CZM
FOUNDATION EQUIPMENT

EK200HP

Courtesy of Crane.Market

SAVANNAH • GEORGIA • USA

THE COMPANY

- CZM has over 40 years of foundation equipment manufacturing experience with a wide range of models for multiple applications: drilled shafts, CFA, driven piles with hydraulic hammers, secant piles, micro piles, and anchoring, among others.
- CZM Foundation Equipment's USA manufacturing facility is located in Savannah, Georgia.
- CZM Foundation Equipment has designed their models with the after sales being priority. Quality and service are the main ingredients to a quality machine, this is one of the direct reasons CZM uses Caterpillar as a base, the Caterpillar bases are not only operator and maintenance friendly but by using Caterpillar it enables the customer access to the large and already nationally established Caterpillar Network.
- CZM is the world's largest manufacturer of CFA drilling rigs, featuring the revolutionary torque mechanism "Bottom Drive CFA", an internationally recognized CZM patent.

Courtesy of Crane.Market

EK200HP

Mounted on
CAT336 (Tier IV)

Courtesy of Crane.Market

APPLICATION

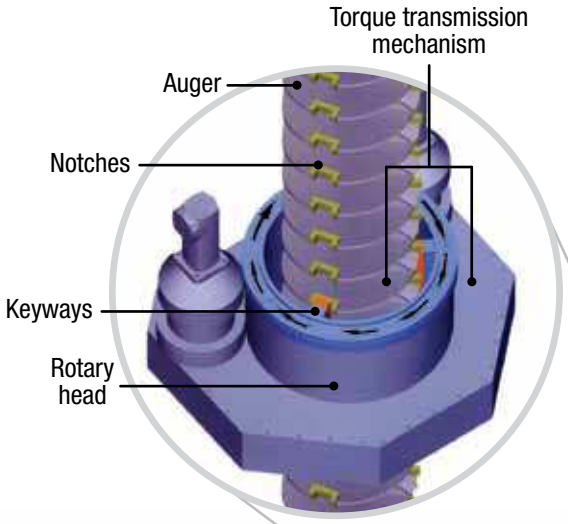
The EK200 from CZM has been designed for high performance and versatility. It is a reliable drilling rig mounted on a CAT base, keeping the operation and maintenance extremely friendly and efficient.

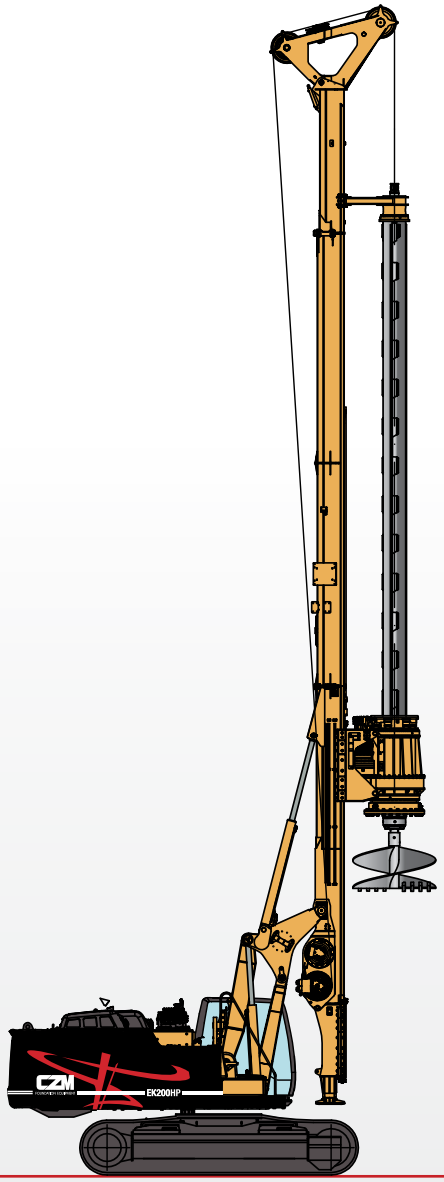
The EK200 rotary head follows the most robust design in the market and has the largest inner passage of its drilling rigs' class. These features allow the EK200 to deliver high drilling torque, the use of stronger Kelly Bars and the versatility of various applications such as Kelly Bar (long and short mast) and CFA. There are no changes to hydraulic hoses for converting to any application thanks to the unique patented torque mechanism "Bottom Drive CFA."

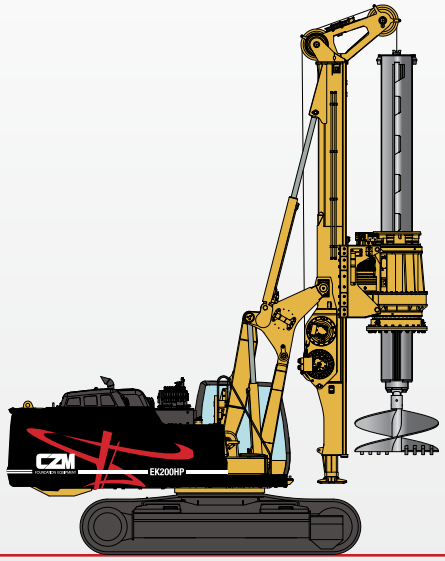
In the EK200 short mast version, there is no down grade of torque due to the great rotary head inner passage which allows for more external elements to the Kelly Bar.

