

## DJ3A DRILLING JUMBO

DJ3A is a hydraulic 3-boom Drill Jumbo independently designed and manufactured by KAMACH and CREG whose coverage reaches up to 170 m<sup>2</sup>. The maximum height of borehole is 12.50 m. Diameters of drill range from 43 mm to 102 mm. The maximum speed is 17.50km/h and the maximum climbing capacity is 18°.

When UCS= 40 MPa , the monthly advance exceeds 250 m and each round could produce more than 150 boreholes. It takes only 3 to 3.5 h to drill one face. The pure drilling efficiency sustains between 1.7 m to 2.5 m/min. The overcut and undercut of boreholes are kept within 10 cm. The machine is quite steady in both function and tunnelling speed.



### Technical Specifications

MAIN PARAMETER	
Empty Weight	48 metric ton
External dimensions	16451 mm×2950 mm×3745 mm
Turning radius (Inner)	6300 mm
Turning radius (External)	12000 mm
Work range (W×H)	15112 mm×12407 mm
Maximum drilling coverage	170 m <sup>2</sup>
Total power installed	200 kW
Maximum grade ability (°)	15°
Maximum tramming speed	18 km/h
Bore diameter	Φ43mm ~ Φ102mm

ROCK DRILL	
Brand	Montabert
Model×Qty	HC109×3
System pressure (bar)	210 bar
Rated power (kW)	18 Kw
Impact pressure (bar)	135 bar
Impact frequency (Hz)	49 Hz
Rotate pressure	140 bar
Rotate torque	730 N·m
Rotate speed	210 r/min
Flushing water pressure	15-25 bar
Weight	142 kg

BOOM	
Control method	Hydraulic pilot control
Coverage	92 m <sup>2</sup>
Telescopic stroke	1600 mm
Swinging angle	±45°
Lifting/descend angle	65°/-35°

FEEDER	
Material	Aluminum alloy
Total length	7302 mm
Maximum propelling force	20 kN
Single propelling depth	5250 mm
Tilt angle	0 ~ 95 °
Swinging angle	±180 °

PLATFORM	
Work range (height×weight)	13.6 m×16 m
Lifting force	400 kg
Telescopic length	5 m

CHASSIS	
Ground clearance	266 mm
Front/Rear tread	4200 mm
Front/Rear wheel base	2080/2310
Front/Rear tires ×qty	14.00R24×6 (4F+2R)
Engine	
Brand	Deutz
Model	TCD2013L06
Power	173 kW
Fuel tank volume	120 Liter
Emission standard	EU III

Power transfer	Hydraulic power transfer
Brake system	Wet disc brake
Steering system	Rear axle power steering

**HYDRAULIC SYSTEM**

Electric motor×Qty	55kW×3
Main pump brand	Rexroth
Main pump model	A10VO110
Main pump rated pressure	210 bar
Main pump displacement	110 ml/r
Aux. pump brand	Rexroth
Aux. pump model	A10VO60
Aux. pump rated pressure	180 bar
Aux. pump displacement	60 ml/r
Hydraulic oil tank volume	750 Liter
Filtration accuracy	10 $\mu$ m

**AIR SYSTEM**

Air compressor model	AED11A-QZ
Air compressor power	11 kW
Displacement /Pressure (8 bar)	1.0 m <sup>3</sup> /min
Air consumption	300×3 L/min
Lub. oil consumption	8~15 drop/min

**WATER SYSTEM**

Pressure water pump brand	LOWARA
Model	15SV13F110T
Rated power	11 kW
Rated flow	270 L/min
Rated pressure	15 bar
Water pressure when drilling	15 bar

