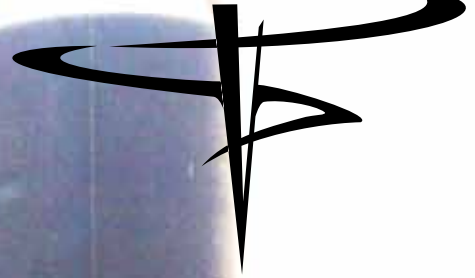




FOUNDATION EQUIPMENT



# EK250

Cat® 340 NG

## 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  
Cat® 340 NG

## 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:

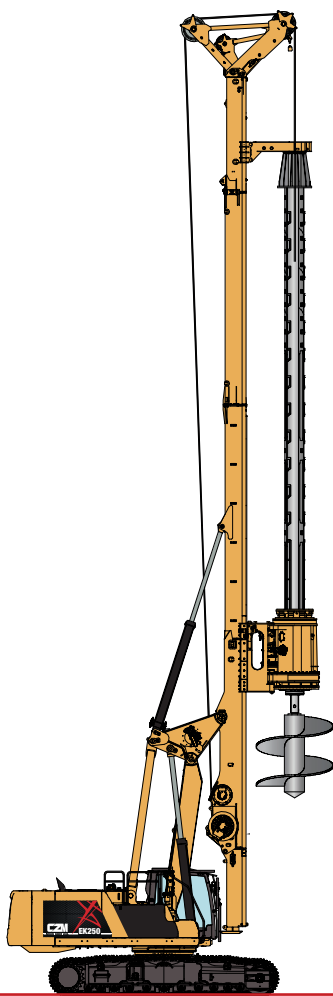
- Conversion to Short Mast and Mid Mast options available.

## 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.
- Freewheeling winch during crowd operation.

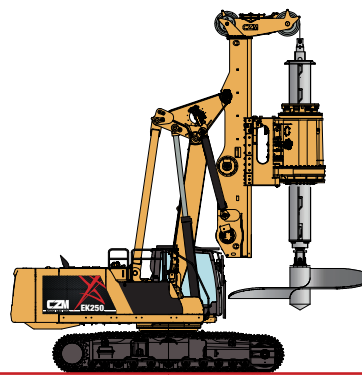
## KELLY BAR:

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



### DRILL SHAFT PILE

Depth (std.): 158 ft / 48 m  
Depth (max.): 200 ft / 61 m  
Diameter (max.) without foot mast: 156 in / 4,000 mm



### SHORT MAST VERSION

Depth (std.): 55 ft / 16.9 m  
Depth (max.): 95 ft / 35 m  
Diameter (max.) without foot mast shoe: 156 in / 4,000 mm

# TECHNICAL SPECIFICATIONS

## KELLY BAR STANDARD MAST APPLICATION

|                                                             |         |          |
|-------------------------------------------------------------|---------|----------|
| Drilling Depth (standard - 4 elements; interlock kelly bar) | 158 ft  | 48 m     |
| Drilling Depth (4 elements; interlock kelly bar)            | 105 ft  | 35 m     |
| Drilling Depth (4 elements; interlock kelly bar*)           | 200 ft  | 61 m     |
| Drilling Diameter with lower mast (max.)                    | 8.2 ft  | 2,500 mm |
| Drilling Diameter without lower mast (max.)                 | 13.1 ft | 4,000 mm |

\*With reduced torque

## KELLY BAR SHORT MAST APPLICATION

|                                                             |         |          |
|-------------------------------------------------------------|---------|----------|
| Drilling Depth (standard - 6 elements; interlock kelly bar) | 55 ft   | 16.8 m   |
| Drilling Depth (6 elements; interlock kelly bar)            | 72 ft   | 22 m     |
| Drilling Depth (6 elements; interlock kelly bar)            | 95 ft   | 30 m     |
| Drilling Diameter with lower mast (max.)                    | 8.3 ft  | 2,540 mm |
| Drilling Diameter without lower mast (max.)                 | 13.1 ft | 4,000 mm |

