

智能
铁钻工
Smart
Wrench

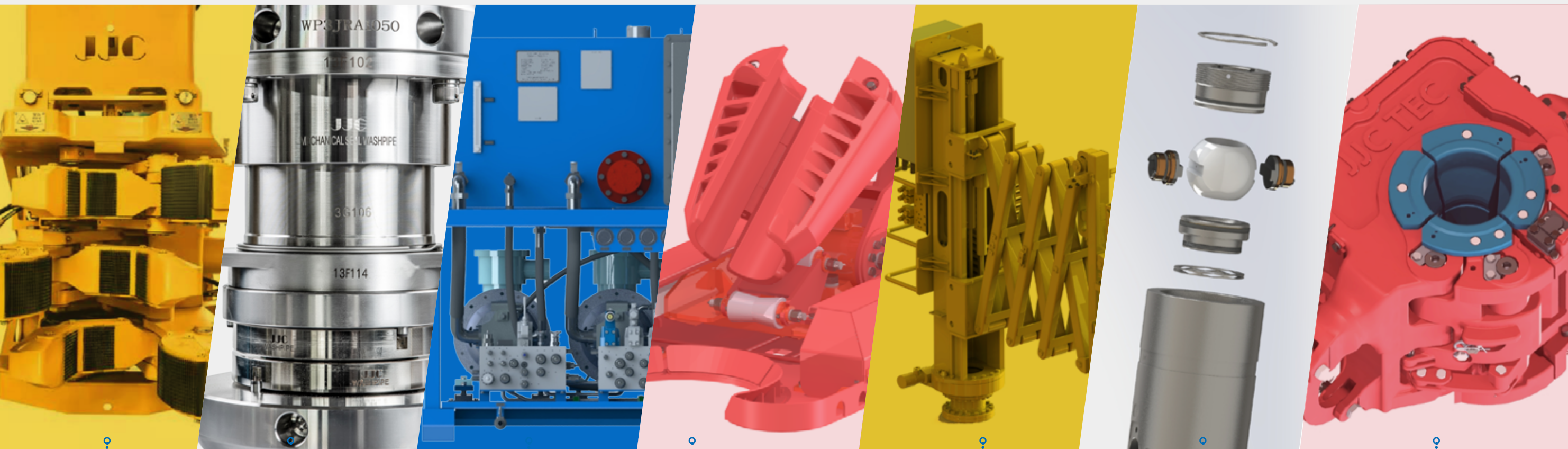


自主研发产品

Product Development

我们坚持以创造客户价值为目标，努力技术创新。公司自主研发产品系列均拥有国内外专利，领先国际先进水平，深受用户喜爱。

We pursue the creation of customer value and strive for technological innovation. Our independent product series with patents domestically and abroad are leading the industry and appraised by users around the world.



智能铁钻工
Smart Wrench

高性能机械密封冲管
Mechanical Seal Washpipe

综合液压动力站
Hydraulic Power Unit

卡瓦提放装置
Powered Slip Handler

钻杆防喷洁扣机
Automated Doper & Mud Bucket

高性能 IBOP
Inner Blowout Preventer

液压吊卡
Hydraulic Elevator

智能铁钻工 Smart Wrench

JJC 智能铁钻工是用于石油天然气钻井管具接头上卸扣和旋扣作业的钻台机器人。本设备采用了新型的能够快速并安全地完成管具上卸扣和旋扣的作业方法，耐用、易于安装、操作及维护。

The smart wrench is an automatic equipment used for making up and breaking out the joints of oil drilling pipes. This equipment adopts innovative working principle, which can quickly and safely carry out the making up and breaking out operation. It is small sized, lightweight, reliable and durable, and easy to use and maintain.

效率 Efficiency



与相同级别的设备相比，体积重量最小，作业效率更高，所需压力等级最低，安全性能更高。

Compared with similar products, it has the minimum envelop size and weight, but higher operation efficiency and better performance.

