



KUVARS Inc.



ZEGA

ZEGA Underground Rig



### KUVARS MAKİNA

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# Precision Manufacturing

ZEGA First Industrial Park is located at No. 15 Bailing North Road, covering an area of 147000 square meters and a building area of 111000 square meters. It's responsible for the research and development and production of various rock drilling equipment and air compressors.

Accumulated over 21 years

Sales of drilling rigs (in units)

26,500

Sales of Air compressor (in units)

165,500

Effective national patents

91



1st Industrial Park



# WITH ABUNDANT CASE EXPERIENCE/

WE ENDEAVOR TO CONTINUOUSLY ENHANCE THE QUALITY OF OUR PRODUCTS AND SERVICES TO PROVIDE CUSTOMERS WITH MORE PROFESSIONAL EXPERIENCES.



■ As a leading enterprise in drilling rig manufacturing industry, ZEGA has been committed to the construction of green mining projects, construction projects, and new energy projects since its establishment in August 2003. It has actively invested in research and development to protect the natural environment, improve resource development and utilization efficiency, and achieve green and long-term sustainable development in the industry.



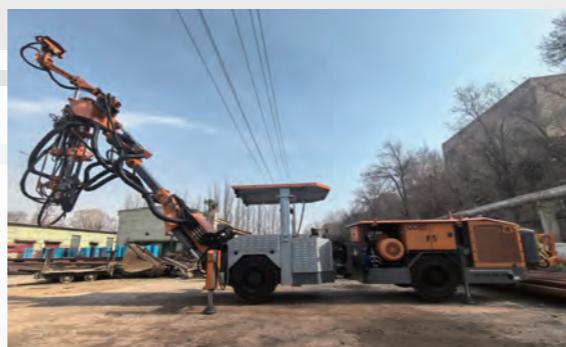
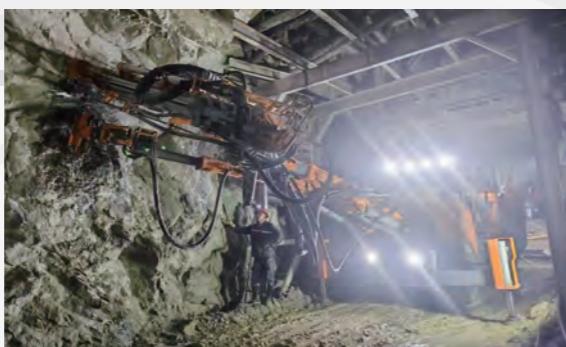
UJ33 Anhui · Cave Depot Project

UJ22 Zhejiang · Pumped hydropower station

UJ21MG Sichuan · Sichuan-Tibet railway

UJ21C Shandong · Nuclear power station

UJ21D Russian Empire · Gold mine



UJ18 Sichuan · Copper mine

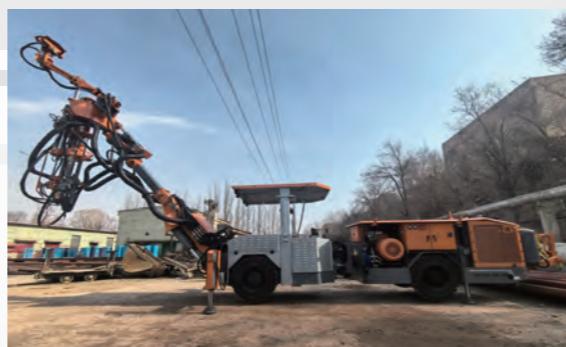
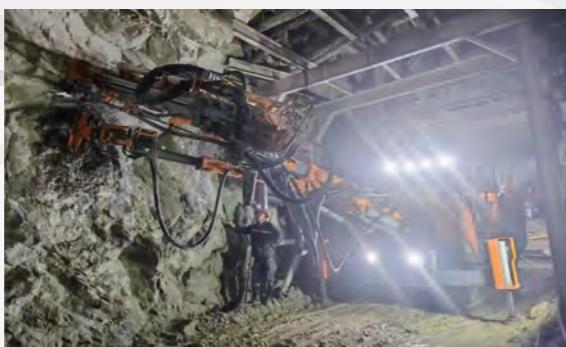
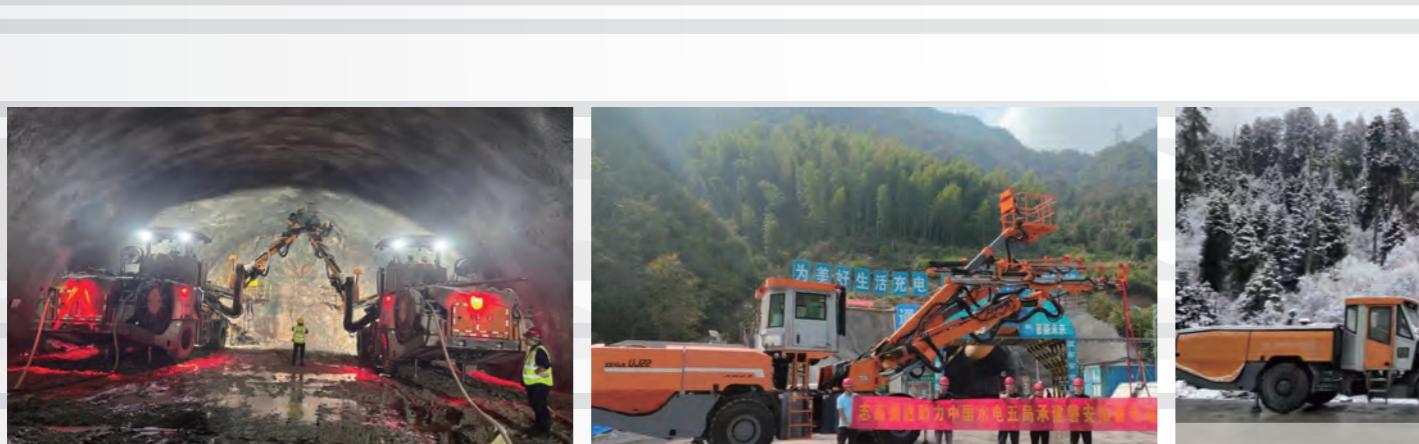
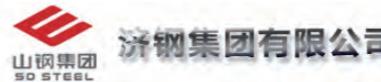
UM21K Hunan · Tungsten mine

UM18K Hebei · Phosphate mine

UP31B Inner Mongolia · Iron Mine

UP31A Jiangxi · Copper mine

Partners of ZEGA




**High Accuracy & High Efficiency**

## Drilling System

■ Self-developed high-power, high-frequency, high-pressure + dual-damping mechanism design of full hydraulic rock drill. Features high penetration rate, long service life of rock tools and lower parts consumption. Combined with the intelligent rock drilling control system with invention patents to ensure a better drilling experience for users, it can automatically adjust the pressure values of rotation, feeding and impact according to the different rock formations to ensure that the drilling process is always in the most optimal matching conditions.

## Feeding System

■ In order to ensure the linearity of the drilled hole and the service life of the feed beam, the high-strength aluminum alloy feed beam is adopted, which has high bending strength, torsional strength and corrosion resistance, and the combination of hydraulic cylinder + wire rope feeding system makes the feeding movement more reliable and smooth.

■ In addition, the feed beam guide rail surface is covered with a replaceable stainless steel cover, and the polymer material wear-resistant pad is used between the moving parts to reduce the coefficient of friction, so that the service life is longer and the consumption is lower.

## Boom Positioning System

■ The design of the double triangle support boom structure and the compound eight-way angle control pilot proportional compensation system ensure smooth, efficient and flexible positioning while accurate parallel holding and angular positioning accuracy in all directions.

■ The drill boom made of high-strength materials and advanced technology has the characteristics of high strength, good rigidity, light weight and strong bearing capacity, which can effectively reduce the shaking problem during suspension rock drilling and ensure the angle retention and stability.

## Drill Body Stabilizing System

■ After the rig is moved to the new drill face in place, four independently controlled hydraulic jacks are used to level and stabilize the drill rig body, as well as the central articulation steering cylinder locking function, to ensure the stability of the overall body of the drill rig while drilling.

## CORE COMPONENTS OF drill rig

**ZY102(H/M)**

**ZY103(H)**

**ZY104(H/M/MZ)**

**ZY105(H/M)**


Rock drill parameters	ZY102(H/M)	ZY103(H)	ZY104(H/M/MZ)	ZY105(H/M)
Percussion power max.	11 kW	15 kW	20 kW	25 kW
Percussion power frequency	100 Hz	42-60 Hz	46-60 Hz	42-50 Hz
Hydraulic system pressure	210 bar	210 bar	220 bar	230 bar
Torque ma	550 N.m	740 N.m	980 N.m	1,810 N.m
Rotation speed	0-320 rpm	0-210 rpm	0-140/0-210 rpm	0-110/0-140 rpm
Water consumption	65 L/min	40-120 L/min	40-120/100-165 L/min	100-165 L/min
Flushing pressure max.	12 bar	12 bar	12 bar	12 bar
Air consumption for lubrication (at 2bar)	3-4 L/S	3-4 L/S	5 L/S	5,5 L/S
Oil consumption for lubrication	1 ml/min	1-1,5 ml/min	1-1,5 ml/min	1-1,5 ml/min
Height between top and rotation center	98 mm	88 mm	88 mm	88/123 mm
Dimensions (L*W*H) (W/O shank adaptor)	735X290X196 mm	1002X278X220 mm	1143X316X223 mm	1340X316X258 mm
Weight	80 kg	165 kg	190/170 kg	258 kg
Shank adaptor	R28/R32	R32/T38 /T45	R32/T38 /T45/T51	T45/T51
Scope of application	Surface and underground drilling operations for $\Phi$ 33-51mm holes.	Surface and underground drilling operations for $\Phi$ 40-102mm holes.	Surface and underground drilling operations for $\Phi$ 40-115mm holes.	Surface and underground drilling operations for $\Phi$ 76-127mm holes.

**World-class machining/assembling/measuring facilities and rigorous production process to ensure product quality.**



# B Good Mobility & Easy Transferring

## Center-articulated Steering System

■ In view of the various mining methods of underground mines and the limited size of drifts, a central articulated steering chassis with high passing capacity in confined spaces is professionally designed to adapt to the flexible transfer under complex underground working conditions.

## Diesel-powered 4WD Tramming

■ Diesel engine powered four-wheel drive trams, multi-gear transmission, no engine stalling when climbing steep slopes and overloading, automatic adaptation to speed reduction and increase output torque, strong off-road ability.

## Cable Reel

■ The large-capacity cable reel increases the working distance, the hydraulic constant-torque drive control prevents the cable from being damaged by excessive tension, and the design of the double-station console further improves the convenience and safety of operation.

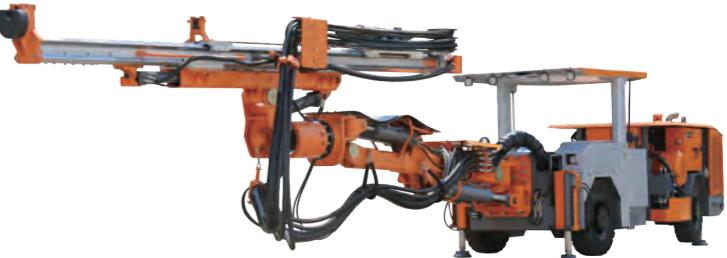
## Modular Structure Design

■ The modular structure of building blocks allows for quick disassembly and reassembly, which makes it easy to knock down the entire rig and then transport it from the shaft cage to the underground level for reassembly.



