

**SANY**®

Quality Changes the World



# SR235M



EU STAGE V / US TIER4 FINAL · MULTIFUNCTIONAL ROTARY DRILLING RIG

BEIJING SANY INTELLIGENT TECHNOLOGY CO., LTD.

# SANY GROUP INTRODUCTION

SANY Group was founded in 1989. It is one of the global leading construction machinery manufactures. SANY has established R&D and manufacturing companies in India, the United States, Germany and Brazil. Currently, the Group's business covers more than 100 countries and regions worldwide. SANY mainly produces concrete machinery, excavating & hoisting machinery, road construction & piling machinery, wind power equipment, port machinery, petroleum equipment, etc.

SANY concrete machinery is the No.1 brand in the world. Large-tonnage hoisting machinery, crawler crane, piling machinery, excavating machinery, port machinery occupying first position in China. In 2021, SANY sold more than 10,000 units of excavators worldwide, occupied more than 15% of market share. SANY Heavy industry was ranked No.468 in the global top 2,000 enterprise list, published by "Forbes" in 13th May, 2021. SANY took the second place among the world construction machinery industry.

## 1994

### Advanced into heavy machinery industry

Hunan Lianyuan Welding Material Factory is officially renamed to Hunan SANY Group Co., Ltd. and its headquarters officially moves to Changsha.

## 2011

### Recognized in a leading publication

SANY Heavy Industry enters the FTGlobal 500 ranking of the world's largest companies.

## 1989

### Started from scratch

Liang Wengen, Tang Xiuguo, MaoZhongwu and Yuan Jinhua founded Hunan Lianyuan Welding Material Factory in Lianyuan, Hunan province. SANY Heavy Industry is successfully listed on the Shanghai Stock Exchange. SANY Heavy Machinery Co., Ltd. is founded, focusing on excavators and oil drilling machinery. SANY acquires leading German concrete machinery manufacturer Putzmeister.

## 2003

### A listed company

SANY Heavy Industry is successfully listed on the Shanghai Stock Exchange. SANY Heavy Machinery Co., Ltd. is founded, focusing on excavators and oil drilling machinery.

## 2012

Putzmeister made a member of SANY Group. SANY acquires leading German concrete machinery manufacturer Putzmeister.





## PEACHTREE, USA

### Made for America, More Than Machines

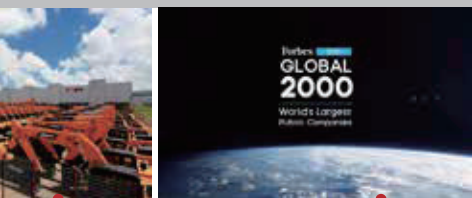
More than 11 years committed to the local community, SANY America not only manufactures and services machinery popular in the market from a base in Peachtree, Georgia, but also contributes labor development and social responsibilities.



## BEDBURG, GERMANY

### Men & Machines

Versed in design and engineering, SANY Europe was inaugurated in Bedburg, Germany, in 2011. SANY Europe offers a wide range of CE compliant products, including hydraulic excavators ranging from 1.6t to 50t, mobile port machinery (reach stacker, empty container handler, heavy duty forklift), rotary drilling rig and crawler crane for the European market.



**2020**

**Sales exceeded  
100 billion RMB**

SANY Heavy Industry becomes the first heavy equipment manufacturer with sales exceeding 100 billion RMB in China.

**2021**

**Ranking 468th  
in Forbes Global 2000**

SANY Heavy Industry ranks first among heavy equipment manufacturers in China and second in the world.

## Donation of Medical Supplies Across the World

During the worldwide outbreak of COVID-19, SANY donated over 300 million medical masks to over 30 countries including Italy, France, Germany, Japan, Austria, and Sweden, fighting COVID-19 in 2020. A German proverb was written on the box of the masks that SANY donated to Germany: "Mountains and valleys don't come together, but humans do." The quote means "Our destiny is closely connected in both good and hard times."

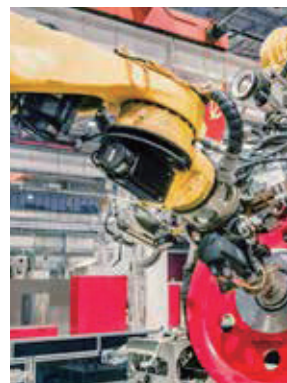
## BEIJING SANY INTELLIGENT TECHNOLOGY CO., LTD.

Beijing SANY Intelligent Technology Co., Ltd. was founded in 2003. As a part of SANY Group, Beijing SANY focuses on pile foundation and underground construction machinery manufacturing. Digging into new technology development, forging new generation of construction technology, it provides overall construction solution. Striving for providing high reliability, high efficiency, more intelligent and economic products to the customers, SANY piling machine always represents the highest level of the whole industry.

In 2021, Beijing SANY was recognized as the first "Lighthouse Factory" in heavy machinery industry by The World Economic Forum. After the intelligent upgrading, the productivity is increased by 85% and the production period is reduced by 77%.



## LIGHTHOUSE FACTORY





Facing growing market demand and complexity in the multi-category and small-batch heavy machinery market, Beijing SANY adopted advanced human-machine collaboration automation, AI and IoT technologies to boost labor productivity by 85% and reduce production time by 77% from 30 days to 7 days.

Sany Beijing



## INNOVATION HISTORY OF SANY PILING MACHINERY

Beijing Sany Intelligent Technology Co., Ltd. has always been focusing on the design, manufacturing, sales and service of foundation construction equipment. The main products are rotary drilling rigs and diaphragm wall grab, covering the whole area of pile foundation, pit supporting and underground construction. With the principle of Quality Changes the World, Beijing Sany has always been dedicating to providing the professional total solution of foundation construction to global customers.

### 2003

SYR220, the first unit, rolled off the assembly line on March 1, 2003. The first homemade SR220C on Qinghai-Tibet railway. Annual output reached 18 units; the largest drilling rig manufacture.



### 2006

First rotary drilling rig manufacturer realized export in China.



### 2008

SR360 with the largest torque in Asia was developed by our own technology.



### 2011

The largest rotary drilling rig in Asia SR460 rolled off the production line. Sany was awarded Customer Satisfaction in the First by China Quality Association.



### 2005

Beijing Sany passed ISO 9001 and CE certifications and became the first Chinese rotary drilling rig manufacturer to obtain such certifications.



### 2007

The first winch crowded rotary drilling rig in China SR220R was born.



### 2009

The successful developing of SR420 rotary drilling rig manufacturing in China.



### 2013

SANY kelly bar product line was awarded FOUR STARS by China Quality Association.