可靠 Reliability



模块化结构设计，维护更方便。设备皮实耐用，故障率更低。

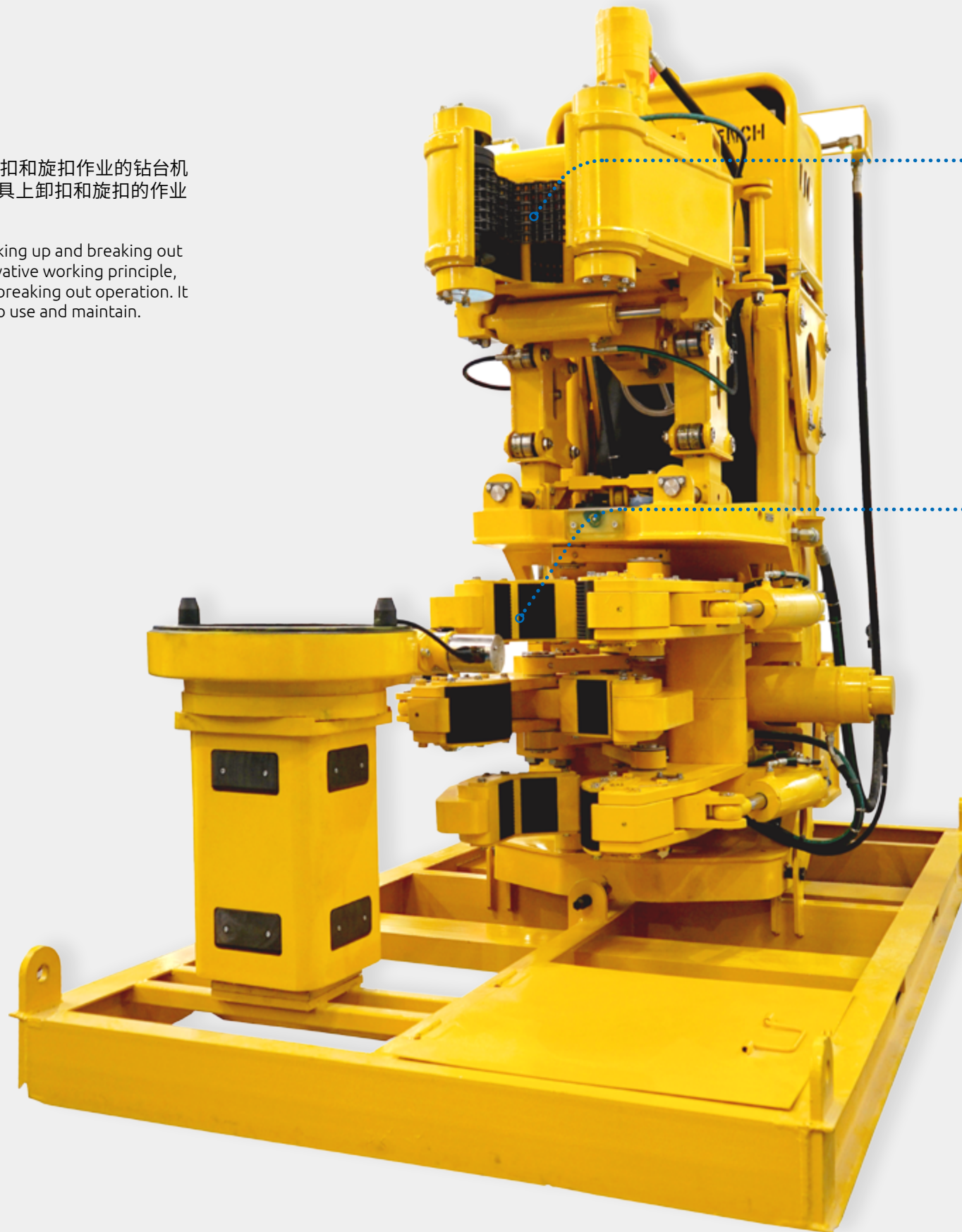
Modular structure design, more convenient for maintenance, durable and robust.

