

Technical Description Launching Gantry



Shenghua Heavy Crane Group

Launching Gantry

There are various kinds of launching gantries available, the choice of which depends upon the geometry of site and construction sequence adopted by the designer.

The Segmental launching Gantry is used in the erection of precast segmental viaducts for span by span and balanced cantilever methods of construction. The self launching gantry is suitable for both straight and curved bridge construction.

And the pre-cast full span launching method of construction is one of the fastest techniques used in launching of long viaducts and high speed railway.



Span by Span Segmental Launching Gantry

Segmental bridge construction method is widely used for both highway and railway bridges.

Both the overhead and underslung LG creating an very flexible system for both the balanced cantilever and the span-by-span method.

Product Overview

With the evolution of technology and construction of the situation, the segmental construction of bridges became popular of the hour for almost every bridge and overpass construction around the world.

The precast segmental girder are installed as a group along the whole length of span, then prestress is introduced into the structure through external tendons, compared with the balanced cantilever erection method, the span by span method is faster construction and with less workers required.

The segmental span by span method is available for the erection of urban LRT or Metro rails where the tight radius of the lines and the proximity of buildings do not allow for conventional equipment.

As a professional manufacturer, the design of our advanced equipment has been improved and optimized over the years, which is light weight, easy to assemble, practical, and most important, efficient in operation.

Product Features

1. Independent supports for relocation system
2. Support overhead crane
3. All the main supports adopt suspension system
4. Spreader beam equipped with hydraulic movement system operated by radio control for all movements
5. Independent stressing platform handling system
6. Adjustable main girder's transversal distance for direct hanging in case of different cross sections



Balanced Cantilever Segmental Launching Gantry

The segmental balanced cantilever erection with launching gantry offers savings in lifting equipment.

Product Overview

Shenghua Heavy Crane Group has abundant experiences with design and construction of precast segmental balanced cantilever bridges, and we have the capability and necessary experience develop cost effective designs that promote safe, effective construction sequences and methods, while achieving optimal productivity.

The balanced cantilever erection with launching gantry offers savings in lifting equipment. Bridge segments are delivered along completed deck, and most works proceed above the terrain as well, therefore no disruption is caused to existing traffic. All temporary loads are introduced directly into piers. Shenghua Heavy Crane Group's highly efficient erection systems enable contractors to reduce the construction schedules for segmental bridges.

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Product Features

1. Independent supports for relocation system
2. Support overhead crane
3. All the main supports adopt suspension system
4. Spreader beam equipped with hydraulic movement system operated by radio control for all movements
5. Independent stressing platform handling system
6. Adjustable main girder's transversal distance for direct hanging in case of different cross sections



Full Span Launching Gantry

The pre-cast full span launching method of construction is one of the fastest techniques used in launching of long viaducts and high speed railway.

The Full Span Method involves pre-casting of typically 20m to 50m long whole span weighing between 300t - 900t.

Product Overview

The pre-cast full span launching method of construction is one of the fastest techniques used in launching of long viaducts and high speed railway. And in this method of construction the equipment especially the launcher equipment has already played a significant role, and will grow in significance as more and more high speed railways and long viaducts are built around the world.

The full span launching method equipment was used for many complex construction conditions including tunnel portal beam erection, small radius curve beam erection and cross station construction, and the crane and steel structure are designed in accordance with FEM 1.001 and international codes respectively.

Our rich experience in global projects ensures that clients will be free of the various problems generally associated with the use of the Full Span Launching Gantry. Shenghua Heavy Crane Group is undisputed one of the most recognised suppliers of the full span launching method equipment in the world today.

How the Full Span Launching Gantry works?

In a dedicated casting yard and transportation of the whole span with a specially designed multi-axle tyre transporter to the bridge site. At the bridge site, an Full Span Launching Gantry purpose-built Launcher shall be used to lift and launch the entire span in the final position, and such launcher is called Full Span Method Launching gantry.

Product Features

- ◆ Full span precast elements can be made under factory conditions that improve safety, precision and efficiency of works
- ◆ Besides work platforms at pier heads, only very little temporary structures are required on site
- ◆ The delivery of manufactured spans along the already made part of the bridge structure in no way disrupts the existing road traffic and no need terrain improvement works



Special Launching Carrier

Special Launching Carrier (SLC) is suitable for high speed railways and passenger special line bridge construction with erecting full span pre-casted concreted beams.

