

CZM
FOUNDATION EQUIPMENT



EK200HP



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.



EK200HP

Mounted on
CAT336 (Tier IV)



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.

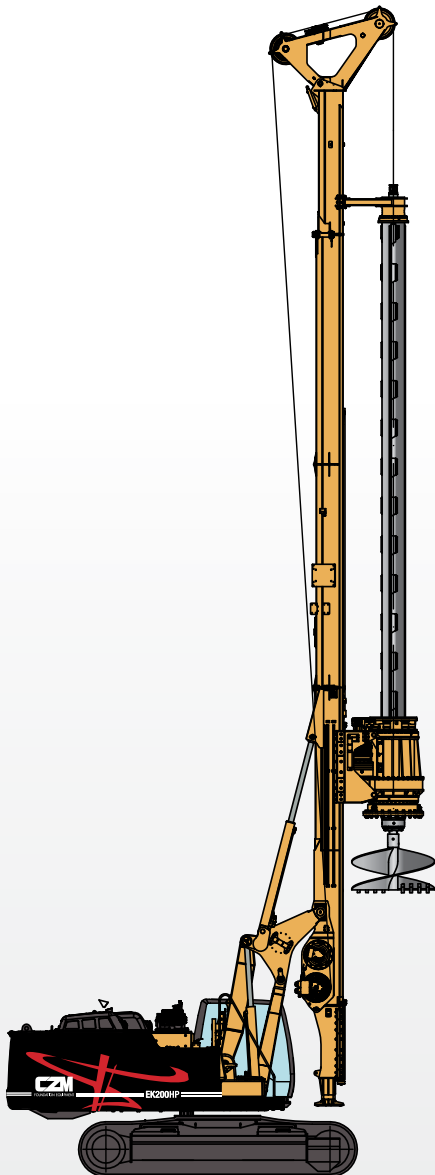
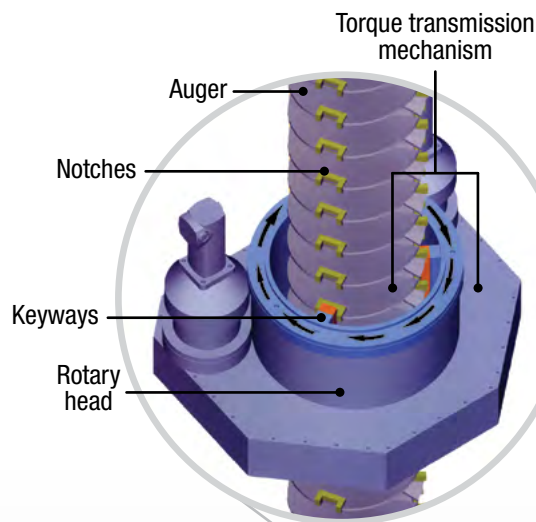
The EK200 rotary head follows the most robust design in the market and has the largest inner passage of its drilling rigs' class. These features allow the EK200 to deliver high drilling torque, the use of stronger Kelly Bars and the versatility of various applications such as Kelly Bar (long and short 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.