丰富配置 Expandability



低温环境、钻具倾斜、全自动作业等多种配置可选。本地、遥控、司钻和集成控制选项，满足新造自动化钻机 and 老钻机自动化改造需求。

Various optional kits for demanding applications: low-temp kit for arctic operation, clamp head linclose kit for land rig, one-touch operation mode control kit, retrofit kit for land/offshore rig integrated control system. (standalone control is standard)



50%

Longevity



加强的设备结构和传动机构，升级高强度钳牙和旋扣链条，寿命延长 50%。

Reinforced structure and strengthened transmission system, high-strength tong jaw and spinning chain, service life prolonged by 50%.

Min

Low Wear

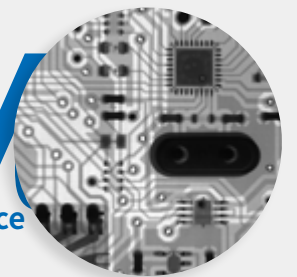


专利技术的连续链式旋扣钳有效地解决了旋扣机构对管体的损伤。专利技术冲扣钳结构采用快抓管钳原理，自适应不同管具尺寸，管具夹持范围内无需更换钳牙或牙座，最大限度地减轻钳牙对管具接头的损伤。

Patented continuous chain spinner effectively reduces damage to the pipe. Patented torque wrench using the principle of quick grasping pipe tongs adapts to different pipe sizes, eliminating the need to replace tongs, and minimizing damage to pipe joints.

99%

High Intelligence



机器视觉升级包，通过深度学习算法智能识别钻具接头，实现“一键式”全自动作业，效率大增。

Automatically identifies drilling tool joint with machine vision and deep learning algorithm. The "One Button" fully-automatic mode greatly increases the efficiency of operation.

智能铁钻工

Smart Wrench



SW10-D1

技术参数 TECHNICAL SPECIFICATIONS

适用管具范围 Pipe Range	2-7/8 " DP ~ 9-3/4 " DC
最大旋扣速度 Max. Spin Speed	80 RPM @ 5 " DP
最大旋扣扭矩 Max. Spin Torque	5,000 N·m (3,750 ft-lb)
最大上扣扭矩 Max. Make-up Torque	140,000 N·m (100,000 ft-lb)
最大卸扣扭矩 Max. Break-out Torque	160,000 N·m (120,000 ft-lb)



SW10-E1

技术参数 TECHNICAL SPECIFICATIONS

适用管具范围 Pipe Range	2-7/8 " DP ~ 9-3/4 " DC
最大旋扣速度 Max. Spin Speed	80 RPM @ 5 " DP
最大旋扣扭矩 Max. Spin Torque	5,000 N·m (3,750 ft-lb)
最大上扣扭矩 Max. Make-up Torque	140,000 N·m (100,000 ft-lb)
最大卸扣扭矩 Max. Break-out Torque	160,000 N·m (120,000 ft-lb)



SW12-D1

技术参数 TECHNICAL SPECIFICATIONS

适用管具范围 Pipe Range	2-7/8 " DP ~ 9-3/4 " DC
最大旋扣速度 Max. Spin Speed	80 RPM @ 5 " DP
最大旋扣扭矩 Max. Spin Torque	5,000 N·m (3,750 ft-lb)
最大上扣扭矩 Max. Make-up Torque	140,000 N·m (100,000 ft-lb)
最大卸扣扭矩 Max. Break-out Torque	160,000 N·m (120,000 ft-lb)



SW08-D1

技术参数 TECHNICAL SPECIFICATIONS

适用管具范围 Pipe Range	2-7/8 " DP ~ 9-1/2 " DC
最大旋扣速度 Max. Spin Speed	80 RPM @ 5 " DP
最大旋扣扭矩 Max. Spin Torque	5,000 N·m (3,750 ft-lb)
最大上扣扭矩 Max. Make-up Torque	110,000 N·m (80,000 ft-lb)
最大卸扣扭矩 Max. Break-out Torque	140,000 N·m (100,000 ft-lb)