**2014**

C8 series comes to the market grandly and sets the new benchmark with its high quality and strong drilling ability.

**2016**

Official launch new C10 series rotary drilling rig, led the industry with innovative technology, high quality, and create legends again.

**2018**

H10 series release to the world, being a matrix of Rotary Drilling for hard rock layer, achieve 100 meters deep pile.

**2020**

11 new products release to the world, fighting the virus cannot block the infrastructure. Wall grab products have been seriated, multifunction rotary drilling rig comes top.

**2015**

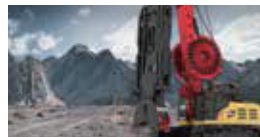
Super-large SR630 broke new record in Industry. Drilling operation in Shenzhen. 2017 SR420II sets a 149m record for the deepest drilling depth on the sea.

**2017**

SR420II sets a 149m record for the deepest drilling depth on the sea.

**2019**

Intelligent rotary drilling rig SR580R launches, leading a new step to pile intelligence. All new-gen Hydraulic Grab SH700 was released to global grab market.

**2021**

M series rotary excavation sells well in overseas markets and is strongly constructed by a variety of construction methods, which is deeply welcomed by customers all over the world.



## WE ARE DRILLING IN THE WORLD

**60+**  
COUNTRIES

**2500+**  
OVERSEAS MARKET

**15000+**  
DOMESTIC MARKET



### Southeast & South Asia

Indonesia  
India  
Malaysia  
Thailand  
Vietnam  
Myanmar  
Singapore  
Bangladesh

Philippines  
Pakistan  
Cambodia  
Laos  
Australia  
Japan  
Sri-Lanka  
South Korea

### Americas

USA  
Mexico  
Brazil  
Columbia  
Panama  
Ecuador  
Peru

### Middle East

UAE  
Turkey  
Saudi  
Qatar  
Bahrain  
Iran  
Iraq  
Oman  
Syria

### Africa

Algeria  
Morocco  
Nigeria  
Egypt  
Angola  
Ethiopia  
Sudan  
Kenya  
South Africa

### CIS Countries

Russia  
Ukraine  
Uzbekistan  
Kazakhstan  
Bulgaria  
Mongolia  
Georgia

## BEIJING SANY IN THE WORLD

Rotary drilling rigs produced by Beijing SANY Intelligent Technology Co., Ltd. have No.1 market share in China for 16 consecutive years, and keep No.1 in export volume for many years. In 2021, the overseas sales volume was almost 300 units. Rotary drilling rigs, diaphragm wall grabs, trench cutters and horizontal directional drills, have been sold to over 60 countries, with a total of more than 2500 units. The products are popular worldwide because of its high quality, high efficiency, safety, and convenience.





**ROTARY DRILLING RIG**



**DIAPHRAGM WALL GRAB**



**TRENCH CUTTER**



**HORIZONTAL DIRECTIONAL DRILL**

# SR235M Rotary drilling rig

- 4 construction methods: Low Headroom, Kelly, Casing, CFA.
- Upgraded from well-developed model, high reliability and good stability
- Efficient, intelligent, safe, comfortable and multifunctional



Low Headroom

Kelly

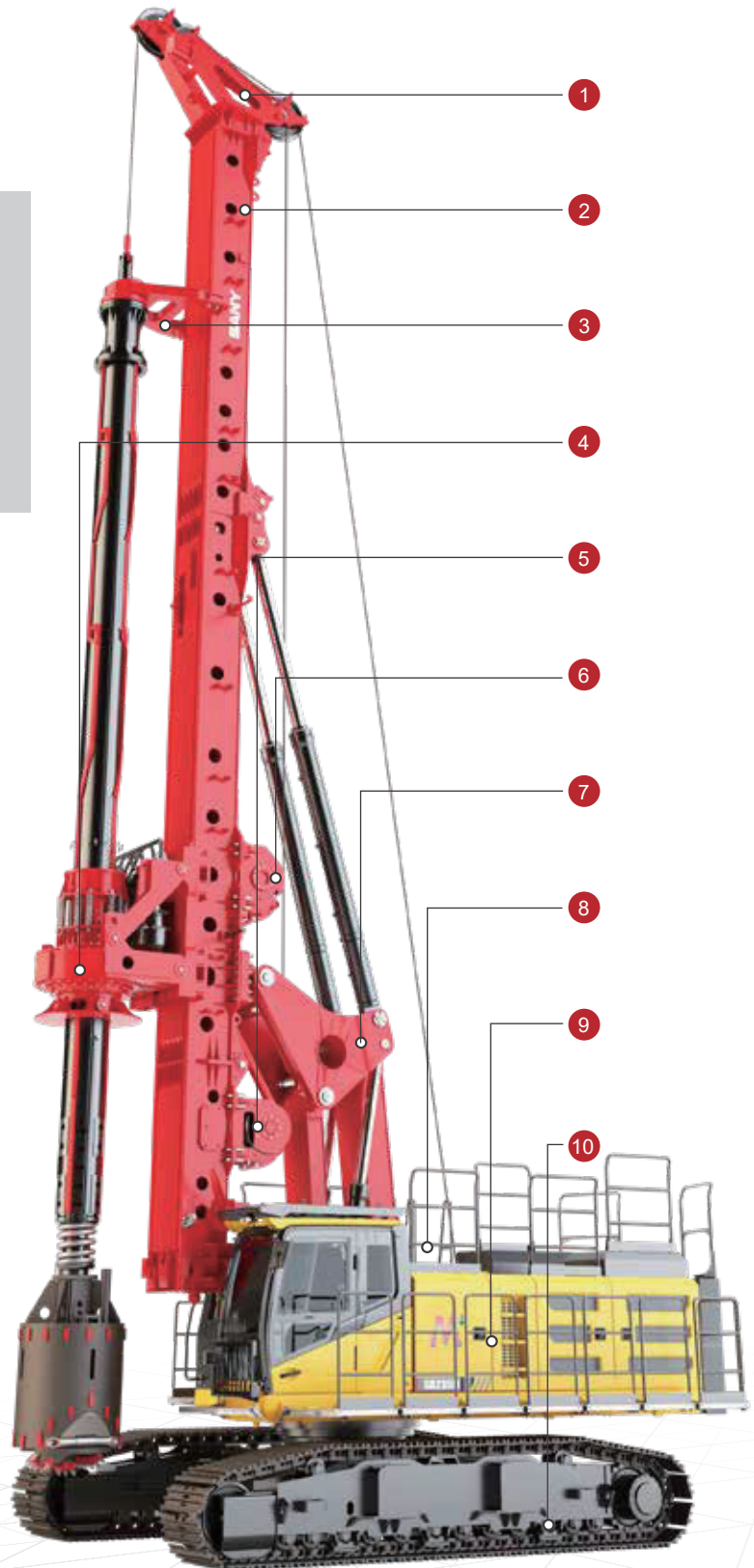
Casing

CFA

### SR235M General Parameters

- Max. pile diameter: 2000 mm ( 79 in )
- Max. pile depth: 73 m / 58 m ( 240 ft / 191 ft )
- Rated torque: 235 kN·m ( 173,327 lbf ft )
- Max. operating height: 24.1 m ( 79 ft )
- Engine: Volvo TAD1181 VE Stage V / Tier4 final  
265 kW @ 2000 rpm ( 355 HP @ 2000 rpm )

