

DJ3E

Three-boom Drill Jumbo

Technical Specification



MakeTunnelling Safer,Better and Faster

China:
China Railway Engineering Equipment Group Co.,Ltd.
E-mail: info_intl@crectbm.com
Tel: +86 0371 6581 5987
Address: No.99, 6th Avenue National Economic & Technical Development Zone 450016 Zhengzhou, Henan Province People's Republic of China

Southeast Asia:
China Railway Engineering Equipment Group Co., Ltd.
Singapore Branch
E-mail: info_singapore@crectbm.com
Tel: +65 6747 8091
Address: 1004 Toa Payoh North, #06-15/16/17, Singapore 318995

Korea:
CREG Co.,Ltd. South Korea Branch
E-mail: info_korea@crectbm.com
Tel: +82 010-2156-8662
Address: No.1521, Building B, Terra-tower, 651, Songpa-gu, Seoul, Republic of Korea

Europe & South & North Americans:
CREGTBM Germany GmbH
E-mail: info@creg-germany.com
Tel: +49 211 52288900
Address: CREGTBM Germany GmbH Willstätterstraße 15 40549 Düsseldorf Germany

Italy:
China Railway Engineering Equipment Group Co.Ltd Italy Branch
Email: creg.italy@legalmail.it
Address: Viale Giuseppe Mazzini 55, 00195 Roma

Oceania:
CREGA Australia Office
Email: info@crega.com.au
Tel: +612 9698 0018
Address: Unit 1, 118 Bourke Road Alexandria NSW 2015 Australia



Intelligence: Better, Faster, Safer Construction

KEY FEATURES

Coverage(HxW)(m)	13.1×16.9
Hydraulic rock drill	HC110
Drill feed	12-21ft
Boom elevating support(mm)	1000
Hole length(mm)	3425-6180
Hole diameter (drifting)(mm)	43-140
Automation package	Basic ,Standard, Total
Turning radius(l/O)(m)	6.55/12.3
Transport width(mm)	2975
Transport height(mm)	3712
Transport length(mm)	17630
Total weight(kg)	52000
(with service boom)	depending on options

CREG DJ3E is a fully automated E-series tunneling jumbo equipped with three electro-hydraulic booms for fast and accurate drilling in tunneling and cavern excavations. Thanks to its 2.5m boom extension and eagle base, this jumbo offers superior coverage 190m².

This rig has automatic drilling functions and boom positioning including an optional fully automatic drilling cycle. DJ3E is equipped the high frequency HC110 rock drill and tools designed for high speed drilling. The drilling speed is 3-4m/min.

ICS4.0 software utilizes the rig's data collection to improve the work cycle and the drill and blast excavation process.

The MWD(Measure While Drilling) can analyze the drilling data and map the geology. The 3D-scanner can detect the over-and under-excavation to assessing reinforcement and injection..



Service platform for smooth and easy utility jobs

Standard equipped with a 27kW rock drill, featuring high-efficient drilling

FOPS certified cabin with excellent visibility for a safe, quiet and ergonomic working environment

Optional series of feeds and automatic rod handling system

Four-wheel drive,186kW engine,strong passing performance

Main Benefits

Versatile and highly productive

Equipped with HC110 rock drill, DJ3E has more rock drill power to improve drilling efficiency ,low drilling tools loss, saving time and money.

In addition to face drilling, DJ3E can also be utilized in other applications such as: advanced long-hole drilling, advanced grouting drilling,bolt hole drilling.



Accurate positioning

- > Total station navigation positioning
- > Positioning accuracy ≤7cm



Drilling efficiency

- > 27kW HC110 rock drill
- > Drilling speed 3-4 m/min



Convenient operation

- > Multi-language operation interface, easy to use
- > Fault diagnosis module, easy maintenance troubleshooting

DJ3E
Three-boom drill jumbo



Instrumented square boom

Standard 2.5m telescopic instrumented square boom, double roll-over and self-parallel function, positioning efficient, stable, accurate, reduce over-digging.



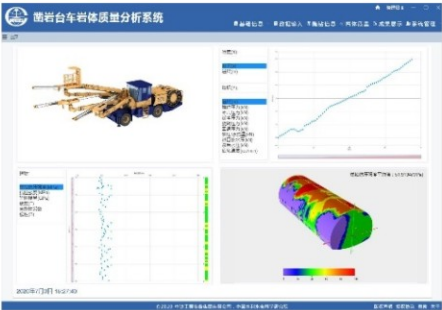
HC110 rock drill

HC110 rock drill adopts low pressure and large flow drilling system; it can realize automatic adjustment and matching of percussion, drilling, rotation and other actions with complex strata; drilling tools have small loss, simple maintenance and high efficiency.