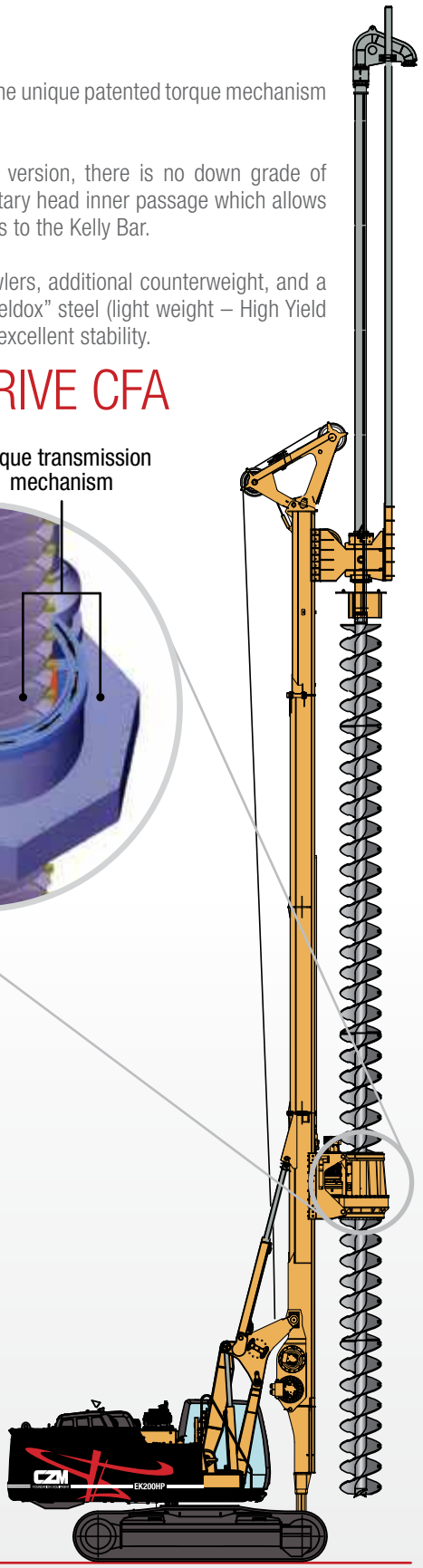
Hydraulic extendable crawlers, additional counterweight, and a mast manufactured in "Weldox" steel (light weight – High Yield Strength) give the EK200 excellent stability.

BOTTOM DRIVE CFA









DRILLED SHAFT PILE
Depth: 130 - 175 ft / *39 - 53 m* (interlock)
130 - 200 ft / *39 - 60 m* (friction)
Diameter (max.) with mast shoe: 70 in / *1,800 mm*
Diameter (max.) w/o mast shoe: 132 in / *3,350 mm*

DRILLED SHAFT PILE "LOW CLEARANCE"
Depth (max.): 95 ft / *29 m* (interlock)
Diameter (max.) with mast shoe: 70 in / *1,800 mm*
Diameter (max.) w/o mast shoe: 132 in / *3,350 mm*

BOTTOM DRIVE CONTINUOUS FLIGHT AUGER PILE
Depth (max.) only with auger: 68 ft / *20.8 m*
Depth (max.) (auger + extension): 84 ft / *25.6 m*
Diameter (max.): 24 in / *600 mm*

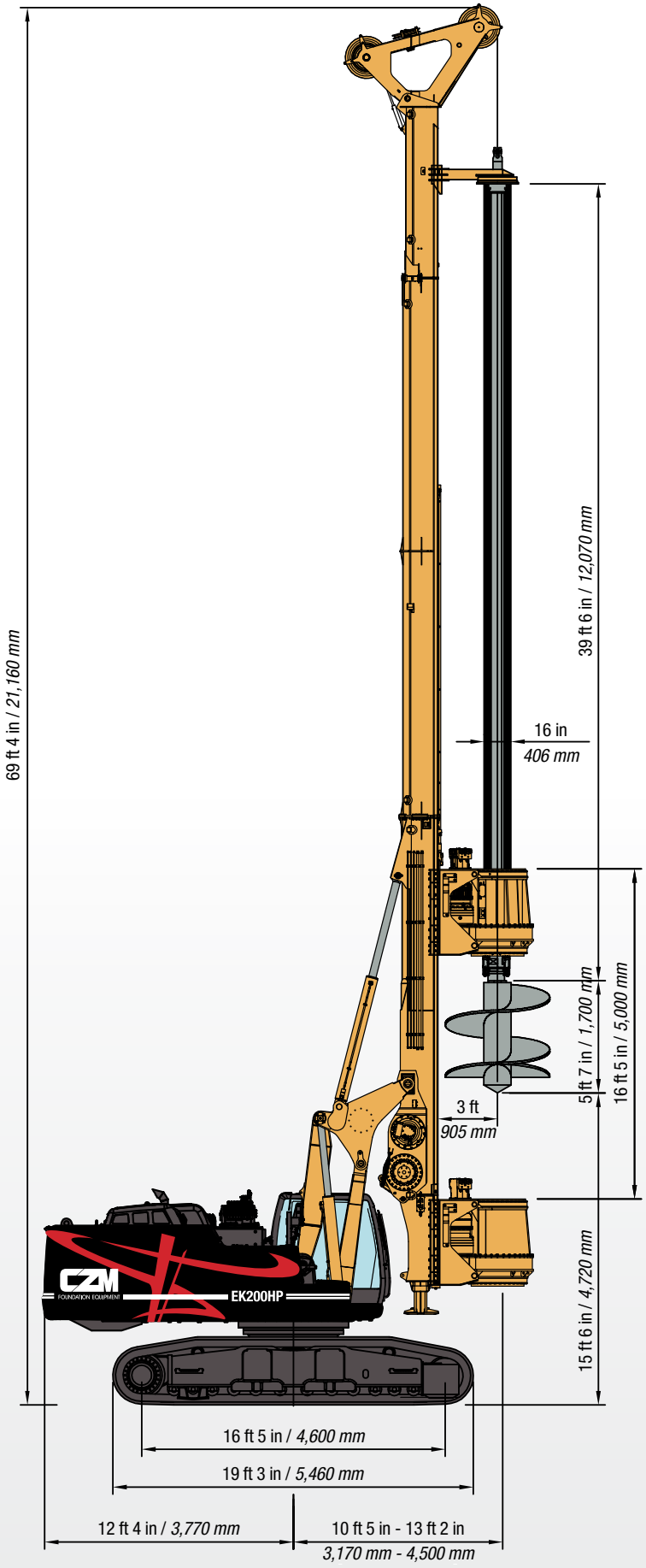
CONVERSION TO SHORT MAST OR CFA ARE MADE WITH SIMPLE KITS WITHOUT CHANGING ANY HOSES