- |                    |                     |
|--------------------|---------------------|
| 1. Masthead        | 6. Crowd winch      |
| 2. Mast            | 7. Kinematic system |
| 3. Mast guide      | 8. Main winch       |
| 4. Rotary drive    | 9. Base carrier     |
| 5. Auxiliary winch | 10. Under carriage  |



## NO.1 Multifunction & Quick conversion

- Universal connection port design allows quick conversion between different modes. Multifunction brings more value to customers.
- Sectional mast allows to build various combinations of low headroom, which can meet different construction requirements.





## NO.2 Powerful engine

- VOLVO TAD1181VE (265 kW/2000 rpm)
- Both Stage V and Tier 4 final emission certification
- High-performance, reliable, low fuel consumption
- Worldwide VOLVO-service partners



## NO.3 Efficient & Energy -saving

- Next generation of electrically controlled positive flow hydraulic system, pressure loss lowered by 12%.
- EP optimal control system distributes power in real time, which brings better driving experience, faster operation feedback, and lower energy consumption.

## NO.4 Safe & Convenient

- Integrated platform for safe maintenance work.
- The ladders on both sides make it easy to reach top of upper square.
- Equipped with central lubrication system.
- Integrated engine filters facilitate replacement.



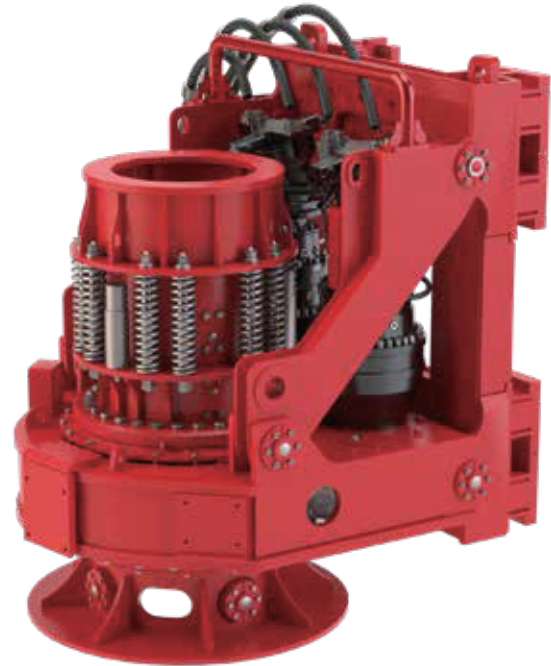
## NO.5 Smart & Ergonomic Cab

- Next generation modern cab with larger space and greater visibility, HD touch screen, engine start button.
- Visual representation of locking device accurately shows the process of locking/unlocking, reduces Kelly bar wear, and avoids accidents.
- Premium air-suspension operator seat, ergonomic and anti-fatigue.
- Multi-language screen. Including English, French, Russian, Spanish, Portuguese, Turkish and Chinese.



## NO.6 Kelly Mode Rotary Drive

- Multi-gear control with maximum spin speed of 30 rpm.
- Dual buffering system reduces vibration and avoids damage to device.
- Lengthened key sleeve design ensures alignment ability and drilling verticality.

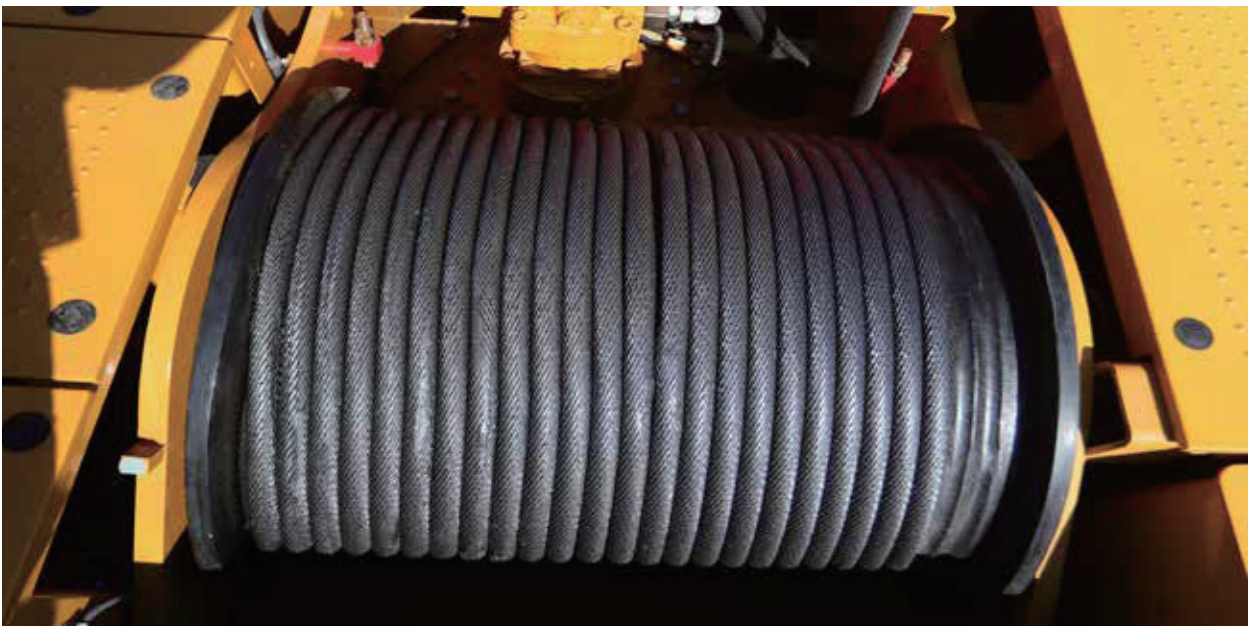


## CFA Rotary Drive

- The design of CFA rotary drive enables rapid conversion.
- Gear box anti - sediment design ensures safety and high efficiency.

