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公司业绩遍布国内70余家钢铁企业，以及巴西、印度、马来西亚、越南、孟加拉、菲律宾、津巴布韦、安哥拉、秘鲁、沙特等多个国家。

公司是北京市高新技术企业，获得国家科学技术奖和全国优秀设计奖等30余项、冶金行业和北京市优秀设计及科技成果奖等近300项，拥有数百项专利技术，多个项目创中国企业新纪录。

BSIET is an international engineering company established through reorganization of Beijing Shougang Design Institute. It is invested by Shougang Group who takes relative majority of the share.

BSIET has the Engineering Design Integrated Qualification Class A issued by the State. It is the first unit of Beijing municipal enterprises awarded this Qualification and is able to undertake engineering design for all industries and all grades. Meanwhile, it can provide technical services such as planning consultation, equipment integration and general contracting. BSIET owns unique technology and rich practical experience in overall design of iron and steel plants, individual design for iron making, steel making, steel rolling, sintering, pelletizing, coking, industrial furnace and integration of metallurgical equipment.

BSIET has served more than 70 iron and steel enterprises in China, and has its achievements in more than 20 countries such as India, Malaysia, Brazil, Viet Nam, Bangladesh, the Philippines, Zimbabwe, Angola, Peru and Saudi Arabia, etc.

BSIET is Hi-tech Enterprise of Beijing City, and has been awarded with 30-odd national science & technology prizes and national excellent design prizes, nearly 300 metallurgical industry and Beijing city excellent design and achievement prizes, and hundreds of national patents. Dozens of projects have created the new records of the Chinese enterprises.



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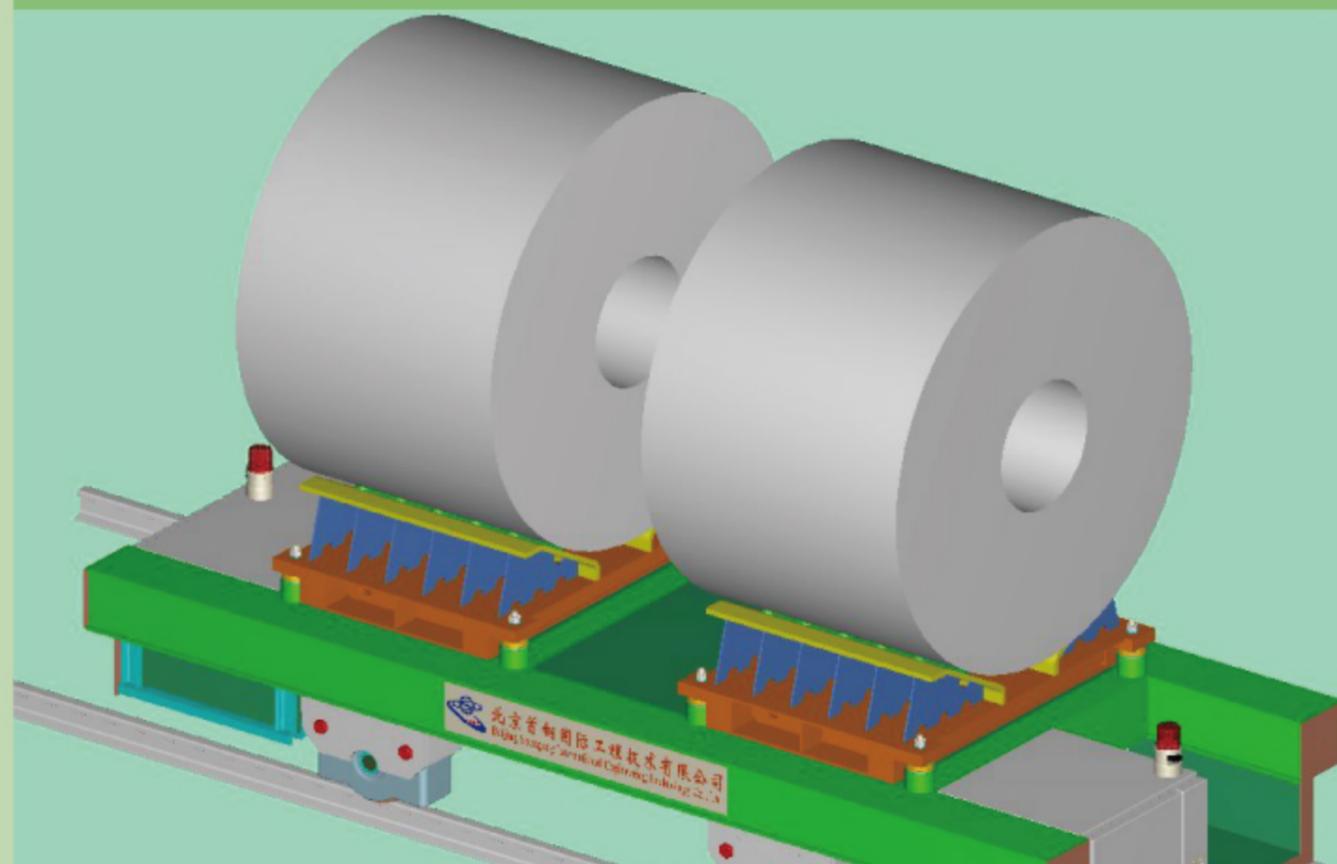
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首钢型重载非接触式供电运输车

