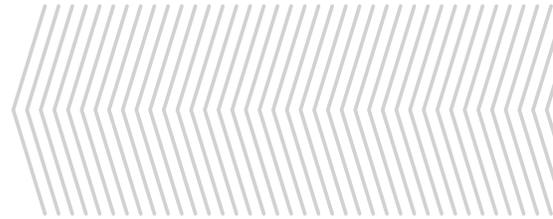


# EK65

## CYLINDER CROWD DRILLING RIG



**CEM**  
FOUNDATION EQUIPMENT



cem-us.com

# EK65

## FEATURES

One load machine with fast and easy set-up.

Kelly bar is transported with the machine, no auxiliary equipment necessary for set up.

Easy conversion from standard to short mast by replacing:

- › **Top mast assembly**
- › **Kelly bar**

### **CZM'S OPERATOR ASSIST TECHNOLOGY:**

- › Auto Gear shifting for Rotary
- › Auto Gear shifting for Main winch
- › Drill Lock
- › Auto Crowd
- › Auto Level
- › Return to Center

**TELEMATICS:** The rig includes a CZM Telematics System for remote monitoring, diagnostics, and software updates, enabling CZM Support to assist with troubleshooting and performance optimization.

### **BASE**

The new Cat® 317 Next Gen is a purpose-built machine powered by a fuel-efficient U.S. EPA Tier 4 Final C3.6 engine.

Equipped with CAT Vision Link that allows management to monitor machine operations and maintenance data online and wireless, providing information such as location, hours, fuel usage, idle time, event codes and maintenance schedule.

### **ROTARY**

Robust design, with 2 slewing bearings on top and bottom, robust pinion and main gear.

1 group of Hydraulic Motor / Planetary Gears for high torque and long life.

Anti-cavitation and anti-shock system for longer hydraulic motor life.

Cooling system for hydraulic motors and gearboxes.

Power-shift for High spin-off speed (110rpm) for quick discharge of soil.

3 operation speeds and 3 spinoff speeds. For high torque and high speeds.

Automatic gear shifting, for seamless operation, high production.

Exchangeable keys, bolted and reversible. No need to rebuild keys by welding inside the rotary.

Hydraulic measurement of torque displayed in the cab for the operator.

# EK65

## FEATURES



## UNDERCARRIAGE

Variable undercarriage with a telescopic style frame provides increased stability and traction force. Its variable width design expands for maximum stability during drilling and retracts for easy transport.

## MAST

Reinforced mast, with high strength steel.

## MAIN WINCH

Special groove for better cable winding and longer cable life.

Press roller to maintain cable alignment standard.

2 gears allows for both high speed and high pulling force.

Automatic gear shifting, for seamless operation, high production.

Automatic down the hole winch stop. When Kelly bar reaches the bottom of the hole, winch automatically stops.

## CAB

AM/FM Radio, Air conditioning/Heating

Top protection

LCD monitor for Engine and Hydraulics computer, with diagnostic system

## CONTROL SYSTEM

Touch Screen Display

### Measurements:

- Torque and rotary speeds
- Drilling depth
- Mast inclination X/Y axis
- Main Winch pulling force
- Crowd force

### Automatic functions:

- Auto-level of mast
- Rotary automatic gear shifting
- Main Winch automatic gear shifting

Maintenance and data logging



## SAFETY

Stability according to EN16228

Base, Mast and Boom Inclinometers

Working radius warning

Limit switches for Boom, Mast Tilt, Main Winch and Service Winch

Operator warnings for non recommended operations.