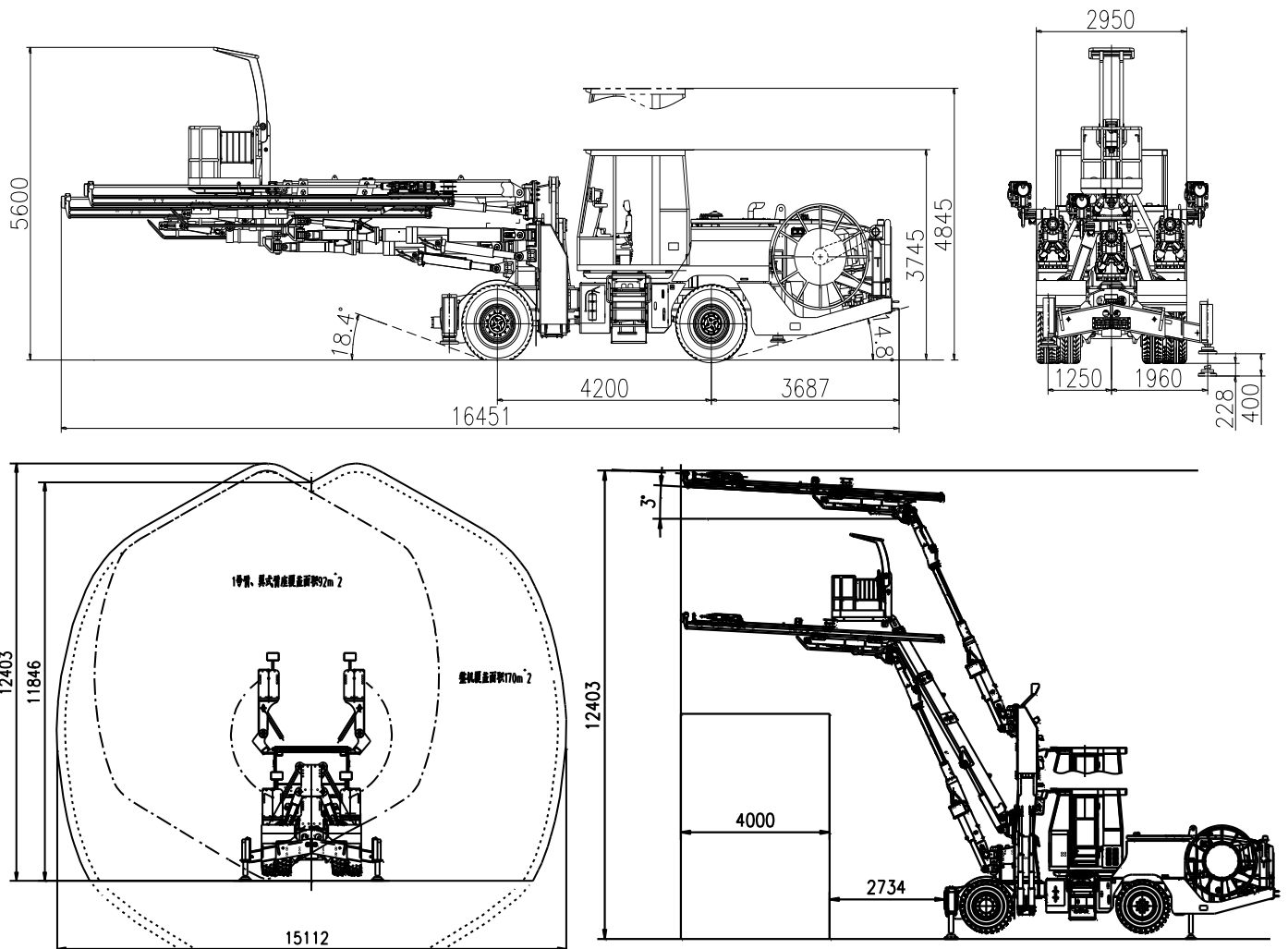
**ELECTRIC SYSTEM**

Brand	Schneider
Circuit Breaker model	NSX series
Total input power	200 kW
Voltage	380VAC/50Hz
Cable length	80 m
Cable reel volume	3×185+3G35
Starting method	Y- $\Delta$
IP class	IP65

CONTROL SYSTEM	
Drilling rig controlling method	Direct control
System voltage	24VDC
Boom control	Hydraulic Pilot Control