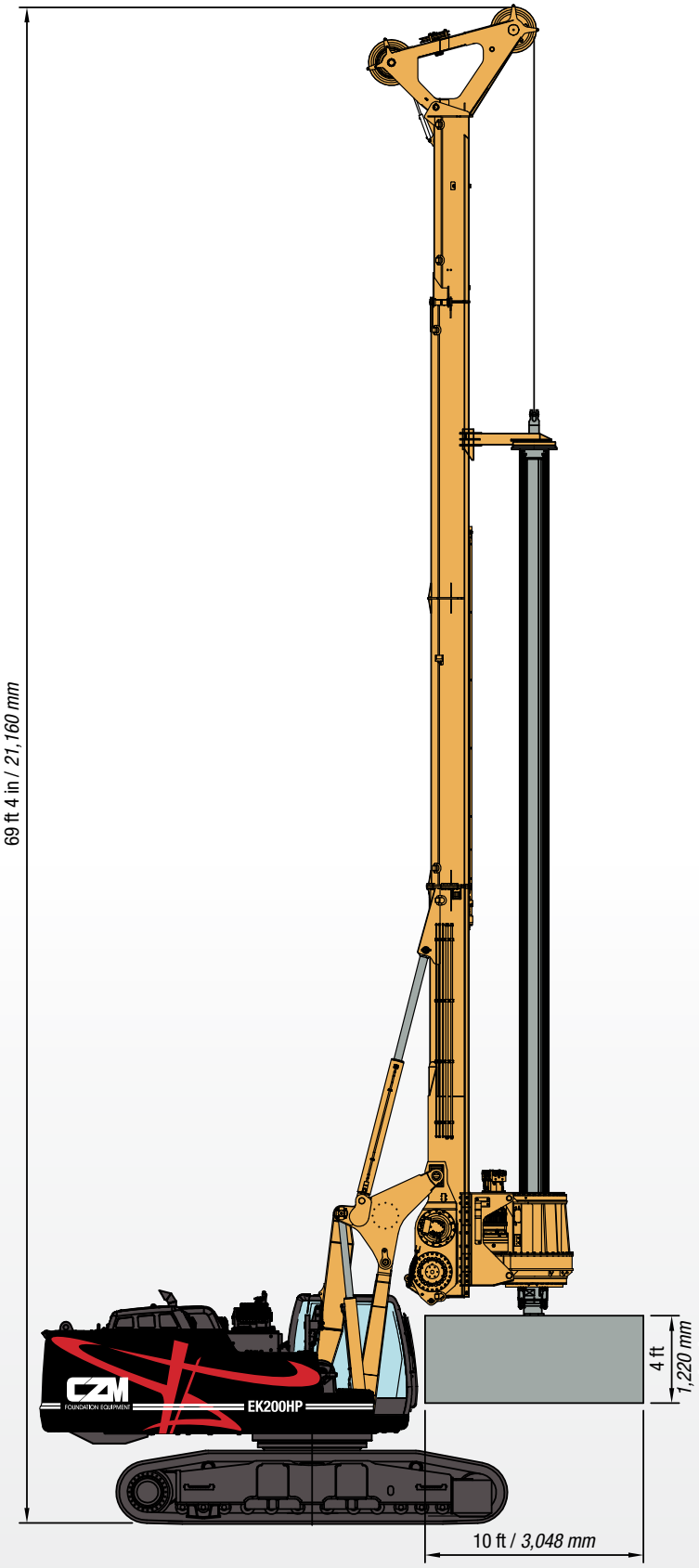
Courtesy of Crane.Market

TECHNICAL SPECIFICATIONS

KELLY BAR STANDARD MAST APPLICATION		
Depth (Standard – 4 elements; interlock Kelly bar)	130 ft	*39 m*
Depth (Maximum – 4 elements; interlock Kelly bar)	175 ft	*53 m*
Depth (Optional – 3 elements; interlock Kelly bar)	90 ft	*27 m*
Diameter (Max. with the mast shoe)	70 in	*1,800 mm*
Diameter (Max. w/o the mast shoe)	132 in	*3,350 mm*
KELLY BAR LOW CLEARANCE APPLICATION		
Depth (Max. – 6 elements; interlock Kelly bar)	95 ft	*29 m*
Depth (Standard – 6 elements; interlock Kelly bar)	78 ft	*24 m*
Diameter (Max. with the mast shoe)	70 ft	*1,800 m*
Diameter (Max. w/o the mast shoe)	132 ft	*3,350 mm*
CFA APPLICATION		
Drilling depth (Auger + Extension)	(68 + 16) = 84 ft	*(20.6 + 5) = 25.6 m*
Drilling Diameter (Max.)	24 in	*600 mm*
Depth with Mast Extensions		
ENGINE - CAT C9.3 ACERT*		
Exhaust Emission Standard	EPA Tier 4 (Final)	*EPA Tier 4 (Final)*
Gross Power – SAE J1995	323 hp	*241 kW*
Displacement	568 in^3	*9.3 L*
Fuel tank	164 gal	*620 L*
ROTARY HEAD		
Maximum torque (nominal)	193,360 lbf.ft	*26,700 kgf.m*
Working Speed	10 - 26 rpm	*12 - 32 rpm*
Spin-off Speed	43 - 110 rpm	*51 - 119 rpm*
CROWD SYSTEM		
Pull down force	52,200 lbf	*23,750 kgf*
Pull up force	62,800 lbf	*28,500 kgf*
Pull down speed	37 ft/min	*11 m/min*
Pull up speed	39 ft/min	*12 m/min*
Cylinder stroke (Standard Mast)	16 ft 5 in	*5,000 mm*
Cylinder stroke (Short Mast)	8 ft	*2,450 mm*
MAIN WINCH (PULL-UP)		
Maximum pull-force 1st layer (nominal)	63,540 lbf	*28,800 kgf*
Maximum pull-force 1st layer (effective)	50,800 lbf	*23,100 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		