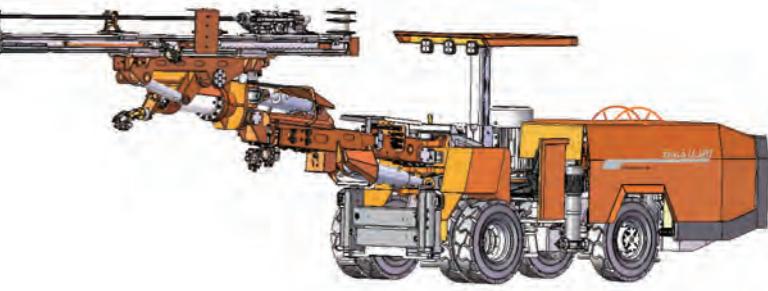
## UJ18A Underground Face Drilling Rig

Face drilling coverage area (W x H) .MAX:5.6X4.3 m  
 Bolting drilling coverage area (W x H).MAX:11.3 X7.3 m  
 Minimum tunnel size of pass through (W x H):1.8X1.8 m  
 Hole range:  $\Phi$  41-102 mm



## UJ20 Underground Face Drilling Rig

Face drilling coverage area (W x H) .MAX:5.23X5.8 m  
 Bolting drilling coverage area (W x H).MAX:11X 7.8 m  
 Minimum tunnel size of pass through (W x H):1.6X1.9 m  
 Hole range:  $\Phi$  41-102 mm



## UJ21D Underground Face Drilling Rig

Face drilling coverage area (W x H) .MAX:6.6X6.3 m  
 Bolting drilling coverage area (W x H).MAX:12.4X9 m  
 Minimum tunnel size of pass through (W x H):2.8X2.8 m  
 Hole range:  $\Phi$  41-102 mm



## UJ22E Underground Face Drilling Rig

Face drilling coverage area (W x H) .MAX:8.72 x 6.35 m  
 Minimum tunnel size of pass through (W x H):3.8X3.8 m  
 Hole range:  $\Phi$  41-102 mm



## ZEGA UJ18A

### Product Features

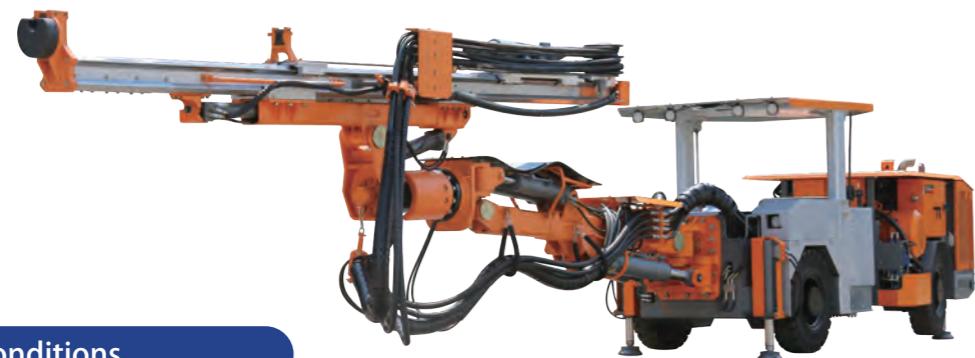
■ Features of this model: Compact structure design with height of 1.5m and width of 1.45m; 4WD central articulated steering chassis enables UJ18A to pass drift size of 1.8mX1.8m; Satisfies requirements for 2X2m to 3.5X3.5m drift development and 360° bolting; it will be perfectly suitable for reconstruction drilling of old narrow vein mines, small-sized diversion tunnels and other constructions.

**Optional Configurations**



Telescopic feed configuration can be applied to both face drilling and bolting operations: extended feed for face drilling operation, retracted feed for vertical bolting operation;

Available in 2 sizes: telescopic feed for drill rod of 1830/3700mm length and 2435/4270mm length. The optional configurations are available for whole series of underground face drilling rigs.



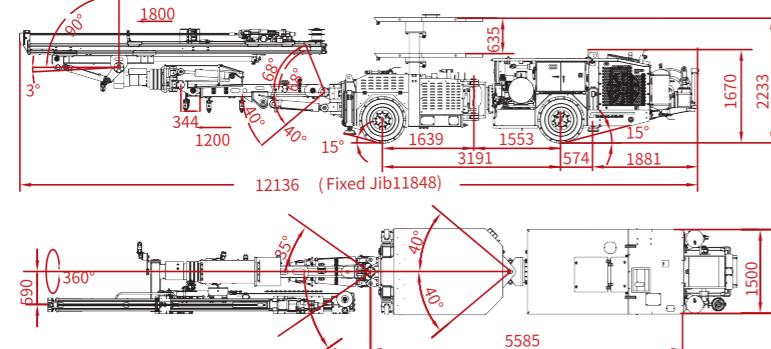
### Working conditions

#### Construction

Tunneling Construction  Water-diversion Works  Cave Depot Project  
 Hydropower Station  Underground Powerhouse  Defense Engineering

#### Green Mining

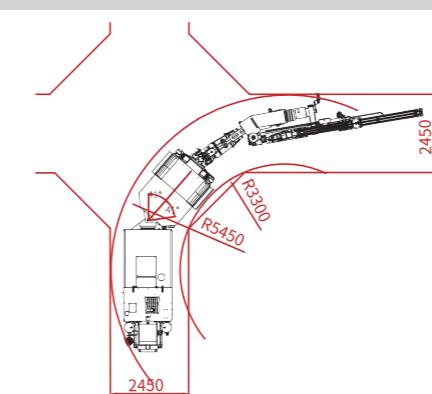
Iron Mine  Chemical Mine  
 Nonferrous Mine  Underground Quarry



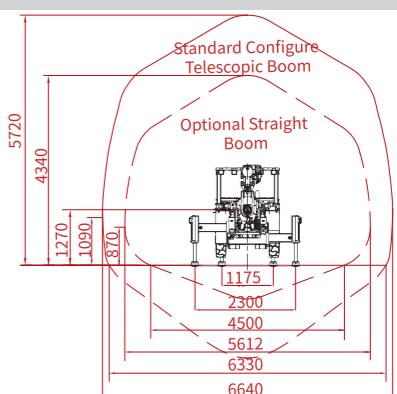
Dimensions

### Technical Specifications

Engine			
Manufacturer	Yuchai	Yuchai	Cummins
Model	YC 4DK100-T301	YCF 36100-T480	F3.8
Emission standards	III China III	IV China IV	V EURO V
Rated power	73.5 kW (100 hp) 2,400 rpm	74 kW (100 hp) 2,200 rpm	75 kW (100 hp) 2,200 rpm
Functional Parameters			
Hole range	Φ41-102mm	Work coverage area max.	30m <sup>2</sup>
Hole depth (1st drill rod)	3,440/4,050 mm	Turning radius	(Inner)R3,300/(Outer)R5,450 mm
Drill rod size & length	T38-H 35-R 32 3,700/4,305	Dimensions (L*W *H)	12,136*1,500 *1,670/2,233 mm
Face size (W *H)	6.64*5.72 m	Weight	11T
Drill Boom & Feed Beam			
Feed total length	5,500/6,100 mm	Parallel holding system	exist
Feed extension length	1,800 mm	Boom extension length	1,200 mm
Feed travel length	3,440/4,050 mm	Boom swing angle	35°
Feed force max.	15 kN	Boom lifting /lowering angle	68° / 40°
Feed speed max.	0.9 m/s	Feed roll-over angle	360°
Pullback force max.	17 kN	Feed tilt angle	90° / -3°
Chassis			
Tramming method	Diesel engine / electrical drive + 4WD + articulated		
Cooling method for tramping	Air cooling	Approach / departure angle	15°
Tramming speed	7/4 km/h	Ground clearance	250 mm
Gradeability	15°	Hydraulic jack	4
Steering angle	±40°	Fuel tank Volume	75 L
Rear axle oscillation angle	±15°	Rock Drill	
Electrical Motor			
Installed power	76 kW	Manufacturer	ZEGA
Main motor power	55 kW	Model	ZY 104M
Number of main motors	1	Percussion power	20kW
Working voltage	380/660V	Percussion frequency	46-60 Hz
Working frequency	50/60 Hz	Rotation speed	0-210 rpm
Cable length	70m	Rotation torque max.	752 N.m
Water System			
Flow rate max.	2m <sup>3</sup> /h	Weight	170 kg
Flushing pressure max.	12 bar	Screw Air Compressor	
Water inlet pressure min.	2 bar	Manufacturer	ZEGA
Cooling method of rock drilling	Water cooling	Model	ZGHA56II
		Nonimal air pressure	8 bar
		Air discharge capacity FAD	1 m <sup>3</sup> /min



Turning radius

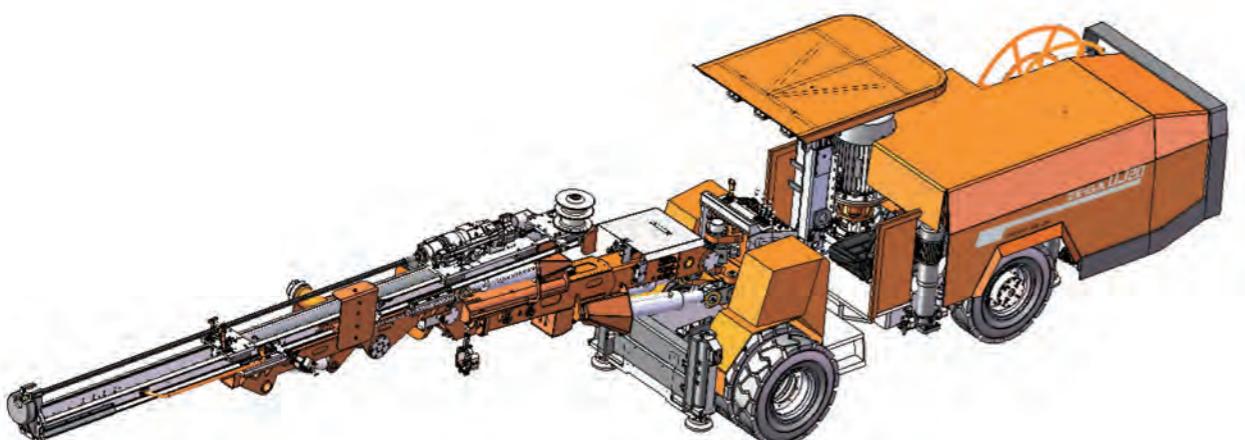


Work Coverage area

## ZEGA UJ20

### Product Features

■ Features of this model: Short and narrow type design of 9m length and 1.22m width; 4WD articulated chassis design; Minimum drift pass size: 1.6mX-1.9m; Satisfies requirements for 2X2.1m to 3.5X3.5m face drilling and 360° bolting operations; Perfectly suitable for face drilling operations on small-sized mines along the vein and decreasing the dilution rate.



### Working conditions

#### Construction

Tunneling Construction  Water-diversion Works  Cave Depot Project

Hydropower Station  Underground Powerhouse  Defense Engineering

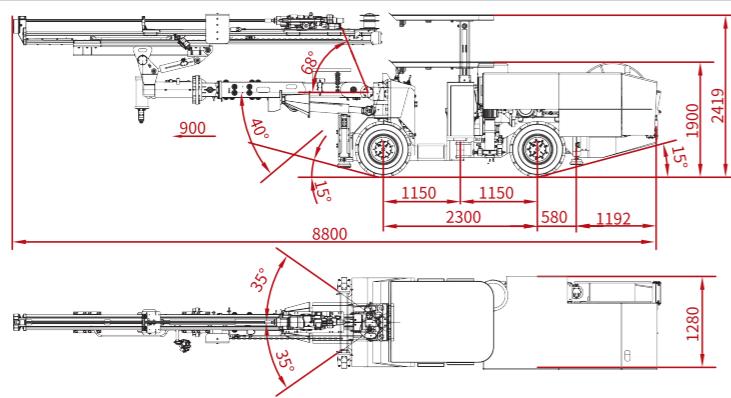
#### Green Mining

Iron Mine  Chemical Mine

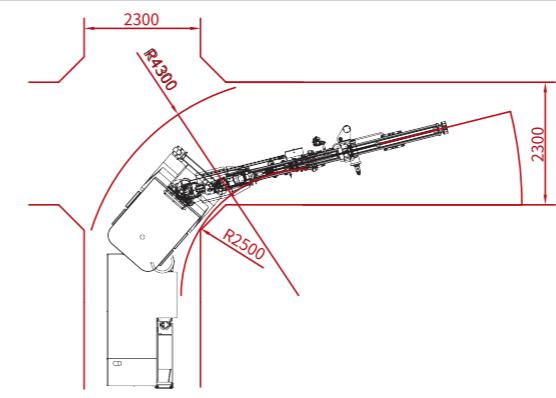
Nonferrous Mine  Underground Quarry

### Technical Specifications

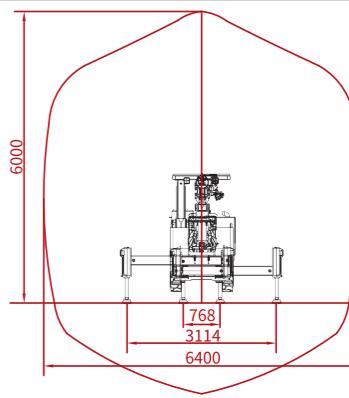
Engine				
Manufacturer	Cummins	Cummins	Cummins	Cummins
Model	4BTA3.9-C100-II	QSB3.9-C100-30	B3.9CS4-C110	F3.8
Emission standards	II China II	III China III	IV China IV	V EURO V
Rated power	74 kW(100 hp)2,200rpm	74 kW(100 hp)2,400rpm	81kW(110 hp)2,500rpm	75 kW(100 hp)2,200rpm
Functional Parameters				
Hole range	Φ41-102mm	Work coverage area max.	25m <sup>2</sup>	
Hole depth (1st drill rod)	3,440/4,050 mm	Turning radius	(Inner)R2,500/(Outer)R4,300 mm	
Drill rod size & length	T38-H 35-R 32 3,700/4,305	Dimensions (L*W *H)	9,800*1,280*1,900/2,419 mm	
Face size (W *H)	5.8*5.23 m	Weight	12 T	
Drill Boom & Feed Beam				
Feed total length	5,500/6,100 mm	Parallel holding system	No	
Feed extension length	1,600 mm	Boom extension length	900 mm	
Feed travel length	3,440/4,050 mm	Boom swing angle	35°	
Feed force max.	15 kN	Boom lifting /lowering angle	68° / 40°	
Feed speed max.	0.9 m/s	Feed roll-over angle	360°	
Pullback force max.	17 kN	Feed tilt angle	90° / -3°	
Chassis				
Tramming method	Diesel engine / electrical drive + 4WD + articulated			
Cooling method for tramping	Air cooling	Approach / departure angle	15°	
Tramming speed	7/ 4 km /h	Ground clearance	240 mm	
Gradeability	15°	Hydraulic jack	4	
Steering angle	±41°	Fuel tank Volume	65 L	
Rear axle oscillation angle	±8°	Rock Drill		
Electrical Motor				
Installed power	78 kW	Manufacturer	ZEGA	
Main motor power	55 kW	Model	ZY 104M	
Number of main motors	1	Percussion power	20kW	
Working voltage	380/660V	Percussion frequency	46-60 Hz	
Working frequency	50/ 60 Hz	Rotation speed	0-210 rpm	
Cable length	80/100m	Rotation torque max.	752 N.m	
Water System				
Flow rate max.	4m <sup>3</sup> /h	Manufacturer	ZEGA	
Flushing pressure max.	12 bar	Model	ZGHA56II	
Water inlet pressure min .	2 bar	Nonimal air pressure	8 bar	
Cooling method of rock drilling	Water cooling	Air discharge capacity FAD	1 m <sup>3</sup> /min	
Screw Air Compressor				