SW06-D1

技术参数 TECHNICAL SPECIFICATIONS

适用管具范围 Pipe Range	3-1/2 " DP ~ 8 " DC
最大旋扣速度 Max. Spin Speed	80 RPM @ 5 " DP
最大旋扣扭矩 Max. Spin Torque	5,000 N·m (3,750 ft-lb)
最大上扣扭矩 Max. Make-up Torque	80,000 N·m (60,000 ft-lb)
最大卸扣扭矩 Max. Break-out Torque	110,000 N·m (80,000 ft-lb)

* 实际产品与图片可能会存在出入，产品参数可根据客户要求进行定制设计。

铁钻工升级选配

Upgrade Packages

加强型冲扣钳 Enhanced Torque Wrench

- 钳钩整体模锻，提高强度及可靠性
Integral Die-forged wrench improves strength and reliability
- 采用关节轴承，提高灵活性及耐久度
Joint bearing improves flexibility and durability

加强型旋扣钳 Enhanced Spin Wrench

- 选用更大扭矩马达，旋扣扭矩提升 25%
More powerful hydraulic motor, spinning torque increased by 25%
- 旋扣补偿行程增加 50%
Vertical compensation for spinning increased by 50%
- 内立柱升级为一体式，旋扣强度提升 30%
Upgraded structure, strength increased by 30%

升级版液压系统 Upgraded Hydraulic System

- 采用压力补偿控制技术，提高定位的准确度和稳定性
Improved accuracy and stability of positioning
- 增加低温循环加热功能，提高低温环境下的反应速度和控制精度
Improved reaction speed and accuracy in low temperature
- 液压管线布局及管径优化，大幅提高整体作业效率
Optimized hydraulic tubing for improved efficiency

升级版电气系统 Upgraded Electric Control System

- 优化控制逻辑和软件算法，提高整体作业效率
Optimized control logic and algorithm for improved efficiency
- 升级 PLC、采样、通讯等硬件模块，显著提高运算速度及抗干扰能力
Upgraded hardware, for significantly improved speed and interference resistance

全自动铁钻工 Full-automatic Smart Wrench

- 提供位置信息自动定位到作业区域
Provide position message to locate working area
- 机器视觉系统自动识别钻具接头
Automatically locate pipe connectors by machine vision system
- 配套深度学习技术，大幅降低人为误操作几率
Deep learning technology, high accuracy and reliability
- 上卸扣作业时间缩短至 20 秒以内
Work cycle reduced to less than 20 seconds

倾斜管具 Inclined Pipe Option

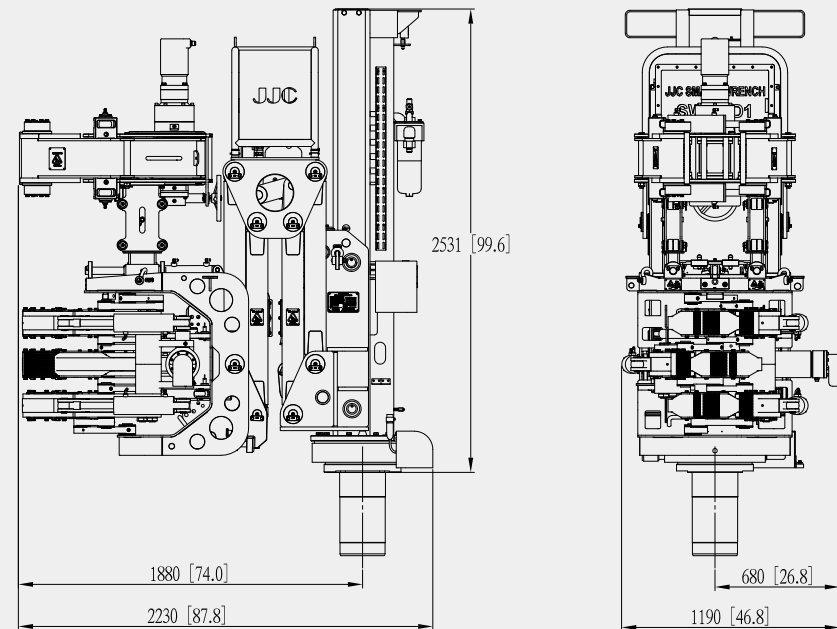
- 可以满足倾斜管具上、卸扣的特殊作业要求。倾斜角度范围 -10~10 度。
- Provide inclining angle between - 10 and + 10 degrees. Meet special requirements of pipe make-up and break-out at inclined positions.