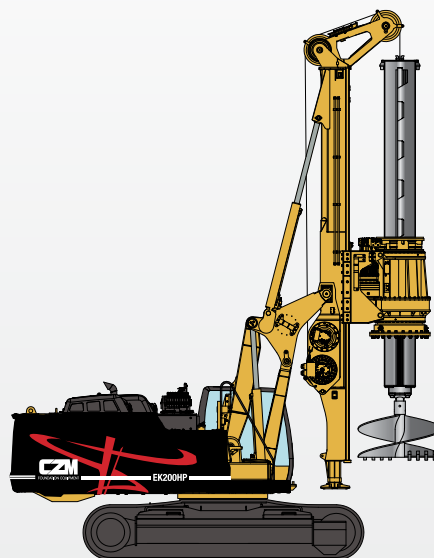
BOTTOM DRIVE CFA



DRILLED SHAFT PILE

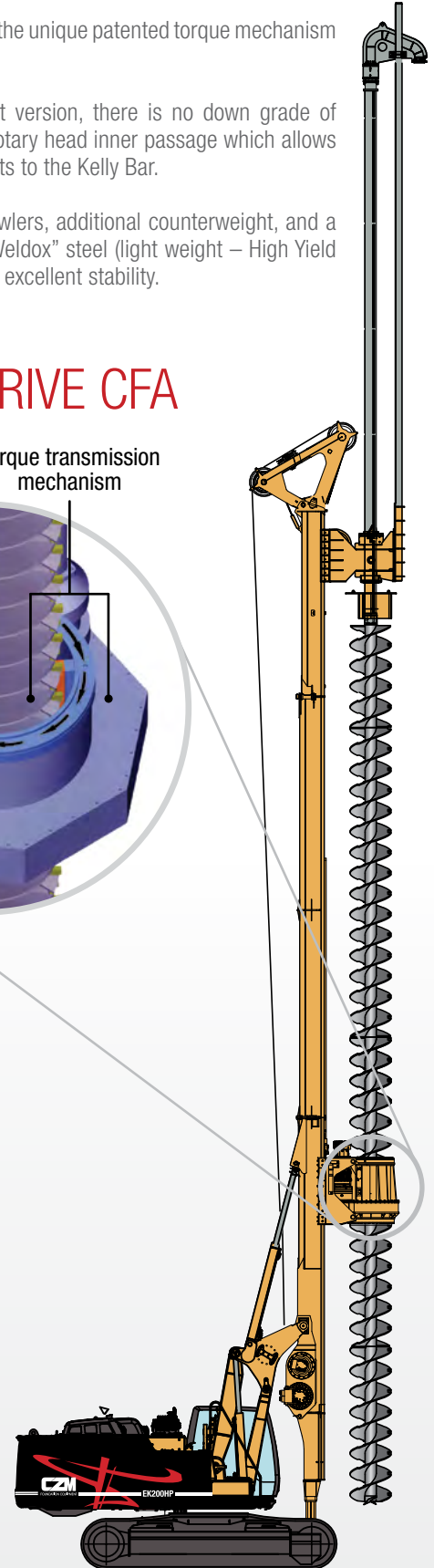
Depth: 130 - 175 ft / 39 - 53 m (interlock)
130 - 200 ft / 39 - 60 m (friction)

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: 59 ft / 18 m
Depth (max.) (auger + extension): 79 ft / 24 m
Diameter (max.): 24 in / 600 mm

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

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)	(59 + 20) = 79 ft	(18 + 6) = 24 m
Drilling Diameter (Max.)	24 in	600 mm

ENGINE - CAT C9.3 ACERT*

Exhaust Emission Standard	EPA Tier 4 (Interim)	EPA Tier 4 (Interim)
Net Power – SAE J1349	300 hp	224 kW
Displacement	568 in³	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 in³	60 cc/3
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