## ROTARY HEAD - STANDARD

|                           |                |              |
|---------------------------|----------------|--------------|
| Max. torque (nominal)     | 234,561 lbf.ft | 32,429 kgf.m |
| Working speed of rotation | 10-21 rpm      | 10-21 rpm    |
| Spin-off rotation         | 48-90 rpm      | 48-90 rpm    |

## CROWD SYSTEM

|                                 |            |            |
|---------------------------------|------------|------------|
| Cylinder stroke - standard mast | 19 ft 8 in | 6,000 mm   |
| Cylinder stroke - short mast    | 8 ft 3 in  | 2,520 mm   |
| Cylinder push force             | 81,813 lbf | 37,110 kgf |
| Cylinder push speed             | 44 ft/min  | 13 m/min   |
| Cylinder pull force             | 76,276 lbf | 34,598 kgf |
| Cylinder pull speed             | 39 ft/min  | 12 m/min   |

## MAIN WINCH

|                                                     |            |            |
|-----------------------------------------------------|------------|------------|
| Max. pull-force - 1st Layer (effective)             | 58,887 lbf | 26,711 kgf |
| Max. pull-force - 1st Layer - 2nd Speed (effective) | 54,239 lbf | 24,603 kgf |
| Line speed - 1st Layer                              | 208 ft/min | 63 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 - 1st Layer (effective) | 22,000 lbf | 10,000 kgf |
| Line speed - 1st Layer                  | 180 ft/min | 55 m/min   |
| 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 Cat® 340 NEXT GEN TIER IV (CAT® C9.3 B)

|                               |         |        |
|-------------------------------|---------|--------|
| Net Power – Standard ISO 9249 | 346 hp  | 258 kW |
| Displacement                  | 568 in³ | 9.3 L  |
| Fuel Tank                     | 158 gal | 600 L  |

## HYDRAULIC SYSTEM

|                               |               |           |
|-------------------------------|---------------|-----------|
| Hydraulic pressure            | 5,076 psi     | 350 bar   |
| Flow rate (main circuit)      | 147.3 gal/min | 558 L/min |
| Flow rate (auxiliary circuit) | 28.5 gal/min  | 108 L/min |
| Hydraulic oil tank capacity   | 43 gal        | 161 L     |

## 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 11 in | 3,000 mm   |
| Working position width (extended)    | 14 ft 1 in | 4,300 mm   |
| Shoes width                          | 32 in      | 800 mm     |
| Max. drawbar pull (both tracks)      | 51,930 lbf | 23,100 kgf |
| Max. travel speed                    | 3.1 mph    | 5.0 km/h   |

## TRANSPORT - STANDARD MAST

|                                                              |            |           |
|--------------------------------------------------------------|------------|-----------|
| Transport height                                             | 11 ft 2 in | 3,400 mm  |
| Transport length                                             | 57 ft 9 in | 17,605 mm |
| Transport width                                              | 9 ft 11 in | 3,000 mm  |
| Transport weight** (without kelly, rotary, & counterweights) | 119,000 lb | 54,000 kg |