## NO.7 Efficient winch system

- The main winch system adopts confluence technology to improve operation speed and efficiency.
- CFA can realize crowd drilling and improve the adaptability under different operating conditions.
- Single layer wire rope on winch drum prolongs service life.







## NO.8 Construction management system

- 10.4 inch large HD touch screen allows smooth operation.
- Operating parameters of the machine and engine aftertreatment system can be displayed on the main screen for easy monitoring.
- Integrated CFA construction management system.



## SR235M Main Parameters

SR235M Main Parameters		
<b>Piling rig</b>		
<b>Pile</b>		
Max. drilling diameter	2,000 mm	79 in
Max. drilling depth	73 / 58 m	240 / 191 ft
<b>Rotary drive</b>		
Rated output torque	235 kN·m	173,327 lbf ft
Rotation speed	5~30 rpm	5~30 rpm
<b>Crowd system</b>		
Crowd force	210 kN	47,210 lbf
Line pull	270 kN	60,698 lbf
Stroke	15,000 mm	591 in
<b>Main winch</b>		
Line pull	235 kN	52,830 lbf
Wire rope diameter	32 mm	1.26 in
Max. line speed	70 m/min	230 ft/min
<b>Auxiliary winch</b>		
Line pull	80 kN	17,985 lbf
Wire rope diameter	20 mm	0.79 in
Max. line speed	70 m/min	230 ft/min
<b>Mast inclination</b>		
Forward/backward	5° / 90°	5° / 90°
Lateral	±3 °	±3 °
<b>Main Chassis</b>		
Engine model	TAD1181VE	TAD1181VE
Engine power ISO 3046-1	265 kW / 2,000 rpm	355 HP / 2,000 rpm
Emission regulation	EEC 97 / 68 EC	EPA / CARB
	Stage V	Tier4 final
Sound pressure level in cabine (EN 16228, Annex B)	LPA 75 dB(A)	LPA 75 dB(A)
Sound power level (2000 / 14 / EC u. EN16228, AnnexB)	LWA 115 dB(A)	LWA 115 dB(A)
Fuel tank capacity	580 L	153 US gal
AD Blue tank capacity	45 L	12 US gal
Extension width	4,500 mm	177 in
Track shoe width	800 mm	32 in
Swing radius	4,600 mm	181 in
<b>Overall machine</b>		
Overall height	24,060 mm	947 in
Operating weight	86,000 kg	189,600 lb
Transport width	3,550 mm	140 in
Transport height	3,755 mm	148 in
Transport length	17,410 mm	686 in
<b>Kelly bar</b>		
Interlock bar Φ445×3×15	10,300 kg / 40 m	22,707 lb / 131 ft
Interlock bar Φ445×4×15 ①	11,300 kg / 54 m	24,912 lb / 177 ft
Interlock bar Φ445×4×16	11,520 kg / 58 m	25,397 lb / 190 ft
Friction bar Φ445×5×14	10,300 kg / 62 m	24,708 lb / 203 ft
Friction bar Φ445×5×15	10,900 kg / 68 m	24,030 lb / 223 ft
Friction bar Φ445×5×16	11,500 kg / 73 m	25,353 lb / 239 ft

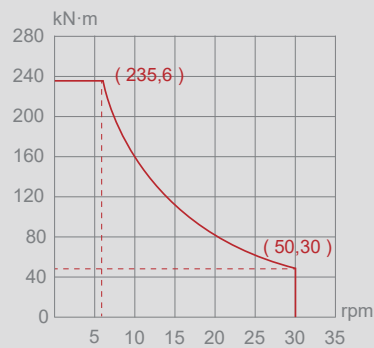
Remarks: ① Standard

## CFA Configurations

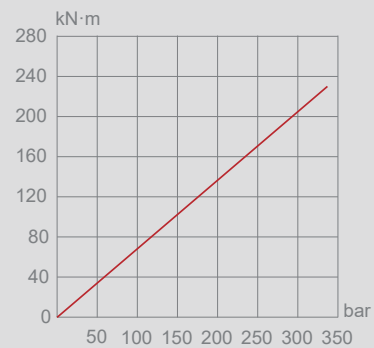
⇒	Kelly	⇒	Auger	⇒	Casing
○	6 m kelly	○	6 m- Φ400	○	Φ400 Casing
●	9 m kelly	○	6 m- Φ500	●	Φ600 Casing
⇒	Drilling tools	●	6 m- Φ600	○	Φ800 Casing
○	Φ400	○	6 m- Φ800	○	Φ1,000 Casing
○	Φ500	○	6 m- Φ1,000	⇒	Auger cleaner
●	Φ600	○	7.2 m- Φ600	○	Φ400
○	Φ800	○	7.2 m- Φ800	●	Φ600
○	Φ1,000	○	7.2 m- Φ1,000	○	Φ800
⇒	Rotary drive	○	Grouting system	○	Φ1,000
●	Ajustable rotary drive torque	○	Crowd system	●	Alarm system

