

CZM

FOUNDATION EQUIPMENT



LR40

LONG REACH

Cat® 317 NG

ABOUT THE LONG REACH SERIES

APPLICATIONS:

- **Long Reach**, the longest reach drill rig of its class in the market.
- Conversion to **Long Mast** and **Short Mast** options available.

BASE:

- The **new Cat® 317 Next Gen** is a purpose-built machine powered by a fuel-efficient U.S. EPA **Tier 4 Final** C4.4 ACERT 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.

MAST:

- Reinforced mast, with high resistance steel **Weldox 700**.

ROTARY:

- **Robust design**, with 2 slewing bearings on top and bottom, robust pinion and main gear.
- Anti-cavitation and anti-shock system for longer hydraulic motor life.
- **1 group of Hydraulic Motor / Planetary Gear** for high torque, high speeds and long life.
- Cooling system for hydraulic motors and gearboxes.
- Power-shift for **High spin-off speed (129rpm)** 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.
- Rotary drive **exchangeable keys**, bolted. No need to rebuild keys by welding inside the rotary.
- Hydraulic measurement of torque displayed in the cabin for the operator.

MAIN WINCH:

- **Special groove** for better cable winding and longer cable life.
- Press-roller included.
- **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.
- Freewheeling winch during crowd operation.
- Hydraulic and mechanical brake.
- Hydraulic measurement of pulling force displayed in the cabin for operator.

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**.

CAB:

- AM/FM Radio, Air conditioning/Heating
- ROPS cab
- 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
 - Drill Lock
 - Auto Crowd
 - Return to Center
- Maintenance and data logging

ACCESSORIES:

- Lighting package
- Refueling pump
- Cold weather start up package
- Fine filtration system
- Tool & O'ring kits



TECHNICAL SPECIFICATIONS

KELLY BAR APPLICATION

Drilling Depth (6/35 - Short mast version, ziplock)	35 ft	10,700 mm
Drilling Depth (5/55 - Long Mast - interlock)	55 ft	16,800 mm
Max. Drilling Depth (6/60 - Short/Long Mast, interlock)	60 ft	18,300 mm
Max. Drilling Diameter above mast foot	47 in	1,200 mm
Max. Drilling Diameter below mast foot	72 in	1,830 mm

ROTARY HEAD - RT 406 - 7.3

Max. torque (nominal)	53,200 ft.lbs	7,300 kgf.m
Working speed of rotation	13 - 35 rpm	
Spin-off rotation	83 - 129 rpm	

CROWD SYSTEM

Cylinder stroke	5 ft 8 in	1,720 mm
Pull down force (nominal)	15,430 lbf	7,000 kgf
Pull up force (nominal)	27,180 lbf	12,330 kgf

MAIN WINCH

Max. pull-force - 1st Layer (effective)	27,200 lbf	12,330 kgf
Max. pull-force - 1st Layer (2nd speed)	22,500 lbf	10,200 kgf
Line speed - 1st Layer	230 ft/min	71 m/min
Max. line (2nd speed)	280 ft/min	86 m/min
Cable diameter	.79 in	20 mm
Drum diameter - 1st Layer	15.7 in	400 mm

AUXILIARY WINCH

Max. pull-force - 1st Layer (effective)	11,520 lbf	5,230 kgf
Cable diameter	5/8 in	16 mm
Drum diameter - 1st Layer	12 in	320 mm

MAST INCLINATION

Backward	5 - 15°	5- 15°
Forward	15°	15°
Sideways	15° / 15°	15° / 15°

DIESEL ENGINE Cat® 317 NEXT GEN (C3.6 EPA Tier 4 Final)

Exhaust Emission Standard	EPA Tier 4 Final	
Net Power - Standard ISO 9249	136 hp	102 kW
Displacement	220 in³	3.6 L
Fuel Tank	72 gal	271 L

MAIN HYDRAULIC SYSTEM

Hydraulic pressure	5,076 psi	350 bar
Flow rate (main circuit)	78 gal/min	296 L/min
Hydraulic oil tank capacity (CAT + additional)	23 gal	87 L
Auxiliary Circuit Flow Rate	43.6 gal/min	165 L/min