超深井作业 Super-Deep Well Option

- 适合超深井双吊卡作业
- Suitable for dual-elevator operation of super-deep wells

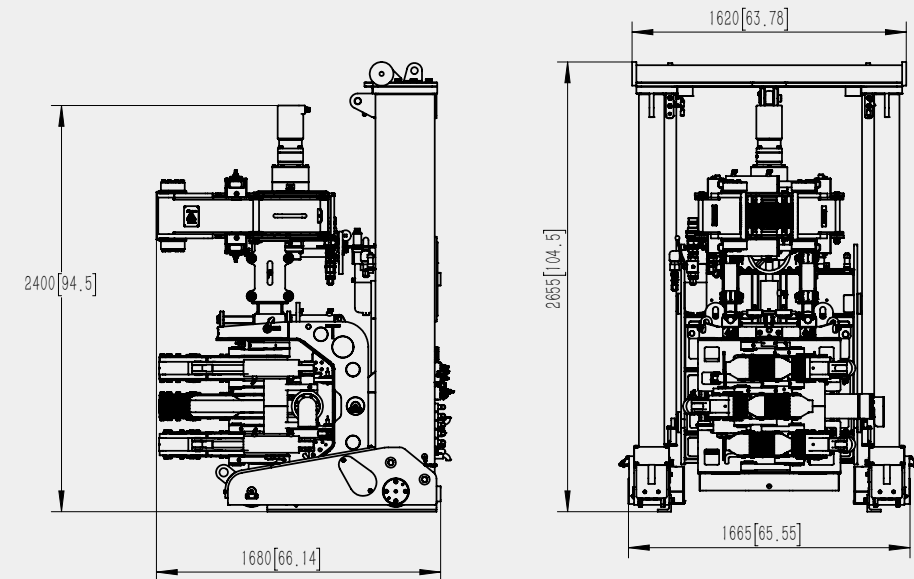
SW10-D1 铁钻工

SW10-D1 SMART WRENCH



SW10-E1 轨道式铁钻工

SW10-E1 SMART WRENCH



技术参数 TECHNICAL SPECIFICATIONS

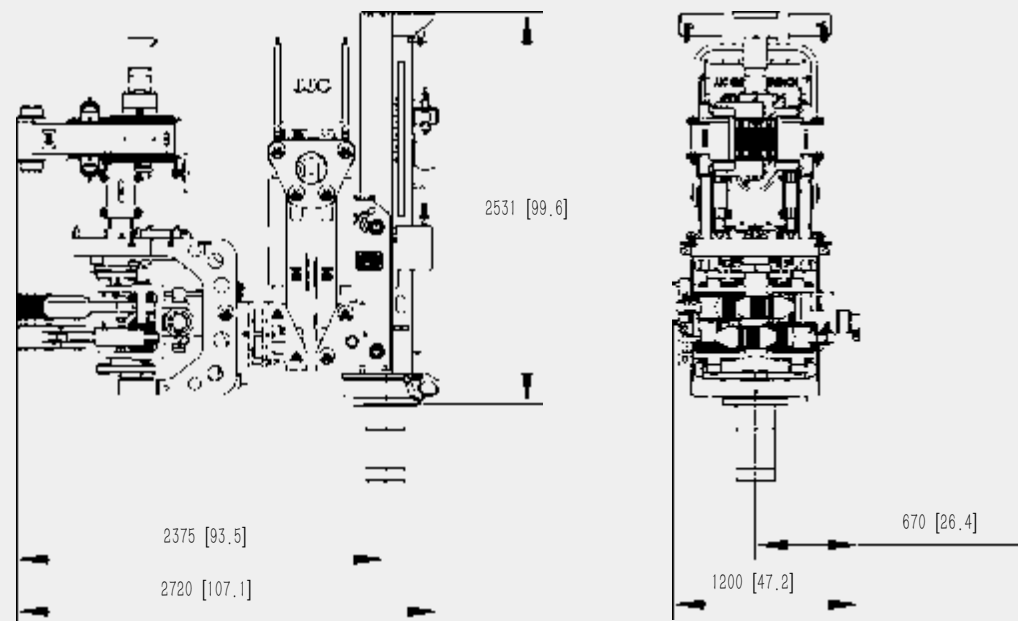
型号 Model	SW10-D1
液动力源要求 Hydraulic Requirement	Rated Pressure: 17.5 MPa (2,500 psi) Max Pressure: 21 MPa (3,000 psi) Rated Flow: 140 LPM (37 GPM) Min Flow: 120 LPM (32 GPM)
适用管具范围 Pipe Range	2-7/8" DP ~ 9-3/4" DC
最大旋扣速度 Max. Spin Speed	80 RPM @ 5" DP
最大旋扣扭矩 Max. Spin Torque	5,000 N·m (3,750 ft-lb)
最大上扣扭矩 Max. Make-up Torque	140,000 N·m (100,000 ft-lb)
最大卸扣扭矩 Max. Break-out Torque	160,000 N·m (120,000 ft-lb)
钻具高度范围 Joint Height	650 mm ~ 1,650 mm (25.6" ~ 65")
水平伸展范围 Horizontal Travel	1,850 mm ~ 3,300 mm (72.8" ~ 129.9")
控制方式 Controls	远程控制和无线遥控 (标配)、集中控制 (选配) Remote Control and Wireless Control (Standard)