● standard ○ optional

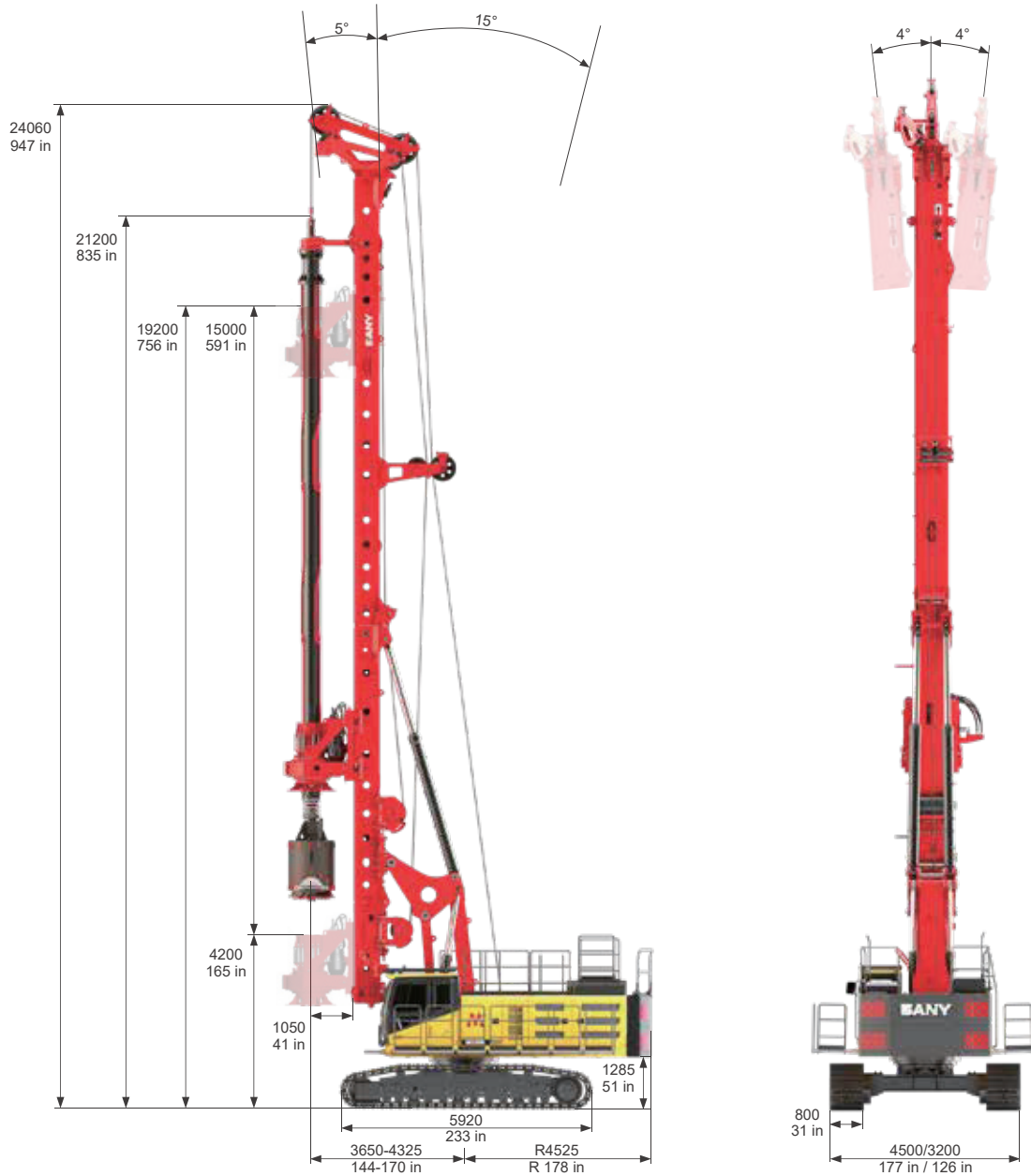
## Rotary Torque Diagram



Torque-rotary speed diagram (Kelly mode)

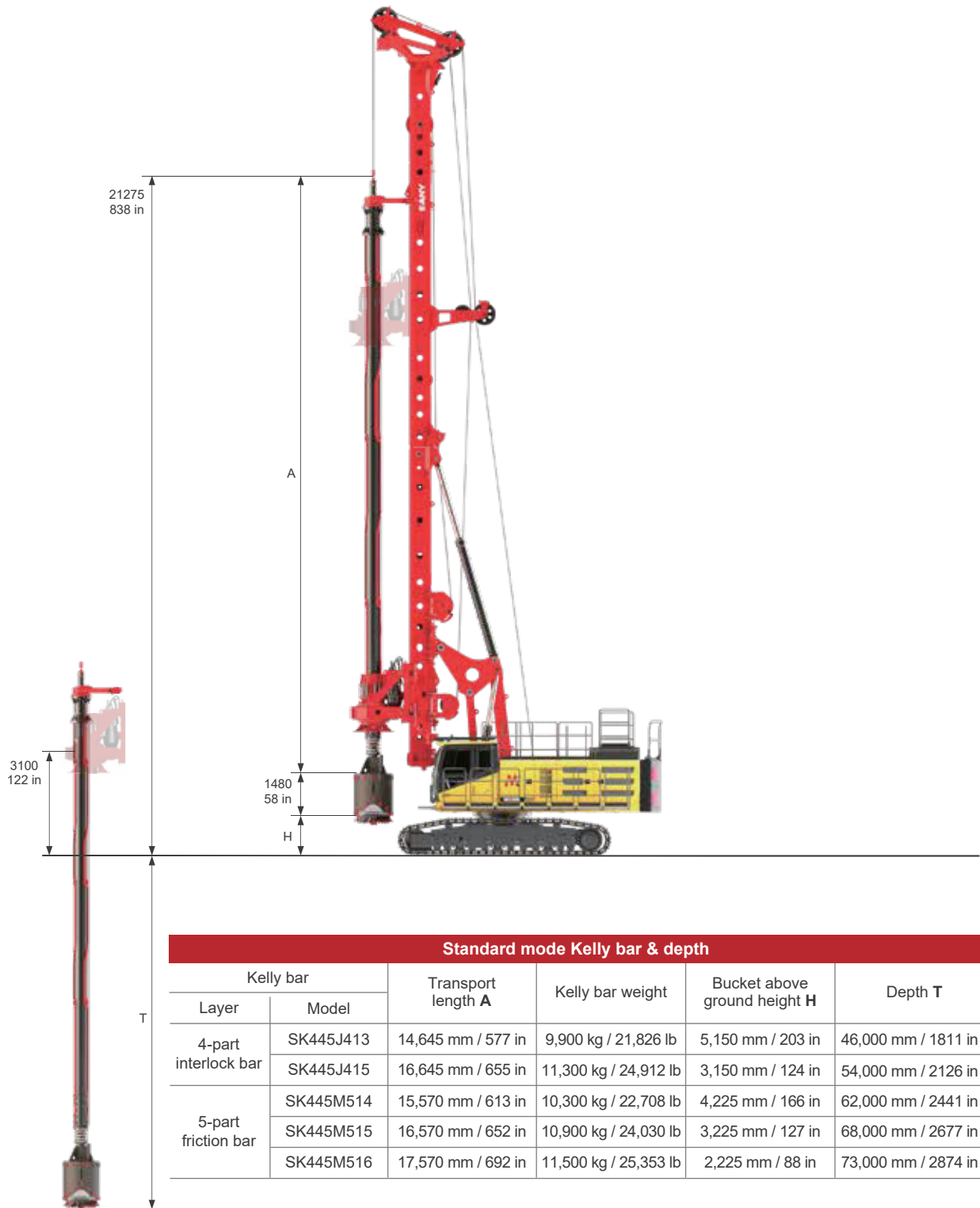


Torque-pressure diagram (Kelly mode)