## External Dimensions



**2. DJ3A Pilot control 3-boom hydraulic drilling jumbo (each)**

S/N	Main Components	Model	Qty (set)
1	Rock drill	HC109	3
2	Feeder		3
3	Drill boom		3
4	Heavy duty chassis		1
5	Lifting sealed cabin		1
6	Hydraulic pilot control system	2TH6	3
7	Anti-jamming system	Intelsense II	3
8	Electric control system	380V	1
9	Engine	TCD2013L06	1
10	Drive axle	37R/213	2
11	Transmission	32000	1
12	Electric motor	YE2-225M-4	3
13	Electric drive air compressor	AED11A-QZ	1
14	Electric drive pressure water pump	15SV13F110T	1
15	Hydraulic pump	A10VO110+A10VO60	3
16	Cable reel	25.1CRC 1018-374P (80m)	1
17	Water hose reel	20.1PR918-250PGR1x2 (60m)	1
18	Hole expansion system		3
19	Translation front outrigger		2
20	Rear outrigger		2
21	Light	1200W	1
22	Platform	Sp2	1

### 3. Free parts with delivery

S/N	Parts Name	Model	Qty
1	Drill bit	R32/D45mm	3
2	Drill rod	T38/R32/5525mm	3
3	Coupler	T38/T38	3
4	Shank	86619376	3

### 4. Tools for Jumbo maintenance

S/N	Parts Name	Model/Code	Qty
1	10mm hexagon socket	6 ~ 19mm	14
2	10mm ratchet wrench		1
3	10mm universal joint		1
4	Set of Allen Wrenches	1.5 ~ 10mm	9
5	Metric Combination Wrench	8 ~ 19mm	10
6	Ratchet Allegro	17mm	1
7	Adjustable wrench	8 "	1
8	Slotted screwdriver		3
9	Phillips screwdriver		4
10	Wire cutters	8 "	1
11	Needle nose pliers	6 "	1
12	Set of circlip pliers		5
13	Steel tape	3mx16mm	1
14	23 piece set metric feeler gauge	0.02 ~ 1mm	1
15	Steel ruler	150mm	1
16	Round head hammer	1 pond	1
17	Magnetic pickup	380mm	1
18	Utility knife		1
19	Aluminum flashlight		1
20	Subtotal		58
21	Grease gun	Steel shield/600cc	1
22	Grease gun head	Steel shield/flat nozzle	6
23	In total		65

## 5. Rock drill tools

S/N	Parts Name	Model/Code	Qty
1	Fixtures	86323516	1
2	Nitrogen filling tool	86490364	1
3	Exclusive flange	86323524	1
4	Pin	86324548	1
5	Special tools for sun protection φ45-51	86352564	1
6	Tap 3/4"	86380821	1
7	Tool set 3/4"	86274453	1
8	Tool set 1`1/8	86328382	1
9	Fixed move	86630001	1
10	Motor installation push rod	86641834	1
11	Exclusive tool	86651114	1
12	Motor, accumulator cover opening tool	86493392	1
13	Motor mounting shaft	86641826	2
14	Heating 50 to 80Nm	86480597	1
15	Exclusive (route 29)	86424199	1
16	Pull up	86575693	1

## 6. Parts Stock Suggested for owner

S/N	Parts Name	Model/Code	Qty	Type
1	Drill bit	R32/φ45	30	Tools
2	Drill pipe	T38/R32, L=5525mm, anti-thread	10	
3	Connection sleeve	T38/T38	10	
4	Front brazing device bushing	KAMACH	6	Consumables
5	Sliding bar on the propelling beam	3128045815	10	
6	Advance beam slide	3128045815	10	
7	Wear-resistant rubber strip	3128303930	50	
8	Middle brazing device bushing	KAMACH	6	
9	Front top plate rubber	3128303527	10	
10	Upper aluminum slider	3128314013	20	
11	Lower aluminum slider	3128314012	20	
12	Rock drill traction wire rope	3128078412	3	
13	Rock drill return wire rope	3125101003	3	
14	Hose reel	3128047510	3	
15	Pulley bearing	3128078427	3	
16	Rock drill propulsion cylinder seal	3128314257	20	
17	Engine fuel coarse filter	0293 7545 (Deutz)	2	

