



**CZM**

FOUNDATION EQUIPMENT



**EK200**

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.



# EK200

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

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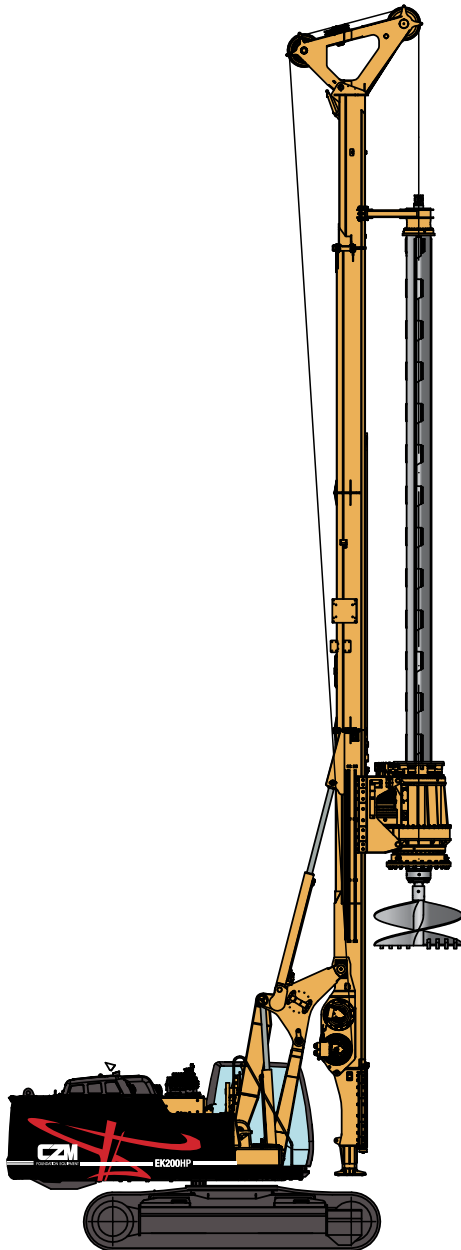
- Conversion to Short Mast and Mid Mast options available.

## 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.

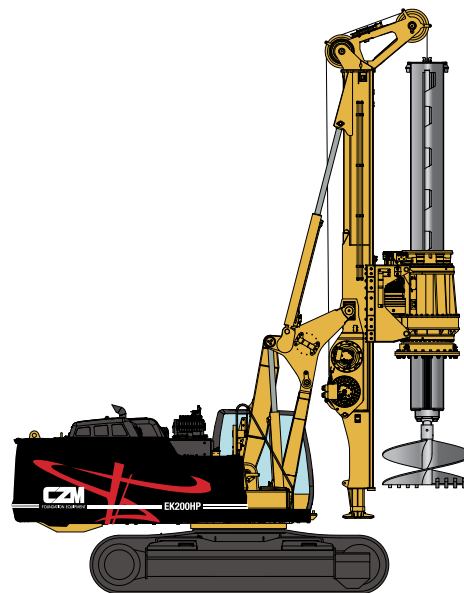
## KELLY BAR:

- **Large inner passage** on rotary allows for **large diameter pipes** (16in) and **thicker keys**.
- Thick Keys made of Wear resistant materials – **Hardox 450**.



### DRILLED SHAFT PILE

Depth: 130 - 200 ft / 39 - 61 m (interlock)  
Diameter (max.) with foot mast: 70 in / 1,800 mm  
Diameter (max.) w/o foot mast: 132 in / 3,350 mm



### DRILLED SHAFT PILE "LOW CLEARANCE"

Depth (std.): 76 ft / 23.2 m (interlock)  
Depth (max.): 95 ft / 29 m (interlock)  
Diameter (max.) with foot mast: 70 in / 1,800 mm  
Diameter (max.) w/o foot mast: 132 in / 3,350 mm

# TECHNICAL SPECIFICATIONS

## KELLY BAR STANDARD MAST APPLICATION

Drilling Depth (standard - 4 elements; interlock kelly bar)	130 ft	39 m
Drilling Depth (3 elements; interlock kelly bar)	90 ft	27 m
Drilling Depth (4 elements; interlock kelly bar*)	200 ft	61 m
Drilling Diameter with lower mast (max.)	5.9 ft	1,800 mm
Drilling Diameter without lower mast (max.)	11 ft	3,350 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)	76 ft	23.2m
Drilling Depth (6 elements; interlock kelly bar)	95 ft	30 m
Drilling Diameter with lower mast (max.)	6 ft	1,800 mm
Drilling Diameter without lower mast (max.)	11 ft	3,350 mm