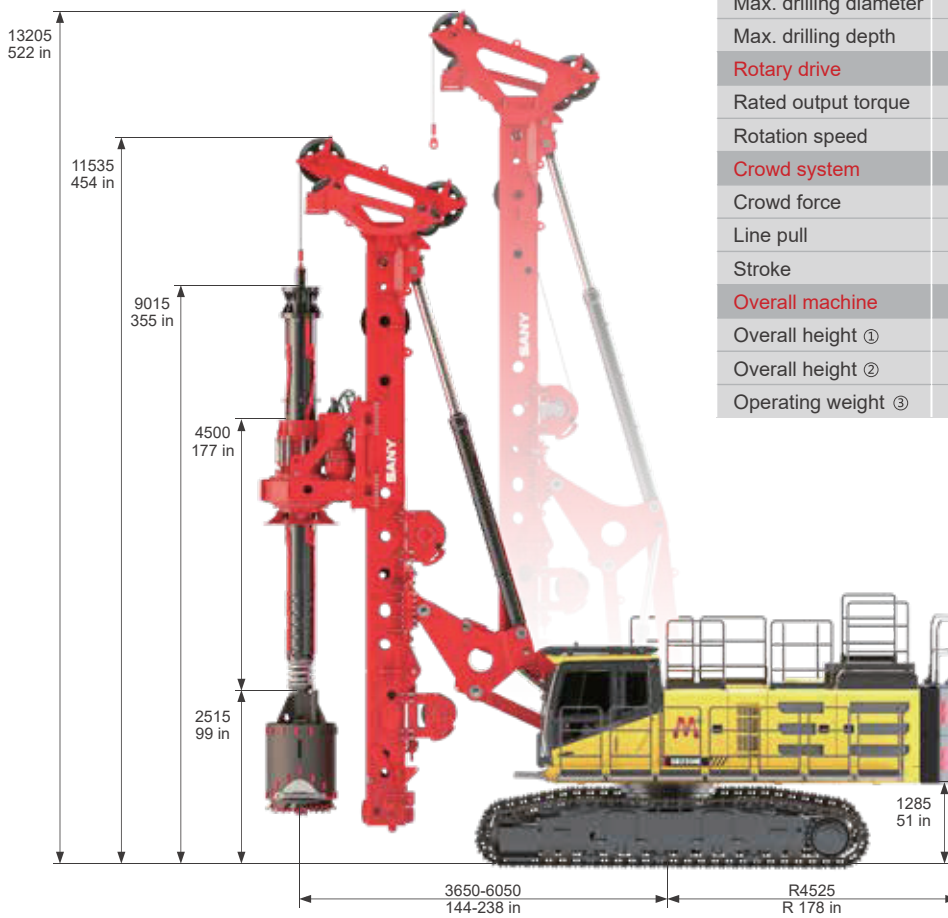
**Kelly bar**

• Max. pile diameter	2,000 mm	79 in
• Max. pile depth	58 m ( Interlock bar ) / 73 m ( Friction bar )	191 ft / 240 ft
• Crowd force push	210 kN	47,210 lbf
• Crowd force pull	270 kN	60,698 lbf
• Stroke	15,000 mm	591 in
• Main winch max. line pull	235 kN	52,830 lbf
• Auxiliary winch max. line pull	80 kN	17,985 lbf



**Low headroom mode**

Multiple mast sections with standard connector, customized length based on requirements.



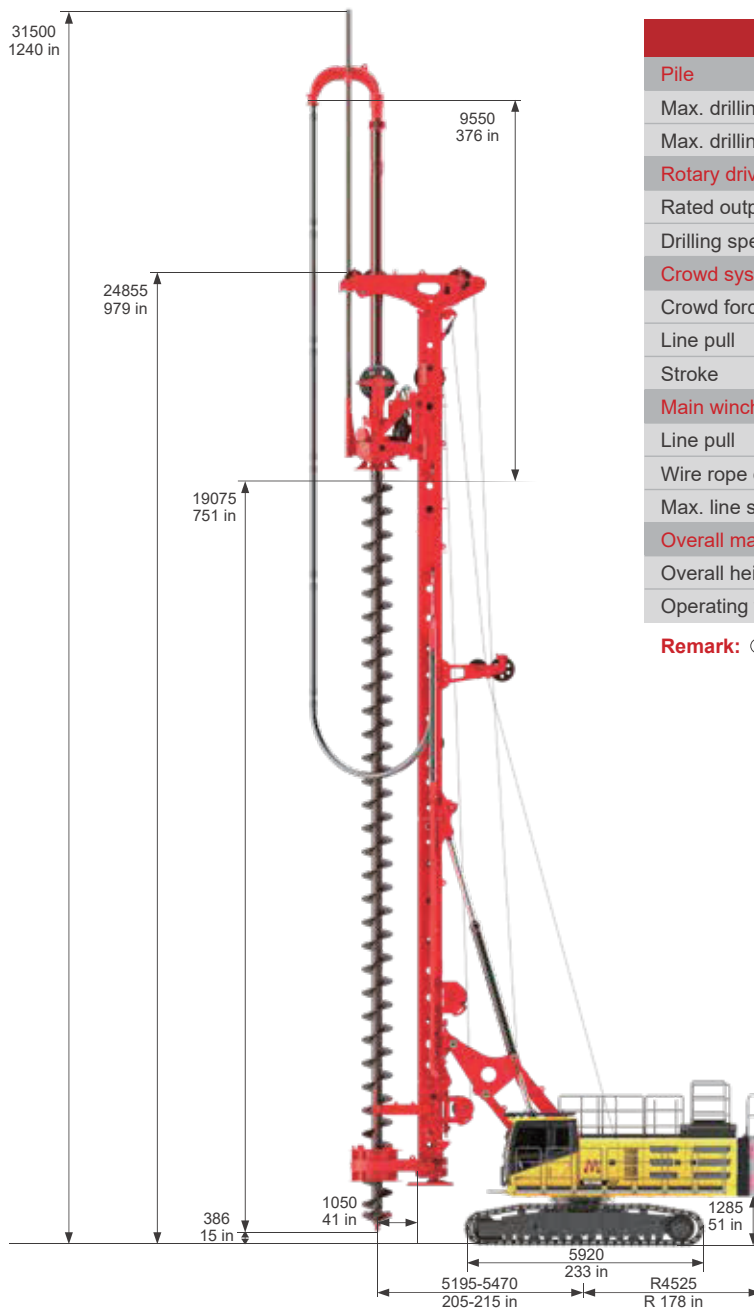
Low headroom		
<b>Pile</b>		
Max. drilling diameter	2,000 mm	79 in
Max. drilling depth	24 m	78.7 ft
<b>Rotary drive</b>		
Rated output torque	235 kN·m	173,327 lbf ft
Rotation speed	5~30 rpm	5~30 rpm
<b>Crowd system</b>		
Crowd force	210 kN	47,210 lbf
Line pull	270 kN	60,698 lbf
Stroke	4,500 mm	177 in
<b>Overall machine</b>		
Overall height ①	13,205 mm	522 in
Overall height ②	11,535 mm	454 in
Operating weight ③	75,000 kg	165,347 lb