Maximum pull-force 1st Layer (effective)	22,479 lbf	*10,196 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*
MAIN HYDRAULIC SYSTEM*		
Main circuit pressure (max.)	5,076 psi	*350 bar*
Main circuit Flow rate (max.)	131 gpm	*498 lpm*
Pilot circuit pressure (max.)	595 psi	*41 bar*
Pilot circuit Flow rate (max.)	7 gpm	*26 lpm*
AUXILIARY HYDRAULIC SYSTEM		
Pump Displacement	3.66 in^3	*60 cc3*
Auxiliary circuit flow rate (max.)	29 gpm	*108 lpm*
MAST INCLINATION		
Forward	5°	*5°*
Backward	15°	*15°*
Sideways	9°	*9°*
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 10 in	*3,000 mm*
Operation position width (extended)	14 ft 7 in	*4,450 mm*
Track shoes width	28.3 in	*750 mm*
TRANSPORT		
Overall Height (Standard Mast)	11 ft 10 in	*3,615 mm*
Overall Height (Short Mast)	11 ft 10 in	*3,600 mm*
Transport Length (Standard Mast)	53 ft 1 in	*16,185 mm*
Transport Length (Short Mast)	36 ft 10 in	*11,200 mm*
Transport Width (Standard Mast / Short Mast)	10 ft 8 in	*3,245 mm*
Transport Weight (Standard Mast)	121,000 lb	*55,000 kg*
Minimum Transport Weight (Standard Mast)	92,000 lb	*41,800 kg*
Transport Weight (Short Mast)	115,000 lb	*52,300 kg*
Minimum Transport Weight (Short Mast)	86,000 lb	*39,100 kg*
GENERAL DATA		
Overall height (Working position; Standard mast)	70 ft	*21,100 mm*
Overall height (Working position; Short mast)	32 ft 4 in	*9,845 mm*
Operation weight (Standard mast)	136,400 lb	*62,000 kg*
Operation weight (Extra counterweight)	145,200 lb	*66,000 kg*
Operation weight (Short mast)	125,800 lb	*59,000 kg*
Ground pressure	17 psi	*1.20 kg/cm^2*