## ROTARY HEAD - STANDARD

Max. torque (nominal)	193,360 lbf.ft	26,700 kgf.m
Working speed of rotation	10-26 rpm	10-26 rpm
Spin-off rotation	50-120 rpm	50-120 rpm

## CROWD SYSTEM

Cylinder stroke - standard mast	16 ft 5 in	5,000 mm
Cylinder stroke - short mast	8 ft	2,450 mm
Cylinder push force	52,200 lbf	23,750 kgf
Cylinder push speed	37 ft/min	11 m/min
Cylinder pull force	62,800 lbf	28,500 kgf
Cylinder pull speed	39 ft/min	12 m/min

## MAIN WINCH

Max. pull-force - 1st Layer (effective)	50,800 lbf	23,100 kgf
Max. pull-force - 1st Layer - 2nd Speed (effective)	39,920 lbf	18,107 kgf
Line speed - 1st Layer	190 ft/min	58 m/min
Cable diameter	1 in	26 mm
Drum diameter - 1st Layer	20.2 in	513 mm

## AUXILIARY WINCH

Max. pull-force - 1st Layer (effective)	22,000 lbf	10,000 kgf
Line speed - 1st Layer	240 ft/min	73 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 in <sup>3</sup>	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	17 ft 10 in	5,450 mm
Length to Center of rollers	15 ft 1 in	4,600 mm
Transport position width (retracted)	9 ft 11 in	3,000 mm
Working position width (extended)	14 ft 7 in	4,450 mm
Shoes width	28.3 in	720 mm
Max. drawbar pull (both tracks)	66,206 lbf	30,030 kgf
Max. travel speed	2.9 mph	4.7 km/h

## TRANSPORT - STANDARD MAST

Transport height	11 ft 10 in	3,615 mm
Transport length	53 ft 1 in	16,185 mm
Transport width	9 ft 11 in	3,000 mm
Transport weight** (without kelly, rotary, & counterweights)	92,000 lb	41,800 kg

## TRANSPORT - SHORT MAST

Transport height	11 ft 8 in	3,560 mm
Transport length	36 ft 7 in	11,140mm
Transport width	9 ft 11 in	3,000 mm
Transport weight** (without kelly, rotary, & counterweights)	86,000 lb	39,100 kg

