

The maximum loading capacity is over **100t**

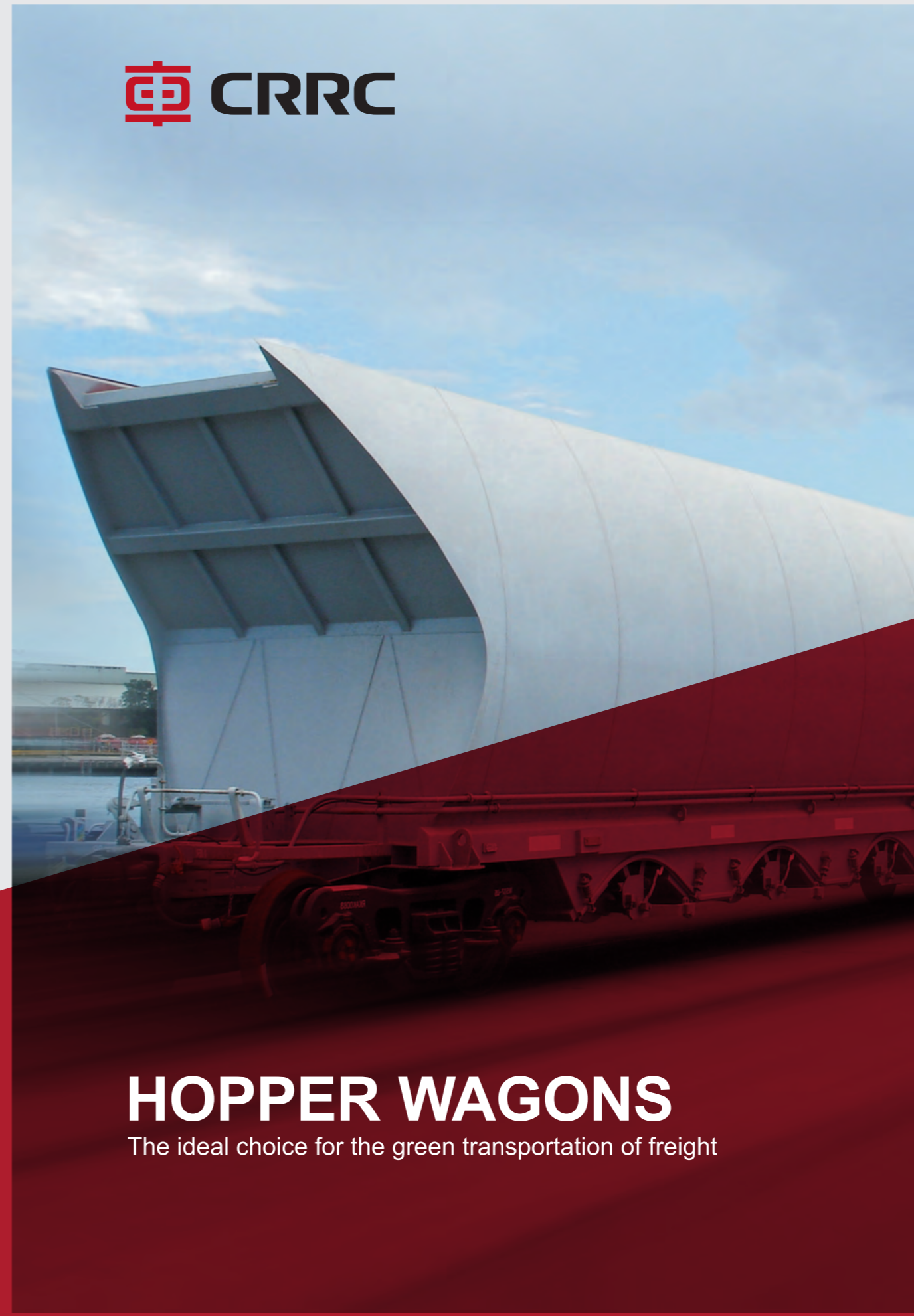
High intelligence



WORKING WITH YOU TO  
CONNECT THE WORLD



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# HOPPER WAGONS

The ideal choice for the green transportation of freight

## OVERVIEW

CRRC's hopper wagons have been developed as a sustainable solution for the transportation of heavy haul freight. The modular design integrates new materials and technologies, and the flexible configuration allows the wagons to be customized according to our clients' demands and to meet the loading and unloading requirements of different types of cargo.

We offer both covered hopper wagons, for the transportation of hydrophilic cargo such as cement and grain, and open hopper cars, for the transportation of hydrophobic bulk cargo, such as coal and ore.

The wagons can be adapted to suit different gauge requirements, and with an axle load ranging from 14t to 32.5t. The maximum loading capacity is over 100t.