## TRANSPORT - SHORT MAST

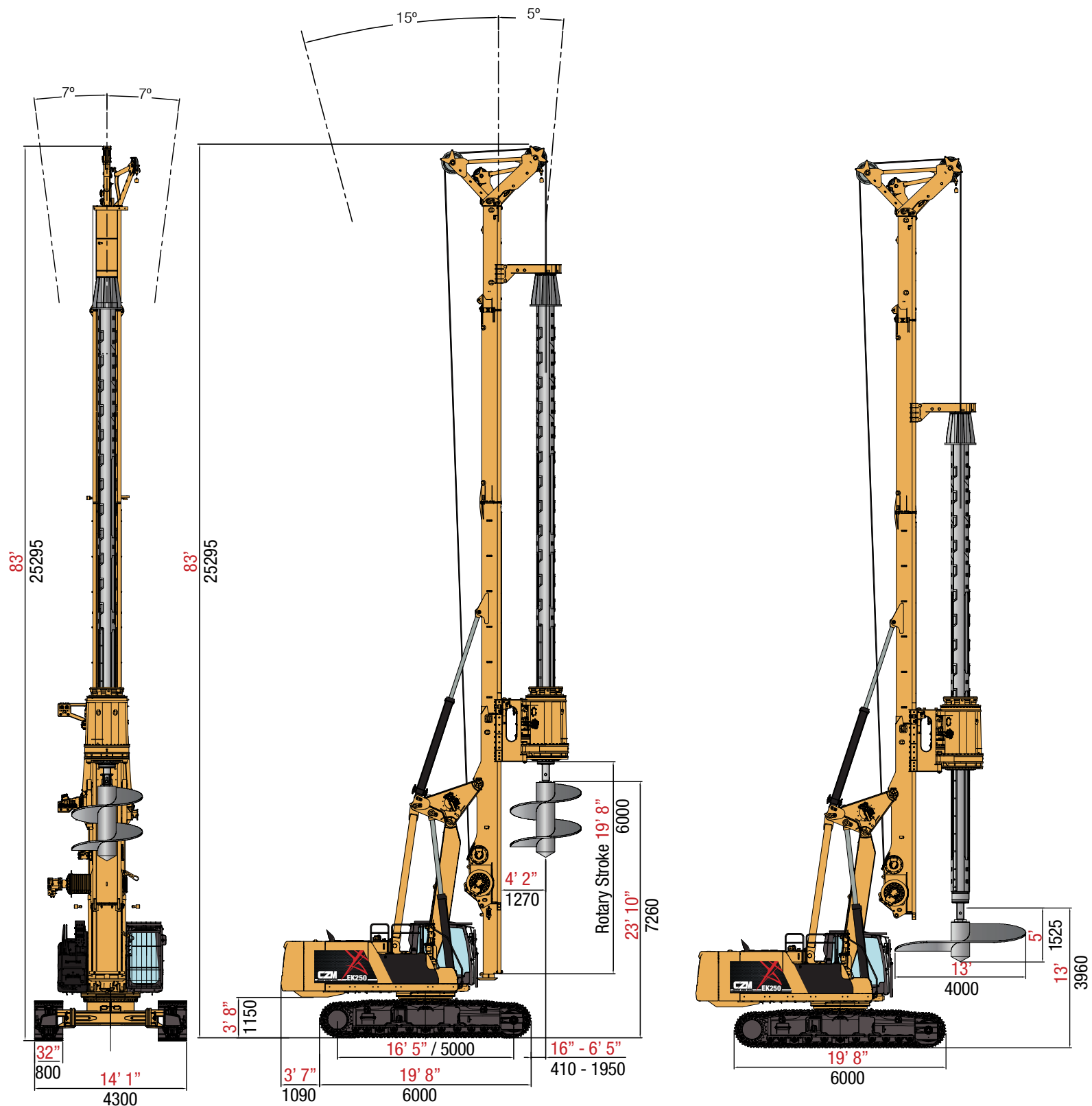
|                                                              |             |           |
|--------------------------------------------------------------|-------------|-----------|
| Transport height                                             | 12 ft       | 3,650 mm  |
| Transport length                                             | 42 ft 11 in | 13,090 mm |
| Transport width                                              | 9 ft 11 in  | 3,000 mm  |
| Transport weight** (without kelly, rotary, & counterweights) | 108,000 lb  | 49,000 kg |