Rod handing system

Rod rotainer, rod clamping manipulator and rod magazine are available as options,rod handing system provides safe,efficient, automatic way of long-hole operation.



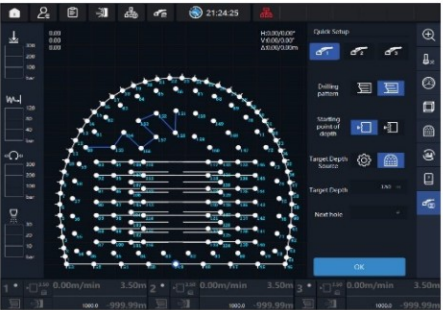
MWD system

During drilling operations, various drilling parameters monitored in real time can be analyzed, geological conditions can be restored through MWD software, and rock hardness can be judged, whether there is water pocket, karst cave, fault, fracture, etc.



Pipe umbrella optional kit

In case of weak ground conditions, Pipe Umbrella Kit is available as option to install pipes, prior to excavation to create a canopy ensuring reliable support and increased stability.



ICS4.0 system

ICS 4.0 is the latest intelligent drilling system, it has the functions of total station vehicle navigation, hole layout diagram, auxiliary positioning of drilling boom, automatic drilling and multi-mode hole depth reference. Through accurate control of drilling position, it reduces over-digging.

All-round after-sales service of CREG

Adhering to the development concept of "professional manufacturing and professional service", we have established an after-sales service organization specializing in tunnel and mine construction equipment.

At present, the after-sales service center has nearly 200 service engineers, and has the after-sales ability to carry out multiple work points and various equipment at the same time. We can provide 24-hour comprehensive service for you.

TECHNICAL SPECIFICATION

Hydraulic rock drill		
Type of rock drill	HC110×3	
Percussion powe(kW)	27	
Percussion pressure(bar)	190	
Percussion rate(Hz)	72	
Stabilizer	hydraulic	
Rotation torque(N)	671	
Rotation speed(r/min)	292	
Hole size (drifting)(mm)	43-89	
Hole size (cut hole)(mm)	76-140	
Recommended rod	T38 - H35 - R32 T45-R46-T45	T38 - R39 - R35
Shank adapter	T38M / T45M	
weight(kg)	215	
length(mm)	1093	
Profile height(mm)	100.5	

Drilling feed					
Type of feed	Feed force (max.)(kN)	Total length (mm)	Hole length (mm)	Rod length (mm)	Net weight (kg)
BMH68-12	23	5485	3425	3700	510
BMH68-14	23	6090	4030	4305	540
BMH68-16	23	6700	4640	4915	570
BMH68-18	23	7310	5250	5525	600
BMH68-20	23	7920	5860	6135	630
BMH68-21	23	8225	6165	6440	650

Boom	
Type of boom	Telescopic square
Parallel coverage(m²)	190
Parallelism	Electric
Boom extension(mm)	2500
Feed extension(mm)	1800
Roll-over angle(°)	±180
Boom elevating support(mm)	1548
Boom pitch(°)	-42~55
Boom swing(°)	±42
Boom weight,net(kg)	4100

Utility boom(optional)	
Coverage(W×H)(m)	19.2×13.8
Boom extension(mm)	2×3000
Boom weight,net(kg)	2800
Basket swing(°)	±45
Max. allowed load(kg)	400

Hydraulic system	
Powerpack(Kw)	3×90
Percussion pump(mL/r)	140(variable)
Rotation pump(mL/r)	50
Ventilation and A/C pump(mL/r)	50
Filtration size (pressure / return)(µm)	10/10
Oil tank volume(L)	650
Filling pump for hydraulic oil	Electric

Drilling control system	
Type of control system	ICS4.0
Higher level in automation	Upgradable
Diagnostic system	Comprehensive
Variety of drilling controls	Advanced torque control system, feed percussion, manual control
Boom contro	Fully proportional
Touch screen display	15" full color
Control system software	Support and maintenance package , include during 12 months
Cable kit	Spare parts programming
Total station navigation set	Excl. total station
Data Platform	