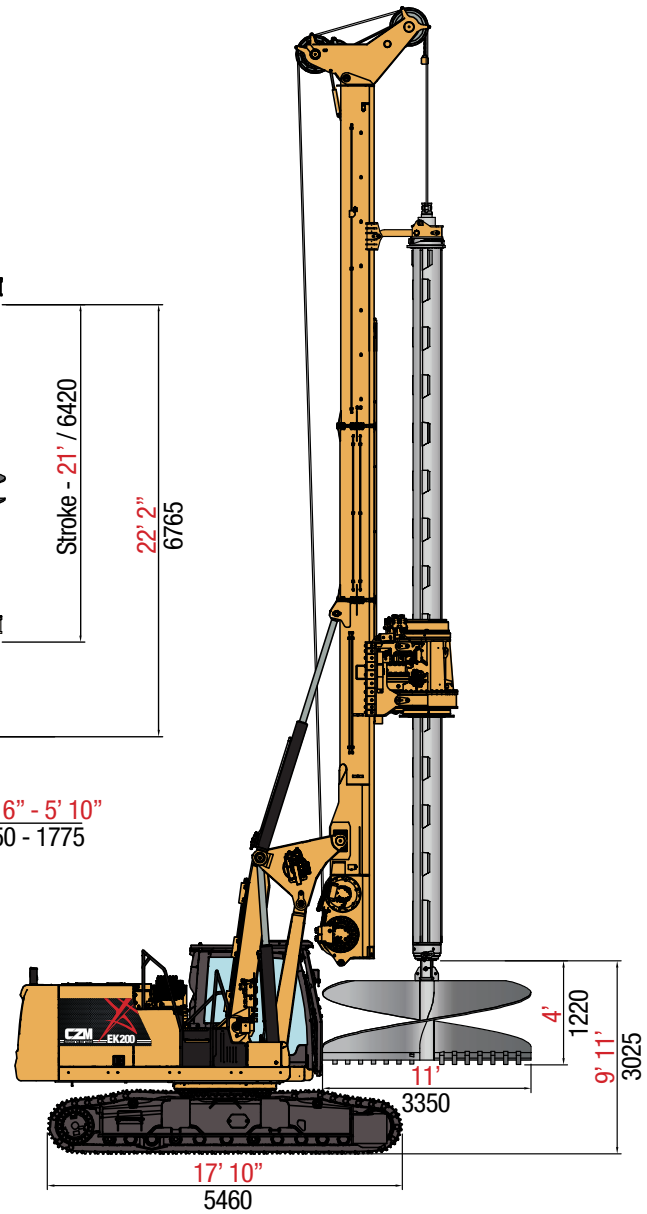
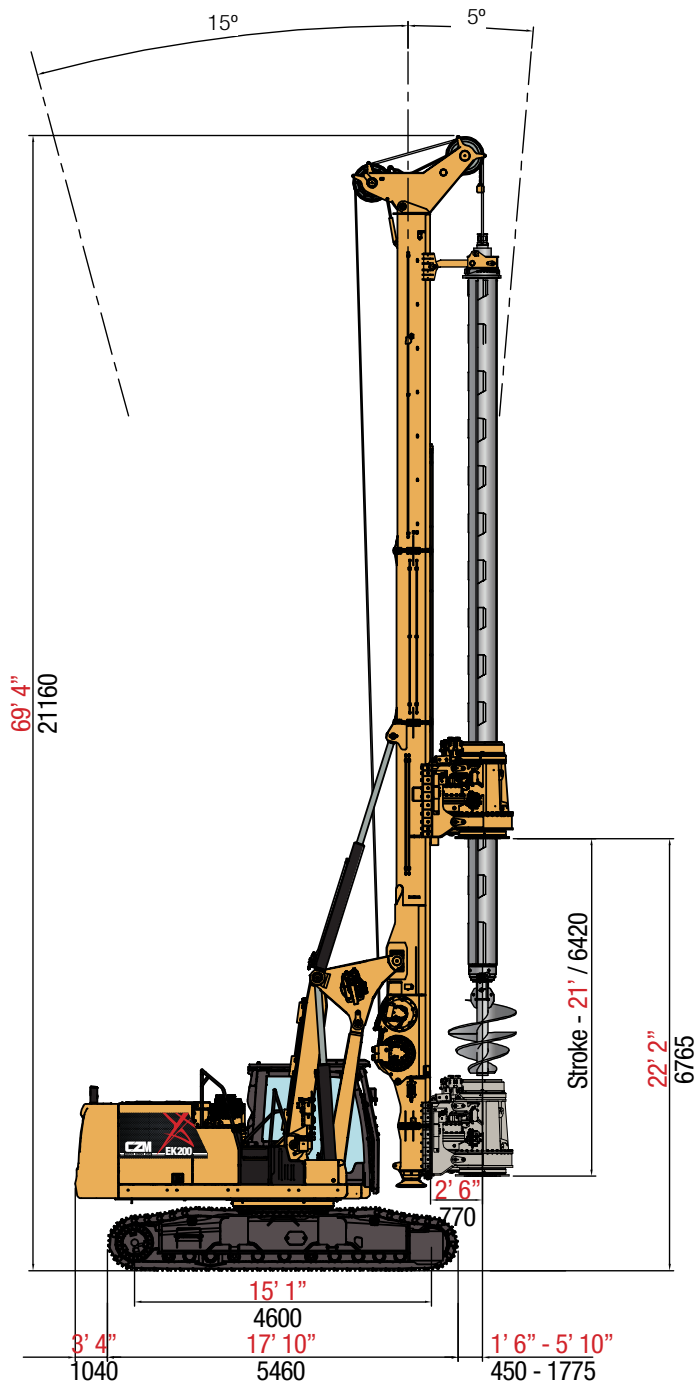