## GENERAL DATA

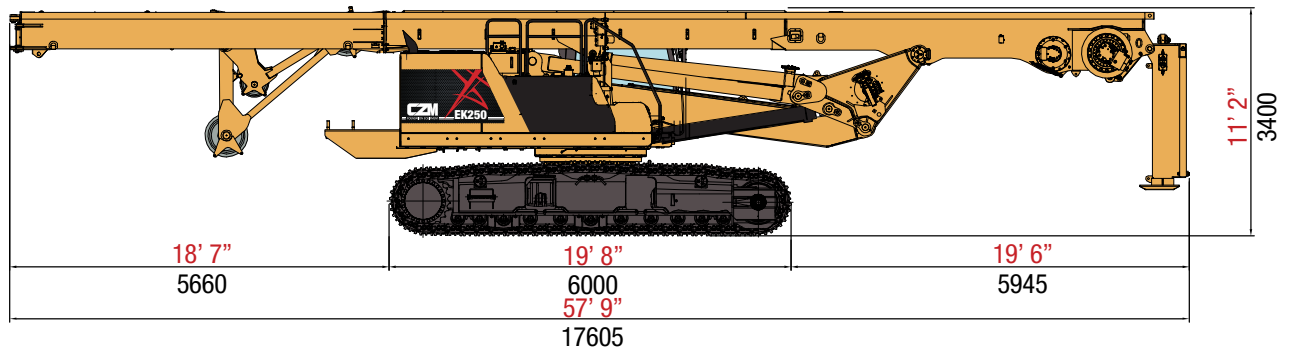
|                                           |            |           |
|-------------------------------------------|------------|-----------|
| Overall height (standard mast)            | 83 ft      | 25,295 mm |
| Overall height (short mast application)   | 31 ft 5 in | 9,590 mm  |
| Operation weight (standard mast)          | 187,750 lb | 85,150 kg |
| Operation weight (short mast application) | 158,750 lb | 72,000 kg |

\*\*Weights are estimated

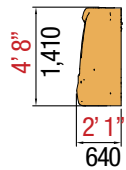
## 06 | CZM FOUNDATION EQUIPMENT



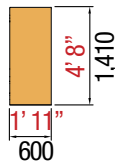
# TRANSPORT POSITION GENERAL DIMENSIONS



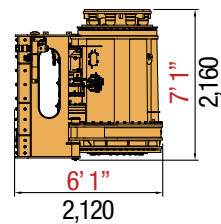
Weight: 119,000 lb / 54,000 kg (removing Rotary, Kelly and Counterweights)



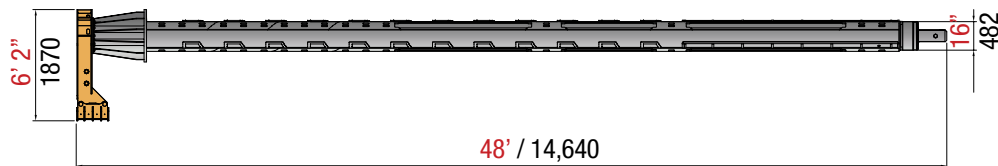
Width: 9 ft 10 in / 3,000 mm  
Weight: 18,700 lb / 8,500 kg\*\*