## ACCESSORIES

Lighting package

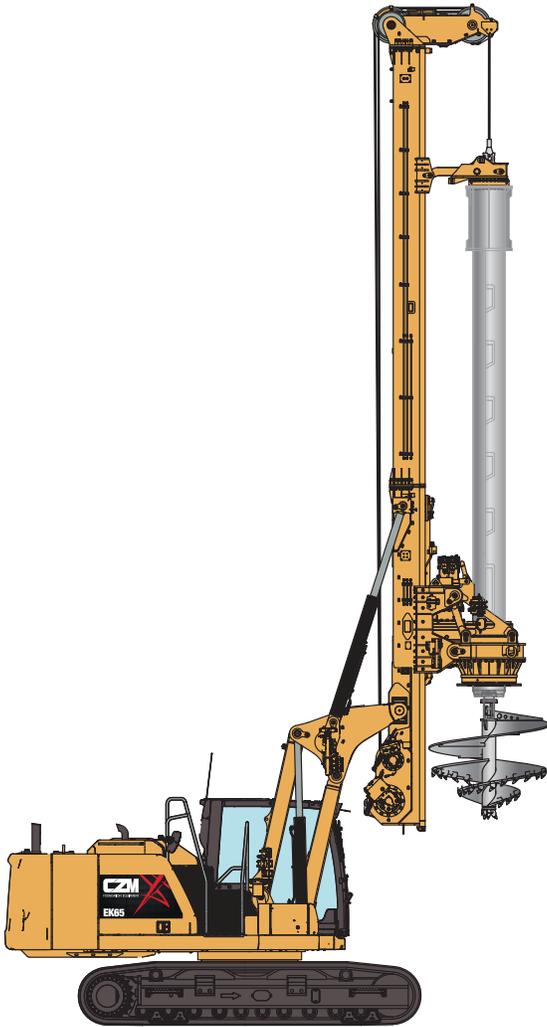
Refueling pump

O-ring kits

Toolbox

# EK65

## APPLICATIONS



### LONG MAST

Standard Drilling Depth	<b>80 ft</b>
Diameter (Max. w/ lower mast)	<b>5 ft</b>
Diameter (Max. w/o lower mast)	<b>8 ft</b>
Max. Torque	<b>77,500 ft.lbs</b>
Operating Weight*	<b>69,500 lb</b>



### SHORT MAST

Standard Drilling Depth	<b>40 ft</b>
Diameter (Max. w/ lower mast)	<b>5 ft</b>
Diameter (Max. w/o lower mast)	<b>8 ft</b>
Max. Torque	<b>77,500 ft.lbs</b>
Operating Weight*	<b>65,500 lb</b>

\*Weight includes standard Kelly, without tool.

### ROTARY HEAD

Maximum torque (Nominal)	<b>77,500 ft.lbs</b>
Working speed of rotation	<b>15-32 rpm</b>
Spin-off rotation	<b>72-110 rpm</b>

### CROWD SYSTEM

Cylinder stroke	<b>6 ft 3 in</b>
Cylinder push force	<b>27,000 lbf</b>
Cylinder push speed	<b>75 ft/min</b>
Cylinder pull force	<b>39,600 lbf</b>
Cylinder pull speed	<b>54 ft/min</b>

### MAIN WINCH

Max. pull-force - 1st Layer (effective)	<b>27,100 lbf</b>
Max. pull-force - 1st Layer - 2nd Speed (effective)	<b>22,250 lbf</b>
Line speed - 1st Layer	<b>190 ft/min</b>
Max. line speed - 1st Layer - 2nd Speed	<b>230 ft/min</b>
Cable diameter	<b>3/4 in</b>
Drum diameter - 1st Layer	<b>15 in</b>

### AUXILARY WINCH

Max. pull-force - 1st Layer (effective)	<b>10,000 lbf</b>
Line speed - 1st Layer	<b>120 ft/min</b>
Cable diameter	<b>5/8 in</b>
Drum diameter - 1st Layer	<b>12.6 in</b>

### MAST INCLINATION

Backward	<b>15°</b>
Forward	<b>5°</b>
Sideways	<b>6° / 6°</b>

### DIESEL ENGINE Cat® 317 - (C3.6 EPA Tier 4 Final)

Net Power – Standard ISO 14396 (DIN)	<b>136 hp</b>
Displacement	<b>220 in<sup>3</sup></b>
Fuel Tank	<b>71.6 gal</b>

### HYDRAULIC SYSTEM - (Cat® 317)

Hydraulic pressure	<b>5,076 psi</b>
Flow rate (main circuit)	<b>78 gal/min</b>
Flow rate (auxiliary circuit)	<b>14.3 gal/min</b>
Hydraulic oil tank capacity	<b>23 gal</b>