GENERAL DIMENSIONS





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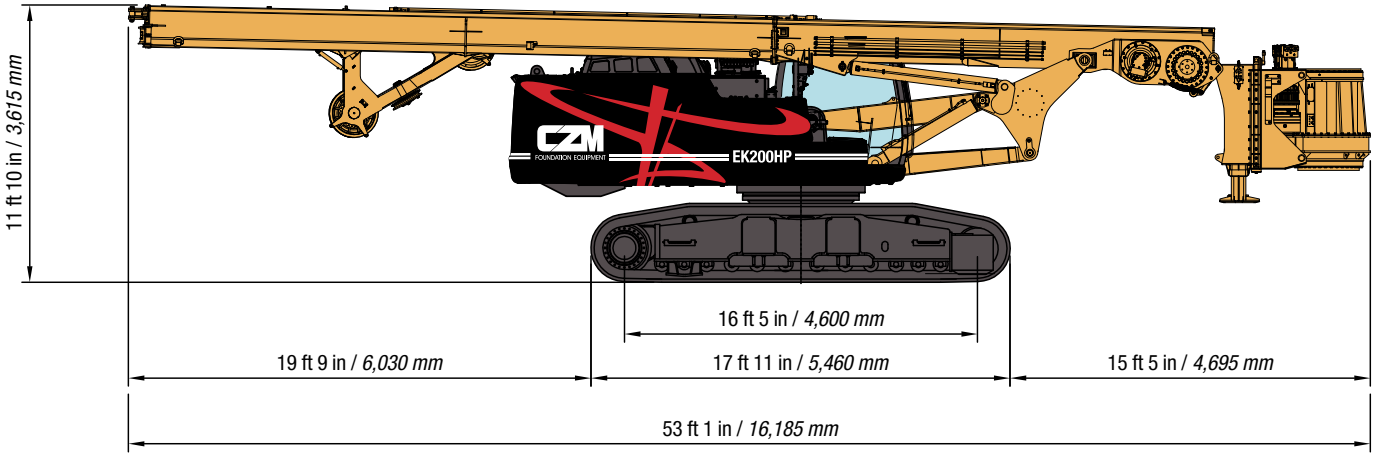
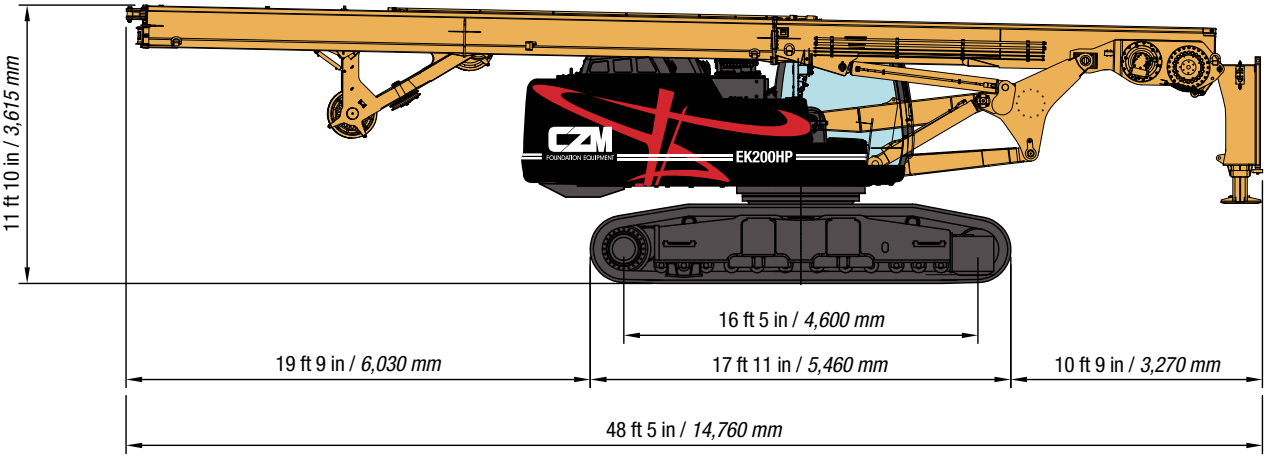
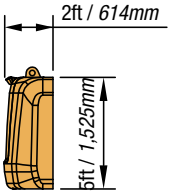
TRANSPORT POSITION



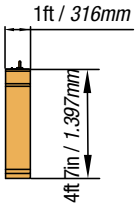
Weight: 121,000 lb / 55,000 kg (transport weight without removing counterweights and rotary)



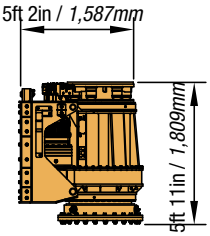
Weight: 92,000 lb / 41,800 kg (transport weight removing counterweights and rotary)