Dimensions



Turning radius

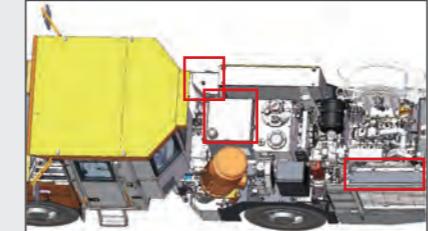


Work Coverage area

ZEGA UJ21D

## Product Features

- Features of this model: Widely used in underground mine development and small-sized tunnels excavation and rock reinforcement; Minimum drift pass size: 2.8X2.8m; Satisfies requirements for 3X3m to 6x6m face drilling on mines and bolting operations; 10.00/R20 reinforced tires + hydraulic converter-transmission brings superior mobility and achieves roof-drilling production.



To solve freeze in extremely cold areas and water shortage in deserts and other problems, we provide a special configuration solution of cuttings flushing with compressed air + air-water mist dust suppression, which can be applied to face drilling, bolting and long-hole drilling.



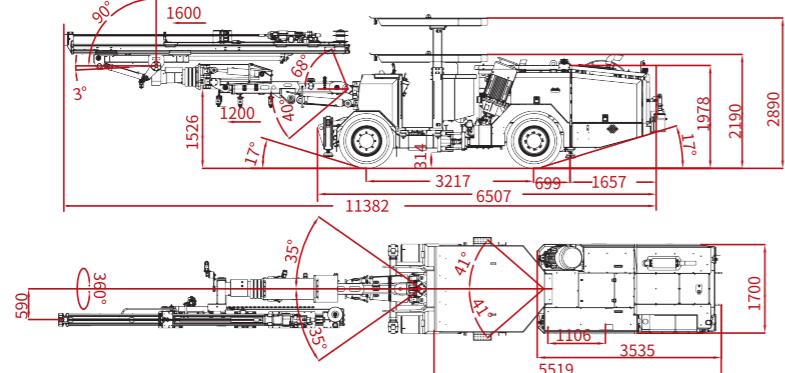
## Working conditions

## Construction

- Tunneling Construction
- Water-diversion Works
- Cave Depot Project
- Hydropower Station
- Underground Powerhouse
- Defense Engineering

## Green Mining

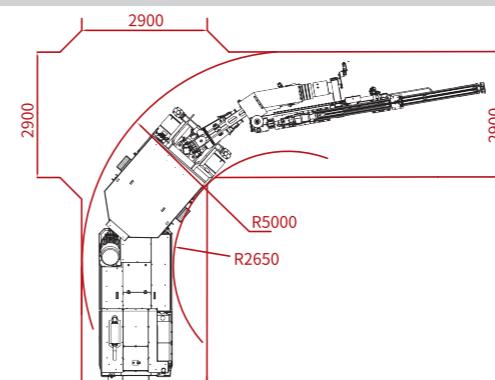
■ Iron Mine      ■ Chemical Mine  
■ Nonferrous Mine      ■ Underground Quarry



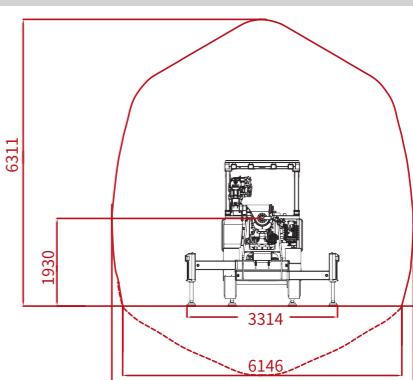
## Dimensions

## Technical Specifications

Engine						
Manufacturer	Cummins	Cummins	Cummins	Cummins		
Model	4BTA3.9-C100-II	QSB3.9-C100-30	B3.9CS4-C110	F3.8		
Emission standards	II China II	III China III	IV China IV	V EURO V		
Rated power	74 kW(100 hp)2,200rpm	74 kW(100 hp)2,400rpm	81kW(110 hp)2,500rpm	75 kW(100 hp)2,200rpm		
Functional Parameters						
Hole range	Φ41-102mm	Work coverage area max.		36m <sup>2</sup>		
Hole depth (1st drill rod)	3,440/4,050 mm	Turning radius		(Inner)R2,650mm/(Outer)R5,000mm		
Drill rod size & length	T38-H35-R32 3,700/4,305	Dimensions (L*W *H)		11,382*1,700* 2,190/2,890 mm		
Face size (W *H)	6.64*6.31 m	Weight		13 T		
Drill Boom & Feed Beam						
Feed total length	5,500/6,100 mm	Parallel holding system		exist		
Feed extension length	1,600 mm	Boom extension length		1.200 mm		
Feed travel length	3,440/ 4,050 mm	Boom swing angle		35°		
Feed force max.	15 kN	Boom lifting /lowering angle		68° / 40°		
Feed speed max.	0.9 m/s	Feed roll-over angle		360°		
Pullback force max.	17 kN	Feed tilt angle		90° / - 3°		
Chassis						
Tramming method	Diesel engine / electrical drive + 4WD + articulated					
Cooling method for tramping	Air cooling	Approach / departure angle		17°		
Tramming speed	7/ 4 km /h	Ground clearance		314 mm		
Gradeability	15°	Hydraulic jack		4		
Steering angle	±41°	Fuel tank Volume		65 L		
Rear axle oscillation angle	±8°	Rock Drill				
Electrical Motor		Manufacturer		ZEGA		
Installed power	78 kW	Model		ZY104M		
Main motor power	55 kW	Percussion power		20kW		
Number of main motors	1	Percussion frequency		46-60 Hz		
Working voltage	380/660V	Rotation speed		0-210 rpm		
Working frequency	50/ 60 Hz	Rotation torque max.		752 N.m		
Cable length	80/100m	Weight		170 kg		
Water System		Screw Air Compressor				
Flow rate max.	4m <sup>3</sup> /h	Manufacturer		ZEGA		
Flushing pressure max.	12 bar	Model		ZGHA56II		
Water inlet pressure min .	2 bar	Nonimal air pressure		8 bar		
Cooling method of rock drilling	Water cooling	Air discharge capacity FAD		1 m'/min		



## Turning radius

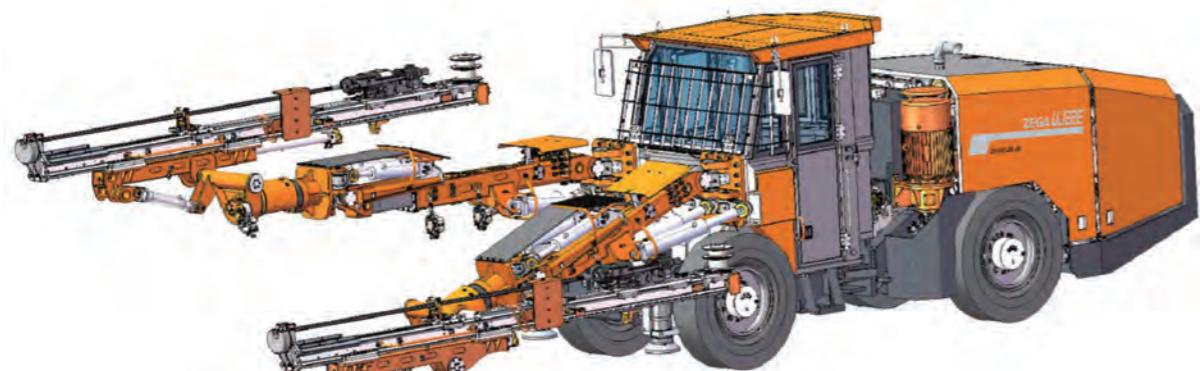


## Work Coverage area

## ZEGA UJ22E

### Product Features

■ Features of this model: Widely used in medium to large-sized underground mine development, and small-sized tunnel excavation and rock reinforcement; Minimum drift pass size: 3.8X3.8m; Satisfies requirements for 4X4m to 9X6m face drilling on mines and bolting operations; UJ22E adopts an electrical proportional fully electronic control system and line-of-sight distance radio remote control and remote intelligent operating systems can be optionally installed to meet customers' demands.



### Working conditions

#### Construction

■ Tunneling Construction   ■ Water-diversion Works   ■ Cave Depot Project  
 ■ Hydropower Station   ■ Underground Powerhouse   ■ Defense Engineering

#### Green Mining

■ Iron Mine   ■ Chemical Mine  
 ■ Nonferrous Mine   ■ Underground Quarry

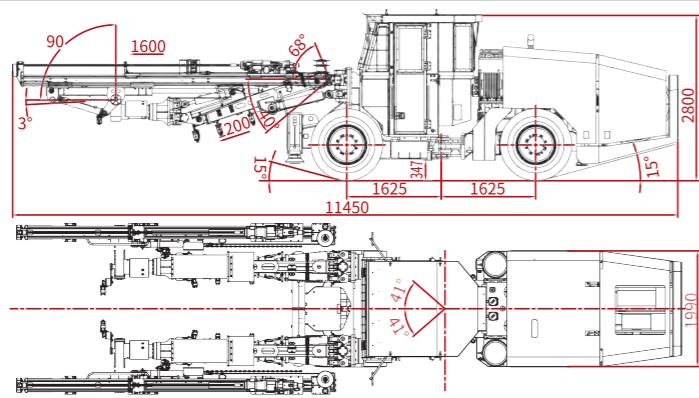
### Optional Configurations



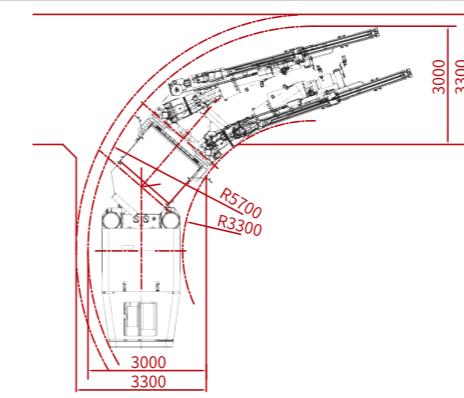
The optional radio remote intelligent operating system for short distance is specially designed for operations in hazardous areas to meet customer's needs. This optional configuration is only available on UJ22E two-boom face drilling rig on mines and the other series drill rigs need to be customized for this configuration.