外形尺寸 (宽 × 高 × 深) Dimensions (W×H×L)	1,190 mm × 2,531 mm × 2,230 mm (46.7" × 99.6" × 87.8")
总重 Weight	3,700 kg (8,157 lbs)

技术参数 TECHNICAL SPECIFICATIONS

型号 Model	SW10-E1
液动力源要求 Hydraulic Requirement	Rated Pressure: 17.5 MPa (2,500 psi) Pressure: 21 MPa (3,000 psi) Rated Flow: 140 LPM (37 GPM) Min Flow: 120 LPM (32 GPM)
适用管具范围 Pipe Range	2-7/8" DP ~ 9-3/4" DC
最大旋扣速度 Max. Spin Speed	80 RPM @ 5" DP
最大旋扣扭矩 Max. Spin Torque	5,000 N·m (3,750 ft-lb)
最大上扣扭矩 Max. Make-up Torque	140,000 N·m (100,000 ft-lb)
最大卸扣扭矩 Max. Break-out Torque	160,000 N·m (120,000 ft-lb)
钻具高度范围 Joint Height	745 mm ~ 1,615 mm (29.3" ~ 63.58")
水平伸展范围 Horizontal Travel	由导轨长度而定 Depending on rail length
控制方式 Controls	远程控制和无线遥控 (标配)、集中控制 (选配) Remote Control and Wireless Control (Standard)
外形尺寸 (宽 × 高 × 深) Dimensions (W×H×L)	1,665 mm × 2,655 mm × 1,680 mm (65.2" × 104.5" × 66.1")
总重 Weight	3,925 kg (8,653 lbs)