18	Engine fuel fine filter	0118 2672 (Deutz)	2			
19	Engine air filter paper filter	0118 2303 (Deutz)	2			
20	Engine air filter safety filter element	0118 3903 (Deutz)	2			
21	Engine oil filter	0118 3575 (Deutz)	2			
22	Water pump water seal	15SV13F110T	10			
23	Air compressor air filter	611R201511-66010	2			
24	Air compressor oil filter		2			
25	Air compressor oil fine separator		2			
26	Parking brake friction plate	03-530-904	5			
27	Service brake friction plate	37R\213	5			
28	Tire assembly	GLR07/14.00R24	1			
29	Hydraulic control ball valve	ARL10-100-LY01	1			
30	Pressure Switch	ISE80-02L-N	1			
31	Return oil filter element	0850 R 010 ON	2			
32	Temperature Switches	TS-132R4P10100	2			
33	Deutz engine special coolant	DC-2 (-15°) or DC-3 (-45°)	2		Liquid and oil fill-in	
34	Deutz engine oil	DQCIII TLX-10W40 FE oe DQCIV - 5W30-UHP (Deutz)	2			
35	Special coolant for air compressor	Allen air compressor lub. Oil	2			
36	Gearbox special oil	8# hydraulic power oil (18L/barrel)	2			
37	Gear oil for front axle and rear axle	85W/90 GL-5 (18L/barrel)	2			
38	Rock Drill Lubricant	Shell 100 air-tool oil (18L/barrel)	5			
39	Lithium Grease	1# (18L/barrel)	5			
40	Hydraulic oil	46# hydraulic oil (209L/barrel)	4			
41	Pressure test connector	SMK20-G1/4-PC-SK	6			Hydraulic components
42	Pressure gauge	SPG063-00250-01-P-B04-U	1			
43	Pressure gauge	SPG063-00060-01-P-B04-U	1			
44	Pressure line	SMS-20/M1/4-P-OR-1000-B	2			
45	Connector (for pressure measurement)	CJ-04	2			
46	Connector (for pressure measurement)	7BJ-04S	2			
47	Connector (for pressure measurement)	CJ-06	2			
48	Connector (for pressure measurement)	7BJ-04-06S	2			
49	Connector (for pressure measurement)	2J-08(G1/4)	2			
50	Connector (for pressure measurement)	2J-10(G1/4)	2			
51	Connector (for pressure measurement)	2J-12(G1/4)	2			
52	Connector (for pressure measurement)	2J-16(G1/4)	2			
53	Connector (for pressure measurement)	2J-20(G1/4)	2			
54	Connector	1JB-06-04WD	4			
55	Connector	1JB-06-08WD	2			
56	Connector	1JB-08-06WD	4			
57	Connector	1JB-10-08WD	2			
58	Connector	1JB-10-12WD	2			
59	Connector	1JB-12-08WD	2			
60	Connector	1JB-06WD	10			
61	Connector	1JB-08WD	10			



62	Connector	1JB-10WD	4
63	Connector	1JB-12WD	4
64	Connector	1JB-16WD	2
65	Connector	1JB-20WD	2
66	Connector	2J9-06	6
67	Connector	2J9-08	6
68	Connector	2J9-10	4
69	Connector	2J9-12	2
70	Connector	6J-06LN	10
71	Connector	6J-08LN	10
72	Connector	6J-10LN	6
73	Connector	6J-12LN	4
74	Connector	6J-16LN	2
75	Connector	6J-20LN	2
76	Blocking plug	4J-04	10
77	Blocking plug	4J-06	10
78	Blocking plug	4J-08	10
79	Blocking plug	4J-10	10
80	Blocking plug	4J-12	10
81	Blocking plug	4J-16	5
82	Blocking plug	4J-20	5
83	Blocking plug	9J-04	10
84	Blocking plug	9J-06	10
85	Blocking plug	9J-08	10
86	Blocking plug	9J-10	10
87	Blocking plug	9J-12	10
88	Blocking plug	9J-16	5
89	Blocking plug	9J-20	5
90	Joint (impact oil intake)	1JN-12-16	2
91	Joint (impact return oil)	1JN-16	2
92	Joint (rotation)	1JN-12	2
93	Connector (leak)	1JN-08	2
94	Crimping joint	26711Y-04-04Z	20
95	Crimping joint	26711Y-06-04Z	20
96	Crimping joint	26711Y-08-06Z	20
97	Crimping joint	26711Y-10-08Z	20
98	Crimping joint	26711Y-12-10Z	20
99	Crimping joint	26712Y-12-12Z	10
100	Crimping joint	26711Y-16-16Z	10
101	Crimping joint	26712Y-16-16Z	10
102	Hose	GH781-08	20
103	Hose	GH781-10	20
104	Hose	GH781-12	20
105	Hose	GH781-16	20
106	Hose	GH781-20	20