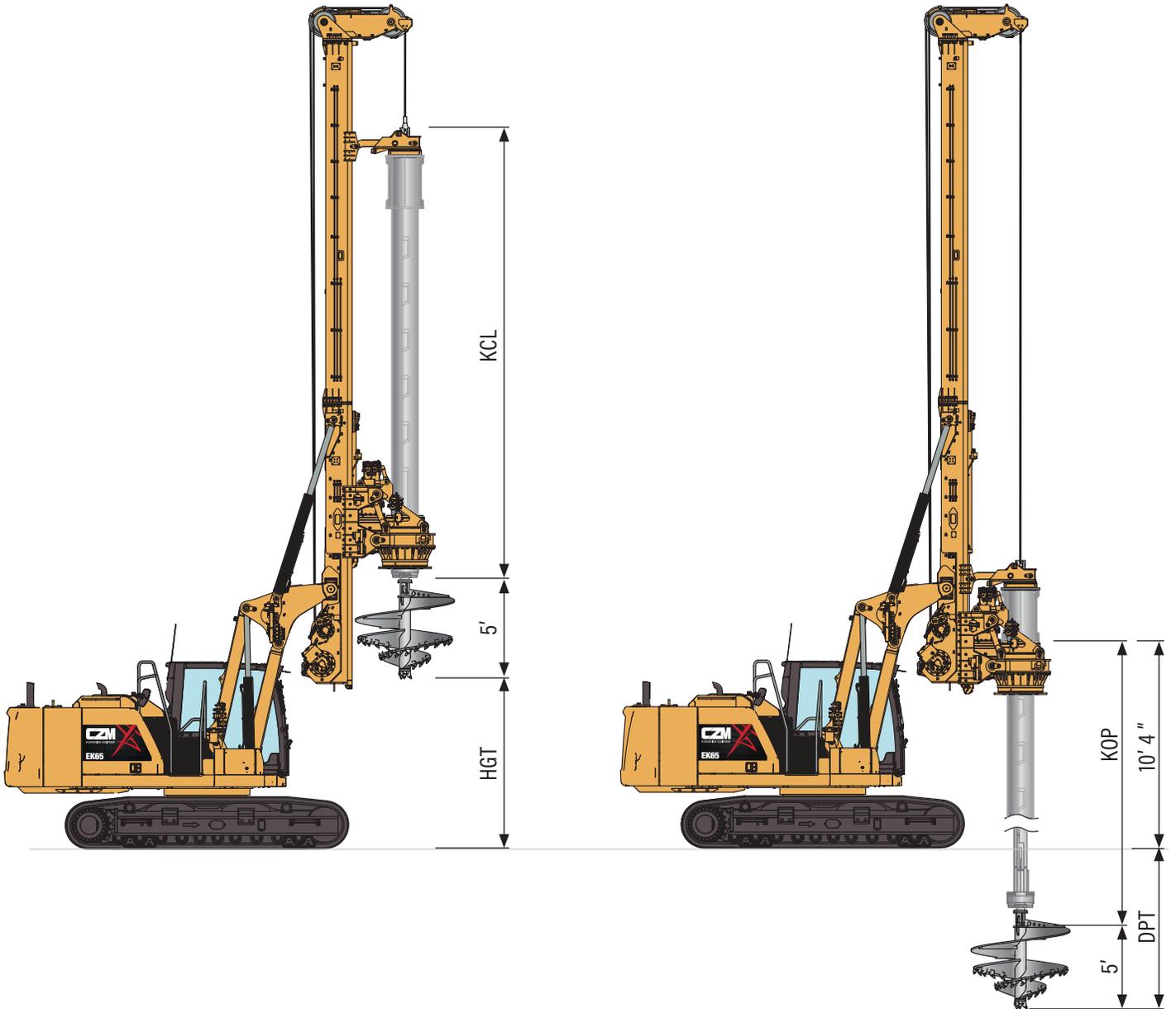
### UNDERCARRIAGE

Track length	<b>14 ft 1 in</b>
Length to Center of rollers	<b>11 ft 8 in</b>
Transport position width (retracted)	<b>8 ft 4 in</b>
Working position width (extended)	<b>12 ft 4 in</b>
Shoes width	<b>23.6 in</b>
Max. drawbar pull	<b>52,200 lbf</b>
Max. travel speed	<b>2.1 mph</b>

\*New VG Undercarriage. Fixed Undercarriage available for Short Mast version only.