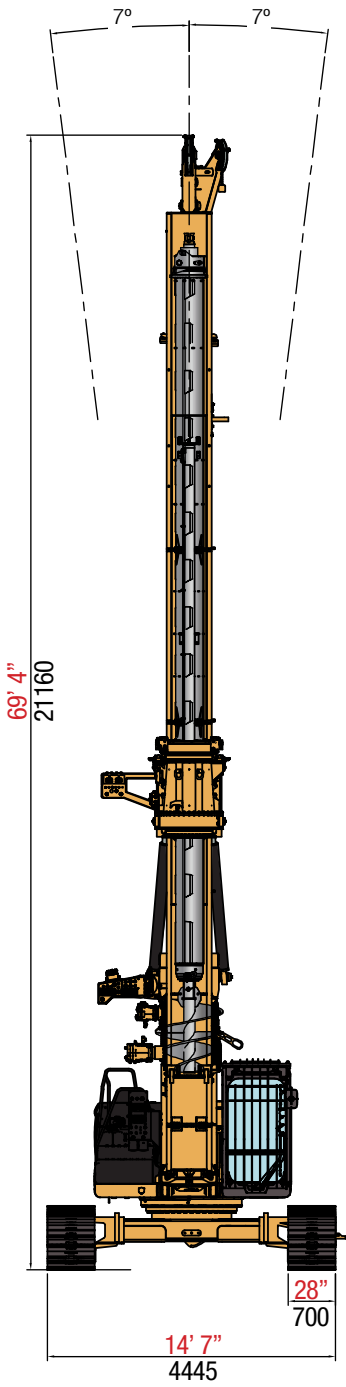
## GENERAL DATA

