25-ton explosion-proof double girder overhead crane installation

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In industrial settings where safety and heavy-duty lifting are paramount, the 25-ton explosion-proof double girder overhead crane stands out as a critical piece of equipment. Especially in environments with flammable gases, vapors, or dust, the need for reliable explosion-proof lifting solutions cannot be overstated. This blog will delve into the key features of this crane, detail its installation process, highlight important considerations, and explore its wide-ranging industry applications.

Key Features of 25-ton Explosion-proof Double Girder Overhead Crane

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- **Superior Explosion-proof Performance**: The core advantage of this crane lies in its explosion-proof design. All electrical components, such as motors, control cabinets, and limit switches, are encapsulated or made of explosion-proof materials. This prevents sparks from igniting the surrounding flammable substances, ensuring safe operation even in hazardous areas classified as Zone 1, Zone 2 for gases or Zone 21, Zone 22 for dust.
- **Robust Double Girder Structure**: The double girder design provides exceptional load-bearing capacity and stability. Compared to single girder overhead cranes, the 25-ton explosion-proof double girder model can handle heavier loads with less deflection, making it suitable for the 25-ton lifting requirement. The girders are typically made of high-strength steel, after precise welding and heat treatment to enhance durability.
- **High Lifting Efficiency**: Equipped with a powerful hoisting mechanism, this crane offers smooth and efficient lifting operations. It has adjustable lifting speeds to meet different working needs, whether for precise positioning of heavy equipment or rapid lifting of materials. The trolley and bridge running mechanisms are also designed for low noise and stable movement.

- **Comprehensive Safety System**: In addition to explosion-proof features, the crane is equipped with multiple safety devices, including overload protectors, limit switches for lifting height and trolley travel, emergency stop buttons, and anti-collision devices. These safety measures work together to prevent accidents and protect both the equipment and the operators.

Overhead Crane Installation Process for 25-ton Explosion-proof Double Girder Model

1. **Pre-installation Preparation**: Before starting the installation, conduct a detailed site survey to ensure the workshop meets the crane's installation requirements, such as the height of the factory building, the strength of the crane runway beams, and the layout of the site. Prepare all installation tools, equipment (such as cranes for lifting components), and materials. Also, check the delivery of the crane components to ensure all parts are complete and undamaged, and verify the technical documents and drawings.
2. **Installation of Crane Runway**: First, install the crane runway beams on the factory columns or steel structure supports. Ensure the runway beams are level, aligned, and have the correct spacing. Use shims to adjust the levelness and tighten the connecting bolts firmly. Check the elevation and span of the runway beams according to the design requirements to lay a solid foundation for the subsequent crane installation.
3. **Assembly of Main Girder and End Carriages**: Assemble the main girders and end carriages on the ground. Connect the end carriages to both ends of the main girders using high-strength bolts, ensuring the connection is tight and accurate. Check the squareness of the crane frame and the parallelism of the two main girders. Install the trolley and hoisting mechanism on the main girders after the frame assembly is completed.
4. **Lifting the Crane Assembly**: Use a large-tonnage truck crane or gantry crane to lift the assembled crane frame. During the lifting process, use multiple lifting points to ensure the crane is balanced and avoid tilting. Slowly lift the crane to the height of the runway beams and accurately place it on the runway wheels. Ensure the wheels are properly aligned with the runway tracks.
5. **Installation of Electrical System**: Install the electrical cables, control cabinets, and operating devices. Connect the electrical components according to the electrical schematic diagram, paying special attention to the explosion-proof connections to ensure no sparks can leak. Test the electrical system to check if the motors, limit switches, and control buttons work normally.

6. **Commissioning and Inspection**: After the mechanical and electrical installation is completed, conduct a comprehensive commissioning. Test the lifting, lowering, trolley travel, and bridge travel functions of the crane. Check the operation of the safety devices, such as the overload protector and emergency stop button. Adjust the parameters to meet the design requirements. Finally, invite relevant authorities to conduct an inspection and obtain the installation qualification certificate before putting the crane into use.

Important Considerations for 25-ton Explosion-proof Double Girder Overhead Crane Installation

> 💡 **Safety First**: During the installation process, strictly abide by safety regulations. All operators must wear personal protective equipment, such as safety helmets, safety shoes, and harnesses. Set up safety warning zones around the installation site to prevent non-installation personnel from entering. Ensure the lifting equipment used for installation is in good condition and operated by qualified personnel.

- **Protection of Explosion-proof Components**: When handling and installing explosion-proof components, avoid collision, impact, or damage to the explosion-proof surfaces. Do not disassemble the explosion-proof components without authorization. After installation, check the explosion-proof seals to ensure they are intact and meet the explosion-proof requirements.
- **Compliance with Standards**: The installation must comply with relevant national and industry standards, such as the explosion-proof safety standards for electrical equipment in hazardous areas and the installation technical specifications for overhead cranes. Keep detailed installation records, including the inspection results of each step, to facilitate future maintenance and inspection.
- **Environmental Adaptation**: Consider the environmental conditions of the installation site, such as temperature, humidity, and corrosiveness. Take corresponding protective measures, such as anti-corrosion treatment for the crane structure in humid or corrosive environments, to ensure the crane's service life.

Industry Applications of Explosion-proof Overhead Crane

The explosion-proof overhead crane, especially the 25-ton double girder model, is widely used in various industries that involve hazardous environments. Here are some typical applications:

Petrochemical Industry

In petrochemical plants, there are large amounts of

Coal Mining Industry

Coal mines are prone to dust explosions. This crane is

Pharmaceutical Industry

flammable gases and liquids, such as gasoline, diesel, and natural gas. The 25-ton explosion-proof double girder overhead crane is used for lifting and moving equipment, raw materials, and finished products, ensuring safe operation in these hazardous areas.

used in coal preparation plants and mine workshops to lift coal, mining equipment, and other materials. Its explosion-proof design prevents dust from igniting, ensuring the safety of the mining operation.

In the production process of some pharmaceuticals, flammable solvents are used. The explosion-proof overhead crane is used for lifting and transporting production equipment and materials in clean and hazardous areas, meeting the strict safety and hygiene requirements of the pharmaceutical industry.

Chemical Industry

Chemical plants produce and process various flammable, explosive, and toxic chemicals. The 25-ton explosion-proof double girder overhead crane is essential for handling heavy chemical equipment, reactors, and storage tanks, ensuring the safety and efficiency of the production process.

Paint and Coating Industry

The paint and coating industry uses a lot of flammable solvents and coatings. The explosion-proof overhead crane is used for lifting and moving large paint tanks, coating equipment, and workpieces, preventing sparks from causing fires or explosions.

Grain Processing Industry

Grain dust is highly explosive. In grain processing plants, the explosion-proof overhead crane is used for lifting and transporting grain, grain processing equipment, and storage bins, ensuring the safety of the grain processing and storage process.

Conclusion

The 25-ton explosion-proof double girder overhead crane is a vital equipment in hazardous industrial environments, with its excellent explosion-proof performance, robust structure, and efficient lifting capacity. The correct overhead crane installation process, strict adherence to safety considerations, and understanding of its industry applications are crucial for ensuring its safe and reliable operation. By choosing the right explosion-proof overhead crane and following the standard installation procedures, enterprises can enhance their production efficiency while ensuring the safety of personnel and equipment.