# LONG MAST

## GENERAL DIMENSIONS



KELLY BAR OPTIONS	PART #	# ELEMENTS	DEPTH - DPT <sup>1</sup>	TRANSPORT - KCL <sup>2</sup>	HGT <sup>3</sup>	KOP <sup>4</sup>	WEIGHT <sup>5</sup>
Standard 5/80 Interlock	20506.5080.000	5	81 ft	22 ft 11 in	8 ft 5 in	87 ft 5 in	9,220 lb

<sup>1</sup> DPT: Total depth with 5ft tool boomed all the way back\*. Additional 1.5 ft of depth if boomed forward.

<sup>2</sup> KCL: Length measured from bottom of stub to top of swivel.

<sup>3</sup> HGT: Length measure from ground to bottom of auger assuming a 5ft tall tool.

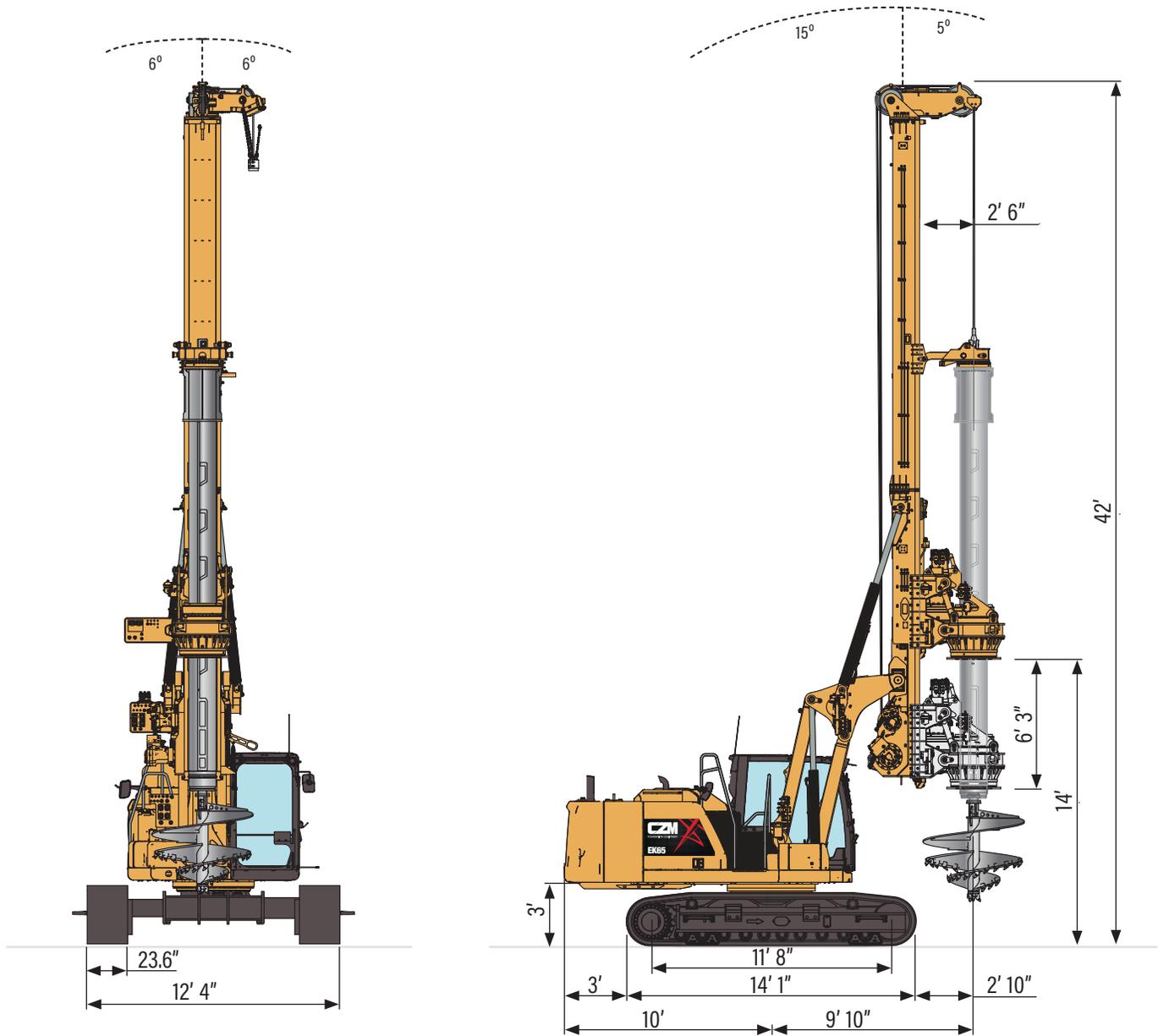
<sup>4</sup> KOP: Length measure from top of flange to bottom of stub (without a tool).