Overall height (standard mast)	69 ft 7 in	21,205 mm
Overall height (short mast application)	26 ft 10 in	8,180 mm
Operation weight (standard mast)	147,900 lb	67,250 kg
Operation weight (short mast application)	127,200 lb	57,800 kg

\*\*Weights are estimated

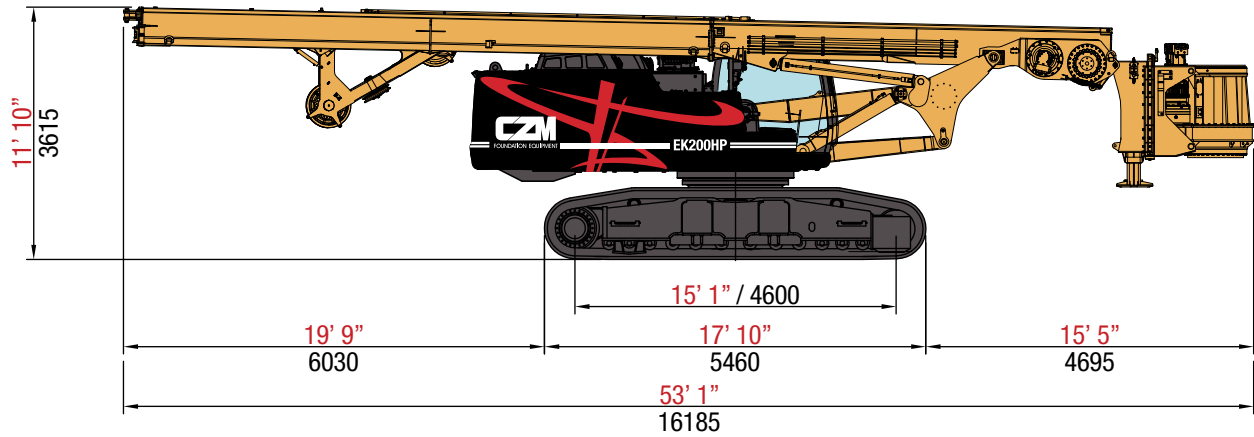


# GENERAL DIMENSIONS

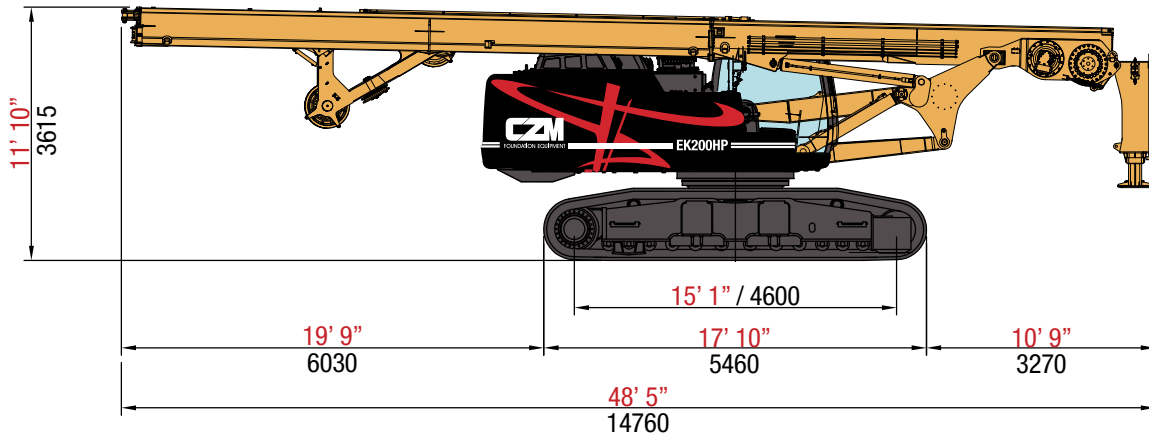


\*\*Measurements are based on the standard 4/130 kelly bar

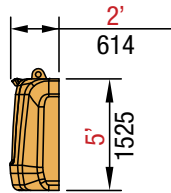
# TRANSPORT POSITION GENERAL DIMENSIONS



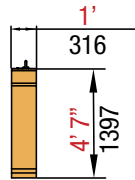
Weight: 135,150 lb / 61,300 kg (transport weight without removing counterweights and rotary)



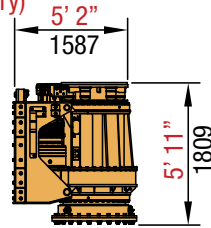
Weight: 95,300 lb / 43,300 kg (transport weight removing counterweights and rotary)