UNDERCARRIAGE

Track length	13 ft	3,965 mm
Length to Center of rollers	10 ft 5 in	3,170 mm
Width	8 ft 10 in	2,690 mm
Shoes width	28 in	700 mm

TRANSPORT

Transport height	10 ft 8 in	3,245 mm
Transport length (Short Mast)	34 ft 3 in	10,440 mm
Transport length (Long Mast)	38 ft	11,590 mm
Transport width	8 ft 10 in	2,690 mm
Transport weight (Short Mast - Kelly, no auger)	62,000 lb	28,200 kg
Transport weight (Long Mast - Kelly, no auger)	65,300 lb	29,000 kg

GENERAL DATA (SHORT MAST)

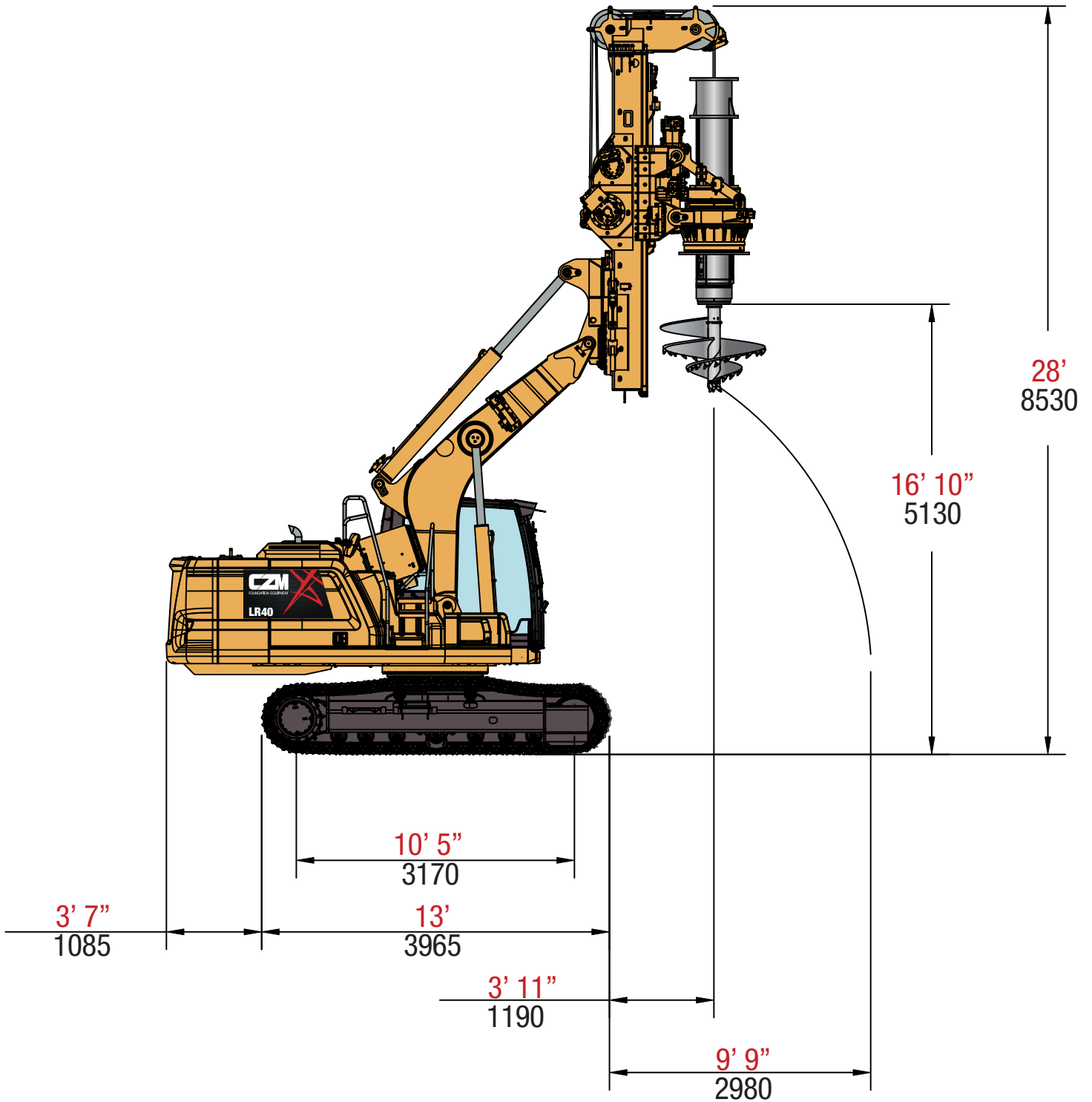
Overall height (Working position, boom lowered)	15 ft 7 in	4,740 mm
Overall height (Working position, boom raised)	28 ft	8,530 mm
Operating weight	66,000 lb	29,930 kg
Ground pressure	9 psi	0.65 kg/cm²