Weight: 18,700 lb
8,500 kg



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



Weight: 10,200 lb
4,600 kg

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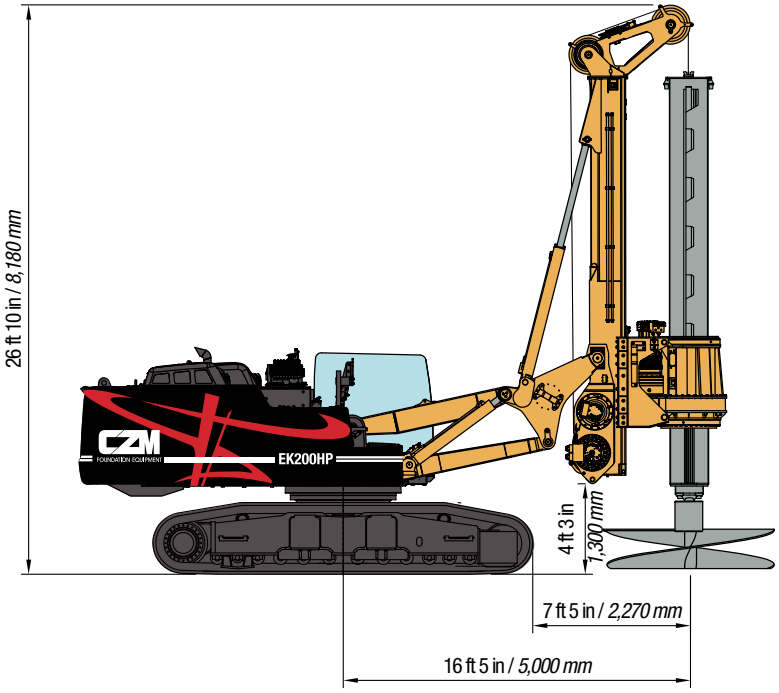
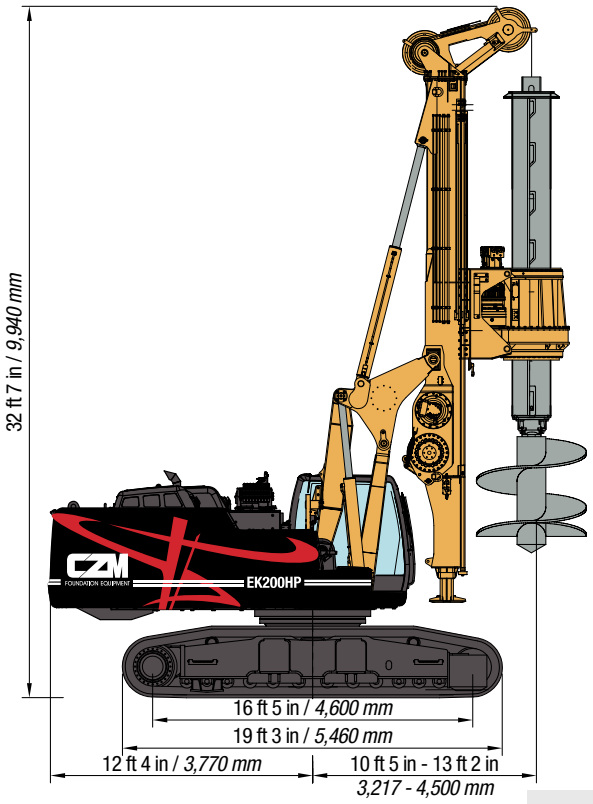
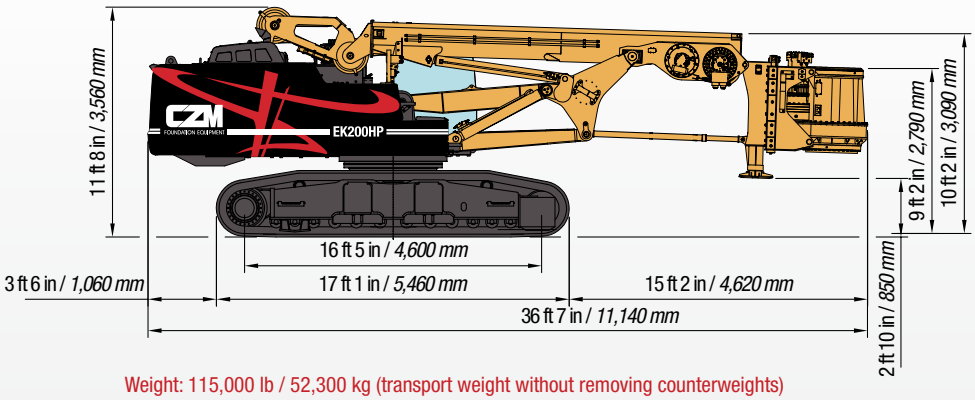
GENERAL DIMENSIONS SHORT MAST

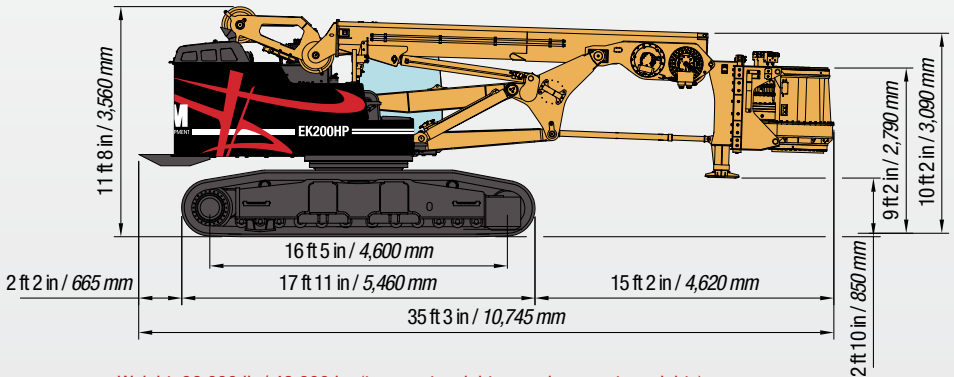




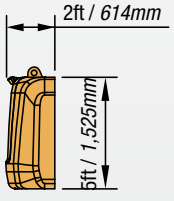
TRANSPORT POSITION SHORT MAST



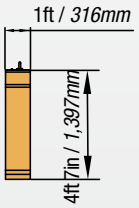
Weight: 115,000 lb / 52,300 kg (transport weight without removing counterweights)



Weight: 96,000 lb / 43,600 kg (transport weight removing counterweights)