107	Hose	GH493-12	20		
108	Hose	GH493-16	20		
109	Hose	FC687-04	25		
110	Hose	FC687-06	25		
111	Hose	FC687-08	25		
112	Hose	FC687-10	20		
113	Hose	FC687-12	20		
114	Hose	FC687-16	20		
115	Hose	FC687-20	30		
116	Impact timing pressure switch	SPW3156A-153.001	3		
117	Oil return filter element	0850 R 010 ON	2		
118	Sealing ring	Seal set	1		
119	AC contactor	LC1-D80M7C	1		Electric components
120	Delay contact	LAD-T2	1		
121	Solenoid valve plug	7000-18021-2260500	3		
122	Three-layer terminal	PT 1.5/S-3L	10		
123	Single-layer terminal	PT 1,5/S	10		
124	Double-layer terminal	PTTB 1,5/S	10		
125	With diode terminal	PT 4-DIO 1N 5408/L-R	5		
126	Thermal trip circuit breaker	TCP40/DC 24V (0700040)	2		
127	Thermal trip circuit breaker	TCP15/DC 24V (0700015)	2		
128	Thermal trip circuit breaker	TCP20/DC 24V (0700020)	2		
129	RCL relay kit (with base)	RCL KITS 24VDC 2CO LED	3		
130	RCL relay kit (with base)	RCL KITS 24vdc 1C/O with light (7760056023)	3		
131	Intermediate relay	RCM kits 24Vdc 4C/O with light- 7760056029	2		
132	Base	SPW ECO 3 CO	2		
133	DRW high power relay	DRW270024LT	1		
134	Delay relay	TIMER ITM 0.1S-100H L (1483870000)	1		
135	Delayed disconnection relay	ETD-BL-1T-OFF-CC-30min	1		
136	Delay close relay	ETD-BL-1T-ON-300s	1		
137	Indicator light	XB2BVB3LC 24V Green	1		
138	Indicator light	XB2BVB4LC 24V Red	1		
139	working lamp	BZ-200W-12K(120°) Warm	1		
140	Driving lights	LP204	2		
141	Fuse	CRT36-00 DC80V 40A	2		
142	Guide sleeve	86511490	6	Rock drill	
143	Dust cover	86327178	2		
144	Water seal	86223930	6		
145	Spline bushing	86511441	1		
146	Snap ring	86220779	1		
147	Butt butt thrust sleeve	86223492	2		
148	Shank holder	86654597	6		

149	Centering ring	86221652	1
150	Centering ring	86221645	1
151	Needle bearing	86223021	3
152	Needle bearing	86221595	2
153	Needle bearing	86221603	2
154	Sealed package	86640299	1
155	pin	86302841	1
156	Nitrogen diaphragm	86634003	4
157	Positioning sleeve	86220878	8
158	Copper ring	86220241	3
159	Thrust washer	86221678	3
160	Thrust washer	86221116	3
161	UNF 3/4" hexagon socket bolt	86313228	2
162	Positioning sleeve	86220878	6
163	T38 shank	86619376	10

## 7. Documents with delivery

S/N	Name	Qty	Remark
1	Operator's Manual	1	
2	Maintenance book	1	Incl. engine,transmission and drive axle
3	Over-all diagram	1	
4	Principle diagram	1	
5	Electric diagram	1	
6	Parts catalogue	1	
7	QC certificater	1	
8	Maintenance card	1	

## 8. Picture for reference