Automation package (Basic)	
ICS platform	
Human-computer interaction interface	
Anti-jamming drill	
Drill rig suitable with various navigation methods	
Fault diagnosis	
Boom electric parallelism	

Automation package(Standard)	
ICS platform	
Human-computer interaction interface	
Anti-jamming drill	
Boom electric parallelism	
Automatic feeder	
Drill plan visualisation on-board	
Display of drill bit location vs. given drill plan	
TAS software (license for free)	
Drill rig suitable with various navigation methods	
Fault diagnosis	
DrillConnect mobile application : Connectivity through Knowledge (optional)	

Automation package(Total)	
Automation Standard package content	
Automatic drilling	
Multi-machine cooperative obstacle avoidance	
Anti-personnel error entering system	
Advanced MWD data collection with reporting and analyses tool	
DrillConnect mobile application : Connectivity through Knowledge box for easy data transfer to and from the rig	
Automatic navigation guidesystem	

Air and water flushing	
Water pump capacity(L/min)	260
Water pump inlet pressure(bar)	Min.2
Flushing water pressure(bar)	10-15
Water outlet(bar)	5-15
Shank lubrication device	Air/oil mist
Air compressor	1.6m³/min at 8bar
Rock drill oil consumption(mL/min)	0.7
Rock drill air consumption(L/min)	300

TECHNICAL SPECIFICATION

Operator's safety cabin

Safety cabin cetification	FOPS / ROPS (ISO 3449 / 3471)
Cabin height(mm) (tramming / inside height)	3715/2000
Cabin elevation(mm)	1100
Seat	Fully adjustable seat
Cabin audio system	MP3 with radio
Electricity outlets	2×230V(16A)

Carrier

Carrier articulation(°)	±40
Rear axle oscillation(°)	±8
Ground clearance(mm)	380
Diesel engine	186kW CN-Stage III 186kW EU-Stage III 186kW EU-Stage V
Transmission	hydromechanical
Tires	14.00-24
Service brakes	Fail-safe wet disc brakes
Tramming speed(km/h)	15
Gradeability / sideways tilt(°)	15/5
Fuel tank(L)	150
Centralized greasing points	Manual
Hand held fire extinguisher	1×6kg(type ABC)
Tramming alarm	Standard
Colour scheme	CREG
Documentation	1 x Operator's manual 1 x Maintenance manual 1 x Parts manual (in English and according to customer needs)

Electric system

Voltage/Frequency(V/Hz)	380/50
Total input power(kW)	310
Starting method	Y-△
Cable reel control (in / out)	Remote control
Outlets on carrier	2×220V (16A)
Front lights (combined working and driving)	4 x 100 W+4×48W LED (24 V)
Rear lights (combined working and driving)	4 x 100 W+4×48W LED (24 V)
Amber flashing light	LED (24V)
Stair service lights	2×LED (24V)
Electric current draw reducer unit	Standard

Optional features and packages

Rock drill	
Rock drill type	HC95SA(with 75kW HPP A18D/L(China) (with 55kW HPP)
Power extractor	For HC110/HC95SA/A18D/L

Drilling feed	
Feed length(According to drill rod)	12';14';16';20';21'
Telescopic feed	6'/12';8'/14';10'/16';12'/18'
Rod retainer	Adapts to various feeds
Rod handling system	Incl. rod retainer+ PE for 8' or 10' or12' extension rods, 8 + 1 extension rods)
Pipe umbrella system	pipe following drilling system

Utility boom	
Utility boom type	Service platform
Safety canopy	FOPS canopy (static or sliding)
Spot lights	1×18WLED

Control system	
User interface	Standard
3D scanning system	Requires MWD system
GeoSURE	Requires MWD system
Data transfer	WLAN /4G/5G including remote GUI view

Electric system	
Multivoltage basic	380 - 440 V, 690 V, 50 Hz
Multivoltage pro	380 - 1 000 V, 50 or 60 Hz
Electric cables	100m
Ground fault and overcurrent unit	Standard
Outlet on carrier	Standard
Spot lights	Standard
Air and water system	
Air compressor	/
End of hole air flushing	Configurable
Air mist flushing	Configurable