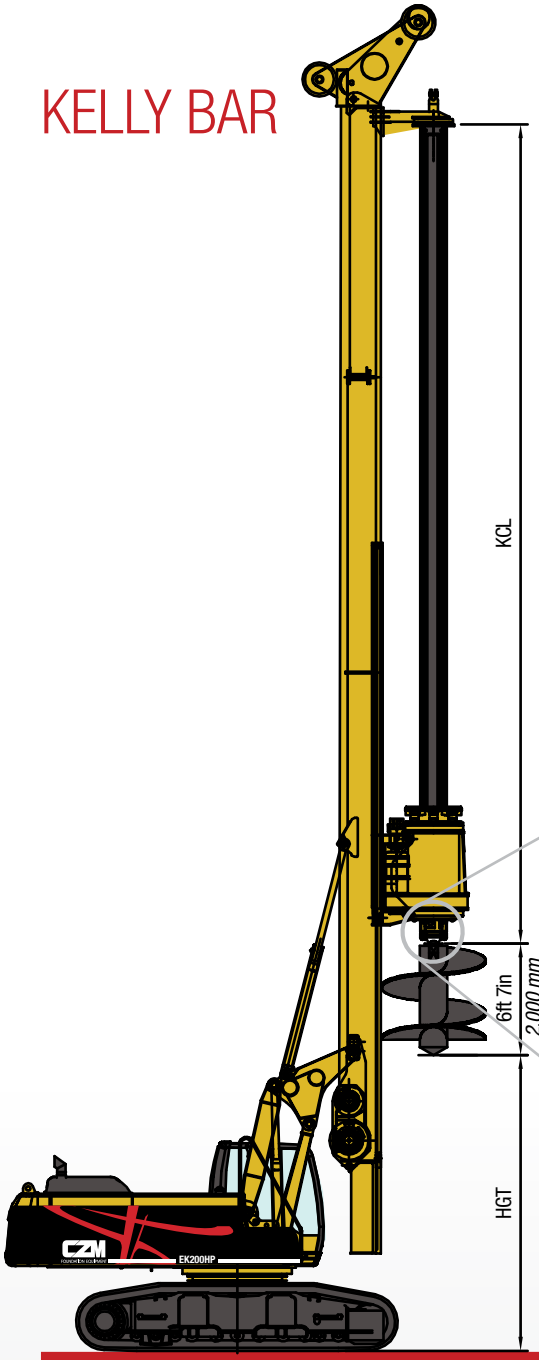


Weight: 18,700 lb
8,500 kg



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

KELLY BAR

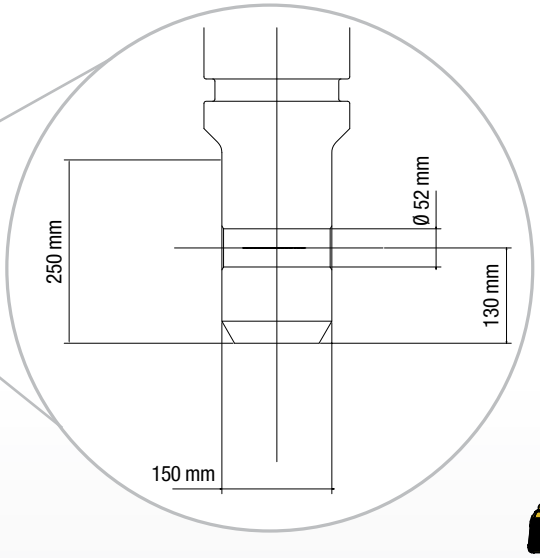


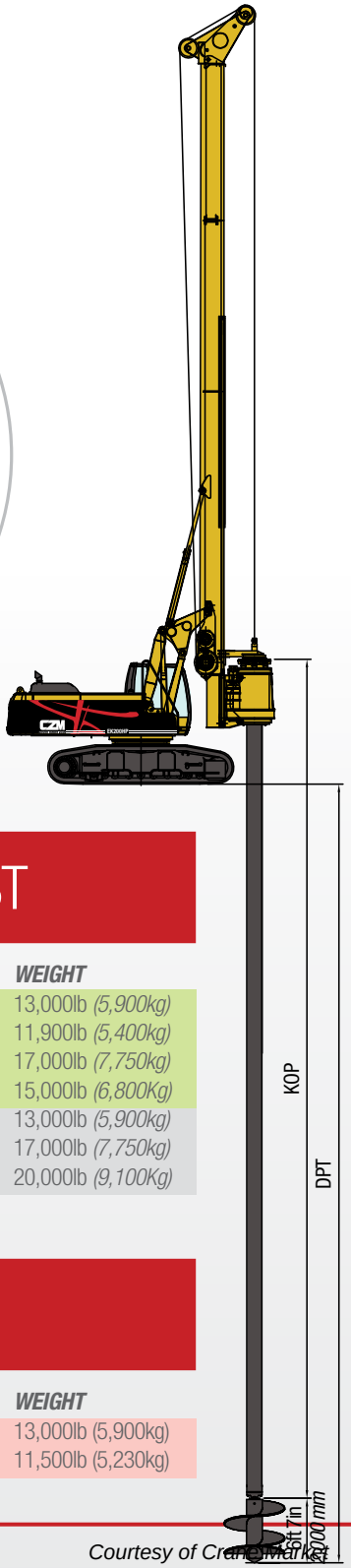
CASED DRILLED SHAFT PILES

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)*.