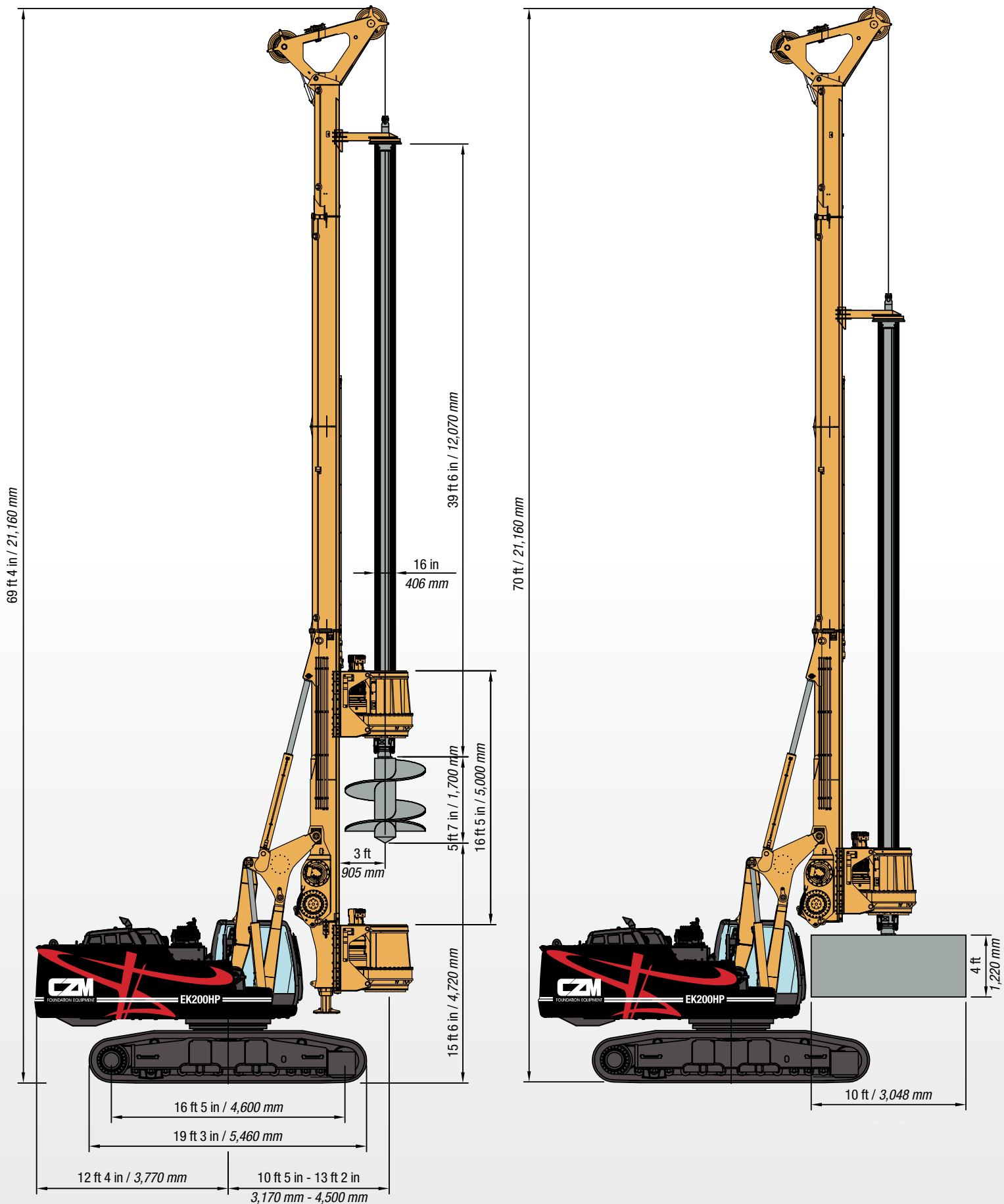
TRANSPORT

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)	124,800 lb	56.700 kg
Minimum Transport Weight (Standard Mast)	86,000 lb	39.100 kg
Transport Weight (Short Mast)	114,400 lb	52.000 kg

