Технические характеристики и описание буровой установки SANY SR150

Все инструкции и документацию к Спецтехнике и оборудованию из Китая Вы можете найти на нашем сайте: russ-import.ru

Вы можете приобрести спецтехнику в наличии и под заказ сайте:

russ-import.ru

Тел. +7-914-600-40-40

Тел. +7-914-600-90-90
In 2005, Beijing Sany passed the certification of Rhine Company of Germany.

In 2006, Sany SR220C Rotary Drilling Rig passed the CE certification of Rhine Company of Germany.

Add: SANY Industrial Region, Beiqing Road, Huilongguan, Changping District, Beijing, P. R. China
Sales hotline: +8610 80727122        Service hotline: +8610 80706787
Zip code: 102206      Website: www.bjSany.com

© The copyright is reserved by SANY.
All rights reserved. All texts, photos and illustrations contained in (not limited to) this brochure belong to SANY and no part of this publication may be reproduced, modified, used, or distributed in any way or for any commercial or public purposes without the authorization of SANY. SANY and SANY logo are the trademark of SANY group worldwide, no person may use any of them without written permission of SANY. Other trademarks and logos involved in this publication belong to their owner. Technology and products improvements may result in difference between your machine and what is presented here. Optional equipment may be demonstrated in this brochure.
Superior performance
Energy-saving & High efficiency
Safe & Reliable
Service guarantee
### Contents

- **P4** Electrical system  
- **P5** Hydraulic system  
- **P6** Mechanical system  
- **P7** High reliability  
- **P8** Durability and economy  
- **P9** Wide application range  
- **P12** World’s largest foundation machinery supplier  
- **P13** Working dimensions  
- **P14** Transport dimensions  
- **P15** Technical specifications  
- **P17** Spare parts specifications  
- **P19** Overseas service  
- **P21** Sany rotary drilling rig family

Sany rotary drilling rig is widely used in urban high-rise buildings, railways, highways, bridges, airports, ports and other bored pile foundation construction, features wide application range, high working efficiency, stable performance, perfect customer support, energy saving and environment-friendly, which now has became the most famous brand in China.
INNOVATION HISTORY OF SANY ROTARY DRILLING RIG

2003  First heavy power hydraulic rotary drilling rig, it broke the technology blockade of the developed country.

2004  Sany SR220C rotary drilling rig piled the first borehole at the construction of the National Stadium “Bird's Nest”.

2005  In 2004 and 2005, Beijing Sany passed ISO 9001 and CE certifications and became the first Chinese rotary drilling rig manufacturer to obtain such certifications.

2006  Beijing Sany became the biggest rotary drilling rig manufacturer and supplier in Asia.

2007  With Sany SR220R rotary drilling rig rolling off the production line, Beijing Sany became the first winch crowded rotary drilling rig manufacturer in China.

2008  SR360 was developed independently and Beijing Sany became one of the top level rotary drilling rig manufacturers around the world.

2009  The successful developing of SR 420 rotary drilling rig completely changed the pile foundation designing in China, and signified the rotary drilling rig manufacturing in China steps from “Made in China” to “Created in China”.

2010  Beijing Sany has developed and sold more than 1000 units of rotary drilling rig, ranking the first in China again. And the record is being updated all the time.
**Electrical system**

- **Integrated circuits**
  Integrated circuits eliminate wire connecting failures, and also bring convenient maintenance.

- **SYS**
  Monitor machine working conditions and improve operation safety.

---

**GPS Remote Monitoring**

- Realize remote customer support with wireless transmission of data.
- 3G communication technology greatly increases the transmission speed and transmission capacity.
- Realize remote recording and fault diagnosis with complex fault diagnosis algorithm.
- M2M fleet service.
- GPS, wireless networks, mobile link.

---

**INNOVATION HISTORY OF SANY ROTARY DRILLING RIG**

- ECC
- Sany service personnel
- Common problems
- Significant information
- Customers
- GPS
- Equipment management
  - On-site status information
- Faults
- Problem-solving
- Construction machinery

---

**Construction machinery**

- Dynamic center
- Static center
- X
- Y
- Z
- A
- C
- L
- P1
- P2
- P3
- N1
- N2
- R
- W
- Y
- a1
- a2
- a3
- a4
Hydraulic system

Sophisticated hydraulic system
- Save energy and realize accurate action control.
  Main loop adopts sophisticated negative hydraulic control system and assistant loop adopts advanced load-sensitive control system, which saves energy and ensures accurate action control.