KELLY BAR CHOICES FOR STANDARD MAST

	NUMBER OF ELEMENTS	DEPTH - DPT	TRANSPORT - KCL	HGT	KOP	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)*
4/130 Friction	4	130ft *(39m)*	39ft *(11.9m)*	13ft 8in *(4.2m)*	134ft 10in *(41m)*	13,000lb *(5,900kg)*
5/160 Friction	5	160ft *(49m)*	39ft 4in *(12m)*	13ft 4in *(4.0m)*	167ft *(50.9m)*	17,000lb *(7,750kg)*
5/200 Friction	5	200ft *(60m)*	47ft 3in *(14.4m)*	9ft 10in *(3.0m)*	206ft *(62.9m)*	20,000lb *(9,100Kg)*

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

KELLY BAR FOR LOW CLEARANCE

	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 6/78 Interlock	6	78ft (24m)	18ft (5.6m)	2ft 9in (0.9m)	84ft (25.6m)	11,500lb (5,230kg)

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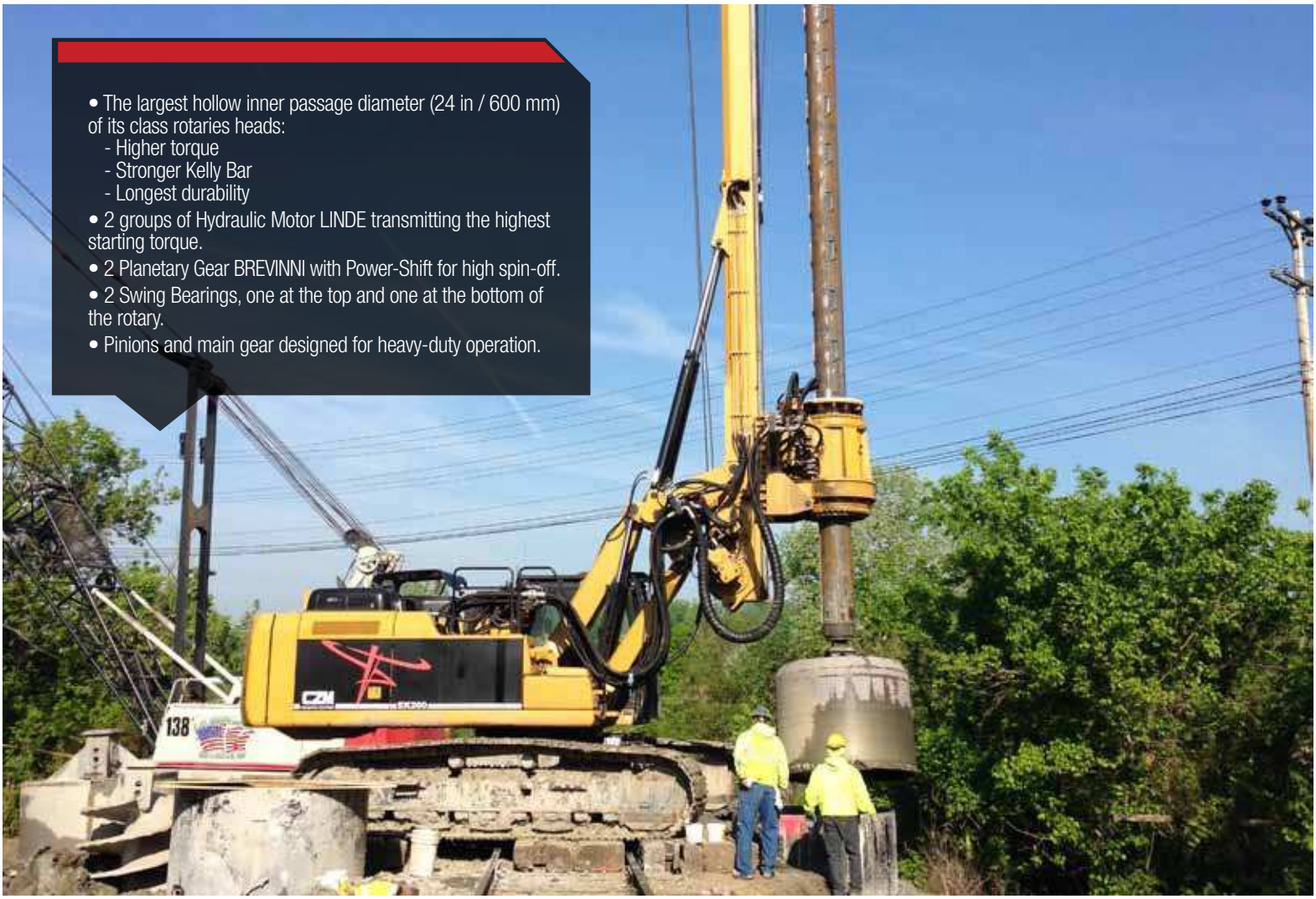

- The largest hollow inner passage diameter (24 in / 600 mm) of its class rotaries heads:
  - Higher torque
  - Stronger Kelly Bar
  - Longest durability
- 2 groups of Hydraulic Motor LINDE transmitting the highest starting torque.
- 2 Planetary Gear BREVINNI with Power-Shift for high spin-off.
- 2 Swing Bearings, one at the top and one at the bottom of the rotary.
- Pinions and main gear designed for heavy-duty operation.

The mast is made of special steel called “Weldox” that has a yield strength 2.8 times higher than regular ASTM A36 steel. It means that with less weight the EK200HP can have better stability and displacements on the job site and easier transport handlings.

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Specifications are subject to change without notice.