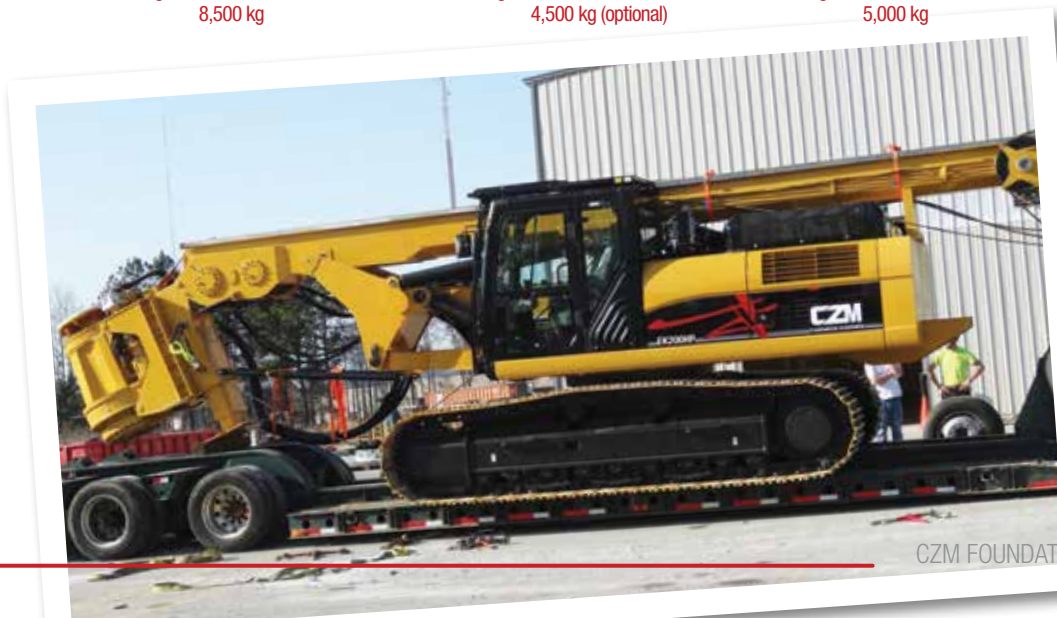
Weight: 18,700 lb / 8,500 kg



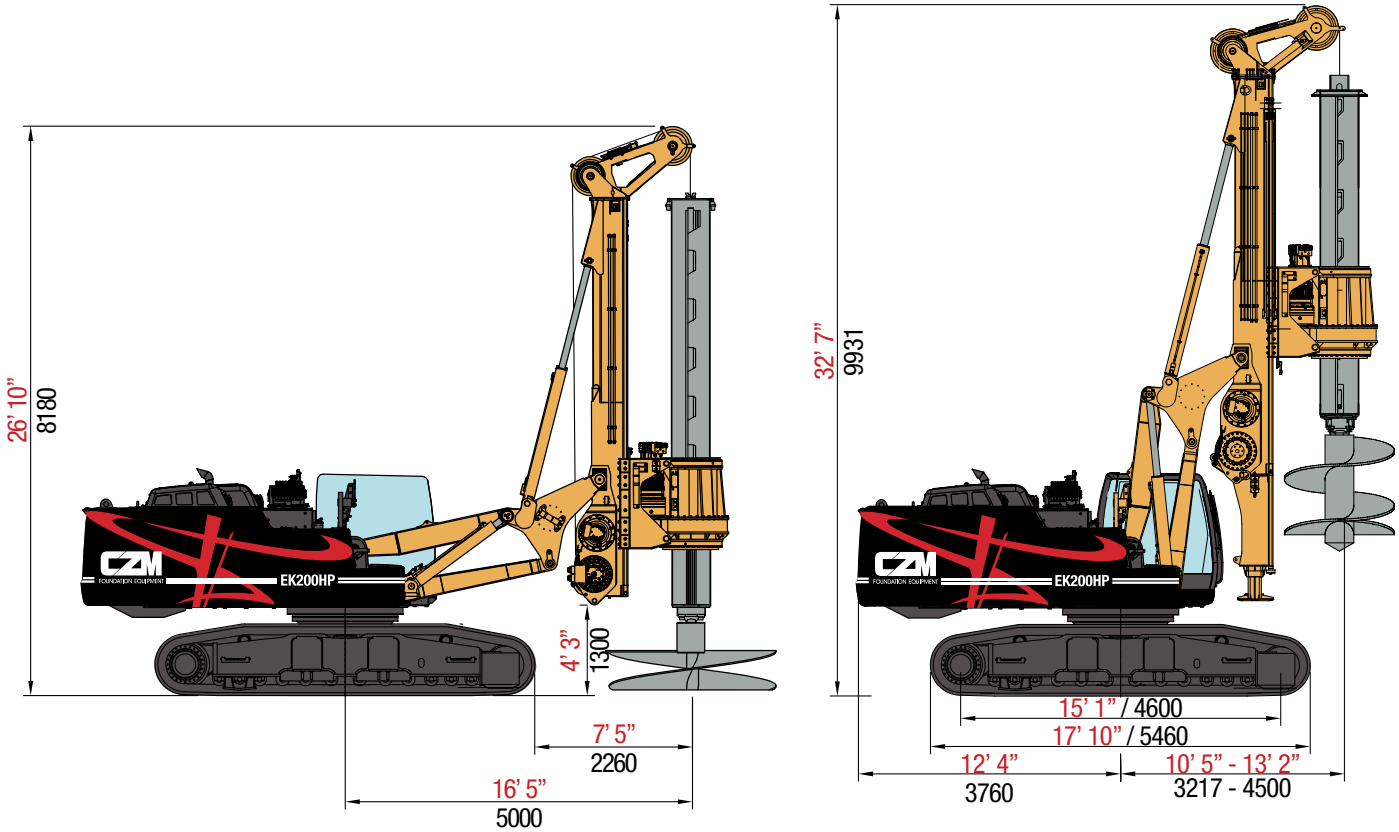
Weight: 9,900 lb / 4,500 kg (optional)