### Technical Specifications

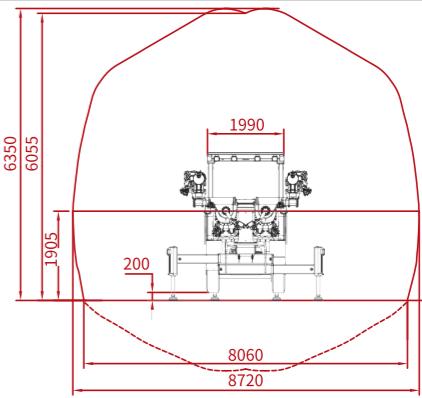
Engine			
Manufacturer	Cummins	Cummins	DEUTZ
Model	QSB3.9-C130-32	B3.9CS4-C130	TCD6.I L6 St.V
Emission standards	III China III	IV China IV	V EURO V
Rated power	97kW(130 hp)2,500rpm	96 kW(130 hp)2,500rpm	160 kW(220 hp)2,200rpm
Functional Parameters			
Hole range	Φ41-102mm	Work coverage area max.	45m <sup>2</sup>
Hole depth (1st drill rod)	3,440/4,050 mm	Turning radius	(Inner)R2,800/(Outer)R5,700 mm
Drill rod size & length	T38-H35-R32 3, 700/4,305	Dimensions (L*W *H)	11,830X1,990X2,800 mm
Face size (W *H)	8.72X6.35 m	Weight	20 T
Drill Boom & Feed Beam			
Feed total length	5,500/6,100 mm	Parallel holding system	exist
Feed extension length	1,600 mm	Boom extension length	1,200 mm
Feed travel length	3,440/ 4,050 mm	Boom swing angle	45°
Feed force max.	15 kN	Boom lifting /lowering angle	68° / 40°
Feed speed max.	0.9 m/s	Feed roll-over angle	360°
Pullback force max.	17 kN	Feed tilt angle	90° / - 3°
Chassis			
Tramming method	Diesel engine / electrical drive + 4WD + articulated		
Cooling method for tramping	Air cooling	Approach / departure angle	15°
Tramming speed	25/11/6.5 km/h	Ground clearance	337 mm
Gradeability	14°	Hydraulic jack	4
Steering angle	±41°	Fuel tank Volume	90 L
Rear axle oscillation angle	±8°	Rock Drill	
Electrical Motor			
Installed power	146kW	Manufacturer	ZEGA
Main motor power	55 kW	Model	ZY104M
Number of main motors	2	Percussion power	20kW
Working voltage	380/660V	Percussion frequency	46-60 Hz
Working frequency	50/ 60 Hz	Rotation speed	0-210 rpm
Cable length	100m	Rotation torque max.	752 N.m
Water System			
Flow rate max.	8m <sup>3</sup> /h	Manufacturer	ZEGA
Flushing pressure max.	15 bar	Model	ZGHA56II
Water inlet pressure min .	2 bar	Nonimal air pressure	8 bar
Water hose length	100m	Air discharge capacity FAD	1 m'/min
Cooling method of rock drilling	Water cooling	Screw Air Compressor	



Dimensions



Turning radius



Work Coverage area


**Safe & Reliable**
**Cabin & Canopy**

■ Equipped with an internationally FOPS certified liftable canopy, which eliminates the potential safety hazards of personnel to the greatest extent, and also has an optional air-conditioned closed cabin, featuring cooling and heating air conditioning, noise reduction and dust prevention, safety and comfort.

**Safety Braking System**

■ The combination of independent wheel-end wet disc brake and emergency braking, and the dual-circuit pedal brake system can safely brake when one or even two brake lines are damaged, thus ensuring safety and reliability during tramsing.

**High Protection**

■ Three-phase five-wire system safe power supply and cable tension limit protection to provide the safety of high-voltage power supply system; Low-voltage control and lighting electrical systems are designed with a DC 24V safety voltage and a protection level of up to IP67.

**High Reliability**

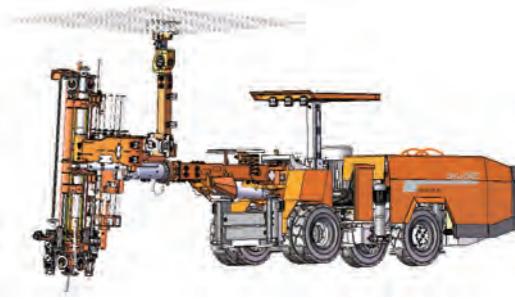
■ The entire drilling rig components are made of internationally renowned brands/domestic first-class brand components that have been proven by the industry to ensure high reliability and well controlling performance in the harsh underground environment.


**UM18K Underground Bolting**

Bolting drilling coverage area (W x H).MAX:7.2X6.3 m  
Minimum tunnel size of pass through (W x H):2X2 m  
Hole range:  $\Phi$  32-51 mm


**UM20 Underground Bolting**

Bolting drilling coverage area (W x H).MAX:6.6X6.5 m  
Minimum tunnel size of pass through (W x H):2X2 m  
Hole range:  $\Phi$  32-51 mm


**UM21K Underground Bolting**

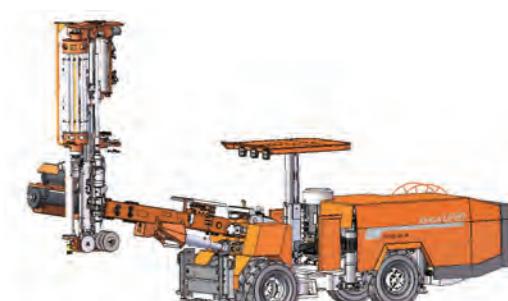
Bolting drilling coverage area (W x H).MAX:7.5 x 7 m  
Minimum tunnel size of pass through (W x H):3 X3 m  
Hole range:  $\Phi$  32-51 mm


**UP31A/B Underground Long-hole Drill Rig**

Production drilling coverage area {W x H}.MAX:6.1X3.8 m/8.5X.51 m  
Minimum tunnel size of pass through (W x H):2.5X2.8 m/2.5X3.5 m  
Hole range:  $\Phi$  64-115 mm


**UP20 Underground Long-hole Drill Rig**

Production drilling coverage area {W x H}.MAX:8.7X6.6 m  
Minimum tunnel size of pass through (W x H):2X2 m  
Hole range:  $\Phi$  64-115 mm



## ZEGA UM18K

### Product Features

■ Features of this model: UM18K is a multi-functional fully hydraulic bolting rig for bolting support operations on underground small to medium-sized mines; Minimum drift pass size: 2X2m; Satisfies requirements for bolting construction of 6x6m drift size; Double triangle support boom structure ensures accurate bolting operation in all directions; The combination of two station feeding system and bolt chamber to achieve split tube friction bolting or resin bolting operations of drilling-bolting and drilling-grouting-bolting.



### Working conditions

#### Construction

Tunneling Construction  Water-diversion Works  Cave Depot Project

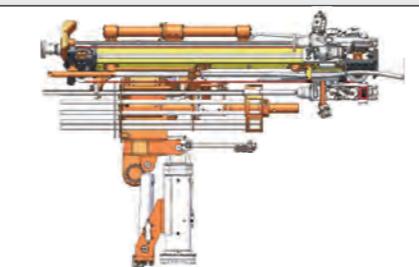
Hydropower Station  Underground Powerhouse  Defense Engineering

#### Green Mining

Iron Mine  Chemical Mine

Nonferrous Mine  Underground Quarry

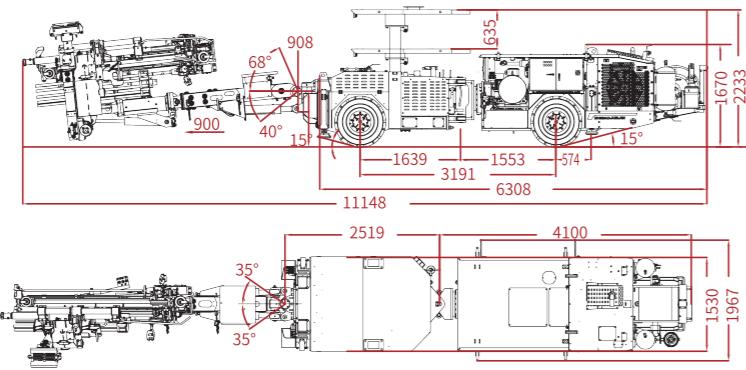
### Optional Configurations



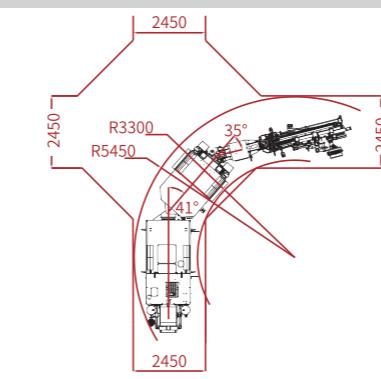
In view of diversified rock support requirements and the limited size of drifts, two configurations of feed system are available: 3200 (2100 feed configuration for bolting support) and 2900 (1800 feed configuration for bolting support). For other operating requirements, the corresponding configurations can be customized

### Technical Specifications

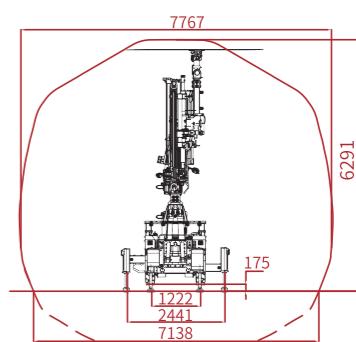
Engine			
Manufacturer	Yuchai	Yuchai	Cummins
Model	YC 4DK100-T301	YCF 36100-T480	F3.8
Emission standards	IV China IV	IV China IV	V EURO V
Rated power	73.5 kW(100 hp)2,400rpm	74 kW(100 hp)2,200rpm	75 kW(100 hp)2,200rpm
Functional Parameters			
Hole range	Φ32-51mm	Hole depth	1,900 mm
Hole depth (1st drill rod)	7.8X6.3 m	Weight	12.5t
Drill rod size & length	R32-H 25- R 25 2,175	Turning radius	(Inner)R2,600/(Outer)R4,600 mm
Face size (W *H)	1,800 mm	Dimensions (L*W *H)	11,148X1,530X1,670/2,233 mm
Bolt type: (Split tube friction bolt) Φ40 mm/ Resin bolt: Φ16/Φ18/Φ20/Φ22/Φ25 mm			Number of bolts: 9+1
Drill Boom & Feed Beam			
Feed total length	2,900 mm	Boom extension length	900 mm
Feed extension length	380 mm	Boom swing angle	35°
Feed travel length	1,900 mm	Boom lifting /lowering angle	68° / 40°
Feed force max.	15 kN	Feed roll-over angle	360°
Feed speed max.	0.9 m/s	Feed tilt angle	18° / -75°
Pullback force max.	17 kN		
Chassis			
Tramming method	Diesel engine / electrical drive + 4WD + articulated		
Cooling method for tramping	Air cooling	Approach / departure angle	15°
Tramming speed	7/4 km/h	Ground clearance	250 mm
Gradeability	15°	Hydraulic jack	4
Steering angle	±40°	Fuel tank Volume	75 L
Rear axle oscillation angle	±15°		
Rock Drill			
Electrical Motor	Manufacturer	ZEGA	
Installed power	76kW	Model	ZY102M
Main motor power	55 kW	Percussion power	11kW
Number of main motors	1	Percussion frequency	100 Hz
Working voltage	380/660V	Rotation speed	0-320 rpm
Working frequency	50/ 60 Hz	Rotation torque max.	430 N.m
Cable length	80m	Weight	80 kg
Water System			
Flow rate max.	2m3 /h	Manufacturer	ZEGA
Flushing pressure max.	12 bar	Model	ZGHA56II
Water inlet pressure min.	2 bar	Nonimal air pressure	8 bar
Water hose length	No	Air discharge capacity FAD	1 m3/min
Cooling method of rock drilling	Water cooling		



Dimensions



Turning radius

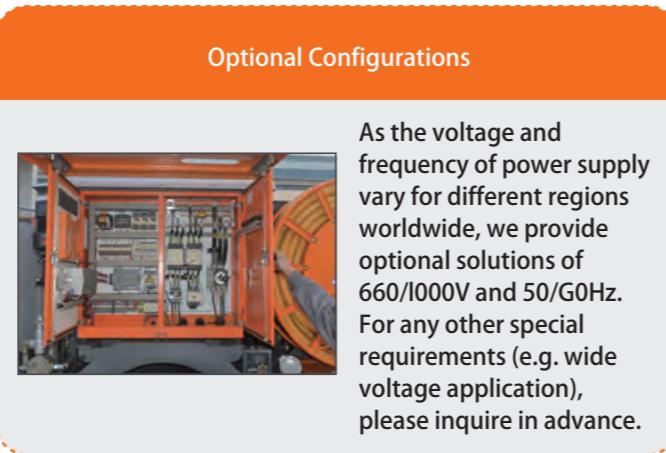


Work Coverage area

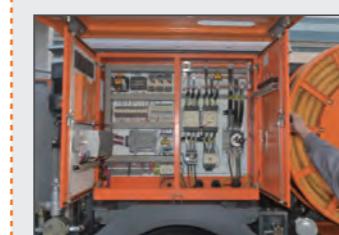
## ZEGA UM20

## Product Features

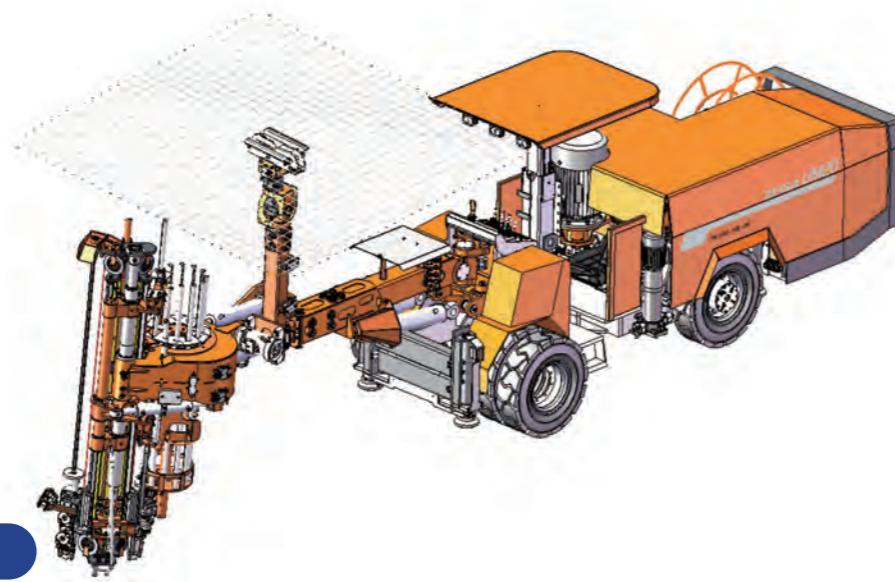
- Features of this model: UM20 is a multifunctional fully hydraulic bolting rig for small-medium-scale underground mine rock reinforcement; Minimum drift pass size: 2X2m; Satisfies requirements for bolting of 6x6m drift size; it has 9m overall length and its intensified 4-group of tyres front chassis structure design makes the gravity center more stable and achieves good mobility and easy transferring.