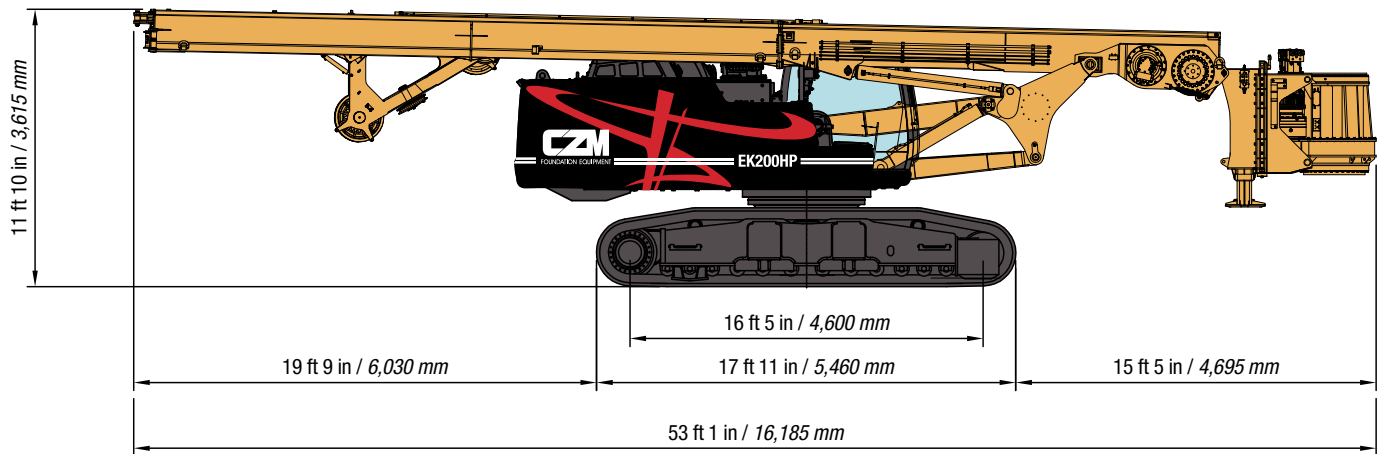
GENERAL DATA

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/cm²

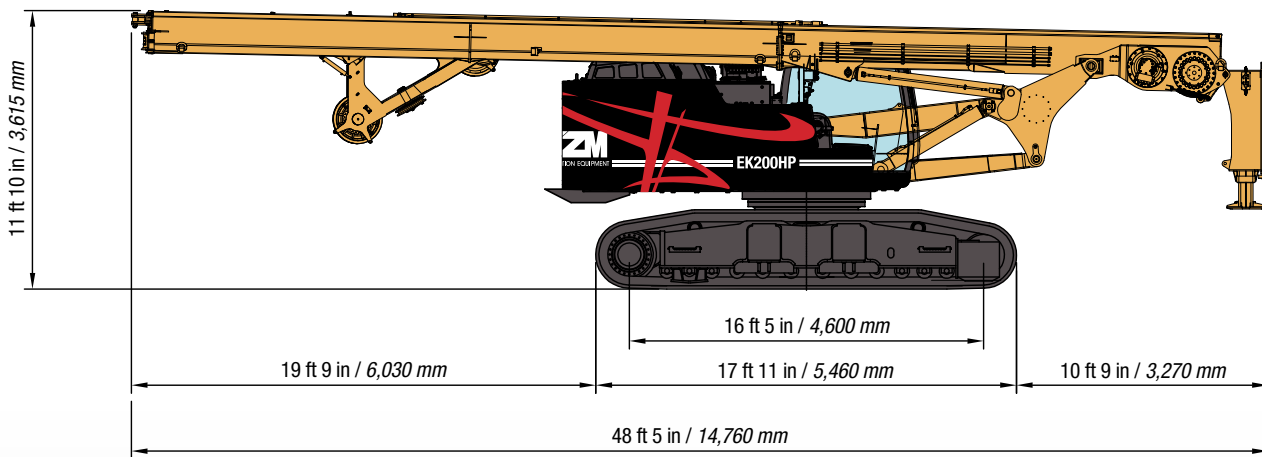
GENERAL DIMENSIONS



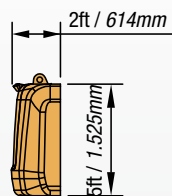
TRANSPORT POSITION



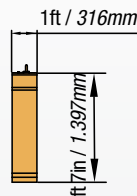
Weight: 124,800 lb / 56,700 kg (transport weight without removing counterweights)



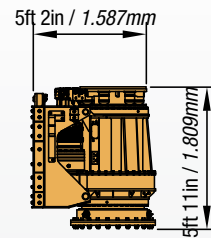
Weight: 86,000 lb / 39,100 kg (transport weight removing counterweights)