SHOUGANG'S HEAVY-LOAD CONTACTLESS POWER SUPPLY VEHICLE



源自百年首钢 服务世界钢铁
Expertise from hundred-year Shougang



北京首钢国际工程技术有限公司
BEIJING SHOUGANG INTERNATIONAL ENGINEERING TECHNOLOGY CO.,LTD.



国内首例60t非接触供电钢卷运输车通过工程模拟试验
The first set of 60-ton contactless power supply steel coil vehicle in China passed the engineering simulation test

首钢型重载非接触式供电运输车是首钢国际工程公司自主研发的产品，该产品突破性地将非接触式供电技术应用到重载运输领域，很好地克服了传统重载运输设备移动供电的局限性，能够满足现代化工厂对运输系统可靠性、安全性及自动化程度日益增长的要求。

首钢国际工程公司将该技术成功应用于冶金行业。2011年5月，公司自主研发设计和设备成套的国内首例重载非接触式供电运输车通过工程模拟试验。各项测试指标表明该重载非接触式供电运输车供电稳定、自动化控制水平高、运行安全可靠，实现了重载运输领域新的突破。

Shougang's heavy-load contactless power supply vehicle, independently developed by BSIET, unprecedentedly applied the contactless power supply technology to the field of heavy-load transportation. It well overcomes the limitation of the movable power supply by traditional heavy-load transport equipment and is able to satisfy the requirements for the reliability, safety of the transport system for a modern plant and meet the growing demand of automation level.

BSIET has successfully applied the technology to the metallurgical industry. In May 2011, the first set of heavy-load contactless power supply vehicle in China, which was independently developed and designed by BSIET, passed the engineering simulation test. All the tested figures show that the heavy-load contactless power supply vehicle with the advantages of stable power supply, high automation control level, safe and reliable operation realizes a new breakthrough in the field of heavy-load transportation.

技术特点 TECHNICAL CHARACTERISTICS

采用新型的非接触供电技术

A new contactless power supply technology is adopted

非接触供电技术是上世纪九十年代才发展起来的新型供电方式，是基于电磁耦合感应原理，通过非机械接触的方式进行电力和信号传输的技术，特别适合于电能和信号由固定电网向移动电网的传输。