GENERAL DATA (LONG MAST)

Overall height (Working position, boom lowered)	19 ft 4 in	5,890 mm
Overall height (Working position, boom raised)	31 ft 9 in	9,680 mm
Operating weight	68,000 lb	30,840 kg
Ground pressure	9 psi	0.67 kg/cm²

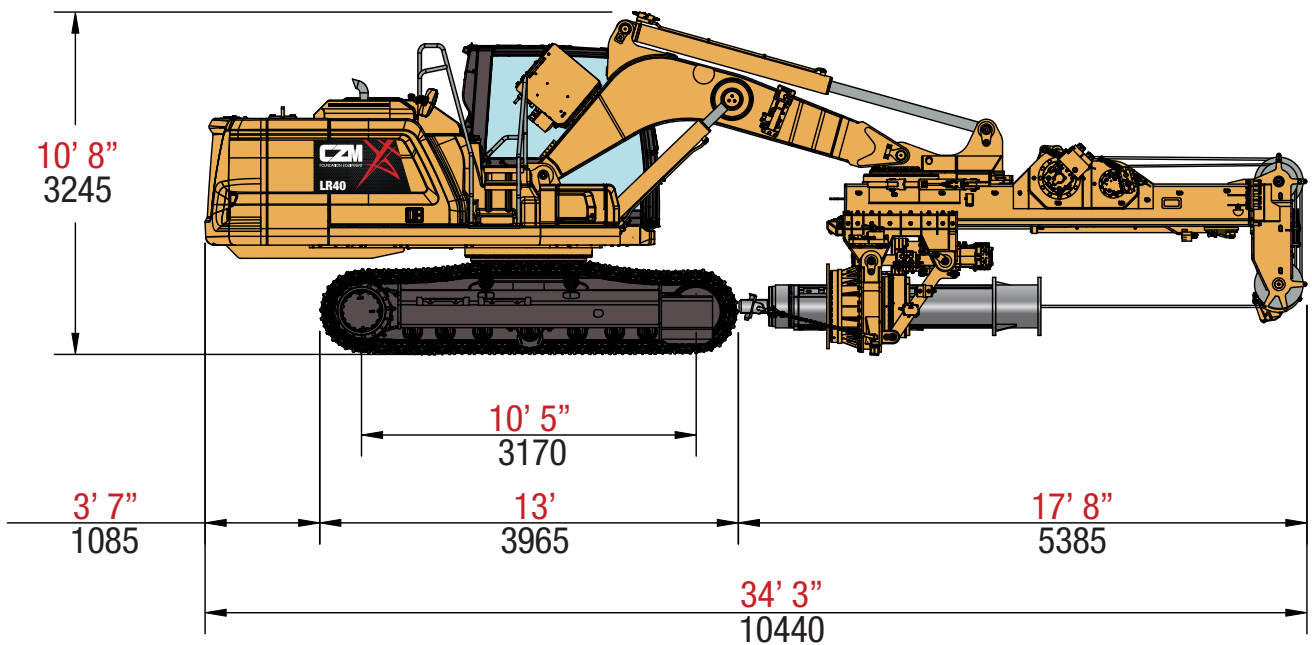
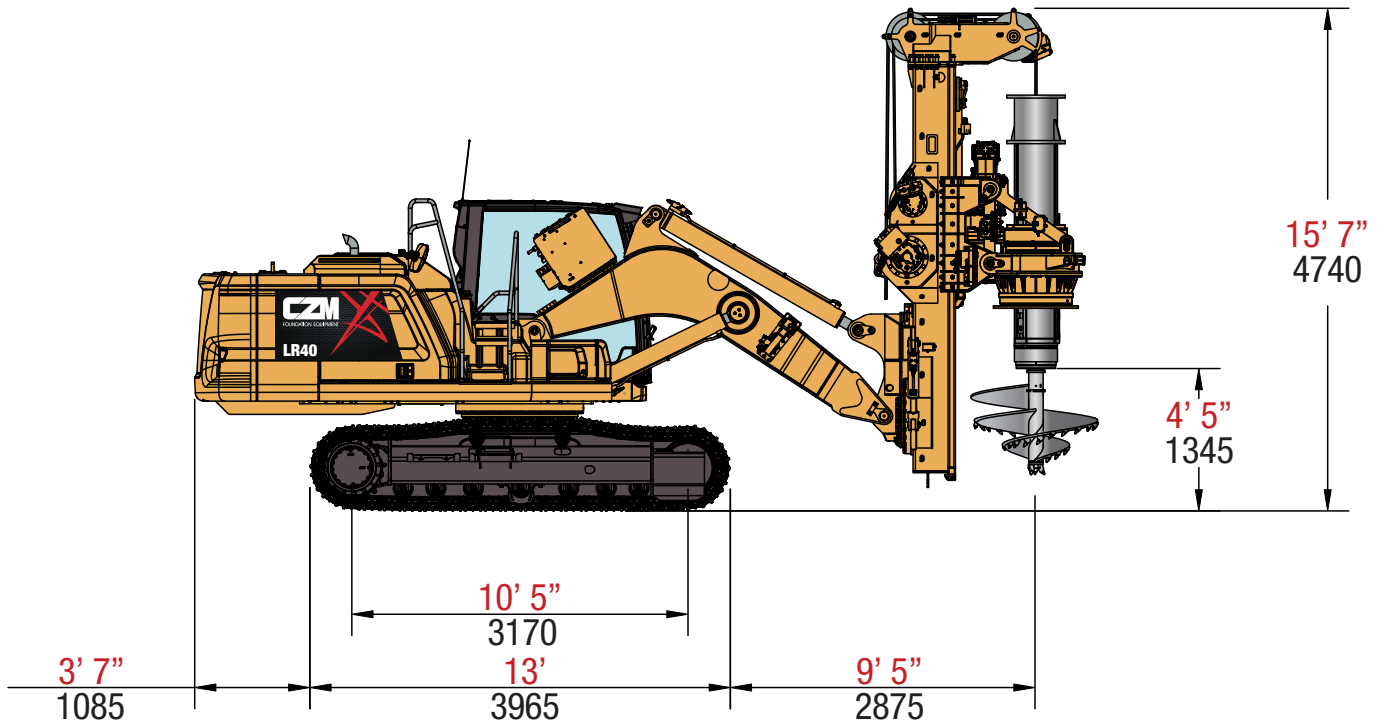