Negative hydraulic control system

Ground touching protection
- Prevent the wire rope from disordering when the main winch is rapidly releasing.
  When the drilling bucket is released to the pile hole bottom, controller of the hydraulic system automatically cuts oil supply to the main winch motor, avoids wire rope disordering caused by over-releasing.

Main winch automatic releasing control
- Releasing speed increased by 50%.
  Main winch wire rope releasing adopts hydraulic confluence technology, which doubles the releasing speed and decreases ineffective working time.

Main winch floating function
- Easy operation and manual controlled
  Floating function enables the drilling to be done without the hoisting of the main winch, which simplifies operation and saves energy.
Mechanical system

Wide application range, high reliability

- Considering the high gravity center and heavy weight, undercarriage adopts reinforced slew bearing to ensure stability while mast standing and lowering.

- Machine welded and high strength steel, undercarriage frame fulfils complicated rotary drilling requirements.

- Sany Kelly bar is made with high strength structural steel tube, and stress concentration area takes special structure, effectively prolongs service life.

- Reasonable designing makes the best of robust Isuzu diesel engines output.

- Brevini, Bonfiglioli rotary drive reducers and famous motors like Rexroth and so on, can adjust speed and torque output automatically according to the real geological condition, perform excellent working efficiency at any working condition.

- Machine welded and high strength steel, undercarriage frame fulfils complicated rotary drilling requirements.

- Sany Kelly bar is made with high strength structural steel tube, and stress concentration area takes special structure, effectively prolongs service life.

- Reasonable designing makes the best of robust Isuzu diesel engines output.

- Brevini, Bonfiglioli rotary drive reducers and famous motors like Rexroth and so on, can adjust speed and torque output automatically according to the real geological condition, perform excellent working efficiency at any working condition.

- Pumps like Kawasaki guarantee plenteous power supply at all the time.

- Sany provides on-site drilling tools modification and customized drilling tools developing to ensure high efficient drilling.
Safety equipments

- Various safety equipments provide comprehensive protection

  - **Cab anti-collision function:**
    Avoids possible collision between mast and cab.

  - **Main winch monitoring system:**
    Provides lighting and monitors the main winch real timely with a camera.

  - **Radar slew protection:**
    Camera and radar sensor eliminate the invisible zone, assure back off and slew safety.

  - **Caution light:**
    Indicate the machine position and height.

  - **Anemometer**
    Measure the wind speed, avoid possible accidents caused by strong wind.

  - **Inclinometer TY-60:**
    Measure the mast angle and ensure mast verticality.

  - **Gradienter SC0-3:**
    Display undercarriage angle and ensure that the machine works at level position.

  - **Cord switch FD676**
    Limit auxiliary winch hoisting height and avoid the pulley yoke from collision.

  - **Auxiliary wireless Control System**
    Reduce labor intensity and improve construction safety.

High Reliability
Durability and economy

To fulfill the increasing requirements of energy saving, SR150C has been improved continually to get the perfect balance of production efficiency and use-cost.

Patented rope holder technology prevents the rope from disordering and skipping, which effectively increases wire rope service life.

Closed loop control with normal speed gear and low speed gear, the distribution of rotary drive output torque and power is more reasonable and more energy efficient.

Patented interchangeable and symmetrical Kelly drive adapter with reliable heat treatment technology, doubly increases the service life of Kelly drive adapter and also features easy maintenance and low cost.

Special designed confluence module for main winch releasing with scaling up principle can greatly increase main winch releasing speed.

Special lubrication system of the rotary drive reducers effectively prolongs rotary drive service life.

Auxiliary wireless Control System

Reduce labor intensity and improve construction safety
Wide Application Range

City rail transit, railroad, highway, water conservancy & electric power project, airport, civil foundation engineering and so on.
Lanxin (From Lanzhou to Sinkiang) Railway

Xibao (From Xi’an to Baoji) Railway

Qatar

Egypt port

Russia

Libya

Dubai

Anqing Yangtze River Railway Bridge

Dubai

Xibao (From Xi’an to Baoji) Railway

SANY Rotary Drilling Rig
World’s largest rotary drilling rig production line
Modern rotary drilling rig production line with the world's largest production capacity and highest automation level.
World’s top laser welding robots, CNC accessory machining center and world-class production line guarantee best manufacturing process and best rotary drilling rig.
World's largest foundation machinery supplier

In 2008, SANY group invested 8 billion RMB in building Beijing Sany manufacturing center. Nankou industrial park is an important part of this center, with 80,000 square meters plant area, total investment of 1.5 billion RMB and planned production capacity of 1,200 units per year. It will become the first rotary drilling rig production line with the largest production capacity and highest modernization degree.
Working dimensions
Transport dimensions (rotary drive assembly)