Cleaning system	
HP system with reel	Up to 180bar

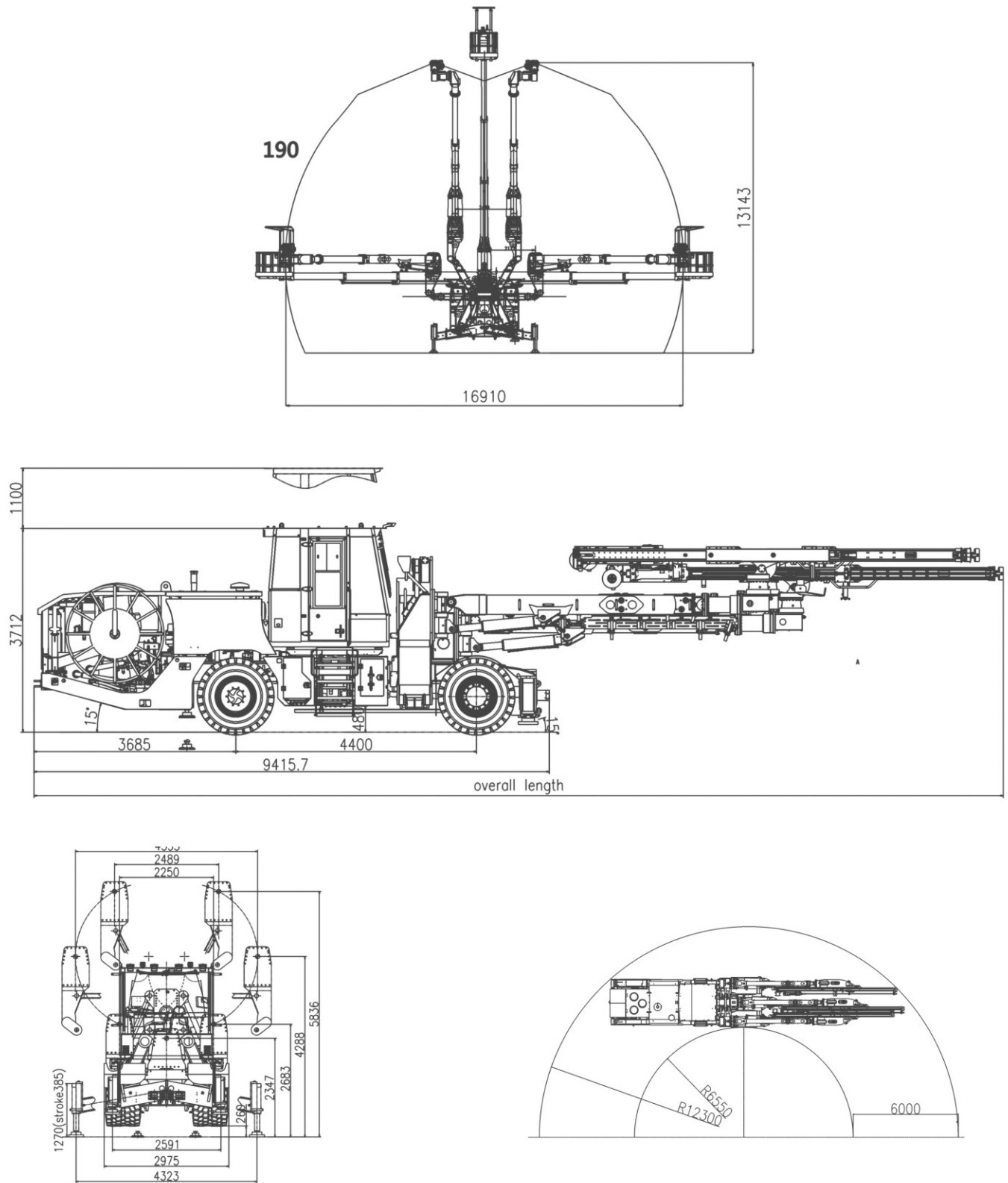
Greasing system	
Automatic system	Carrier, boom and utility boom

Fire suppression system	
Spare hand held fire extinguisher	1 x 7.7 kg or 9 kg (type ABC)
Manual or automatic system	Configurable

Carrier	
Tramming cameras	Rear, side and front
Rod rack	Standard

Extra items	
Spare wheel assembly	Standard
Special tools for rock drill	Field tool set / complete tool set
Documentation	Extra manuals for free
Package: Country specific options	EUR,AUS,LAM,ME

TECHNICAL DRAWING



Feeder and overall length						
Feeder model	BMH68-12'	BMH68-14'	BMH68-16'	BMH68-18'	BMH68-20'	BMH68-21'
Feed length	5485	6090	6700	7310	7920	8225
Overall length	15960	16570	17170	17630	18390	18690