The wagons can also support different methods of unloading including transverse or longitudinal rotary unloading, and longitudinal mobile unloading, in order to suit the varying set ups and demands of different goods yards.





## MAIN FEATURES

### ▶ ENVIRONMENTAL ADAPTABILITY

▶ CRRC's hopper wagons can operate in temperatures ranging from -40°C to +50°C and are highly resistant to wind, sand, rain and snow, thus ensuring the safe transportation of cargo.

▶ The low dynamic effect and use of effective technologies provide a more stable bogie performance. New technologies including secondary suspension, wheelset elastic positioning, wear-free structure for saddle and side frame, flexible diagonal connecting device and TMX all combine to improve the bogie's transverse vibration and curve negotiation performance. The reduced unsprung weight also helps to reduce the interaction force and wear between wheels and rails so that the critical speed and running performance of the vehicles are greatly improved.

### ▶ SAFETY AND RELIABILITY

▶ The strength of the car body, bogie, coupler and draft gear all meet AS, AAR, EN, UIC and TB standards, as well as other international standards. This ensures the longitudinal bearing capacity of the vehicle is maximized.

▶ The electric braking system helps alleviate the pressure of longitudinal impact on the vehicles and improves regenerative braking capacity so as to ensure the safety of the vehicles.

### ▶ ENERGY-SAVING AND ENVIRONMENTALLY-FRIENDLY

▶ Innovations in structural engineering allow the car body to be more light weight: side and end walls include built-in side columns and aluminium alloy sections. This new, simple yet innovative structure not only meets strength requirements, but can greatly improve the fatigue life of vehicles.

▶ The door mechanism uses a mechanical trigger, allowing goods to be unloaded quickly. Importantly, the mechanism requires only basic ground facilities, which reduces installation, operation and maintenance costs.

▶ Doors can be open on both sides of the cars. This means that unloading operations are not limited by the running direction of the train. This reduces marshalling workload and avoids the excessive wear of wheelsets caused by single direction operation. Our double locking system allows for safe and reliable operation.

### ▶ HIGH INTELLIGENCE

▶ Our hopper wagons use active Radio Frequency Identification (RFID) and automatic control technology to facilitate the reliable positioning of moving vehicles and to allow real-time communication between vehicles and ground control. Additionally, the active RFID is integrated with the PLC controller, allowing automated operation of the hatch cover and bottom door as the vehicles enter or leave the loading and unloading areas.

### ▶ LIFECYCLE

▶ The vehicles are designed with a service life of 25 years or 5 million kilometers.



## MAIN PERFORMANCE PARAMETERS



### KM100AH

Loading capacity (t)	100
Tare weight (t)	20
Axle load (t)	30
Total volume (m³)	115
Track gauge (mm)	1,435
Maximum running speed (km/h)	100
Vehicle length (mm)	14,330
Length between truck centers (mm)	10,530
Maximum vehicle width (mm)	3,368
Maximum vehicle height (mm)	4,018

### ▶ FEATURES

- ▶ Aluminum alloy car body;
- ▶ Mechanical trigger mechanism for unloading
- ▶ Low Unsprung Weight;
- ▶ Integrated braking technology with quick assembly .

### CLY100

Loading capacity (t)	100
Tare weight (t)	30
Axle load (t)	32.5
Total volume (m³)	84
Track gauge (mm)	1,435
Maximum running speed (km/h)	110
Vehicle length (mm)	17,000
Length between truck centers (mm)	13,060
Maximum vehicle width (mm)	3,260
Maximum vehicle height (mm)	4,284

### ▶ FEATURES

- ▶ Active RFID on car body;
- ▶ Hatch cover uses an integral sliding mechanism; bottom cover uses a longitudinal rotary rod mechanism;
- ▶ Electronic control braking system.

### C32

Loading capacity (t)	95
Tare weight (t)	25
Axle load (t)	30
Total volume (m³)	106
Track gauge (mm)	1,435
Maximum running speed (km/h)	80
Vehicle length (mm)	16,100
Length between truck centers (mm)	12,280
Maximum vehicle width (mm)	3,020
Maximum vehicle height (mm)	4,100

### ▶ FEATURES

- ▶ Steel welded carbody without a central sill;
- ▶ Bottom door uses a mechanical trigger mechanism for unloading;
- ▶ Integrated braking technology.

## INTERNATIONAL SALES

Hopper wagons are one of the most widely used wagon types on the international rail freight market. CRRC has sold approximately 5000 hopper wagons of 20 different types to operators all around the world, in regions ranging from Australia and Southeast Asia to Africa and the Middle East. As an example, since 2011, we have exported 1,438 new stainless steel, narrow-gauge coal hopper cars to Australia.