<sup>5</sup> Weight with a-frame and swivel.

Other kelly bars available upon request.

# LONG MAST

## GENERAL DIMENSIONS



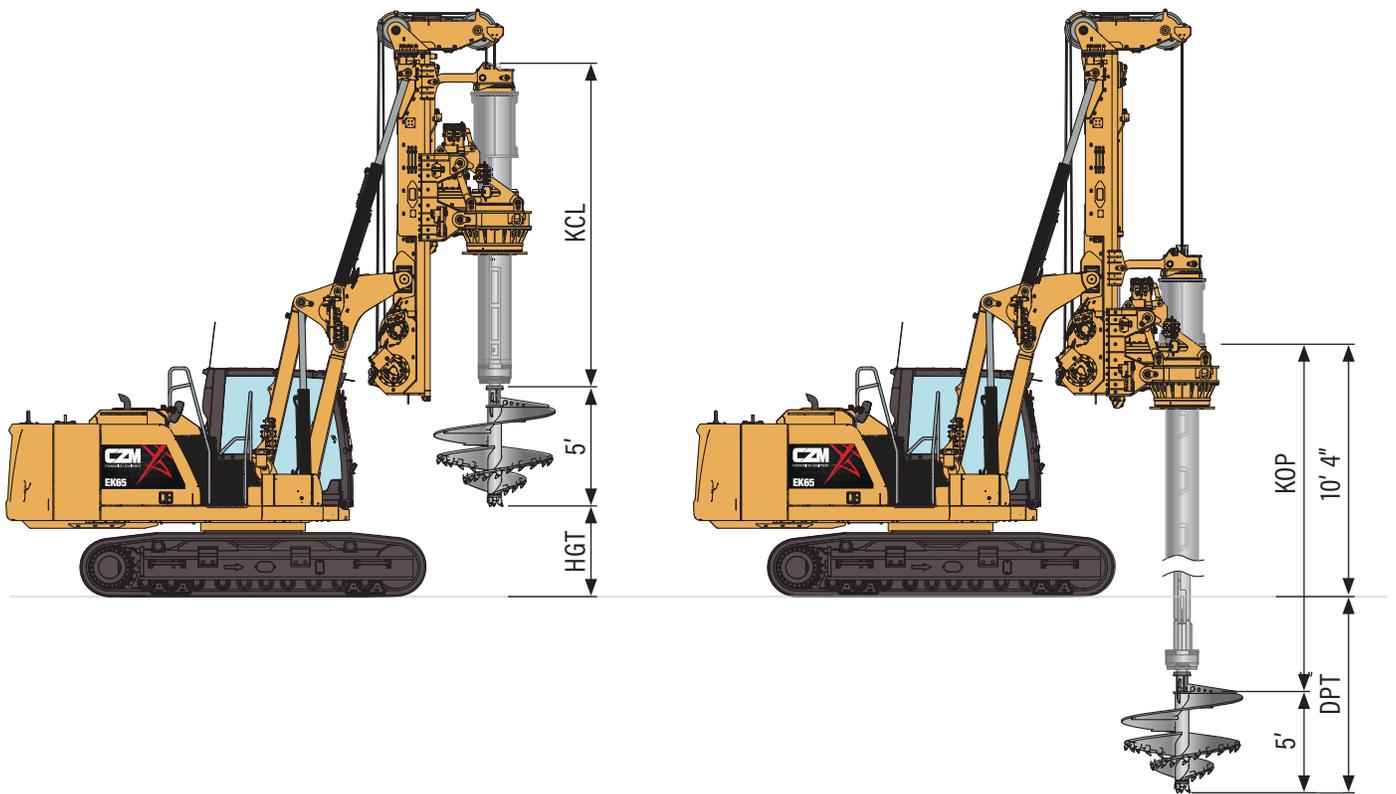
### GENERAL SPECIFICATIONS

Maximum torque (Nominal)	<b>77,500 ft.lbs</b>
Crowd force	<b>27,000 lbf</b>
Main winch line pull	<b>27,100 lbf</b>
Cylinder stroke	<b>6 ft 3 in</b>
Operation height	<b>42 ft</b>
Operation weight*	<b>69,500 lbs</b>

\*Weight includes standard Kelly, without tool.

# SHORT MAST

## GENERAL DIMENSIONS



KELLY BAR OPTIONS	PART #	# ELEMENTS	DEPTH - DPT <sup>1</sup>	TRANSPORT - KCL <sup>2</sup>	HGT <sup>3</sup>	KOP <sup>4</sup>	WEIGHT <sup>5</sup>
Standard 5/40 Interlock	20506.5040.000	5	37 ft	13 ft 11 in	3 ft 8 in	43 ft 4 in	5,180 lb
Standard 5/52 Interlock	25862.5052.000	5	50 ft 6 in	17 ft 1 in	6 in	56 ft 10 in	7,010 lb

<sup>1</sup> DPT: Total depth with 5ft tool boomed all the way back\*. Additional 3 ft of depth if boomed forward.

<sup>2</sup> KCL: Length measured from bottom of stub to top of swivel.