This Full Span Method involves pre-casting of typically 20m to 35m long whole span weighing between 500t -1200t.

Product Overview

The SLC adopts the design mode of three-in-one with beam of lifting, transportation and erection. This equipment can directly erect concrete box girder on the top of piers at the entrance or exit of tunnels without the need for disassembling. During the operation of the bridge beam, the double line integral hole box girder can be passed the tunnels at 250km/h and 350km/h, and the beam can be erection at the entrance or exit of tunnels.

The SLC can convenient erection the first and the end beam of the bridge, and it is convenient to erection the last beam before entering the tunnel and the erection the first beam after the tunnel.

To meet the requirement of erecting full span pre-casted concreted beams, Shenghua Heavy Crane Group supplies various kinds of machines for the bridge construction, including Special Launching Carrier, different kinds of Launching Gantry, etc.



Product Features

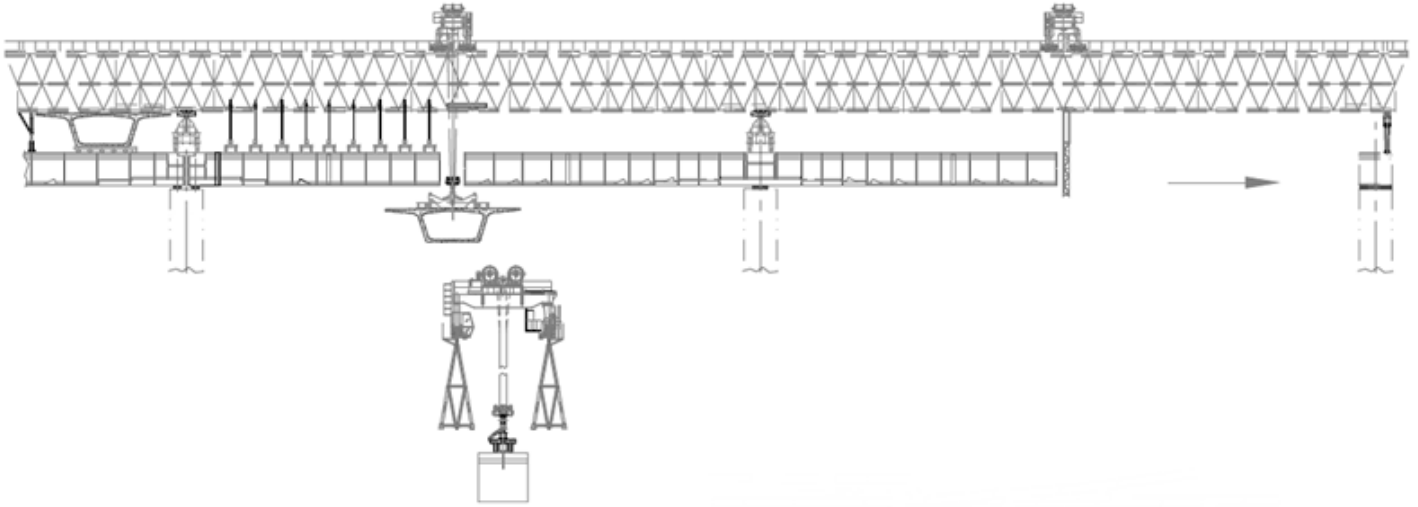
1. The SLC adopts the design mode of three-in-one with beam of lifting, transportation and erection.
2. Compared with the traditional flow type launching gantry, the SLC can smoothly erection beam without the guide beam under the machine and any auxiliary tools off-machine
3. The SLC can be light weight, simple in form, operating procedure is simple, safety and operation
4. The SLC can convenient to get cross from the span to next, and it also has a strong adaptability to the working environment



Launching Gantry Projects

Nanhuwan Bridge

This launching girder design by Shenghua Heavy Crane Group for China Harbour Engineering Company(CHEC), it was one very successful experience.



Details:

Client: China Harbour Engineering Company(CHEC)

Project: Nanhuwan Bridge

Year of Manufacture:2013

Number of Pieces: 1

Construction method: Balanced Cantilever Method

Characteristics:

Max span length:42m

Winch lifting capacity:120ton

Accommodation curve: $\geq 2500\text{m}$

Max transversal slope: $\leq 3\%$

Max longitudinal slope: $\leq 4.5\%$

Speed:

Lifting speed with load:0~2m/min

Lifting speed Without Load:0~5m/min

Travelling:0~5m/min



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