



## Battery Locomotive (XK)

### Description

1. Mine usage, anti-explosive, low profile, uses chopped wave cascade speed control.
2. Applicable to methane mine tunnel and marsh gas tunnel for transporting coal, waste rock, equipment and people.
3. Three types of battery locomotive: regular type, underground anti-explosive type and outdoor project type.

### Advantages

1. Large traction power, high speed, strong carrying capacity, smooth operating, safe and reliable.
2. Humanized design.
  - (1) Broad driver's chamber and good layout.
  - (2) Reserve enough space for the potential assembling and de-assembling places.
3. Battery.
  - (1) High performance.

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- (2) Durable.
- (3) Cheap operating fee.
- (4) Recyclable and no harm to environment.
- 4. High value accessories equipped.
  - (1) Indicator automatically showing overvoltage and undervoltage.
  - (2) Air damping.
  - (3) Electric braking.
  - (4) Mechanical braking.
- 4. No risk of explosion by spark, which is suitable for gas mine.
- 5. No need of setting line using battery locomotive, especially good for the small capacity transporting system with irregular tunnels and tunnel mucking transportation.

**Parameters**

Item	Model				
	XK5-6.7. 9/90-A	XK8-6/ 110-A	XK8-7.9/ 132-A	XK8-6.7. 9/144-A	XK12-6.7. 9/192-A
Whole Set Net Weight (T)	5	8	8	8	12
Track Gauge (mm)	600/762/900	600	762/900	600/762/900	600/762/900
Traction Hourly (KN)	7.06	11.8	11.18	12.83	16.48
Speed Hourly (km/h)	7	6.2	7.5	7.8	8.7
Max Traction (KN)	12.26	19.62	19.62	19.62	29.43
Battery Set Nominal Voltage (V)	90	110	132	144	192
Battery Set Capacity (Ah)	330	370	370	440	560
Traction Motor Power × Set Number (kW)	7.5×2	11×2	11×2	15×2	22×2
Overall Length (mm)	2960	4430	4430	4470	4740
Overall Width (mm)	996×1105×243	1054	1354	1050/1212/1350	1600
Height from Track Surface to Ceiling (mm)	1550	1550	1550	1600	1600
Traction Height (mm)	210/320	320/430	320/430	320/430	320/430
Axle Gauge (mm)	850	1100	1100	1150	1220
Wheel Gauge (mm)	φ520	φ680	φ680	φ680	φ680
Min Curve Radius (m)	6	7	7	7	7
Speed Control Method	Resistance	Resistance	Resistance	Resistance	Resistance
Braking Method	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical,

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CO., LTD

					Electric, Air Dumping
Note	1 <sup>st</sup> Level Transmission	1 <sup>st</sup> Level Transmission	Battery Parallel, 2nd Level Transmission	in	

### Using Environment

1. Altitude above sea level of using battery locomotive should be lower than 1200 m.
2. Environment temperature: highest 40°C, lowest -20°C.
3. Humidity: maximum average relative humidity of the most severe humidity month is 95%. (Average temperature of the same month, lowest no more than 25°C.)
4. No gas or conductive dust in the air corrodes metal and damage insulating.

### Working Principle

1. Direct current provided by battery passing through anti-explosive plug, controller and resistance box goes into the electric motor and drives the electric motor.
2. By driving gear, the electric motor makes the wheel roll and the traction engine moving forward.

### Maintenance

1. Shift change maintenance of battery locomotive: (1) check each shift, (2) immediately solve the problems.
2. Regular maintenance
  - (1) Checks of each week.
    - ① Thorough check at least once.
    - ② Check fastening thoroughly.
    - ③ Check electric pieces and instruments of the electric system.
  2. Minor maintenance monthly.
  3. Medium maintenance every three month or half a year.

### Speed Reducing System and Maintenance

1. Lubricating oil of the speed reducer box
  - (1) Check the volume each week and add according to the consumption amount.
  - (2) Lubricating oil type, middle-sized ep gear oil 200 or machine oil No. 50.
2. Gear engagement
  - (1) Abnormal sound would be heard when the battery locomotive is running, indicating the gear mounting is loosened or the gear engagement clearance changed or wear off.

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- (2) Severe wear off could also be caused by oil lacking and oil impurity.
- (3) Maintenance: ① adjust the gear engagement clearance and contacting areas, (2) add oil, (3) replace gear and clean oil tank if the case is severe.

3. Wheel check monthly

- (1) Regularly check the wear off of the wheel rolling circle
  - ① When the wheel tread dent beyond 3 mm in depth and 5 mm in length, or wear off beyond 5 mm, dismantle the wheel and polish.
  - ② Replace the tyre if the wear off depth go beyond 25 mm.
  - ③ When repairing wheel by turning method, diameter deviation of the same axle wheel should be no larger than 0.75 mm. The diameter deviation of the two wheel of the same battery locomotive should be no larger than 2 mm.