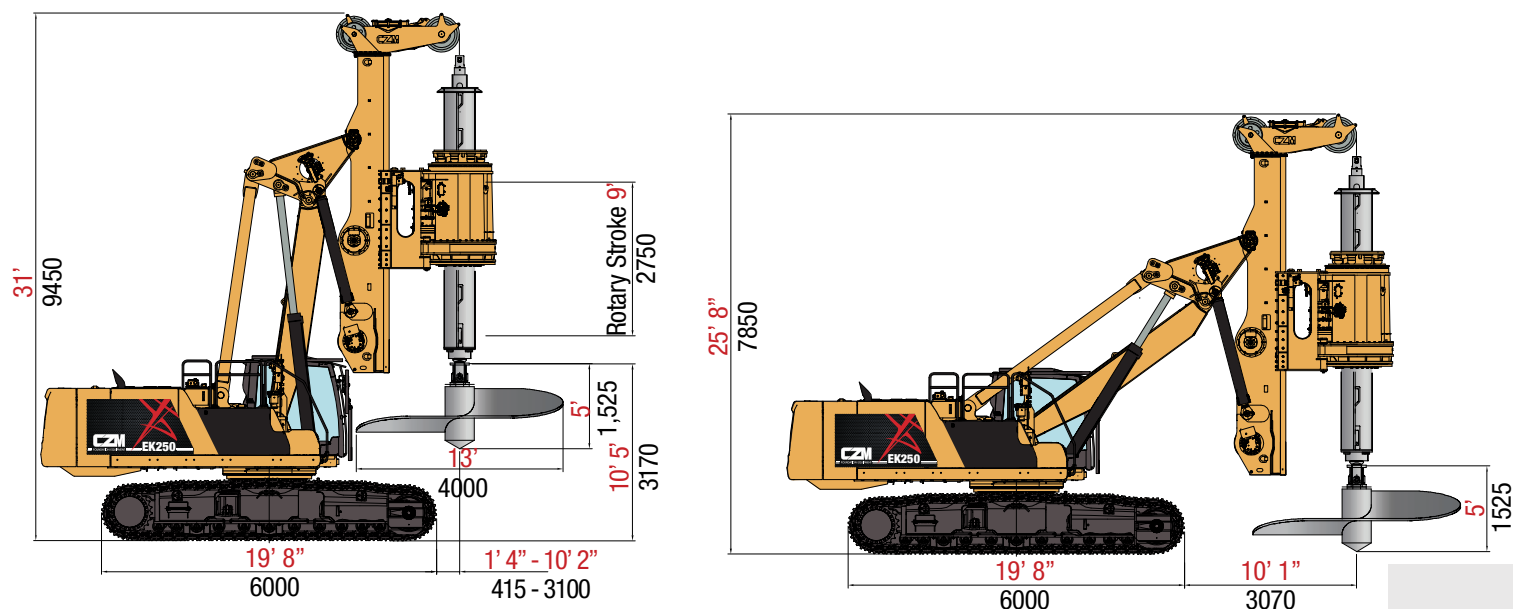
Width: 6 ft 8 in / 2,040 mm  
Weight: 19,000 lb / 8.7 ton