Transport dimensions (without rotary drive)

Rotary drive
### Technical Specifications

Max. output torque: 150kN.m  
Max. drilling dia: 1.5m  
Max. drilling depth: 55m

#### SR150C

<table>
<thead>
<tr>
<th>Unit</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Drilling Dia.</td>
<td>mm</td>
</tr>
<tr>
<td>Max. Drilling Depth</td>
<td>m</td>
</tr>
<tr>
<td>Largest torque</td>
<td>kN.m</td>
</tr>
<tr>
<td>Speed of rotary drive rotation</td>
<td>rpm</td>
</tr>
<tr>
<td>Max. push</td>
<td>kN</td>
</tr>
<tr>
<td>Max. pull</td>
<td>kN</td>
</tr>
<tr>
<td>Crowd stroke</td>
<td>mm</td>
</tr>
<tr>
<td>Mast sideward</td>
<td>°</td>
</tr>
<tr>
<td>Mast forward</td>
<td>°</td>
</tr>
<tr>
<td>Main winch pull (1st layer)</td>
<td>kN</td>
</tr>
<tr>
<td>Main winch wire rope dia.</td>
<td>mm</td>
</tr>
<tr>
<td>Max. main winch line speed</td>
<td>m/min</td>
</tr>
<tr>
<td>Aux. winch pull (1st layer)</td>
<td>kN</td>
</tr>
<tr>
<td>Aux. winch wire rope dia.</td>
<td>mm</td>
</tr>
</tbody>
</table>

#### Engine

<table>
<thead>
<tr>
<th>CC–6BG1TRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine power</td>
</tr>
<tr>
<td>Style</td>
</tr>
<tr>
<td>Intake form</td>
</tr>
<tr>
<td>Fuel</td>
</tr>
<tr>
<td>Emission regulation</td>
</tr>
<tr>
<td>NO. of cylinder–bore x stroke</td>
</tr>
<tr>
<td>Displacement</td>
</tr>
<tr>
<td>Compression ratio</td>
</tr>
<tr>
<td>Rated power</td>
</tr>
<tr>
<td>168hp@2100rpm</td>
</tr>
<tr>
<td>Max. output torque</td>
</tr>
<tr>
<td>864lbf.ft@1800rpm</td>
</tr>
</tbody>
</table>
### Chassis 

<table>
<thead>
<tr>
<th></th>
<th>SY230RC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of chassis</td>
<td>mm</td>
<td>6310</td>
</tr>
<tr>
<td>Operating width</td>
<td>mm</td>
<td>4,100</td>
</tr>
<tr>
<td>Crawler width</td>
<td>mm</td>
<td>700</td>
</tr>
<tr>
<td>Swing radius (foreside/backside)</td>
<td>mm</td>
<td>5,160/3,980</td>
</tr>
<tr>
<td>Transport width</td>
<td>mm</td>
<td>3,400</td>
</tr>
<tr>
<td>Transport height</td>
<td>mm</td>
<td>3,225</td>
</tr>
<tr>
<td>Traction force</td>
<td>kN</td>
<td>220</td>
</tr>
<tr>
<td>Total weight (with standard Kelly bar)</td>
<td>ton</td>
<td>45</td>
</tr>
</tbody>
</table>

### Standard equipment/Optional equipment

<table>
<thead>
<tr>
<th>Standard equipment/Optional equipment</th>
<th>Standard</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mast verticality measuring</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Slew angle measuring</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Drilling depth real time measuring</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Main winch pull measuring</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Oil pressure measuring device</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>GPS/GPRS data transmission</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Engine diagnose system</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>PLC control module</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Manual mast adjusting device</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Auto mast verticality adjusting function</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Main winch floating control</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Electric control diesel pump</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Auto idle model</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>All directional Gradenter</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Cab collision protection</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Electric protection module</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Main winch bottom-touching protection</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Slew siren</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Aux. winch protection device</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Mast sideward limiters</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Display monitor</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Fault displaying function</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Main winch lighting</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Pile lighting</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Air–conditioner</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Radio</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Derricking angle measuring</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Crowding force measuring device</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Rotary drive torque output measuring</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Rotary drive speed measuring</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Mast standing/lowering remote controller</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Slurry adding remote controller</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Emergency stop switch</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Main winch camera monitor</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Anemometer</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Caution light</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Radar slew protection system</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
Advantages of Sany Kelly bar

1. Time verified
   Verified by long time using, economic and high efficient, which is widely used in the civil foundation construction.