GENERAL DIMENSIONS SHORT MAST



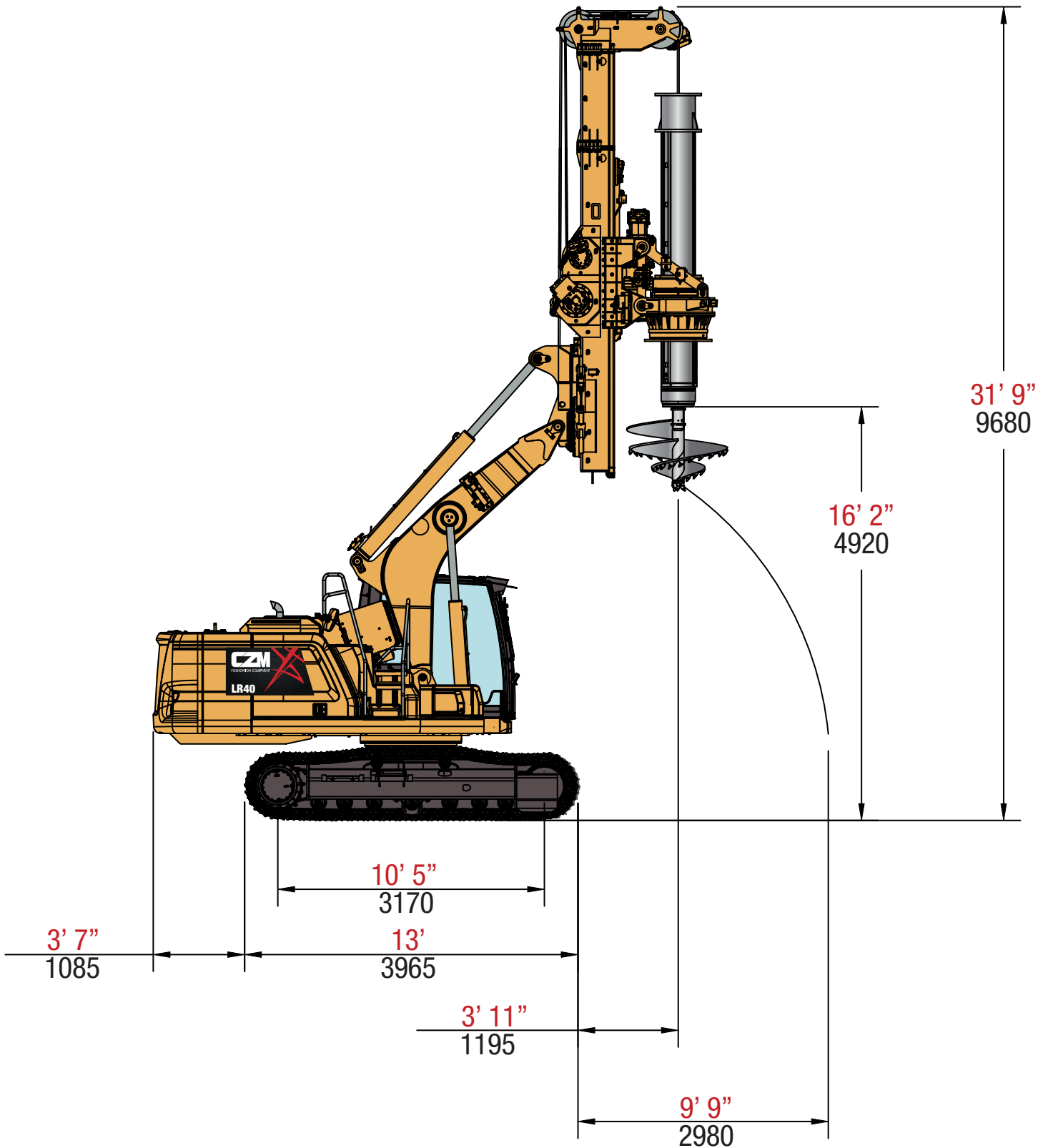
(With standard Short Mast kelly bar 6/35 ziplock)