## Optional Configurations



As the voltage and frequency of power supply vary for different regions worldwide, we provide optional solutions of 660/1000V and 50/60Hz. For any other special requirements (e.g. wide voltage application), please inquire in advance.



## Working conditions

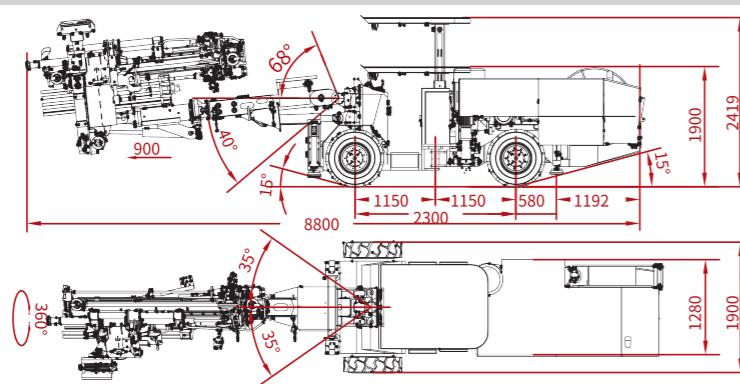
## Construction

- Tunneling Construction
- Water-diversion Works
- Cave Depot Project
- Hydropower Station
- Underground Powerhouse
- Defense Engineering

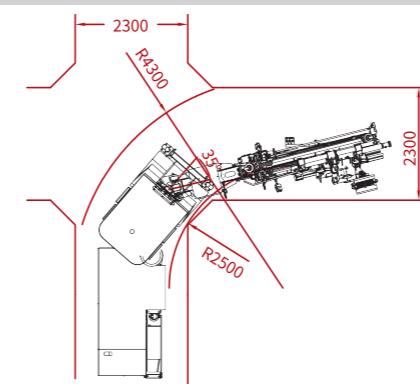
## Green Mining

■ Iron Mine      ■ Chemical Mine  
■ Nonferrous Mine      □ Underground Quarry

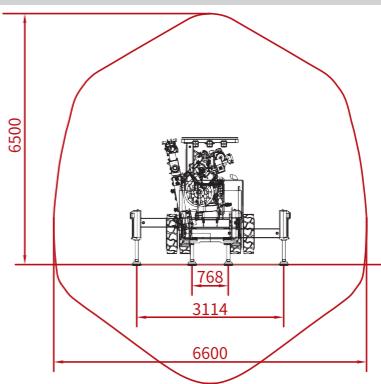
Technical Specifications				
Engine				
Manufacturer	Cummins	Cummins	Cummins	Cummins
Model	4BTA3.9-CI00-II	QSB3.9-CI00-30	B3.9CS4-CII0	F3.8
Emission standards	II China II	III China III	IV China IV	V EURO V
Rated power	74 kW(100 hp)2,200rpm	74 kW(100 hp)2,400rpm	81 kW(110 hp)2,500rpm	75 kW(100 hp)2,200rpm
Functional Parameters				
Hole range	Φ32-51mm	Hole depth	I,900/2,200 mm	
Hole depth (1st drill rod)	6.6*X6.5 m	Weight	14 T	
Drill rod size & length	R32-H 25-R 25 2,175 /2,475	Turning radius	(Inner)R2,500/(Outer)R4,300 mm	
Face size (W *H)	I,800/2,000/2,100 mm	Dimensions (L*W *H)	8,800*1,280*1,900/2,419 mm	
Bolt type: (Split tube friction bolt) Φ 40 mm/ Resin bolt: Φ16/Φ18/Φ20/Φ22/Φ25 mm				Number of bolts:9+ 1
Drill Boom & Feed Beam				
Feed total length	2,900/3,200 mm	Boom extension length	900 mm	
Feed extension length	480 mm	Boom swing angle	35°	
Feed travel length	I,900/2,200 mm	Boom lifting /lowering angle	68° / 40°	
Feed force max.	15 kN	Feed roll-over angle	360°	
Feed speed max.	0.9 m/s	Feed tilt angle	18° / - 75°	
Pullback force max.	17 kN			
Chassis				
Tramming method	Diesel engine / electrical drive + 4WD + articulated			
Cooling method for tramping	Air cooling	Approach / departure angle	15°	
Tramming speed	7/4 km/h	Ground clearance	250 mm	
Gradeability	15°	Hydraulic jack	4	
Steering angle	±41°	Fuel tank Volume	65 L	
Rear axle oscillation angle	±8°	Rock Drill		
Electrical Motor		Manufacturer	ZEGA	
Installed power	66kW	Model	ZY102M	
Main motor power	45 kW	Percussion power	11kW	
Number of main motors	1	Percussion frequency	100 Hz	
Working voltage	380/660V	Rotation speed	0-320 rpm	
Working frequency	50/ 60 Hz	Rotation torque max.	550 N.m	
Cable length	80/100m	Weight	170 kg	
Water System		Screw Air Compressor		
Flow rate max.	4m3 /h	Manufacturer	ZEGA	
Flushing pressure max.	12 bar	Model	ZGHA56II	
Water inlet pressure min .	2 bar	Nonimal air pressure	8 bar	
Water hose length	No	Air discharge capacity FAD	1 m3/min	
Cooling method of rock drilling	Water cooling			



## Dimensions



## Turning radius



## Work Coverage area

## ZEGA UM21K

### Product Features

■ Features of this model: UM21K is a multifunctional fully hydraulic bolting rig for medium to large-sized underground mine rock reinforcement; Minimum drift pass size: 3X3m; Satisfies requirements for bolting drift size of 7x8m; The optional 3-degree-of-freedom robotic arm design can meet the positioning needs of the protective net hanging under various angle conditions. Together with the drill boom, the whole process of hanging nets, drilling, and bolt installation is completed in one go.



### Working conditions

#### Construction

Tunneling Construction  Water-diversion Works  Cave Depot Project

Hydropower Station  Underground Powerhouse  Defense Engineering

#### Green Mining

Iron Mine  Chemical Mine

Nonferrous Mine  Underground Quarry

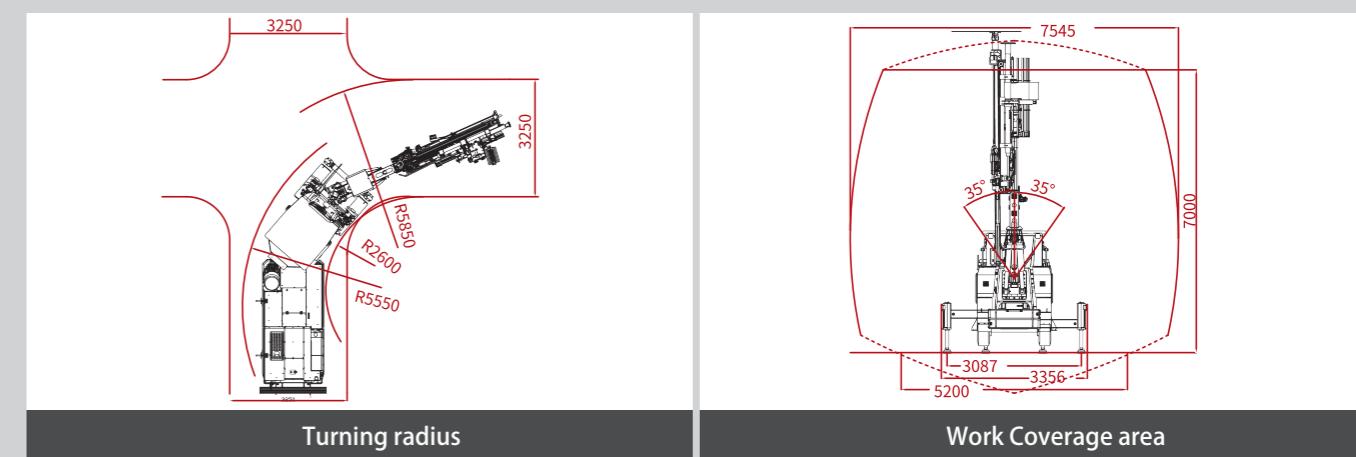
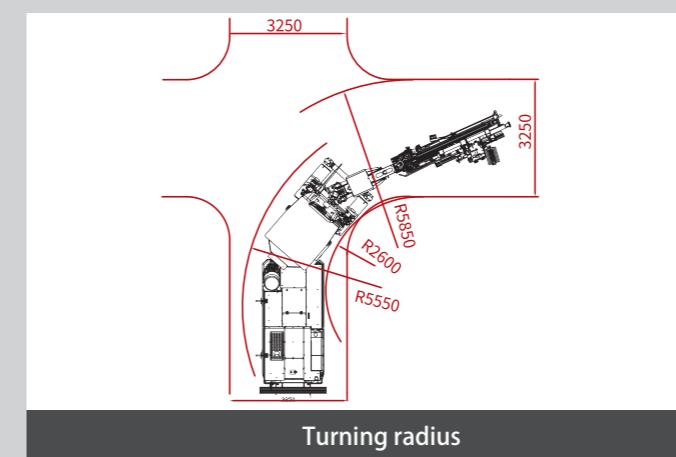
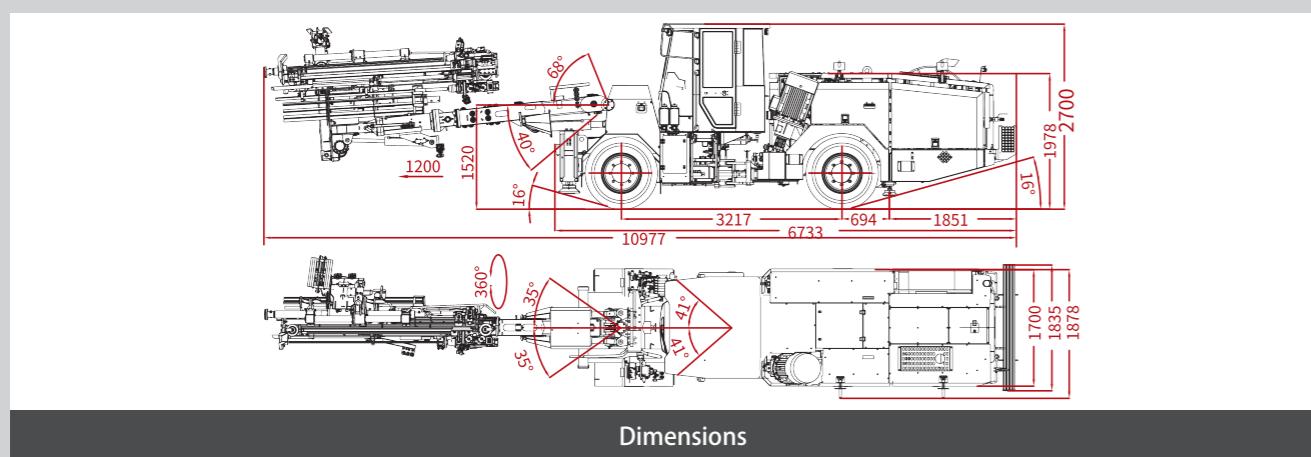
### Optional Configurations



Taking diversified requirements for operation environment into consideration, we offer option of an air-conditioned cabin. It is worth noting that some models are not equipped with the air-conditioned cabin and please refer to the optional configurations list for details.