Kelly bar	Weight	Depth	Option
Interlock kelly $\Phi 445 \times 4 \times 6$	5,570 kg	18 m	
	12,280 lb	59 ft	
Friction kelly $\Phi 445 \times 5 \times 6$	4,800 kg	24 m	Standard
	10,582 lb	78.7 ft	

**Remarks:** ① The boom at highest location. ② The boom at lowest location. ③ With standard kelly bar.

### CFA mode

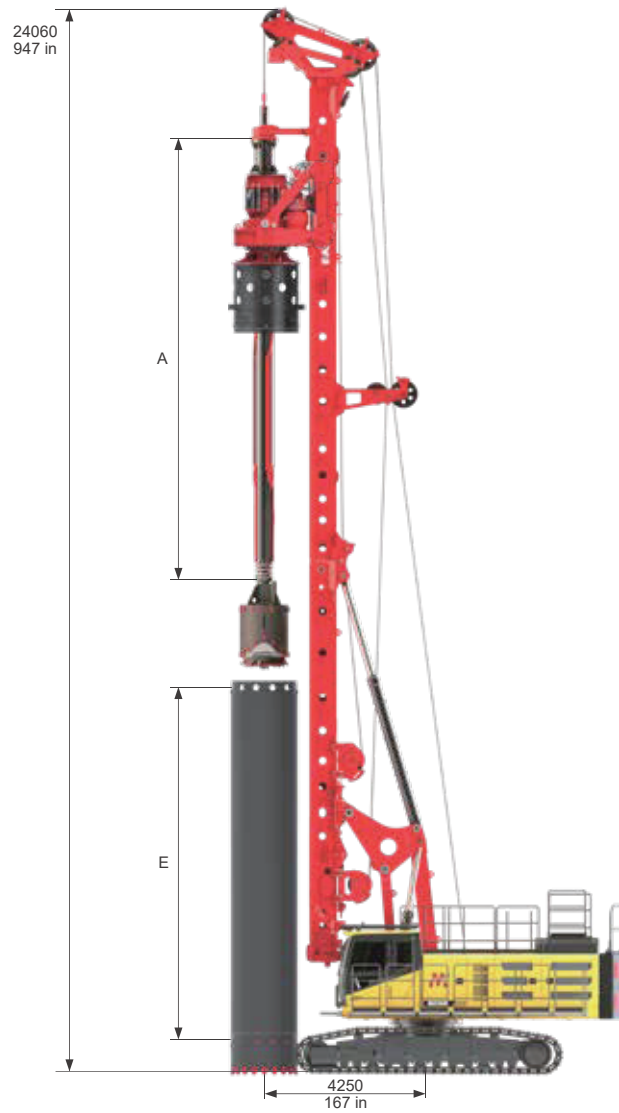
CFA construction management system is highly integrated with the main control program in one screen. Warning of abnormal CFA construction. Cloud storage of construction record data, such as pile number, hole depth and time. It's convenient for construction management.



CFA mode		
<b>Pile</b>		
Max. drilling diameter	1,000 mm	39.4 in
Max. drilling depth	25.5 m	83.7 ft
<b>Rotary drive</b>		
Rated output torque	100~230 kN·m	73,756~169,639 lbf ft
Drilling speed	5~30 rpm	5~30 rpm
<b>Crowd system</b>		
Crowd force	210 kN	47,210 lbf
Line pull	/	/
Stroke	17,000 mm	669 in
<b>Main winch</b>		
Line pull	800 kN	179,850 lbf
Wire rope diameter	32 mm	1.26 in
Max. line speed	17.5 m/min	57.4 ft/min
<b>Overall machine</b>		
Overall height ①	31,500 mm	1,240 in
Operating weight	90 t	198,416 lb

**Remark:** ① With pipe.

### Casing Kelly Drilling

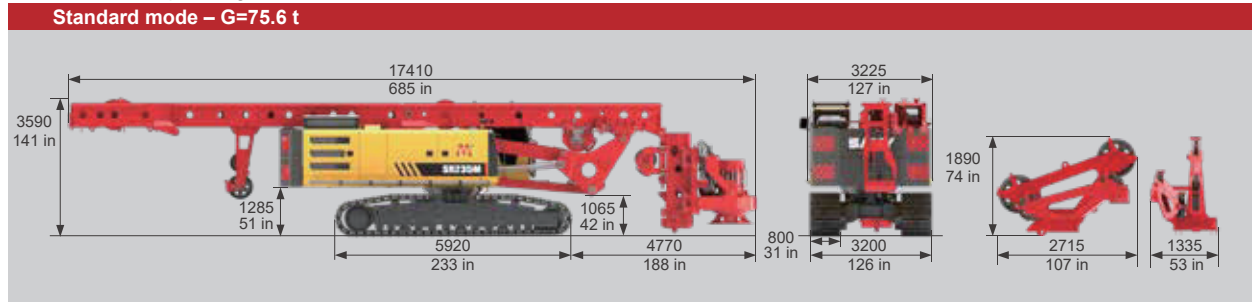


Kelly bar Specifications	Maximum depth		Casing length with Casing oscillator E		Casing length with Casing adaptor E	
	m	ft	m	ft	m	ft
SK445J409	29 m	95.1 ft	7 m	23.0 ft	8 m	26.2 ft
SK445J410	33 m	108.3 ft	6 m	19.7 ft	7 m	23.0 ft
SK445J411	37 m	121.4 ft	5 m	16.4 ft	6 m	19.7 ft
SK445J412	42 m	137.8 ft	4 m	13.1 ft	5 m	16.4 ft
SK445J413	46 m	150.9 ft	3 m	9.8 ft	4 m	13.1 ft
SK445J414	50 m	164.0 ft	2 m	6.6 ft	3 m	9.8 ft
SK445J415	54 m	177.2 ft	1 m	3.3 ft	2 m	6.6 ft