GENERAL DIMENSIONS SHORT MAST



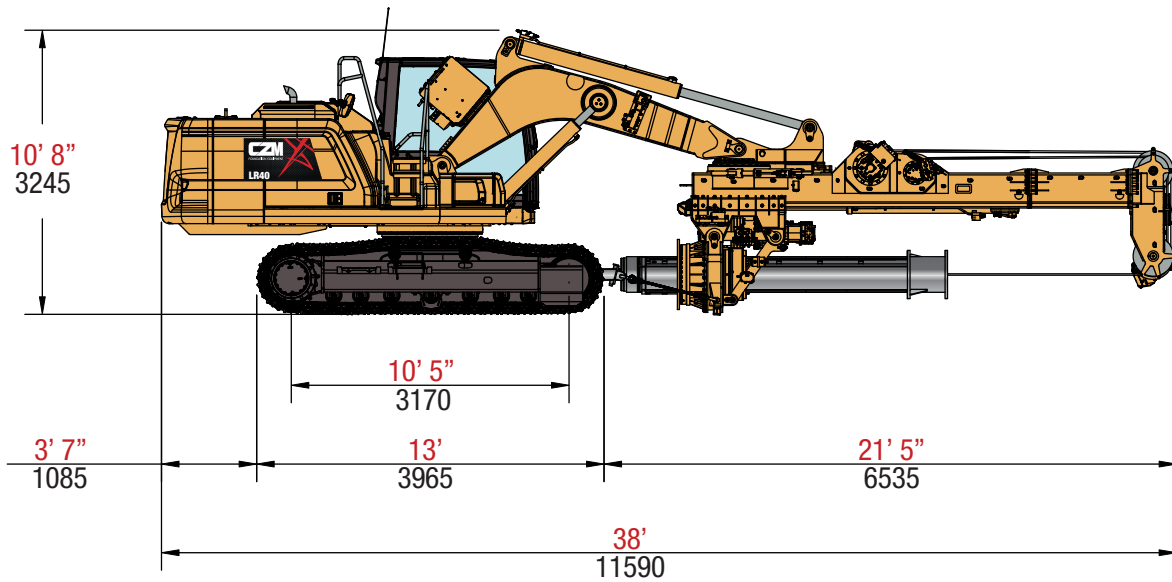
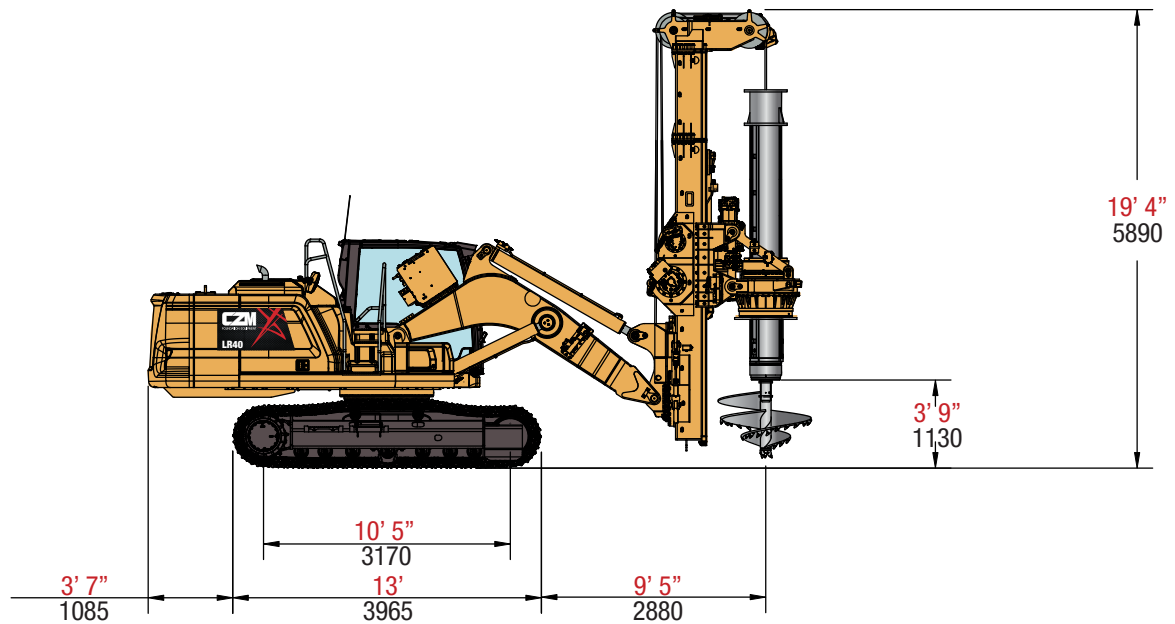
(With standard Short Mast kelly bar 6/35 ziplock)

GENERAL DIMENSIONS LONG MAST



(With kelly bar 5/40 ziplock)

GENERAL DIMENSIONS LONG MAST



(With kelly bar 5/40 ziplock)

KELLY BAR OPTIONS FOR LR40

	NUMBER OF ELEMENTS	DEPTH	CLOSED LENGTH	WEIGHT
6/35 Ziplock	6	35' / 10.7m	9'2" / 2.8 m	3,400 lbs / 1,500 kg
5/40 Ziplock	5	40' / 12.2m	12'10" / 3.9m	4,700 lbs / 2,100 kg
5/55 Interlock	5	55' / 16.8m	15' 2" / 5.2m	5,300 lbs / 2,400 kg
6/60 Interlock	6	60' / 18.3m	13' 9" / 4.2m	5,500 lbs / 2,500 kg



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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