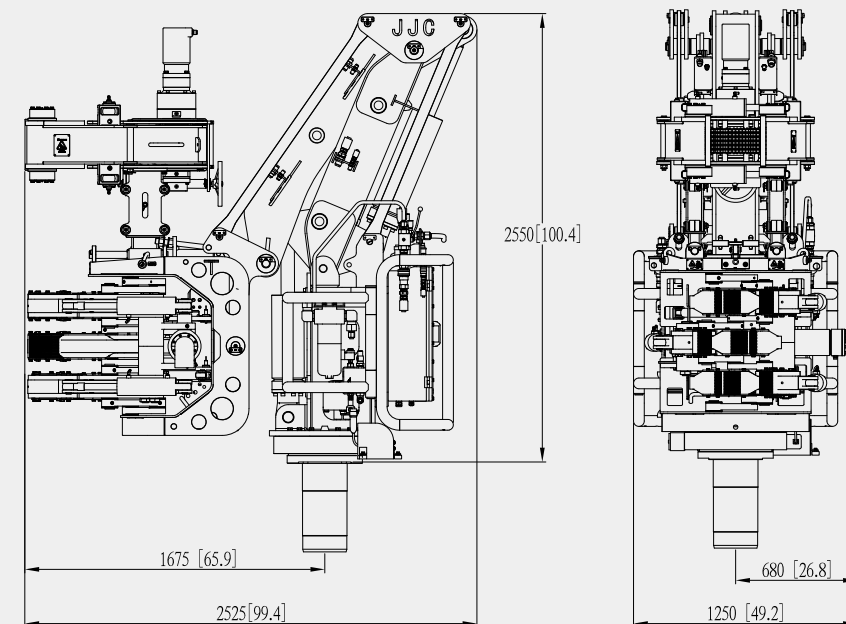
SW12-D1 超深井铁钻工

SW12-D1 SMART WRENCH



SW08-D1 铁钻工

SW08-D1 SMART WRENCH



技术参数 TECHNICAL SPECIFICATIONS

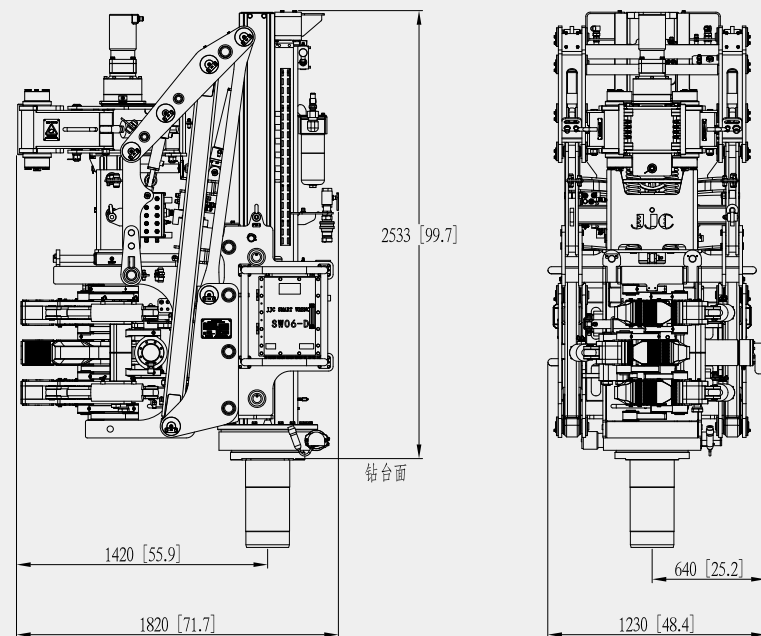
型号 Model	SW12-D1
液动力源要求 Hydraulic Requirement	Rated Pressure: 17.5 MPa (2,500 psi) Max Pressure: 21 MPa (3,000 psi) Rated Flow: 140 LPM (37 GPM) Min Flow: 120 LPM (32 GPM)
适用管具范围 Pipe Range	2-7/8 " DP ~ 9-3/4 " DC
最大旋扣速度 Max. Spin Speed	80 RPM @ 5 " DP
最大旋扣扭矩 Max. Spin Torque	5,000 N·m (3,750 ft-lb)
最大上扣扭矩 Max. Make-up Torque	140,000 N·m (100,000 ft-lb)
最大卸扣扭矩 Max. Break-out Torque	160,000 N·m (120,000 ft-lb)
钻具高度范围 Joint Height	570 mm ~ 1,570 mm (22.4 " ~ 61.8 ")
水平伸展范围 Horizontal Travel	2,365 mm ~ 3,840 mm (93.5 " ~ 151.2 ")
控制方式 Controls	远程控制和无线遥控 (标配)、集中控制 (选配) Remote Control and Wireless Control (Standard)
外形尺寸 (宽 × 高 × 深) Dimensions (W×H×L)	1,200 mm × 2,531 mm × 2,720 mm (47.2 " × 99.6 " × 107.1 ")
总重 Weight	4,017 kg (8,856 lbs)