Width: 9 ft 10 in / 3,000 mm  
Weight: 10,250 lb / 4,650 kg\*\*



Width: 6 ft 8 in / 2,040 mm  
Weight: 17,750 lb / 8,000 kg\*\*

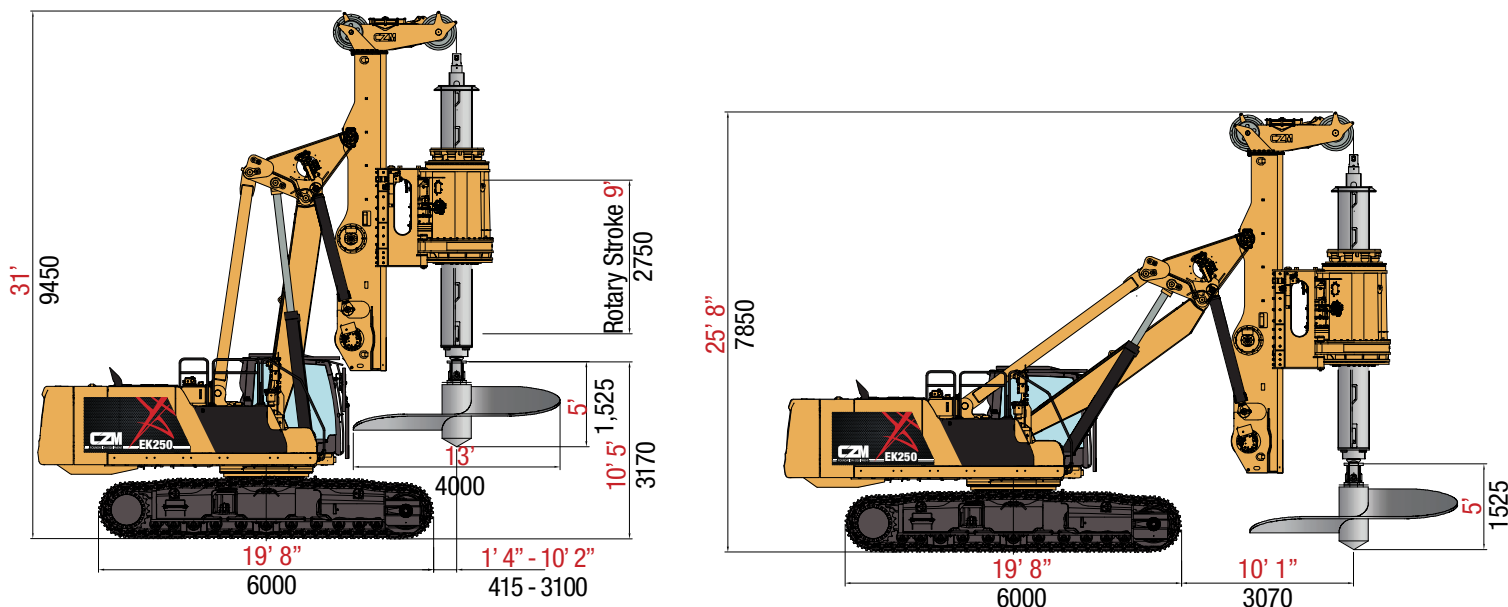


Standard 4/158 Weight: 12,750 lb / 9,800 kg\*\*

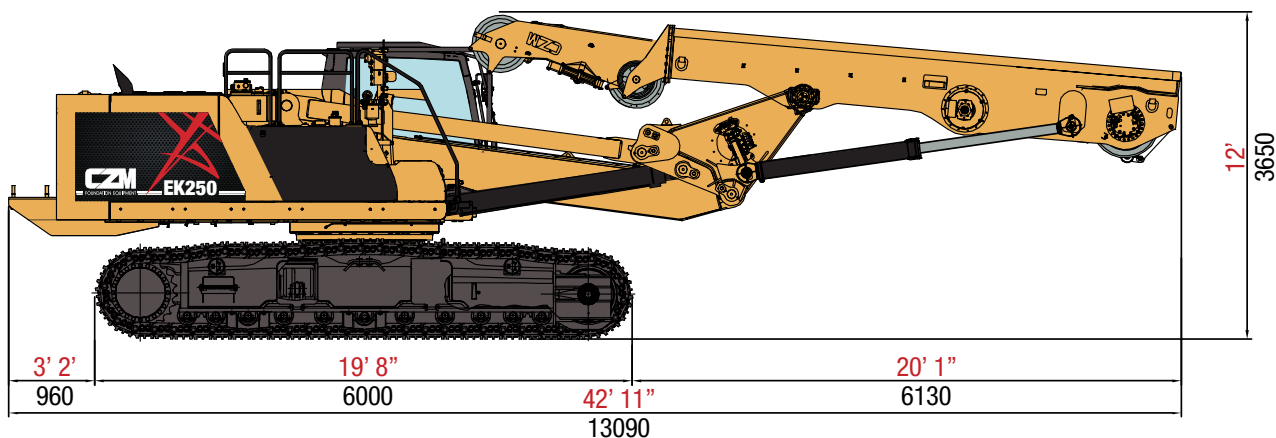


\*\*Weights are estimated

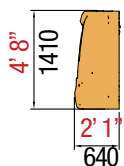
# SHORT MAST GENERAL DIMENSIONS



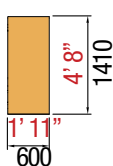
## TRANSPORT POSITION SHORT MAST



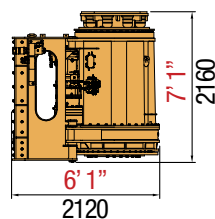
Weight: 108,000 lb / 49,000 kg\*\* (removing Rotary, Kelly and Counterweights)