### Technical Specifications

Engine				
Manufacturer	Cummins	Cummins	Cummins	Cummins
Model	4BTA3.9-C100-II	QSB3.9-C100-30	B3.9CS4-C110	F3.8
Emission standards	II China II	III China III	IV China IV	V EURO V
Rated power	74 kW(100 hp)2,200rpm	74 kW(100 hp)2,400rpm	81 kW(110 hp)2,500rpm	75 kW(100 hp)2,200rpm
Functional Parameters				
Hole range	Φ32-51mm	Hole depth	I,900/2,200 mm	
Hole depth (1st drill rod)	8.5X7 m	Weight	15 T	
Drill rod size & length	R32-H 25-R 25 2,175 /2,475	Turning radius	(Inner)R2,890/(Outer)R6,000 mm	
Face size (W *H)	I,800/2,000/2,100 mm	Dimensions (L*W *H)	10,700X1,900X2,700 mm	
Bolt type: (Split tube friction bolt) Φ40 mm/ Resin bolt: Φ16/Φ18/Φ20/Φ22/Φ25 mm				Number of bolts: 9+1
Drill Boom & Feed Beam				
Feed total length	2,900/3,200 mm	Boom extension length	1,200 mm	
Feed extension length	480 mm	Boom swing angle	35°	
Feed travel length	I,900/2,200 mm	Boom lifting /lowering angle	68° / 40°	
Feed force max.	15 kN	Feed roll-over angle	360°	
Feed speed max.	0.9 m/s	Feed tilt angle	18° / -75°	
Pullback force max.	17 kN			
Chassis				
Tramming method	Diesel engine / electrical drive + 4WD + articulated			
Cooling method for tramping	Air cooling	Approach / departure angle	17°	
Tramming speed	12/4.5 km/h	Ground clearance	314 mm	
Gradeability	15°	Hydraulic jack	4	
Steering angle	±41°	Fuel tank Volume	65 L	
Rear axle oscillation angle	±8°			
Rock Drill				
Electrical Motor	Manufacturer	ZEGA		
Installed power	66kW	Model	ZY102M	
Main motor power	45 kW	Percussion power	11kW	
Number of main motors	1	Percussion frequency	100 Hz	
Working voltage	380/660V	Rotation speed	0-320 rpm	
Working frequency	50/ 60 Hz	Rotation torque max.	550 N.m	
Cable length	80/100m	Weight	80 kg	
Water System				
Flow rate max.	4m3 /h	Manufacturer	ZEGA	
Flushing pressure max.	12 bar	Model	ZGHA56II	
Water inlet pressure min .	2 bar	Nonimal air pressure	8 bar	
Water hose length	No	Air discharge capacity FAD	1 m3/min	
Cooling method of rock drilling	Water cooling			
Screw Air Compressor				



## ZEGA UP31A/31B

### Product Features

■ Features of this model: UP31A/B is a long-hole drill rig for medium to large-sized drifts; Minimum drift pass size: 3X3m; Satisfies operation requirements for deep hole mining drifts with 5.1x7.9m size; The aluminium alloy feed beam and 3 spikes support between the upper and lower roofs to ensure secure positioning and drilling accuracy, and avoid position change during drilling; The feeding system adopts the direct connection design of multi-stage hydraulic cylinder to reduce discontinuous stress caused by regular chain / steel wire rope feeding, thereby lowering the possibility of drilling deviation, at the same time, it greatly decreases faults sources and promotes reliability. The large-capacity automatic rod handling system of 27+1 drill rods satisfies one positioning for drilling operations of 50m hole depth, and effectively prevents operators from working in hazardous areas for improving safety level.



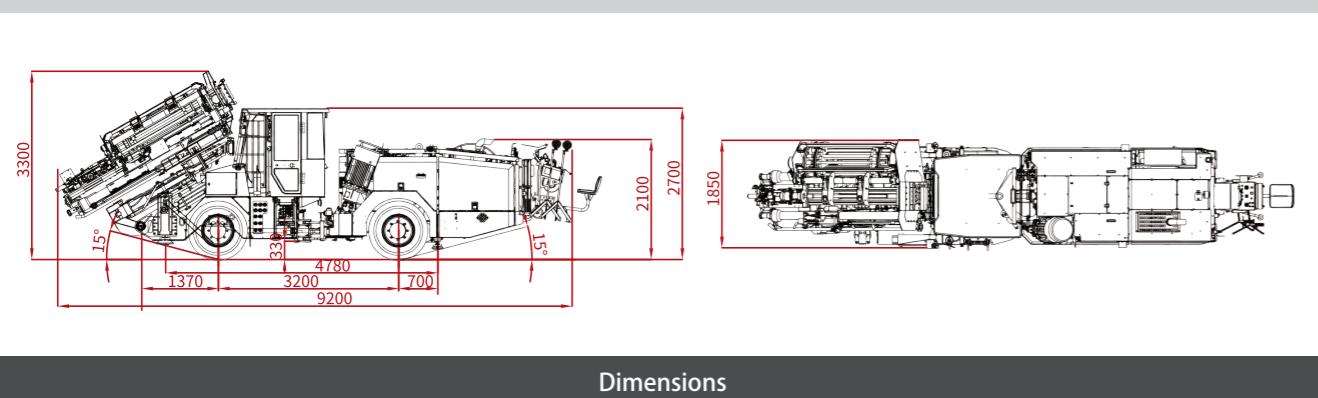
### Working conditions

#### Construction

Tunneling Construction  Water-diversion Works  Cave Depot Project  
 Hydropower Station  Underground Powerhouse  Defense Engineering

#### Green Mining

Iron Mine  Chemical Mine  
 Nonferrous Mine  Underground Quarry



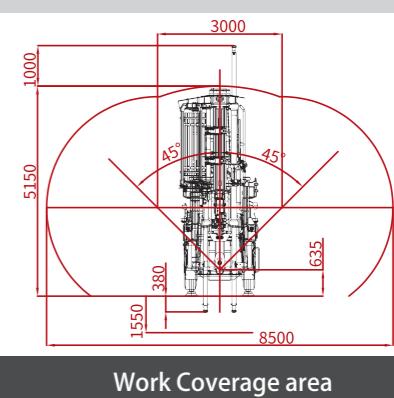
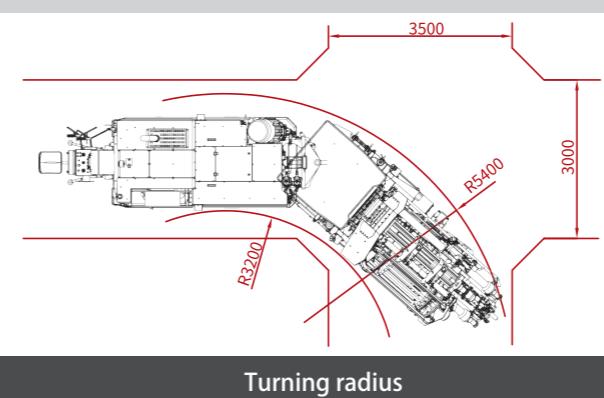
### Optional Configurations



Regarding to harsh operation environments, there is an option of widened front axle to boost the turning stability and reliability. Notice: This configuration is suitable for the drifts width of 4m or above.

### Technical Specifications / The date behind is parameters of UP31B

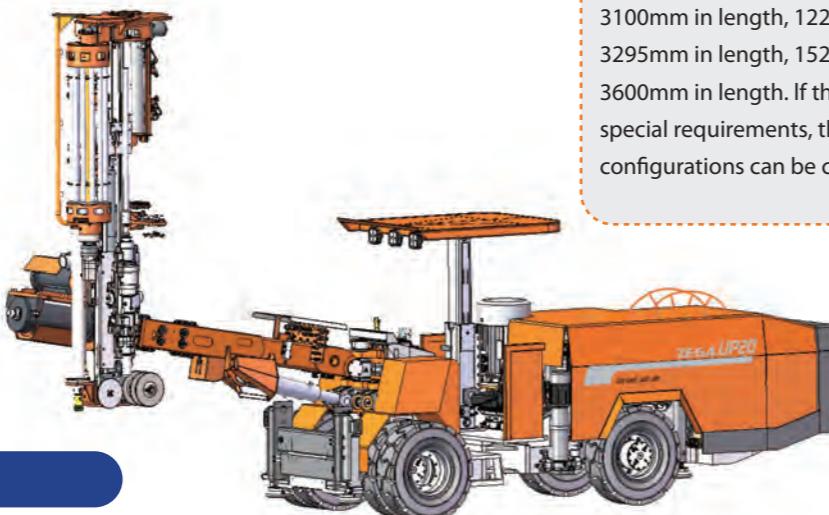
Engine						
Manufacturer	Cummins	Cummins	Cummins	Cummins		
Model	4BTA3.9-C100-II	QSB3.9-C100-30	B3.9CS4-C110	F3.8		
Emission standards	II China II	III China III	IV China IV	V EURO V		
Rated power	74 kW(100 hp)2,200rpm	74 kW(100 hp)2,400rpm	81 kW(110 hp)2,500rpm	75 kW(100 hp)2,200rpm		
Functional Parameters						
Hole range	Φ32-51mm	Number of auto changing rods	No & 27+1			
Hole depth (1st drill rod)	8.5X7 m	Turning radius	(Inner)R,2650/(Outer)R5,000 mm			
Drill rod size & length	R32-H 25-R 25 2,175 /2,475	Dimensions (L*W *H)	9,000*1,700*2,700mm&			
Face size (W *H)	1,800/2,000/2,100 mm	Weight	9,200*1,850*3,300mm 14T &16T			
Drill Boom & Feed Beam						
Feed total length	3,000mm&3,600mm	Travel length of rear spike	900mm & 1,800mm			
Feed extension length	900mm&1,200mm	Boom extension length	No& 460 mm			
Feed travel length	1,370mm&1,980mm	Boom swing angle	45°			
Feed force max.	30 kN	Boom lifting/lowering angle	30° /70° & 45° /60°			
Feed speed max.	0.9 m/s	Feed roll-over angle	360°			
Pullback force max.	30 kN	Parallel distance	1,700mm&3,000mm			
Travel length of front spike	650mm&1,150mm					
Chassis						
Tramming method	Diesel engine / electrical drive + 4WD + articulated					
Cooling method for tramping	Air cooling	Approach / departure angle	17°			
Tramming speed	12/4.5 km/h	Ground clearance	314 mm			
Gradeability	15°	Hydraulic jack	4			
Steering angle	±41°	Fuel tank Volume	65 L			
Rear axle oscillation angle	±8°					
Electrical Motor						
Installed power	81 kW	Manufacturer	ZEGA			
Main motor power	55 kW	Model	ZY104MZ			
Number of main motors	1	Percussion power	20kW			
Working voltage	380/660V	Percussion frequency	42-52Hz			
Working frequency	50/ 60 Hz	Rotation speed	0-140 rpm			
Cable length	80/100m	Rotation torque max.	980 N.m			
Remote control distance	20 m	Weight	185 kg			
Rock Drill						
Water System						
Flow rate max.	6m3 /h	Manufacturer	ZEGA			
Flushing pressure max.	14 bar	Model	ZGHA56II			
Water inlet pressure min .	2 bar	Nonimal air pressure	8 bar			
Water hose length	No	Air discharge capacity FAD	1 m3/min			
Cooling method of rock drilling	Water cooling					
Screw Air Compressor						



## ZEGA UP20

### Product Features

■ Features of this model: UP20 is a long-hole drill rig for small to medium-sized drifts; Minimum drift pass size: 2X2m; Satisfies requirements for deep hole mining operations on 6x6m face size; The drill boom of 2-degree-of-freedom roll-over cylinder design ensures steady operations at all directions, thereby UP20 is perfectly suitable for long-hole drilling on nonferrous mines along the vein; The operation is under the protective safety canopy, which is safer, more reliable and effective.



### Working conditions

#### Construction

Tunneling Construction  Water-diversion Works  Cave Depot Project

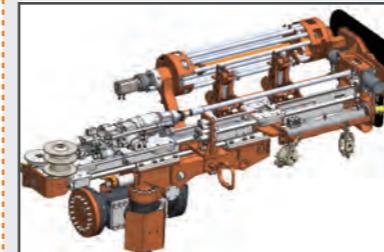
Hydropower Station  Underground Powerhouse  Defense Engineering

#### Green Mining

Iron Mine  Chemical Mine

Nonferrous Mine  Underground Quarry

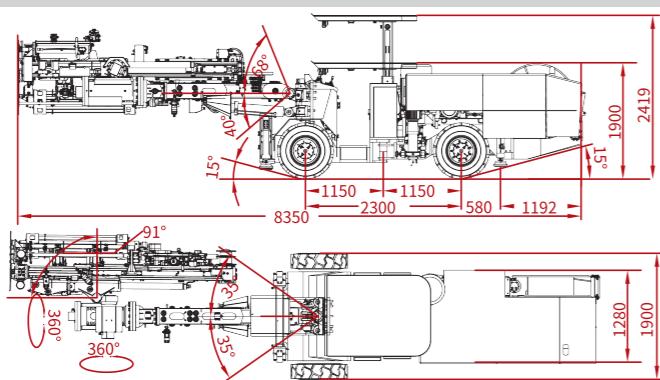
### Optional Configurations



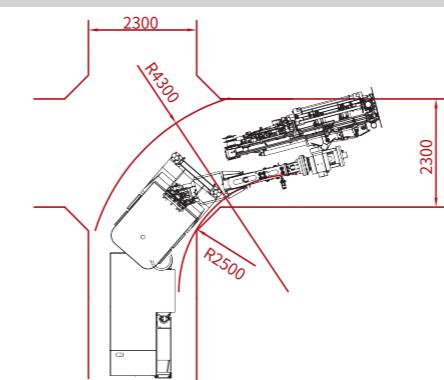
In accordance with various drift sizes and hole depth requirements, we provide 3 feed configurations of different specifications: 915 feed of 3100mm in length, 1220 feed of 3295mm in length, 1525 feed of 3600mm in length. If there are other special requirements, the drill rig configurations can be customized.