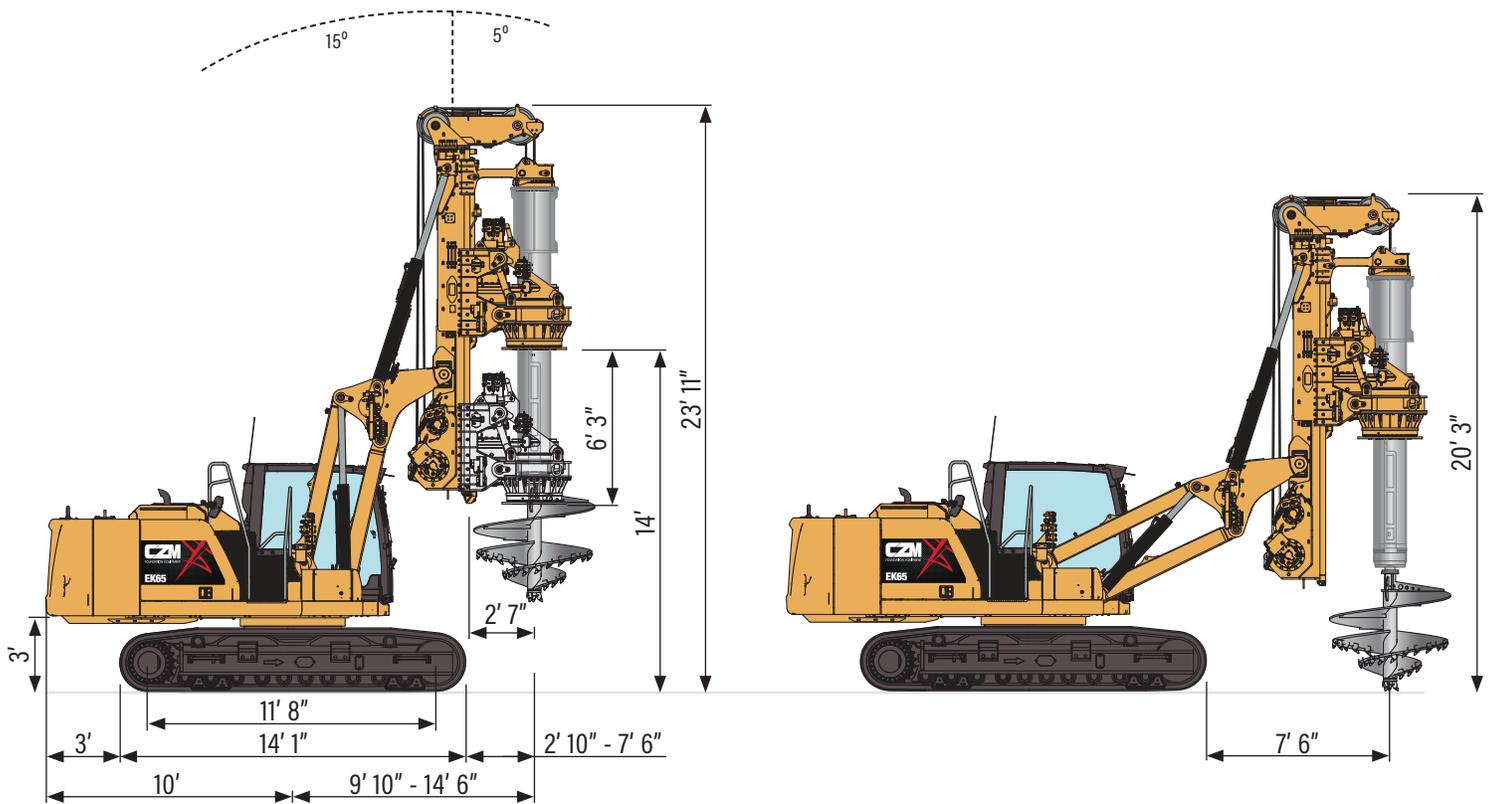
<sup>3</sup> HGT: Length measure from ground to bottom of auger assuming a 5ft tall tool. More clearance can be reached with mast extension. Standard 5ft mast extension in stock.

<sup>4</sup> KOP: Length measure from top of flange to bottom of stub (without a tool).

<sup>5</sup> Weight with a-frame and swivel.

# SHORT MAST

## GENERAL DIMENSIONS



### GENERAL SPECIFICATIONS

Maximum torque (Nominal)	<b>77,500 ft.lbs</b>
Crowd force	<b>27,000 lbf</b>
Main winch line pull	<b>27,100 lbf</b>
Cylinder stroke	<b>6 ft 3 in</b>
Operation height	<b>24 ft - 20 ft 3 in</b>
Operation weight*	<b>65,500 lbs</b>