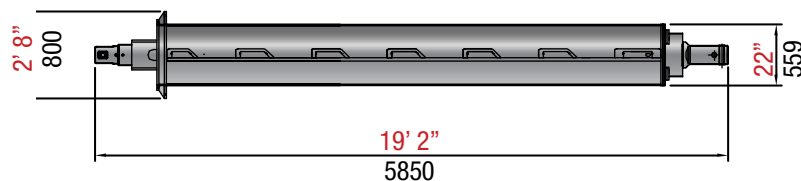
Width: 9 ft 10 in / 3,000 mm  
Weight: 18,750 lb / 8,500 kg\*\*



Width: 9 ft 10 in / 3,000 mm  
Weight: 6,250 lb / 2,825 kg\*\*



Width: 6 ft 8 in / 2,040 mm  
Weight: 15,750 lb / 7,150 kg\*\*



Short Mast 6/55 Weight: 10,250 lb / 4,650 kg\*\*

\*\*Weights are estimated

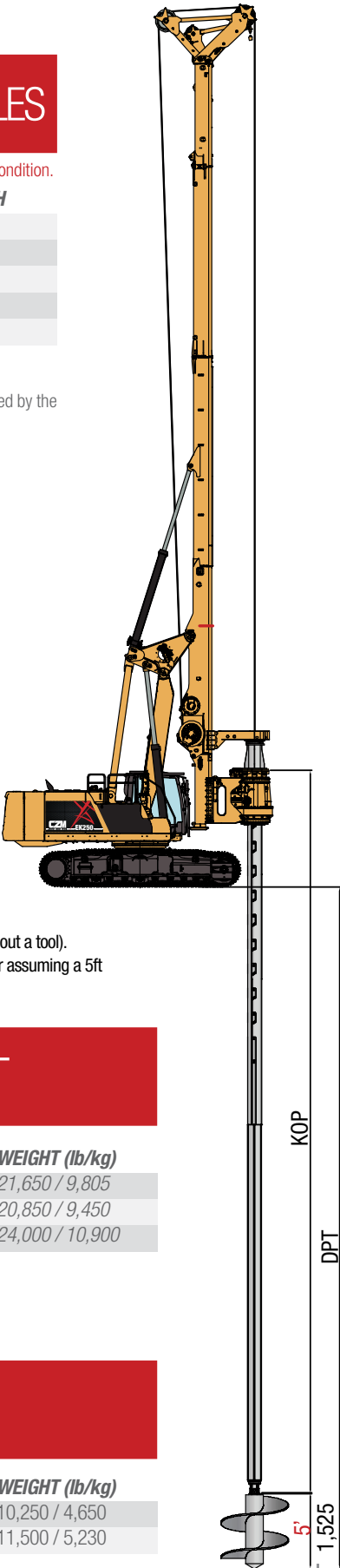
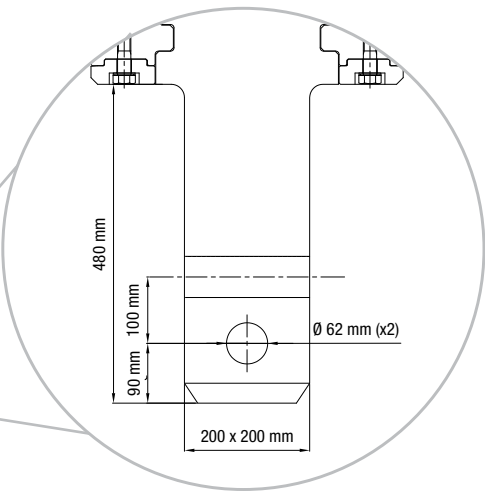
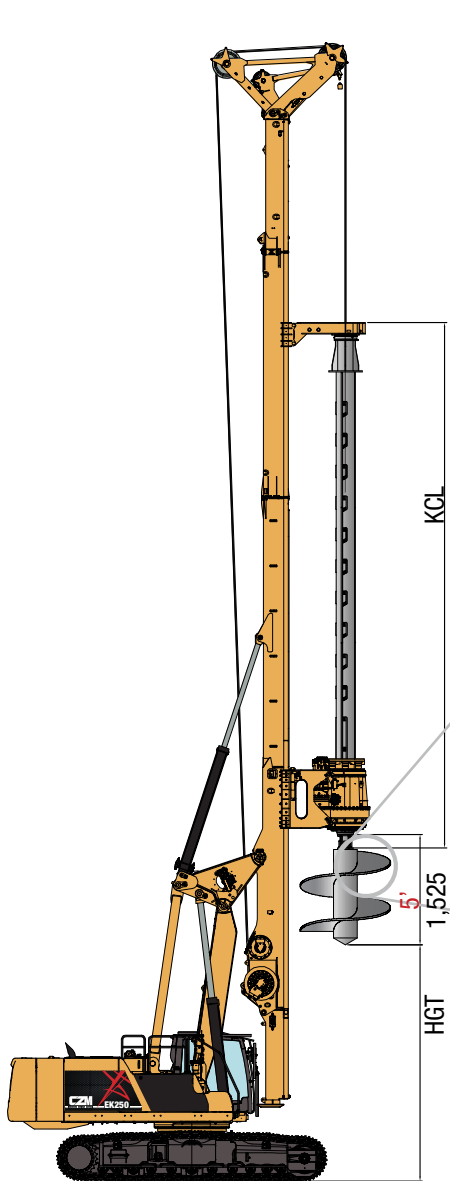
# KELLY BAR GENERAL DIMENSIONS