### Technical Specifications

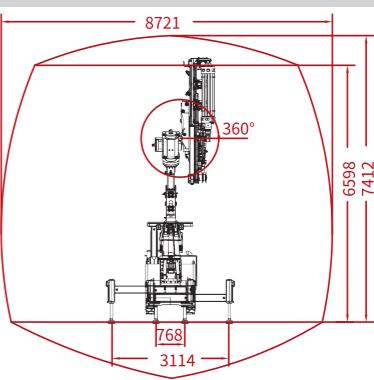
Engine				
Manufacturer	Cummins	Cummins	Cummins	Cummins
Model	4BTAA3.9-C100-II	QSB3.9-C100-30	B3.9CS4-C110	F3.8
Emission standards	II China II	III China III	IV China IV	V EURO V
Rated power	74 kW(100 hp)2,200rpm	74 kW(100 hp)2,400rpm	81 kW(110 hp)2,500rpm	75 kW(100 hp)2,200rpm
Functional Parameters				
Hole range	Φ65-115mm	Number of auto changing rods	10+1	
Hole depth	35 m	Turning radius	(Inner)R2,500mm/(Outer)R4,300 mm	
Drill rod size & length	T38/T 45/TSI 1,220/1,525/1,830	Dimensions (L*W *H)	8,350*1,280*1,900/2,419 mm	
Face size (W *H)	8.7*6.6 m	Weight	14 T	
Drill Boom & Feed Beam				
Feed total length	3,350 mm	Travel length of rear spike	1,000 mm	
Feed extension length	800 mm	Boom extension length	900 mm	
Feed travel length	1,600 mm	Boom swing angle	35°	
Feed force max.	20 kN	Boom lifting/lowering angle	68° / 40°	
Feed speed max.	0.9 m/s	Feed roll-over angle	360° +180°	
Pullback force max.	20 kN	Parallel distance	3,800 mm	
Travel length of front spike	600 mm			
Chassis				
Tramming method	Diesel engine / electrical drive + 4WD + articulated			
Cooling method for tramping	Air cooling	Approach / departure angle	15°	
Tramming speed	7/4 km/h	Ground clearance	240 mm	
Gradeability	15°	Hydraulic jack	4	
Steering angle	±41°	Fuel tank Volume	60 L	
Rear axle oscillation angle	±8°			
Rock Drill				
Electrical Motor	Manufacturer	ZEGA		
Installed power	81kW	Model	ZY104MZ	
Main motor power	55 kW	Percussion power	20kW	
Number of main motors	1	Percussion frequency	42-52 Hz	
Working voltage	380/660V	Rotation speed	0-140 rpm	
Working frequency	50/ 60 Hz	Rotation torque max.	980 N.m	
Cable length	80/100m	Weight	185 kg	
Water System				
Flow rate max.	6m <sup>3</sup> /h	Manufacturer	ZEGA	
Flushing pressure max.	14 bar	Model	ZGHA56II	
Water inlet pressure min.	2 bar	Nonimal air pressure	8 bar	
Water hose length	No	Air discharge capacity FAD	1 m <sup>3</sup> /min	
Cooling method of rock drilling	Water cooling			
Screw Air Compressor				



Dimensions



Turning radius



Work Coverage area



## Customized Service

### Optional Configurations

- It is designed with the principle of embeddable modular structure, and can be equipped with different configuration function packages according to the different application and construction needs of customers.

### Customized Design

- According to different working conditions, environments and regulations and other special needs, to provide customers with a variety of customized designs.

### Environmental Adaptability

- For extreme operating conditions such as extreme cold, tropical deserts, high altitude or high corrosion under the seabed, we provide customized corresponding technical solutions to meet the needs of different regions around the world.

### Remote Management

- Operators and equipment technicians can easily obtain the operation data of the fleet through the wireless network, which makes the production scheduling and maintenance of the equipment more efficient.



**UJ21C/21CH** Underground Construction Drill Rig

Face drilling coverage area (W x H).MAX:11.9 X9.5 m  
 Bolting drilling coverage area (W x H).MAX:19.3 X 13.2 m  
 Minimum tunnel size of pass through (W x H):4X4 m  
 Hole range:<1>41-102 mm



**UJ21MG** Underground Construction Drill Rig

Bolting drilling coverage area (W x H).MAX: 19.2X13.3 m  
 Minimum tunnel size of pass through (W x H): 4.5X4.5 m  
 Hole range:<1>41-102 mm



**UJ22A** Underground Construction Drill Rig

Face drilling coverage area (W x H).MAX:13.8X9.6 m  
 Bolting drilling coverage area (W x H).MAX:21X 13.4 m  
 Minimum tunnel size of pass through (W x H):4.5X4.5 m  
 Hole range:<1>41-102 mm



**UJ33A** Underground Construction Drill Rig

Face drilling coverage area (W x H).MAX:16.2X 13.2 m  
 Bolting drilling coverage area (W x H).MAX:23.2X 16.9 m  
 Minimum tunnel size of pass through (W x H): 6.7X6.7m  
 Hole range:<1>41-102 mm







ZEGA UJ22A

## Product Features

- Features of this model: UJ22A is a face drilling rig for highways, railways, hydropower, cave storage and other medium to large-sized tunnel constructions. Equipped with two drill booms with parallel holding function and one service platform, UJ22A not only satisfies requirements for face drilling operations on tunnels of 13.8X9.7m, but also bolting, advanced pipe sheds and other support operations. The liftable air-conditioned cab provides the operator with a better view to promote the control accuracy of overbreak.



## Working conditions

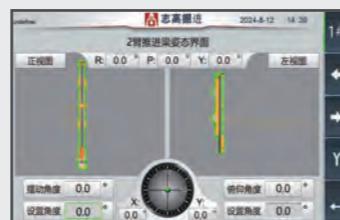
## Construction

- Tunneling Construction
- Water-diversion Works
- Cave Depot Project
- Hydropower Station
- Underground Powerhouse
- Defense Engineering

## Green Mining

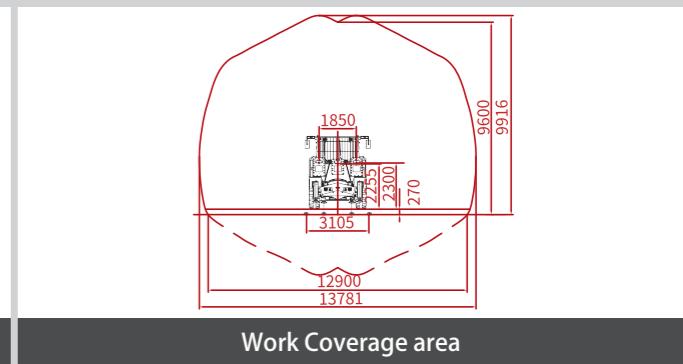
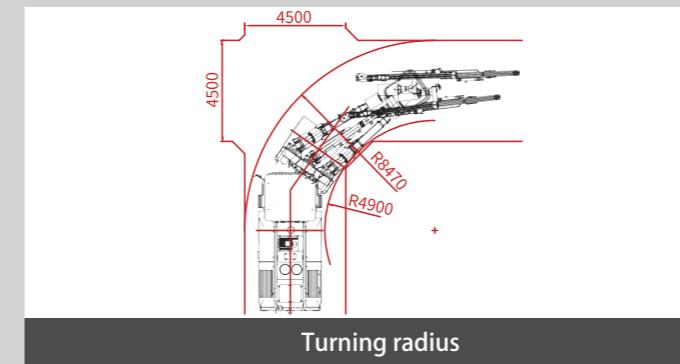
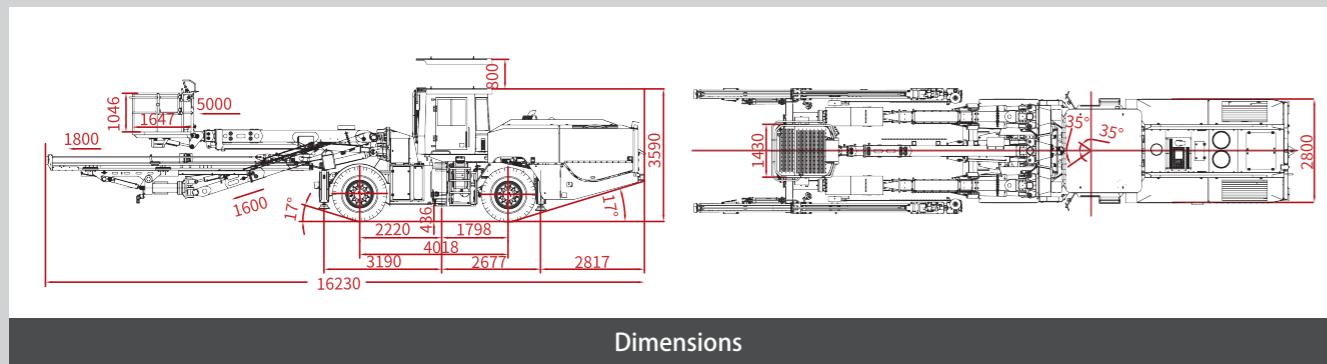
- Iron Mine
- Chemical Mine
- Nonferrous Mine
- Underground Quarry

## Optional Configurations



The drill plan import/export system is designed for satisfying requirements of angle control and storing measured data, which displays real-time drilling angle and stores these data. in addition, the optional function of uploading data can be added as required.

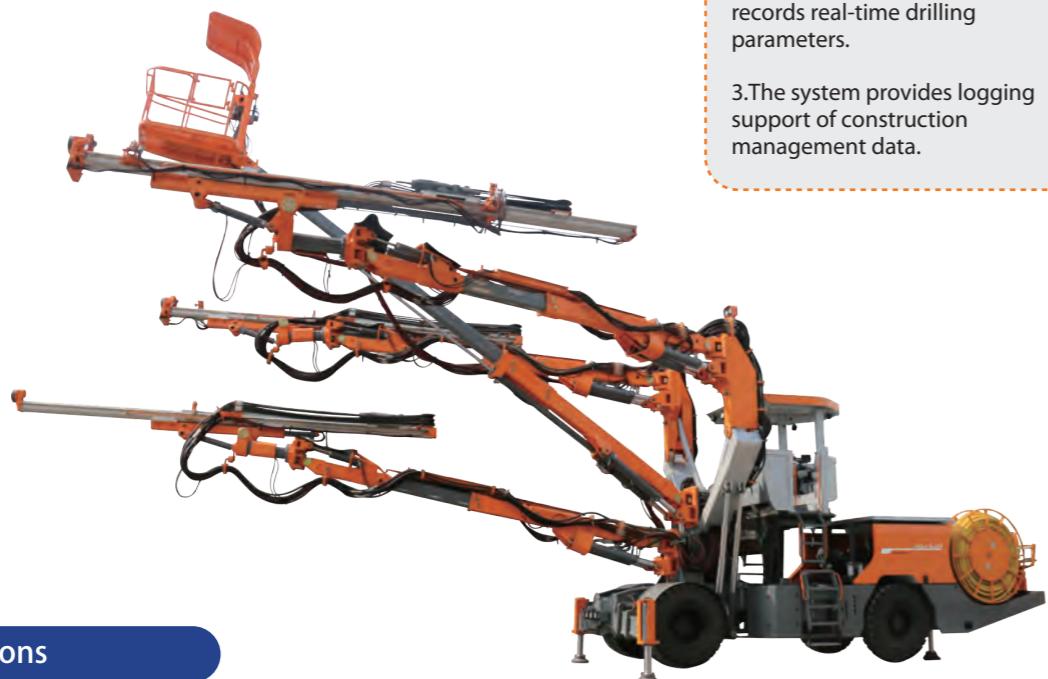
Technical Specifications			
Engine			
Manufacturer	Cummins	Cummins	DEUTZ
Model	QSB5.9-C170-30	B5.9CS4-C175	TCD6.1 L6 st.V
Emission standards	III China III	IV China IV	V EURO V
Rated power	125kW(170 hp)2,200rpm	129kW(175 hp)2,200rpm	160kW(220 hp)/120kW(165hp)2,200rpm
Functional Parameters			
Hole range	Φ41-102mm	Work coverage area max.	116 m2
Hole depth (1st drill rod)	4,050/5,270 mm	Turning radius	(Inner)R4,900/(Outer)R8,470 mm
Drill rod size & length	T38-H35-R32 4,305/5,525	Dimensions (L*W *H)	16,230X2,800X3,590/4,390 mm
Face size (W *H)	13.8X9.6 m	Weight	40T
Drill Boom & Feed Beam			
Feed total length	6,100/7,244 mm	Parallel holding system	exist
Feed extension length	1,800 mm	Boom extension length	1,600 mm
Feed travel length	4,050/5,270 mm	Boom swing angle	45°
Feed force max.	20 kN	Boom lifting /lowering angle	68° /45°
Feed speed max.	0.9 m/s	Feed roll-over angle	360°
Pullback force max.	20 kN	Feed tilt angle	90° /-3°
Service Platform			
Platform arm swing angle	45°	Rated capacity	600 kg
Arm lifting /lowering angle	60° / 35°	Face size (W*H)	17.3X11.2m
Arm extension length	5,000 mm	Work coverage area max.	145 m2
Chassis			
Tramming method	Diesel engine / electrical drive + 4WD + articulated		
Cooling method for tramping	Air cooling	Approach / departure angle	17°
Tramming speed	29/ 8 km /h	Ground clearance	436 mm
Gradeability	14°	Hydraulic jack	4
Steering angle	±35°	Fuel tank Volume	220 L
Rear axle oscillation angle	±8°	Rock Drill	
Electrical Motor		Manufacturer	ZEGA
Installed power	152 kW	Model	ZY104M
Main motor power	55 kW*2	Percussion power	20 kW
Number of main motors	2	Percussion frequency	46/60 Hz
Working voltage	380/660V	Rotation speed	0-210 rpm
Working frequency	50/ 60 Hz	Rotation torque max.	752 N.m
Cable length	100m	Weight	170 kg
Water System		Screw Air Compressor	
Flow rate max.	16 m3 /h	Manufacturer	ZEGA
Flushing pressure max.	15 bar	Model	ZGHA56II
Water inlet pressure min .	2 bar	Nonimal air pressure	8 bar
Water hose length	100m	Air discharge capacity FAD	1 m3/min
Cooling method of rock drilling	Water cooling		