这种供电方式可以有效克服蓄电池、电缆卷筒、滑触线等传统供电方式的诸多缺点，具有安全、免维护、供电距离长、可以露天环境下运行等优点。

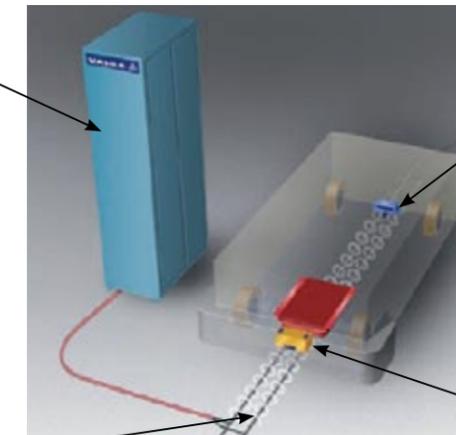
- ◎ 无物理接触，几乎100%免维护，可以在低成本维护的情况下发挥设备的功能；
- ◎ 对设备行走距离、速度和加速度没有限制；
- ◎ 不会有电火花和触电等安全隐患；
- ◎ 可工作于露天、潮湿、结冰、多尘等恶劣环境；
- ◎ 数据通讯系统集成在初级电缆中，无需另外装设通讯线；
- ◎ 无噪音和粉尘，对环境无污染，节能环保；
- ◎ 不需蓄电池、电缆卷筒等移动供电设备，减小了车体自重的同时环境更加干净、整洁。



地面供电柜
Ground power supply cabinet



高频电缆
High-frequency cable



非接触供电系统组成
Make-up of contactless power supply system



通讯天线
Communications antenna



车载拾电器
Vehicle-mounted pick-up



拾电装置与地面供电系统无接触
The pick-up not contacted with the ground power supply system



数据通讯系统集成在初级电缆中
Data communication system integrated in primary cable

Based on the principle of electromagnetic coupling induction, the contactless power supply technology - a new power supply technology developed in 1990s last century to transmit electrical power and signal by way of non-mechanical contact is specially fit for transmission of electrical energy from a fixed grid to a mobile grid.

This power supply technology is able to effectively overcome the shortcomings of the traditional power supply by such modes as batteries, cable reels, sliding contact lines and so on and has the advantages such as safety, maintenance-free, long power supply distance and operation in open-air condition, etc.

- ◎ Without physical contact and with 100% maintenance-free virtually, it can give full play to the equipment functions under the condition of a low-cost maintenance;
- ◎ No any limitations on traveling distance, speed and acceleration of equipment are necessary;
- ◎ No any potential safety hazards such as electric sparks, electric shocks and the like would occur;
- ◎ It can work in such bad conditions as open air, damp, icy and dusty, etc.;
- ◎ Data communication system is integrated in primary cable and no any communication wires are to be mounted additionally;
- ◎ No any noise and dust, no any pollution to the environment would take place, energy saving and environmental protection are foreseen;
- ◎ No such mobile power supply facilities as batteries, cable reels and so on are necessary and the weight of the vehicle itself is reduced while the environment is more clean and tidy.

露天环境下运行的轻载非接触供电运输车
Light-load contactless power supply vehicle operated in open air condition



采用轨道式运输 Track transport is adopted

- ◎ 轨道式运输运行阻力小，承载能力高，节电节能，控制简单；
- ◎ 轨道导向不但控制了运行方向，而且还特别限制了非接触式供电过程中车上拾电器对感应电缆的偏移，使拾电器拾电效率得以保证。
- ◎ The track transport is characterized by a small operating resistance, a large carrying capacity, power and energy saving as well as easy control;
- ◎ The track guide can not only control the traveling direction of the vehicle, but also specially limit the offset of the induction cable caused by the pick-up on the vehicle during the contactless power supply so as to ensure the picking-up efficiency of the pick-up.

自动化水平满足不同用户需求 Automation level meets the demands of different customers

- ◎ 变频电机驱动，运行速度可调（可选）；
- ◎ 位置控制采用位置传感器（Mark）或编码器，可以实现固定位置或任意位置的控制；
- ◎ 控制模式（可选）
 - ★ 手动模式：
根据需要，操作工人可手动控制车的前进、后退、停止。
 - ★ 本地自动：
运行路线上设有固定停止点（A，B，C，…），操作控制面板置于车上，操作工人可通过车上的按钮或遥控器让车从当前点自动运行至任一停止点。
 - ★ 在线自动：
所有运输车的控制可接入全厂物流自动控制系统，实现全厂物流运输的自动化。
- ◎ It is driven by a variable-frequency motor and the traveling speed can be adjustable (optional);
- ◎ A position sensor (Mark) or an encoder is used for control of the position in order to realize the control of a fixed position or any positions;
- ◎ Control mode (optional)
 - ★ Manual mode
Operator can, as required, manually control the actions of the vehicle such as forward, backward and stop.
 - ★ Local automatic
Fixed stopping points (a, b, c.....) are provided along the traveling line and an operation control panel is mounted on the vehicle. The operator can, by way of the push-buttons or remote controller on the vehicle, make the vehicle automatically travel from the present point to any of the stopping points.
 - ★ On-line automatic
All controls of the vehicle can be connected to the automatic material-flow control system of the whole plant to realize an automatic material transport in the whole plant.