Weight: 18,700 lb
8,500 kg



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

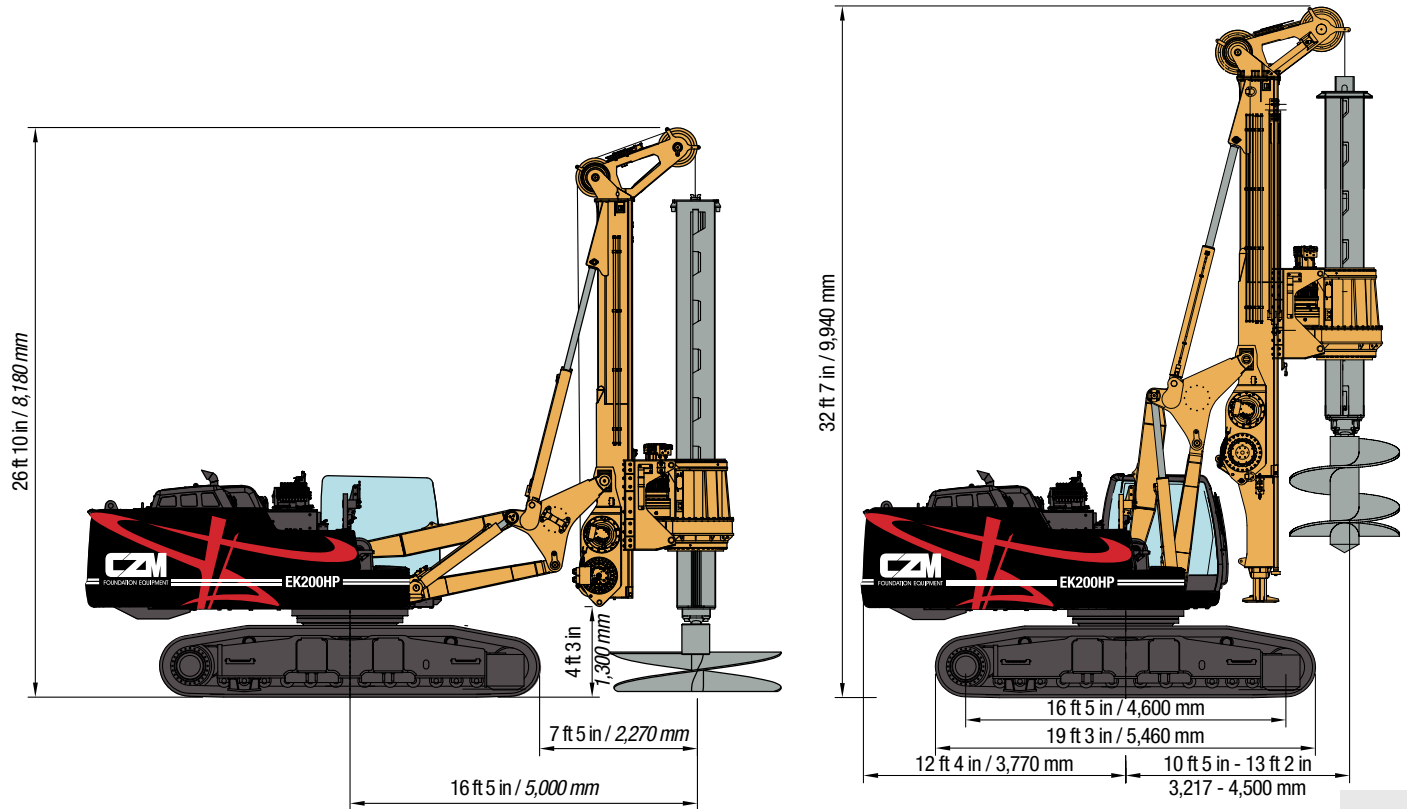


Weight: 10,200 lb
4,600 kg

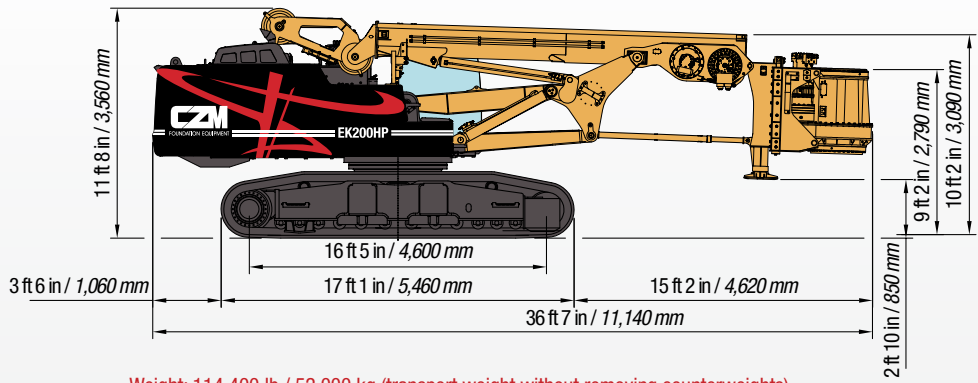




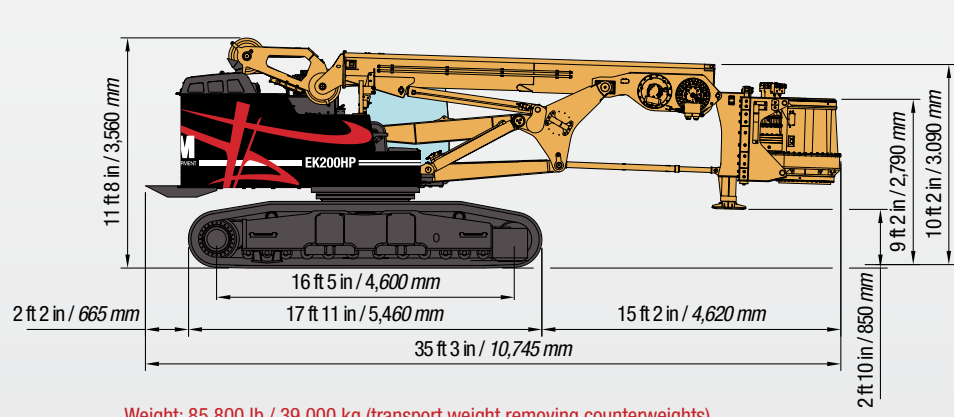