## 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 4/158 (48) Interlock | 4                  | 158' / 48,158            | 49'6" / 15,100                          | 19'2" / 6,100               | 167'10" / 51,150            | 21,650 / 9,805  |
| Short 4/105 (32) Interlock    | 4                  | 105' / 32,000            | 36'9" / 11,200                          | 19'2" / 6,100               | 117' 9" / 35,900            | 20,850 / 9,450  |
| 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 158 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 6/55 Interlock | 6                  | 55' / 16,800 | 14' 9" / 4,500  | 5' 7" / 1,700  | 59' 6" / 18,150 | 10,250 / 4,650 |
| Standard 6/72 Interlock  | 6                  | 72' / 22,000 | 18' / 5,600     | 5' 3" / 1,600  | 79' 4" / 24,200 | 11,500 / 5,230 |





**DISCLAIMER:** EK250 can not be used as a crane.  
Please refer to user manual for proper usage.





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, driven pile and hydraulic hammers and soil improvements. We are a Caterpillar OEM (Original Equipment Manufacturer).

### HEADQUARTERS

962 Interstate Centre Boulevard  
Ellabell • Georgia • 31308  
United States • Phone: (912) 200-7654

### AFTER SALES - CALIFORNIA

1720 N. Ventura Avenue  
Ventura • California • 93001  
United States • Phone: (805) 667-8416

### AFTER SALES - GEORGIA

145 East Industrial Boulevard  
Pembroke • Georgia • 31321  
United States • Phone: (912) 200-7656

### AFTER SALES - KENTUCKY

2001 West Hal Rogers Parkway  
London • Kentucky • 40741  
United States • Phone: (912) 320-2699

### AFTER SALES - TEXAS

2501 Blue Mound Rd. W  
Haslet • Texas • 76052  
United States • Phone: (817) 232-8053

[WWW.CZM-US.COM](http://WWW.CZM-US.COM)