编码器(Mark)
Encoder (Mark)

位置传感器
Position sensor

可靠的安全防护系统 Reliable safety protection system

◎ 激光安全保护装置

每台运输车前后都装有激光安全检测装置。当激光安全扫描装置扫描到警示区域内（4-6m，数值可根据需要设定）有物体时，声光报警器警示音报警；当物体进入安全区域（0-4m，可设定）时无条件停车；当物体出安全区域后运输车自动恢复运行。

◎ 声光警告装置

用于安全报警和提示

◎ 急停装置

车体上设有急停按钮。通过“手按”等简单的操作就可实现紧急停止的功能。

◎ 安全防撞杆

位于车体前、后方并探出车体，当物体接触车体前的防撞杆时，防撞杆触动杆内的微动开关，并立即发出停车指令。

◎ 接地靴

接地靴能够保证车体的安全接地，防止雷电对车上的电气设备损坏。

◎ Laser safety protections

Laser safety detectors are provided in front and rear of each vehicle. An acoustooptical annunciator gives alarm if an object is found in a warning zone (4-6m, the figure can be set up as required) by a laser safety scanner; The vehicle stops without conditions when the object goes into a safe zone (0-4m, the figure can be set up); The vehicle automatically operates if the object is off the safe zone.

◎ An acoustooptical annunciator

It is used for a safety alarming and warning.

◎ Emergency stop

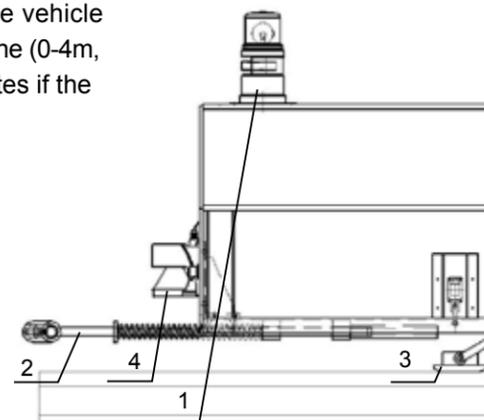
An emergency stop push button is mounted on the vehicle body. An emergency stop function can be realized by way of such easy operation as "MANUAL PUSH BUTTON", etc.

◎ A safe collision-proof rod

It is located in front and rear of the vehicle body and protrudes from the vehicle body. When an object contacts the collision-proof rod in front of the vehicle body, the rod triggers the microswitch inside the rod and a stop command is given immediately.

◎ Grounding boot

The grounding boot ensures a safe grounding of the vehicle body and prevents the electrical equipment on the vehicle from damage caused due to thunder and lightning.



安全防护系统原理图

Schematic diagram of safety protection system

- 1、声光报警器 Acoustooptical alarm
- 2、防撞杆 Collision-proof rod
- 3、接地靴 Grounding boot
- 4、激光安全扫描仪 Laser safety scanner