ZEGA UJ33

## Product Features

- Features of this model: Suitable for highways, railways, hydropower, cave storage and other underground and tunnel constructions. The three heavy-duty booms, one service platform, liftable cab, cable reel and hose reel whose constant cable tensions are automatically controlled, facilitate the operation and maintenance. Two outside booms are equipped with eagle-shaped boom seats, which can be applied in large-scale face drilling, bolting, advanced pipe sheds and other drilling operations.



## Working conditions

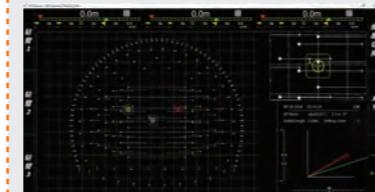
## Construction

- Tunneling Construction
- Water-diversion Works
- Cave Depot Project
- Hydropower Station
- Underground Powerhouse
- Defense Engineering

## Green Mining

- Iron Mine       Chemical Mine
- Nonferrous Mine       Underground Quarry

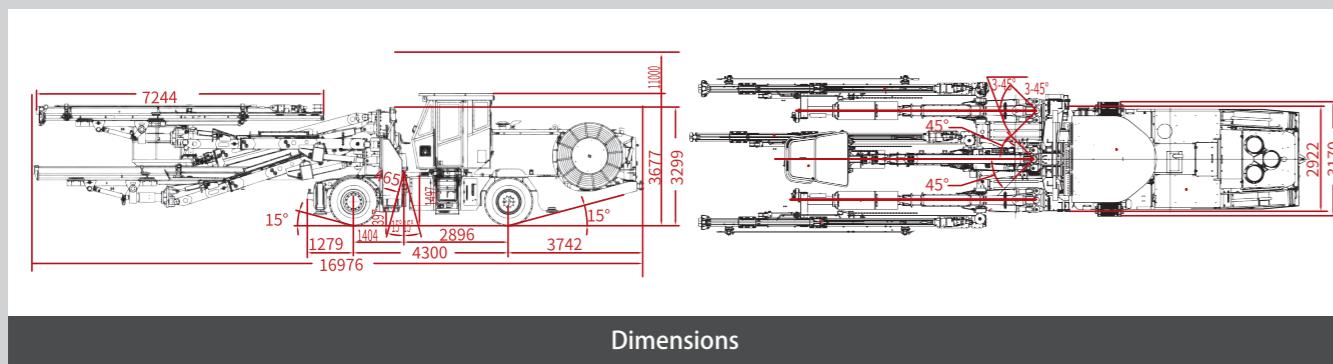
## Optional Configurations



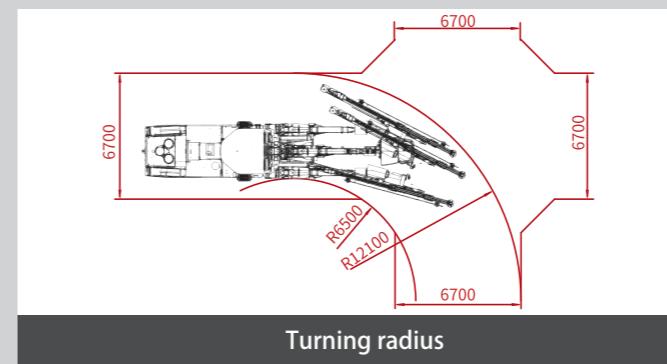
- 1.Digital and intelligent monitoring of the whole drilling operation.
- 2.The system monitors and records real-time drilling parameters.
- 3.The system provides logging support of construction management data.

## Technical Specifications

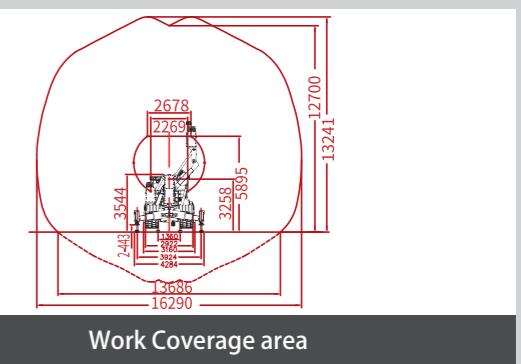
Engine			
Manufacturer	Cummins	Cummins	DEUTZ
Model	QSC8.3-C240-III	B6.7CS4-240C	TCD6.I L6 st.V
Emission standards	III China III	IV China IV	V EURO V
Rated power	179 kW(245 hp)2,200rpm	177 kW(240 hp)2,200rpm	160kW(220 hp)/120kW(165hp)2,200rpm
Functional Parameters			
Hole range	Φ41-102mm	Work coverage area max.	184 m <sup>2</sup>
Hole depth (1st drill rod)	4,050/5,270 mm	Turning radius	(Inner)R6,500/(Outer)R12,100 mm
Drill rod size & length	T38-H35-R32 4,305/5,525	Dimensions (L*W *H)	16,970 x 2,930 X3,159/3,859 mm
Face size (W *H)	16.3X13.2 m	Weight	50T
Drill Boom & Feed Beam			
Feed total length	6,100/7,244 mm	Parallel holding system	exist
Feed extension length	1,800 mm	Boom extension length	1,600 mm
Feed travel length	4,050/5,270 mm	Boom swing angle	45°
Feed force max.	20 kN	Boom lifting /lowering angle	68° /45°
Feed speed max.	0.9 m/s	Feed roll-over angle	360°
Pullback force max.	20 kN	Feed tilt angle	90° /-3°
Service Platform			
Platform arm swing angle	45°	Rated capacity	600 kg
Arm lifting /lowering angle	60° / 35°	Face size (W*H)	17.3X11.2m
Arm extension length	5,000 mm	Work coverage area max .	145 m <sup>2</sup>
Chassis			
Tramming method	Diesel engine / electrical drive + 4WD + articulated		
Cooling method for tramping	Air cooling	Approach / departure angle	15°
Tramming speed	19.8 / 9.6 / 4.3 km/h	Ground clearance	396 mm
Gradeability	14°	Hydraulic jack	4
Steering angle	38° /-50°	Fuel tank Volume	150 L
Rear axle oscillation angle	±8°	Rock Drill	
Electrical Motor		Manufacturer	ZEGA
Installed power	222 kW	Model	ZY104M
Main motor power	55 kW*3	Percussion power	20 kW
Number of main motors	3	Percussion frequency	46/60 Hz
Working voltage	380/660V	Rotation speed	0-210 rpm
Working frequency	50/ 60 Hz	Rotation torque max.	752 N.m
Cable length	100m	Weight	170 kg
Water System			
Screw Air Compressor			
Flow rate max.	20 m <sup>3</sup> /h	Manufacturer	ZEGA
Flushing pressure max.	17 bar	Model	ZGHA56II
Water inlet pressure min .	2 bar	Nonimal air pressure	8 bar
Water hose length	100m	Air discharge capacity FAD	1 m <sup>3</sup> /min
Cooling method of rock drilling	Water cooling		



## Dimensions



## Turning radius



## Work Coverage area

Optional List of ZEGA Underground Rig

✓ means exist

Optional	Model	UJ1SA	UJ20	UJ21D	UJ22E	UMISK	UM20	UM21K	UP20	UP31A	UP31B	UJ21C	UM21MG	UJ22A	UJ33
Feed Assembly for Drill Rod of 3090mm		✓	✓	✓								✓			
Feed Assembly for Drill Rod of 3700mm		✓	✓	✓	✓							✓			
Feed Assembly for Drill Rod of 4305mm				✓	✓							✓	✓	✓	✓
Feed Assembly for Drill Rod of 5525mm												✓		✓	✓
1830/3700 Telescopic Feeder			✓	✓	✓										
2435/4270 Telescopic Feeder				✓	✓										
I+I Rod HandlingSystem												✓		✓	✓
1+3 Rod HandlingSystem												✓		✓	✓
1.8m Bolt Feeder						✓	✓	✓							
2.0m Bolt Feeder						✓	✓	✓							
2.2m Bolt Feeder									✓	✓					
1m Drill Rod Long and Medium Hole Feeder										✓	✓				
1.2m Drill Rod Long and Medium Hole Feeder										✓	✓	✓			
1.5m Drill Rod Long and Medium Hole Feeder										✓					
Engine water jacket preheating kit		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Automatic Extinguishing System		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Automatic Centralized Lubrication System		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drilling Pilot System		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Line-of-sight radio remote control					✓										
Cold Weather Package		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tropical Climate Package		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
100m Cable		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
600V power supply package		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
1000v Power Source Package		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Front Axle Widening Configuration		✓	✓	✓		✓	✓	✓	✓	✓	✓				
Cab with Air Con				✓	✓				✓	✓	✓				
Cab display for monitoring camera		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

We continue to provide customers with reliable spare parts, we also committed to providing first-class after-sales service.

- Our after-sales service team and agents maintain long-term and stable close cooperation, creating a global service support system for ZEGA Tunnelling, ensuring that customers can continuously increase production capacity while reducing repair and maintenance costs.

## SPARE PARTS MANUAL

- All products are supplied with spare parts manuals that meet international standards and are tailored to customers, as well as maintenance kits at different stages to ensure the smooth and reliable operation of the equipment.

## GENUINE PARTS

- Customers should always use authentic or factory approved parts and oils to ensure the life and performance, and the long lasting smooth running of the machine;



## SERVICE STATION

- We can provide users with mobile service workstations, which are convenient in transportation and complete in supporting facilities, allowing users to enjoy one-stop services such as "maintenance and repair of mining and construction equipment, emergency parts reserve".



## SERVICE AGREEMENT

Different service plans for customers to choose from:

### a) Annual Service Agreement (ASC)

ZEGA service engineers will visit the users regularly for routine check and service according to the service plan.

### b) Full Service and Maintenance Agreement (FMC)

ZEGA service engineers will visit the users regularly for inspection and service according to the maintenance service hours.

### c) Site Service Contract (SSC)

ZEGA professional service engineers will provide service on site for a long period of time, and customers can also select service plans and time periods according to actual needs.



## QUALITY ASSURANCE SERVICES

We provide quality assurance services that meet international industry standards;

At the same time, we are seeking to carry out a "warranty period extension" plan that exceeds industry standards:

establish industry benchmarks, and enhance brand strength!



## LICENSING

We grant authorization to eligible agents and issue corresponding authorization letters and certificates.



## Parts Accessories & Services

Build Dreams and Achieve the Future Together with ZEGA Digging