技术参数 TECHNICAL SPECIFICATIONS

型号 Model	SW08-D1
液动力源要求 Hydraulic Requirement	Rated Pressure: 16Mpa(2,300psi) Max Pressure: 17.5 MPa (2,500 psi) Rated Flow: 140 LPM (37 GPM) Min Flow: 120 LPM (32 GPM)
适用管具范围 Pipe Range	2-7/8 " DP ~ 9-1/2 " DC
最大旋扣速度 Max. Spin Speed	80 RPM @ 5 " DP
最大旋扣扭矩 Max. Spin Torque	5,000 N·m (3,750 ft-lb)
最大上扣扭矩 Max. Make-up Torque	110,000 N·m (80,000 ft-lb)
最大卸扣扭矩 Max. Break-out Torque	140,000 N·m (100,000 ft-lb)
钻具高度范围 Joint Height	650 mm ~ 1,780 mm (25.6 " ~ 64.6 ")
水平伸展范围 Horizontal Travel	1,620 mm ~ 2,900 mm (55.2 " ~ 118.2 ")
控制方式 Controls	远程控制和无线遥控 (标配)、集中控制 (选配) Remote Control and Wireless Control (Standard)
外形尺寸 (宽 × 高 × 深) Dimensions (W×H×L)	1,250 mm×2,550 mm×2,525 mm (49.2 " ×100.4 " × 99.4 ")
总重 Weight	3,700 kg (8,157 lbs)

SW06-D1 车载钻机铁钻工

SW06-D1 SMART WRENCH



技术参数 TECHNICAL SPECIFICATIONS

型号 Model	SW06-D1
液动力源要求 Hydraulic Requirement	Rated Pressure: 17.5 MPa (2,500 psi) Max Pressure: 21 MPa (3,000 psi) Rated Flow: 140 LPM (37 GPM) Min Flow: 120 LPM (32 GPM)
适用管具范围 Pipe Range	3-1/2 " DP ~ 8 " DC
最大旋扣速度 Max. Spin Speed	80 RPM @ 5 " DP
最大旋扣扭矩 Max. Spin Torque	5,000 N·m (3,750 ft-lb)
最大上扣扭矩 Max. Make-up Torque	80,000 N·m (60,000 ft-lb)
最大卸扣扭矩 Max. Break-out Torque	110,000 N·m (80,000 ft-lb)
钻具高度范围 Joint Height	655 mm ~ 1,655 mm (25.8 " ~ 65.0")
水平伸展范围 Horizontal Travel	1,450 mm ~ 2,590 mm (57.0 " ~ 102.0 ")
控制方式 Controls	远控控制和无线遥控 (标配)、集中控制 (选配) Remote Control and Wireless Control (Standard)
外形尺寸 (宽 × 高 × 深) Dimensions (W×H×L)	1,230 mm × 2,533 mm × 1,820 mm (48.4" × 99.7" × 71.7 ")
总重 Weight	3,470 kg (7,650 lbs)