GENERAL DIMENSIONS SHORT MAST



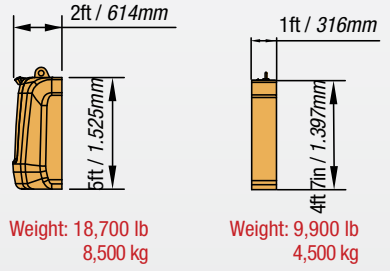
TRANSPORT POSITION SHORT MAST



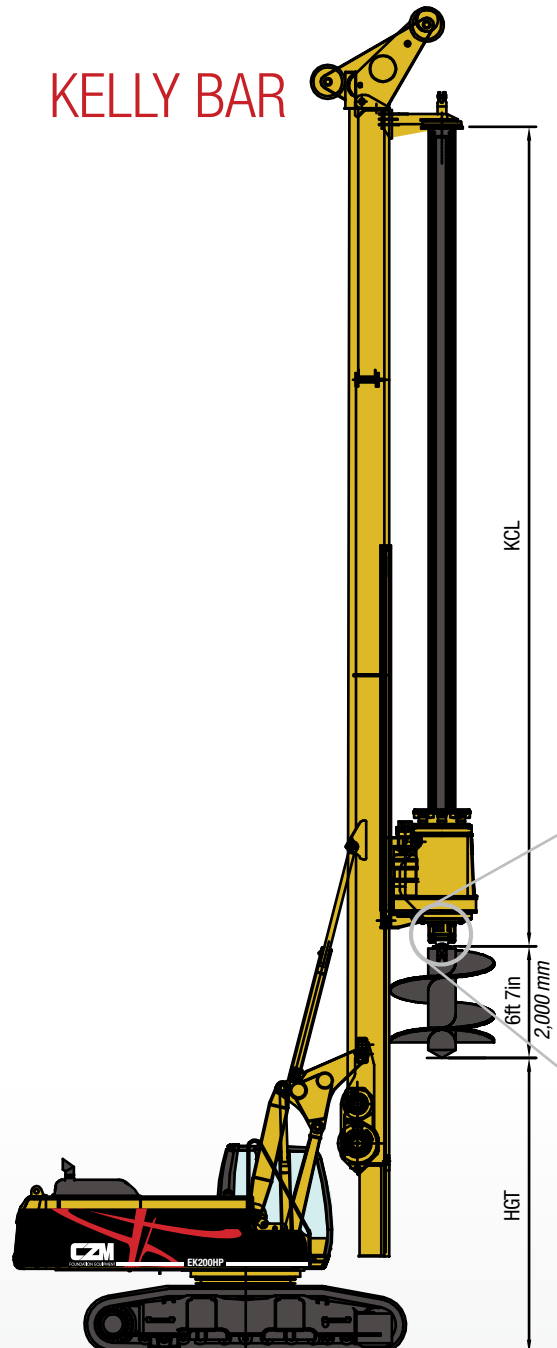
Weight: 114,400 lb / 52,000 kg (transport weight without removing counterweights)