2. More reliable
   With the most advanced welding robots, CNC automatic cutting machines and other advanced equipments, high components precision and welding quality guarantee high reliability.

3. Longer service life
   Specific debugging filed is established to simulate real Kelly bar working conditions to analyze and improve key parts, like the drive key service life is significantly increased with Sany self developed high strength anti-wearing steel.

4. Optimized structure
   Static analysis, dynamic analysis and fatigue analysis are taken with the most advanced analysis software like ANSYS and ADAMS during the designing process, which optimize Kelly bar with lighter weight and better structure without any missing of the design requirements, dozens of patents have been applied by Sany in this field and this keeps Sany’s leading position in China.

### Optional Kelly bars for SR150C (mm)

<table>
<thead>
<tr>
<th>Model</th>
<th>Retracted length (A)</th>
<th>Extended le</th>
<th>\</th>
<th>13193</th>
<th>φ601</th>
<th>φ377</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friction Kelly bar φ377-5×12m</td>
<td>12390</td>
<td>56552</td>
<td>\</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inter-locking Kelly bar φ377-4×12m</td>
<td>12745</td>
<td>46000</td>
<td>45400</td>
<td>13560</td>
<td>φ601</td>
<td>φ377</td>
</tr>
</tbody>
</table>
SANY special drilling tools

SANY can supply with all kinds of standard drilling tools, including DBB-II, DBB-III, CB and so on. For special formations, SANY can also provide special drilling tools accordingly to improve working efficiency. The latest special drilling tools developed by SANY are as follows.

Drilling tool for karst stratum

3.5m height ensures that small caves not exceed 3m can be penetrated through straightly, without problems like Kelly bar jam or pile inclination.

Bucket for slate layer

Built-in spiral structure crushes rocks while the teeth around the bucket cuts, as spiral structure can bring the cuttings up, bottom cleaning bucket is not needed, which simplifies the drilling process.

Belling bucket

The bearing capacity of bored piles can be increased significantly by enlarging the pile base, and greatly reduce construction cost.

Bucket for gravel layer

Double-layer (triple-layer) bucket is designed for drilling medium size pebbles, which adopts the "squeeze" idea, pebbles of different sizes are squeezed and compacted in the bucket before being taken out. Considering drilling efficiency and wearing of drilling teeth, this kind of bucket is obvious better than others.

SANY drilling teeth

Compare with other drilling teeth, SANY drilling teeth features the following characteristics.

Better material. After many times of material testing, the wear resistance and the strength of SANY teeth are more than 30% higher than the general products in the market.

Construction based designing. SANY V19 drilling teeth has larger cutting angle and has higher working efficiency. SANY drilling bullet is more adaptive to pebble, gravel and soft rock geological formations.
Overseas Service

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

1–2 months 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:
0086–10–80706787

Global Customer Support Email:
rigservice@sany.com.cn
SANY ROTARY DRILLING RIG FAMILY

Hydraulic Rotary Drilling Rig

SR100
Max. Drilling Depth: 40m
Max. Drilling Dia: 1250mm

SR120
Max. Drilling Depth: 41m
Max. Drilling Dia: 1500mm

SR150C
Max. Drilling Depth: 55m
Max. Drilling Dia: 1800mm

SR200C
Max. Drilling Depth: 58m
Max. Drilling Dia: 2300mm

SR220C
Max. Drilling Depth: 66m
Max. Drilling Dia: 2300mm

SR250
Max. Drilling Depth: 70m
Max. Drilling Dia: 2300mm

SR360 II
Max. Drilling Depth: 90m
Max. Drilling Dia: 2500mm

SR420 II
Max. Drilling Depth: 110m
Max. Drilling Dia: 3000mm
**Rig with Winch Crowd system**

SR460
Max. Drilling Depth: 120m
Max. Drilling Dia: 3500mm

SR250R
Max. Drilling Depth: 70m
Max. Drilling Dia: 2300mm

SR280R
Max. Drilling Depth: 84m
Max. Drilling Dia: 2500mm

SR280R II
Max. Drilling Depth: 84m
Max. Drilling Dia: 2500mm

**Rotary Drilling Rig With CFA System**

SR150M
Max. Drilling Depth: 17m
Max. Drilling Dia: 750mm

SR200M
Max. Drilling Depth: 20m
Max. Drilling Dia: 800mm

SR250M
Max. Drilling Depth: 23m
Max. Drilling Dia: 800mm

SR280M
Max. Drilling Depth: 24m
Max. Drilling Dia: 800mm