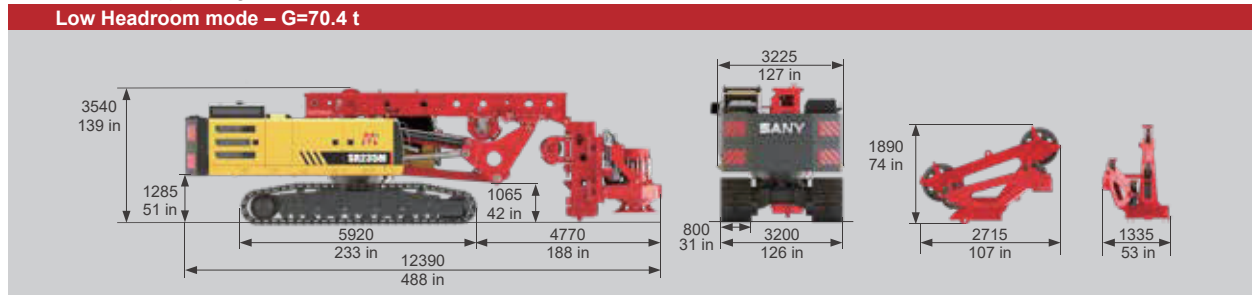


### TRANSPORT DATA- DIMENSIONS AND WEIGHTS

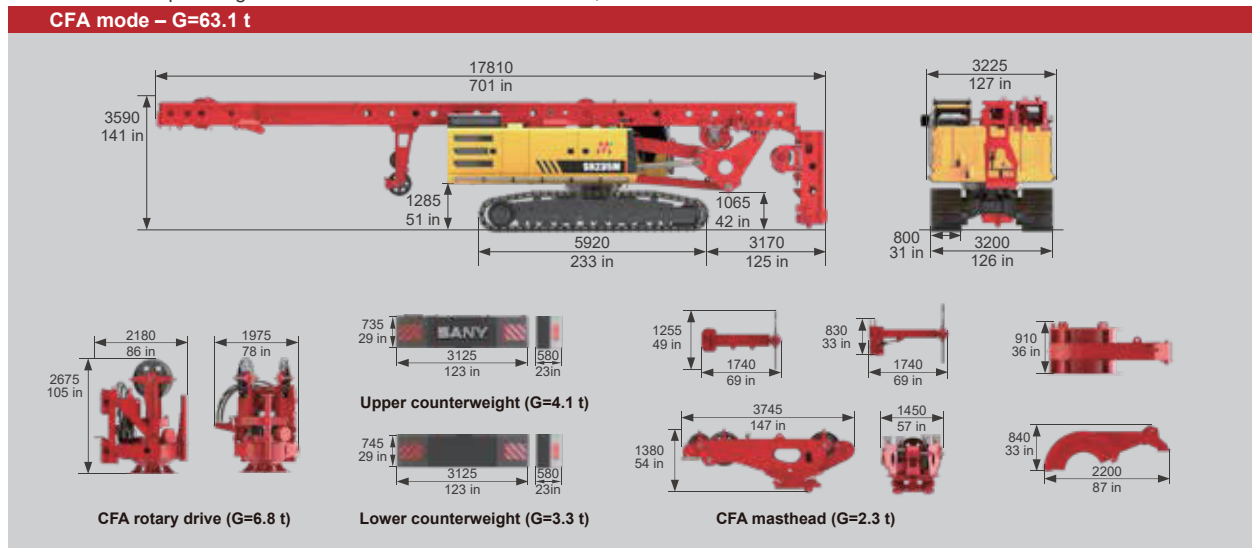
Standard Transportation size		
Transport weight	75.6 t	166,669 lb
Transport length	17,410 mm	685 in
Transport width	3,225 mm	127 in
Transport height	3,590 mm	141 in



Standard Transportation size		
Transport weight	70.4 t	155,205 lb
Transport length	12,390 mm	488 in
Transport width	3,225 mm	127 in
Transport height	3,540 mm	139 in



CFA Standard Transportation size		
Transport weight	63.1 t	139,111 lb
Transport length	17,810 mm	701 in
Transport width	3,225 mm	127 in
Transport height	3,590 mm	141 in



**SR235M CONSTRUCTION CASES**



SR235M Low Headroom in Singapore



SR235M in UK



SR235M CFA Mode worked in Singapore Changi airport. Customer gave high praise for performance and fuel consumption.



SR235M CFA Mode in Singapore Moulmein RISE 27# project

# SANY INTERNATIONAL CONSTRUCTION CASES



SR235M in casing mode



SANY SR250 in Holland



SR285R Casing construction method works in Turkey



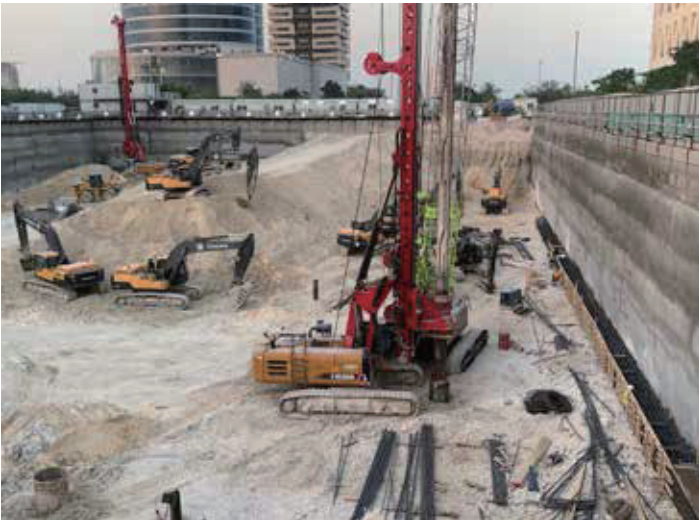
SR285R reported by Turkey newspaper



Overseas export



SR365R in Singapore



Two sets of SR285RW in Qatar



SR360R in Georgia



SR235 in Hungary



SR150 in Egyptian port



SR150 in SUDIMAT Company of France



Indonesia high speed railway construction project



SR285R in Myanmar



SR285R at Uzbekistan railway project

### Service Network/Parts Warehouses

● Parts Warehouses

▲ Service Network





## SERVICE COMMITMENTS

One machine one parts manual.  
Global service inspection patrolling is carried out every season.

One month's special service for new machine, including new machine assembling, commissioning, delivery inspection and operator training.

Professional training for oversea clients holds in China twice a year.

Provide service cards and service stickers, set up Global Customer Support Hotline and Global Customer Support Email.

At present, the sales and service system has been established in 30 countries.

280 overseas customer support engineers are working overseas.

Set up 22 oversea parts warehouses, with more than 3,000 kinds of spare parts can be selected by customers.



Global Customer Support Hotline :

**0086-4006-09-8318**

Global Customer Support Email :

**crd@sany.com.cn**



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