Weight: 85,800 lb / 39,000 kg (transport weight removing counterweights)



KELLY BAR

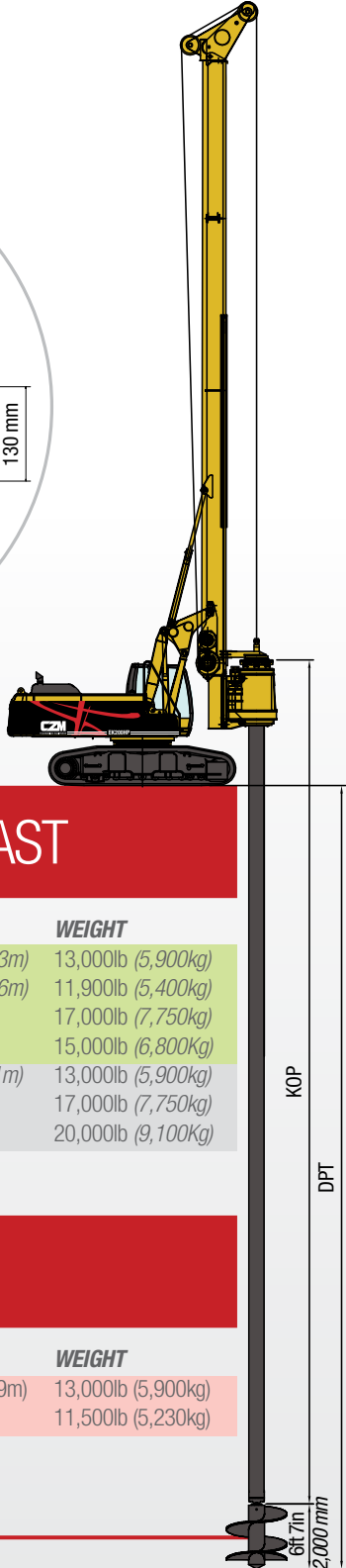
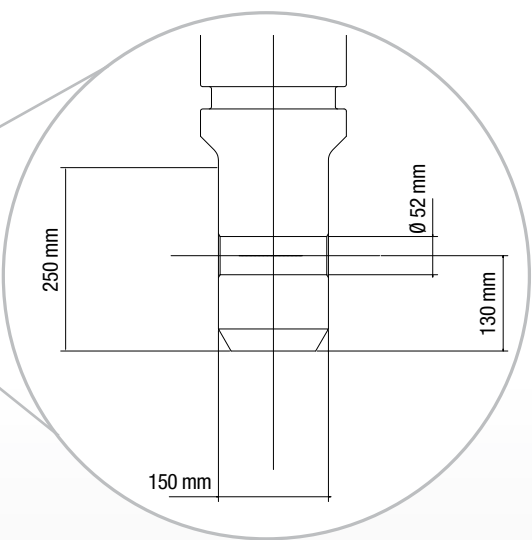


CASED DRILLED SHAFT PILES

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)



- 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.