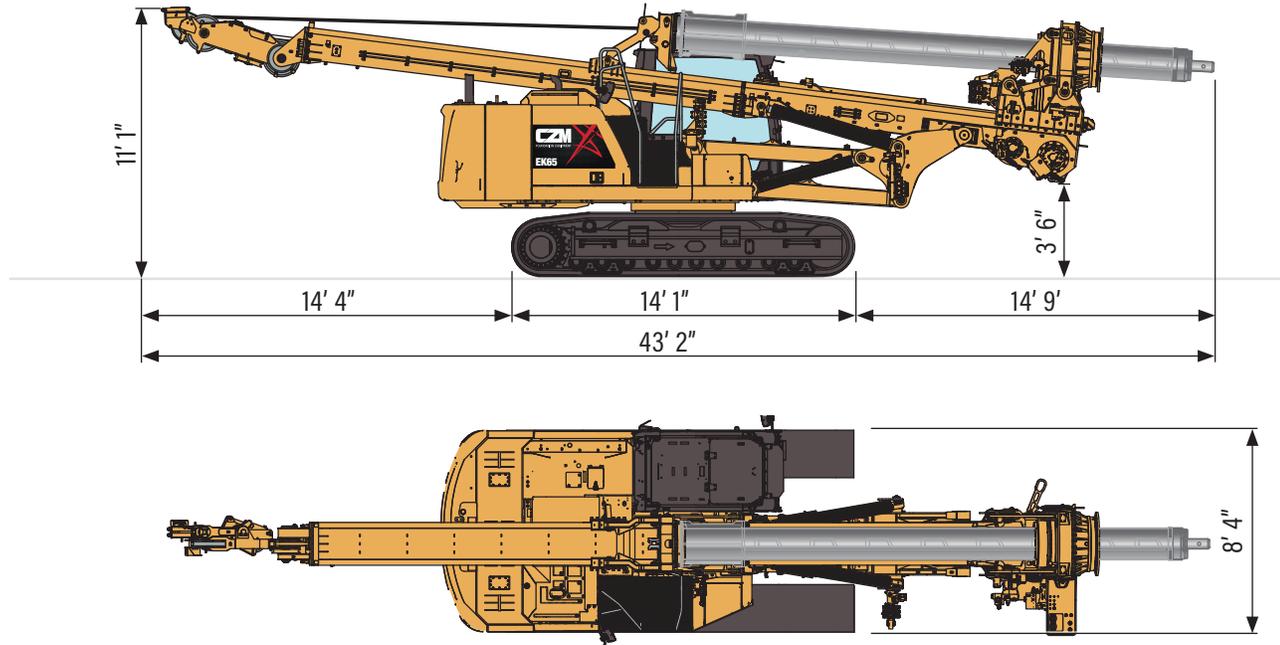
\*Weight includes standard Kelly, without tool.



# TRANSPORT

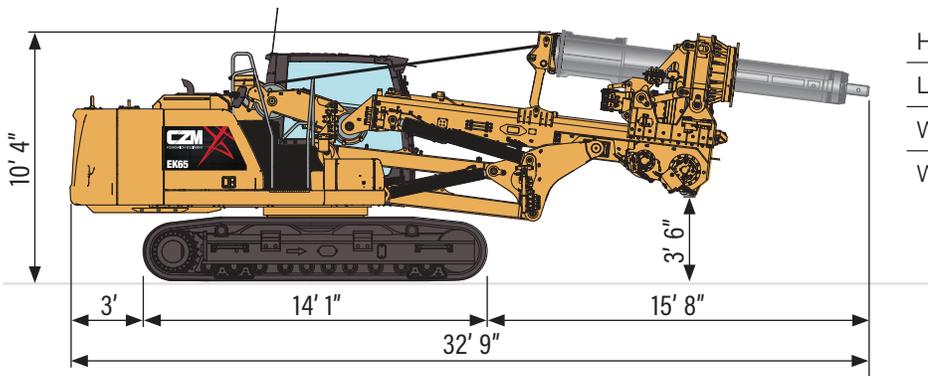
## DIMENSIONS

### LONG MAST



Height	11 ft 1 in
Length	43 ft 2 in
Width	8 ft 4 in
Weight*	69,500 lb

### SHORT MAST



Height	10 ft 4 in
Length	32 ft 9 in
Width	8 ft 4 in
Weight*	65,500 lb

### COMPONENTS

Rotary	6,100 lb
Counterweight	8,310 lb

\*Weight includes standard Kelly, without tool.



FOUNDATION EQUIPMENT

> HEADQUARTERS

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(912) 200-7654

czm-us.com



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(817) 232-8053

ABOUT CZM

CZM is headquartered in Savannah, Georgia, USA. For 50 years, we have specialized in manufacturing foundation equipment. We design and customize models for many different drilling applications including Drilled Shafts, CFA, Displacement piles, Soilmixing, Micropiles, Anchors, Driven piles and Soil improvement. We are a Caterpillar OEM (Original Equipment Manufacturer).

myCZM > [portal.myczm-us.com](http://portal.myczm-us.com)

The myCZM Web Portal is the essential digital point of reference for all customers and dealers, providing instant access to everything you need.

- > **Machine Documentation:** Consult manuals, warranties, stability charts, and technical schematics (electrical/hydraulic).
- > **Spare Parts:** Navigate and identify needed parts, and submit direct quotation requests.
- > **Support:** Directly submit information and general inquiries.

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