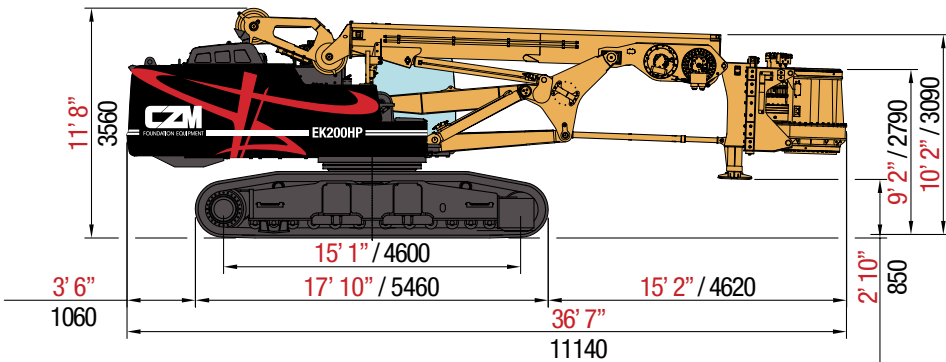
Weight: 11,000 lb / 5,000 kg



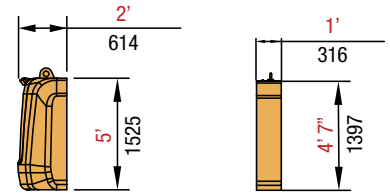
# SHORT MAST GENERAL DIMENSIONS



## TRANSPORT POSITION SHORT MAST

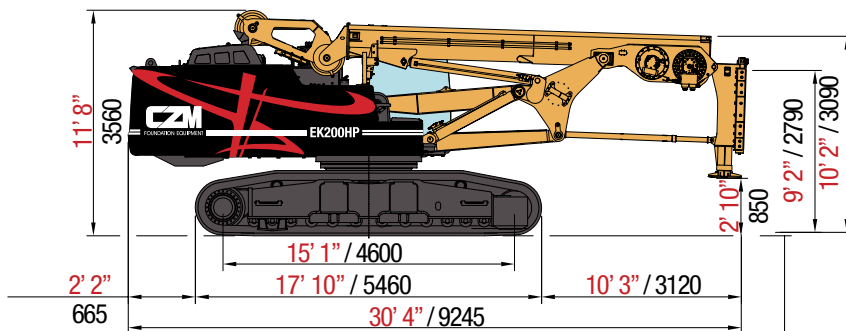


Weight: 115,700 lb / 52,600 kg (transport weight without removing counterweights and rotary)

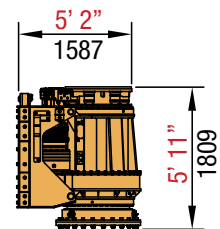


Weight: 18,700 lb / 8,500 kg

Weight: 9,900 lb / 4,500 kg (Optional)



Weight: 86,000 lb / 39,100 kg (transport weight removing counterweights and rotary)



