Bridge crane upper structure



Overview

Understanding the Basic Structure of Bridge Cranes: An Essential GuideExplore the detailed structure of bridge cranes, including specific data, operational.

Key Takeaways

The upper structure of a bridge crane consists of the bridge girders, end carriages, trolley, hoist, and associated power and control systems, forming the main load-bearing and movement framework.

Bridge and Girders

The bridge is the primary horizontal structure spanning the workspace, supporting the trolley and hoist while moving along the runway rails. It typically consists of single or double girders, made from high-strength steel to resist bending and torsional forces. Double-girder cranes are used for heavier loads and allow the hoist to travel between the girders, maximizing lifting height.

The girders are often connected by end ties, which maintain the squareness of the bridge and prevent skewing during travel.

End Carriages

At each end of the bridge, end carriages house the wheels that allow the bridge to traverse the runway. These carriages are designed with a specific wheelbase to match the crane span and can be configured for top-running or underslung cranes. Wheel equalizer arrangements within the end carriages distribute the crane and load weight evenly across the rails, ensuring stability and smooth movement.

© 2026 CJC FIBRE CONSULTANTS - All rights reserved

Trolley and Hoist

The trolley moves along the bridge girders and carries the hoist, which performs the vertical lifting and lowering of loads. Hoists can be chain, wire rope, or belt types, and their capacity ranges from a few tons to over 200 tons depending on the crane design. The trolley allows precise lateral positioning of the load across the bridge span.

Power and Control Systems

The upper structure integrates power supply systems such as festoon cables, busbars, energy chains, or cable reels to provide electricity to the bridge and hoist. Control systems can be manual, pendant, or wireless, managing bridge travel, trolley movement, and hoist operation. Variable frequency drives (VFDs) are often used to enable smooth acceleration, deceleration, and speed control.

Safety and Auxiliary Components

Additional components include limit switches to prevent overtravel, overload protection sensors, and brakes for emergency stopping. Electrical cabinets protect sensitive components from dust and moisture, ensuring reliable operation. In summary, the upper structure of a bridge crane is a coordinated assembly of girders, end carriages, trolley, hoist, and control/power systems, designed to safely lift and move heavy loads across the facility while maintaining stability, precision, and operational efficiency.

Article Content

Understanding the Basic Structure of Bridge Cranes: An Essential Guide

Explore the detailed structure of bridge cranes, including specific data, operational mechanics, and safety features.

Piece by Piece: Overhead Cranes Explained – Part 3 – Bridges

Learn more about the crane components that make up an overhead crane''s bridge and the role of each bridge crane part in part 3 of overhead cranes explained.

Basic structure of bridge crane

Generally, Overhead bridge crane for sale are constructed using a combination of two girders connected at the ends, which are called double-girder bridge cranes. Only a small number of

Understanding the Structure of an Overhead Bridge

Meta Description: Discover the main components of a overhead bridge crane structure, including girders, end carriages, hoists, and safety systems.

© 2026 CJC FIBRE CONSULTANTS - All rights reserved

Crane Components: A Glossary & Guide | CraneWerks

The trolley is the crane component mechanism that moves the hoist along the bridge girder of a crane. The hoist is moved horizontally along the top or underside of

Overhead Crane Parts and Functions Breakdown: A

It explains the main components, accessories, and assemblies of a typical overhead crane. Whether you are an operator, maintenance worker, or

Comprehensive Guide to Structural Design of Single

This article systematically introduces the key structural design elements of single-girder bridge cranes, including main girder design, outrigger and end girder

Bridge Crane Specifications | Specs for Top Running

Updated Jan 2025 | Shupper-Brickle Equipment is pleased to provide these free engineering specifications for a top running single girder bridge crane and

Overhead Bridge Cranes Explained: Your Complete Guide

We will break down the core components, explain the differences between configurations — like single vs. double girder and freestanding vs.

Crane Basic

Overhead crane main structures & main parts and components for you to know better about bridge cranes. Get your overhead crane design & custom crane kit.

Crane Components: A Glossary & Guide | CraneWerks

Runway What the bridge crane travels on to move the crane up and down the bays. These are typically part of the building structure, as beams, and there are two

Overhead Cranes Explained – Morgan Engineering

Part 3: The Crane''s Bridge Explore the main structure of an overhead crane, the bridge, in the third installment of our series. This post covers

Understanding the Components of an Overhead Crane:

Key takeaways from this article: An overhead crane diagram provides a visual representation of the crane, including its structural components, electrical

Bridge crane: All bridge crane basics you need know

Bridge crane basics you need know to get the right bridge crane to make the most of the bridge crane. Get to know types of bridge cranes, bridge crane configuration, bridge crane components, bridge

© 2026 CJC FIBRE CONSULTANTS - All rights reserved

Rules for Construction of Overhead and Gantry Cranes (Top ...

Rules for Construction of Overhead and Gantry Cranes (Top Running Bridge, Multiple Girder) A N A M E R I C A N N A T I O N A L S T A N D A R D Two Park Avenue • New York, NY • 10016 USA Date of

Understanding the Structure of an Overhead Bridge

Understanding the Structure of an Overhead Bridge Crane: Key Components Explained Meta Description: Discover the main components of a

Bridge Crane, Hoist & Overhead Lifting Equipment Glossary of Terms

800-642-7263 – Visit Shupper-Brickle''s Glossary of Terms page to brush up on keywords and terms associated with cranes, hoists & other types of overhead lifting equipment you might be

Understanding Bridge Cranes: The Basics

Have you ever seen a bridge crane in action? Whether it''s zooming overhead on a construction site or slowly hoisting cargo in a warehouse, bridge cranes are powerful machines that provide vital support

Contact Us

Continue your research online:

Website: https://cjcconsultants.co.za
Technical inquiry: https://cjcconsultants.co.za/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 CJC FIBRE CONSULTANTS - All rights reserved