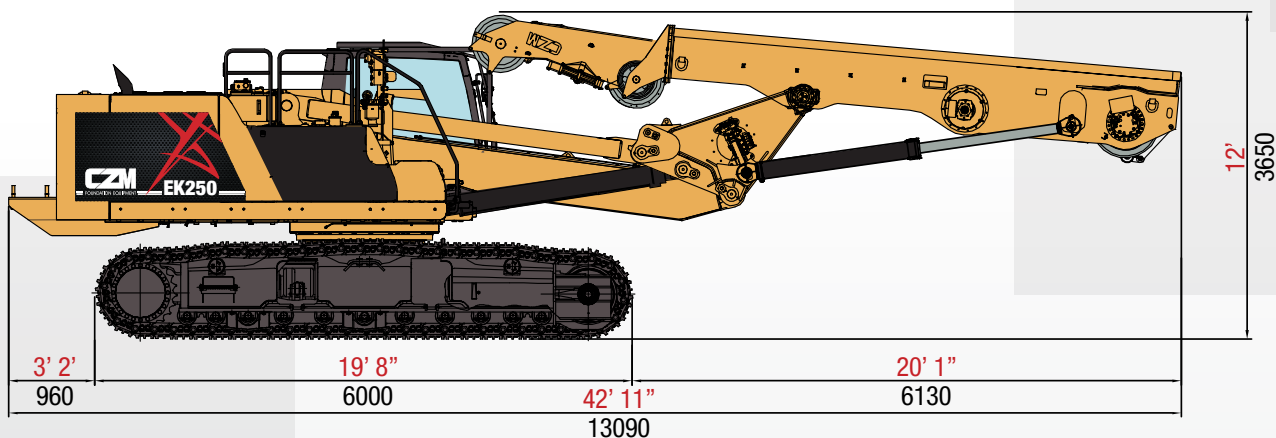
Weight: 19,800 lb / 9 ton



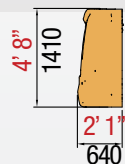
# SHORT MAST GENERAL DIMENSIONS



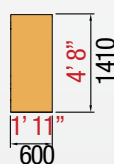
## TRANSPORT POSITION SHORT MAST



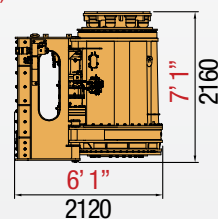
Weight: 107,000 lb / 48,600 kg (removing Rotary, Lower Mast and Counterweights)



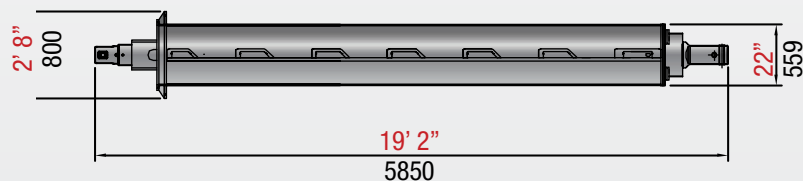
Width: 9 ft 10 in / 3,000 mm  
Weight: 18,700 lb / 8.5 ton



Width: 9 ft 10 in / 3,000 mm  
Weight: 10,000 lb / 4.5 ton



Width: 6 ft 8 in / 2,040 mm  
Weight: 19,000 lb / 8.7 ton



Weight: 12,100 lb / 5.5 ton



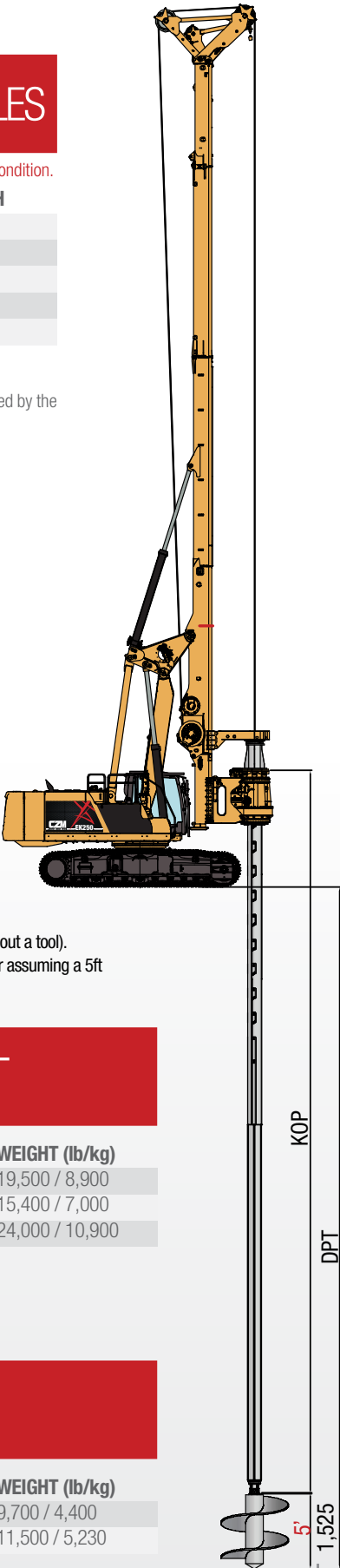
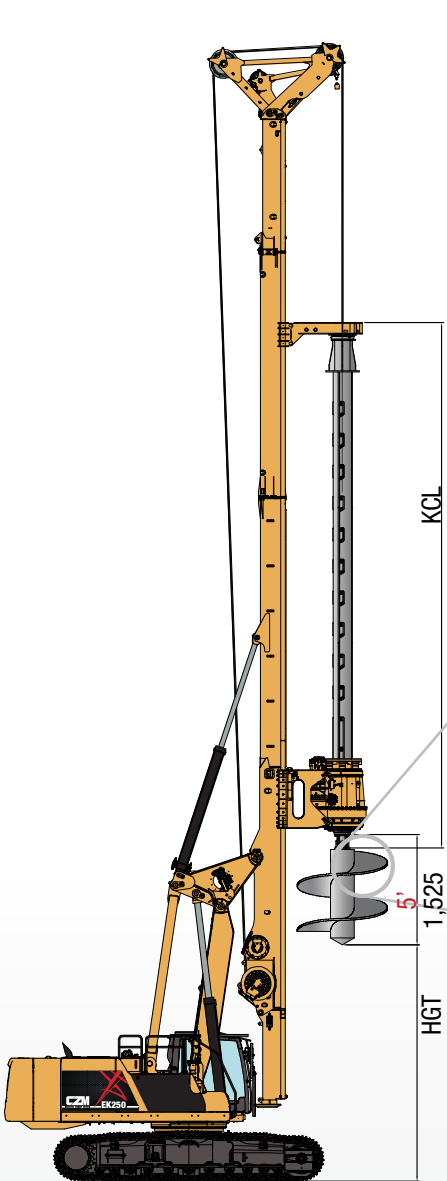
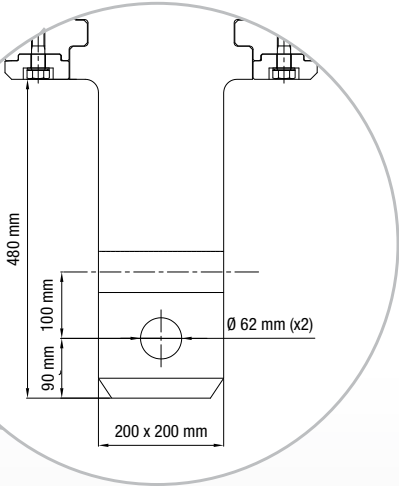
# KELLY BAR GENERAL DIMENSIONS