Weight: 11,000 lb / 5,000 kg





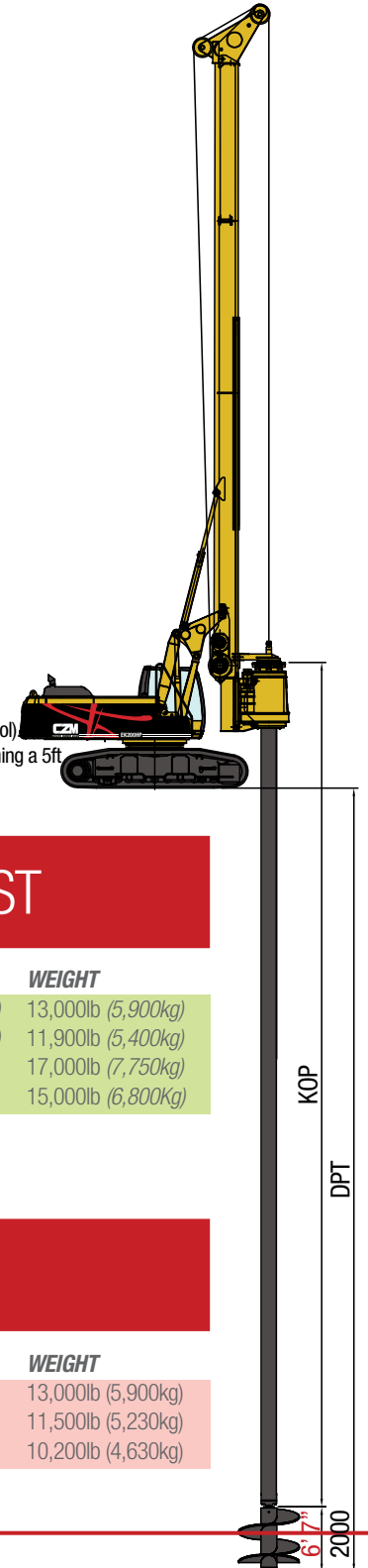
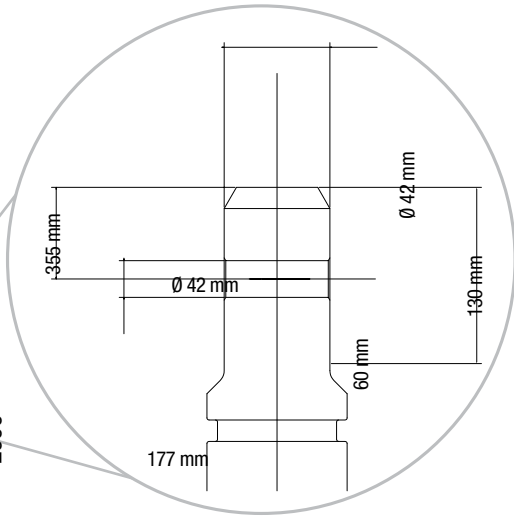
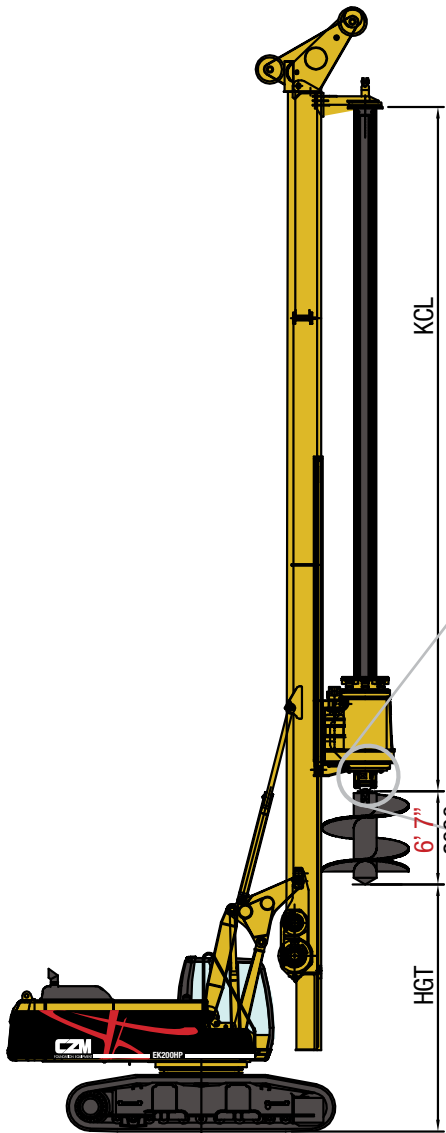
# KELLY BAR GENERAL DIMENSIONS

## CASED DRILLED SHAFT PILES

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

CASING DIAMETER	MAXIMUM DEPTH
60 in / 1,500 mm	60 ft / 18 m
50 in / 1,300 mm	72 ft / 22 m
40 in / 1,000 mm	90 ft / 27 m

- Maximum length of each casing element 15 ft (4.6 m).



- <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>	HGT <sup>3</sup>	KOP <sup>2</sup>	WEIGHT
Standard 4/130 Interlock	4	130ft (39m)	39ft (11.9m)	13ft 8in (4.2m)	132ft 3in (40.3m)	13,000lb (5,900kg)
3/90 Interlock	3	90ft (29m)	39ft 4in (12m)	13ft 4in (4.0m)	100ft 5in (30.6m)	11,900lb (5,400kg)
Long 4/175 Interlock	4	175ft (53m)	50ft 7in (15.4m)	6ft 7in (2m)	178ft (54.3m)	17,000lb (7,750kg)
Long 3/120 Interlock	3	120ft (36m)	50ft 7in (15.4m)	6ft 7in (2m)	123ft (37.5m)	15,000lb (6,800kg)

The standard kelly has 4 interlocking elements and reaches 130 ft (39 m) depth.

## KELLY BAR OPTIONS FOR SHORT MAST

	NUMBER OF ELEMENTS	DEPTH - DPT	TRANSPORT - KCL	HGT	KOP	WEIGHT
Long 6/95 Interlock	6	95ft (29m)	21ft (6.4m)	2ft 9in (0.9m)	101ft 5in (30.9m)	13,000lb (5,900kg)
Standard 6/76 Interlock	6	76ft (23.2m)	18ft (5.6m)	5ft 3in (1.6m)	84ft (25.6m)	11,500lb (5,230kg)
Short 6/55 Interlock	6	55ft (16.8m)	14ft 9in (4.5m)	5ft 3in (1.6m)	59ft 6in (18.2m)	10,200lb (4,630kg)









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).

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Specifications are subject to change without notice.