激光安全扫描仪
Laser safety scanner



接地靴
Grounding boot



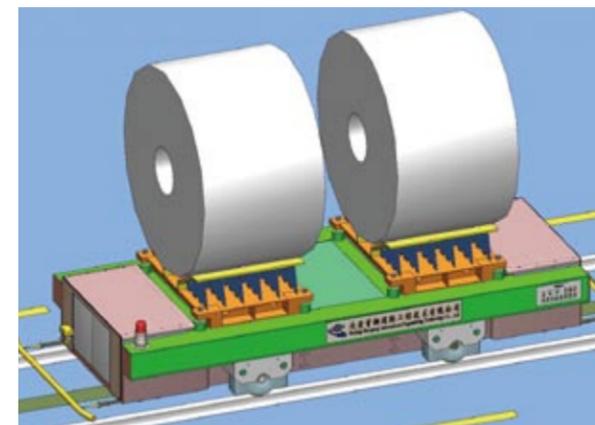
声光报警器
Acoustooptical alarm

应用领域 SCOPE OF APPLICATIONS

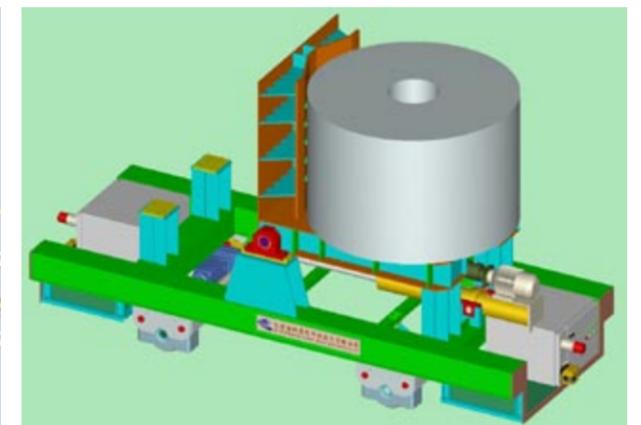
首钢国际工程公司自主研发的重载非接触式供电运输车优势显著：第一，供电电缆埋在地下，可以很好地解决由于环境、运输距离长以及接触磨损所引起的运输车供电问题；第二，能够实现在露天、复杂工况下的长距离全自动稳定运行；第三，该重载运输车除设置了传统的声光报警和防撞杆外，还设置了自动激光安全识别装置，解决了车辆自动运行过程中的安全问题。可适用于冶金、仓储、物流等各种重载运输行业。

The heavy-load contactless power supply vehicle independently developed by BSIET has its obvious advantages: First, embedment of power cables under the ground well solves the problem of power supply by the vehicle caused due to the environment, long transport distance and contact wear; Second, a long-distance full-automatic stable operation can be executed in open air and complicated working condition; Third, the said heavy-load vehicle is not only equipped with the traditional acoustooptical alarm and collision-proof rod, but also an automatic laser safety identification device to settle the safety problem of the vehicle in the course of automatic traveling. It can be applied to various fields of heavy-load transportation such as metallurgy, storehouse storage and logistics, etc.

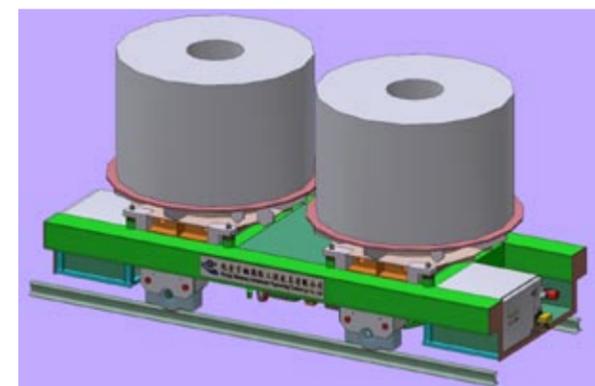
产品展示 PRODUCT REFERENCE



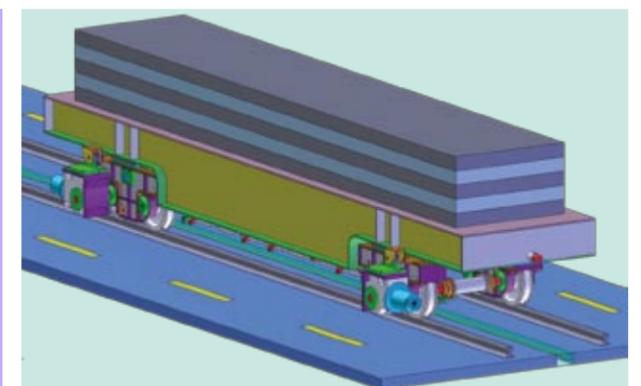
60t非接触供电钢卷运输车(卧卷), 应用于首钢迁钢
60-ton contactless power supply steel coil vehicle (horizontal coil) applied to Shougang's Qiangang



30t非接触供电钢卷运输车(带翻卷), 应用于首钢迁钢
30-ton contactless power supply steel coil vehicle (with coil downending) applied to Shougang's Qiangang



60t非接触供电钢卷运输车(立卷)
60-ton contactless power supply steel coil vehicle (vertical coil)



150t非接触供电板坯运输车
150-ton contactless power supply slab vehicle