## CASED DRILLED SHAFT PILES

Reference only. Depth and diameter will depend on the soil condition.

CASING DIAMETER	MAXIMUM DEPTH
84 in / 2,130 mm	64 ft / 19 m
80 in / 2,000 mm	68 ft / 21 m
70 in / 1,800 mm	77 ft / 23 m
60 in / 1,500 mm	90 ft / 27 m
50 in / 1,300 mm	108 ft / 33 m

- Maximum length of each casing element 18 ft (5,500 mm)
- It can be optionally equipped with a casing oscillator, powered by the drilling rig, for greater diameters and depth of casing.



- <sup>1</sup> **KCL:** Length measured from bottom of stub to top of swivel.
- <sup>2</sup> **KOP:** Length measure from top of flange to bottom of stub (without a tool).
- <sup>3</sup> **HGT:** Length measure from bottom of ground to bottom of auger assuming a 5ft tall tool. More clearance can be reached with mast extension.
- <sup>4</sup> **DPT:** Total depth with 5ft tool boomed all the way back.

## KELLY BAR OPTIONS FOR STANDARD MAST

	NUMBER OF ELEMENTS	DEPTH - DPT <sup>4</sup>	TRANSPORT - KCL <sup>1</sup> (ft in/mm)	HGT (ft in/mm) <sup>3</sup>	KOP (ft in/mm) <sup>2</sup>	WEIGHT (lb/kg)
Standard 4/160 (48) Interlock	4	160' / 48,650	49'6" / 15,100	19'2" / 6,100	167'10" / 51,150	19,500 / 8,900
Short 4/127 (38) Interlock	4	127' / 38,650	39'4" / 11,985	19'2" / 6,100	135' / 41,150	15,400 / 7,000
Long 4/200 (61) Interlock	4	200' / 61,000	59'6" / 18,200	14' 1" / 4,300	207'1" / 63,150	24,000 / 10,900

The standard kelly has 4 interlocking elements and reaches 160 ft (48 m) depth.

## KELLY BAR OPTIONS FOR SHORT MAST

	NUMBER OF ELEMENTS	DEPTH - DPT	TRANSPORT - KCL	HGT (ft in/mm)	KOP (ft in/mm)	WEIGHT (lb/kg)
Kelly Bar 5/55 Interlock	5	55' / 16,800	18' / 5,600	5' 7" / 1,700	66' 4" / 20,230	9,700 / 4,400
Standard 6/72 Interlock	6	72' / 22,000	18' / 5,600	5' 3" / 1,600	79' 4" / 24,200	11,500 / 5,230













FOUNDATION EQUIPMENT

## THE COMPANY

CZM is headquartered in Savannah, Georgia, USA. For over 40 years, we have specialized in manufacturing foundation equipment. We design and customize models for many different drilling applications including Drill shafts, CFA/cased CFA, Micropile and anchoring, piledrive and hydraulic hammers and soil improvements. We are a Caterpillar OEM (Original Equipment Manufacturer).

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