Part 1: Overview

1. In General
   1.1 Reasonable design, small size, low headroom
   1.2 Maximize lifting height, so as to play workshop’s efficacy
   1.3 Light dead weight, low wheel loading.
   1.4 Advanced technology, functional, energy saving and efficient
   1.5 Frequency control of motor speed, stable travelling

2. Supply Scope
   Yuantai mainly manufactures electric bridge cranes with lifting capacity of 5t-32t, span of 7.5m-31.5m, lifting height of 3m-30m, working class (A3-A4), also can design and manufacture according to requirements.

3. Application
   3.1 Matched using with electric hoists of CD1 model, MD1 model, etc.
   3.2 Widely used in processing workshop, metallurgical assisting warehouse, storage, yard and power station.
   3.3 It is also used in textile and food industry instead of double-girder bridge crane.
   3.4 Banned to be used in inflammable, explosive corrosive medium environment

4. Applicable scope & Working conditions
   It is applicable in the temperature of -25℃-+40℃, Humidity<85%, Altitude below 1000m, Power is 3-phase 380v 50HZ(also can be customized according to customer's requirements)

5. Mark
   For example: lifting capacity: 5t, span:10.5m, electric double girder overhead crane can be marked as LH5t-10.5m

6. Products Description
   Mainly have bridge frame, trolley, crane travelling mechanism and electrical equipments.

Bridge Frame
   Consisted with main girder, end girder, walking board, column, testing cage, cabin and its plateform.

- Main Girder
  1. Double main girder, welded in box shape, The arch degrees comply with the national requirements.
  2. Steel material model is Q235B or Q345B(similar as Fe37 or Fe52)
  3. Main and end girders are connected by strong bolts
  4. The rail can be fixed on middle of main girder or partial of main girder.
  5. Metall structure is Steel with pretreatment process
  6. Main welding submerged are welded automatically, nondestructive flaw detection

- End Girder
  1. End girder is welded by rectangle tube or quality steel plate
  2. Main girder and end girder is connected by bolts.

Part 1: General Introduction

1. Trolley
   1. Compact structure, small size, light weight
   2. Travelling rail is P-shape rail or square-steel rail
   3. consisted with motor, reducer, trolley frame and hoist
   4. Trinity travelling structure
   5. The lifting mechanism is same as hoist's

2. Crane Travelling Mechanism
   1. When ground control, it use soft start, small current, No axial sway
   2. Motor has few and adapt to frequent starting, remarkable energy saving
   3. Cabin control use ZDR series cone winding rotor, three-phase asynchronous motor or electromagnetic brake motor
   4. High mechanical strength, compact structure, brake moment is adjustable
   5. Motor starting is stable, safe brake
   6. Crane wheel, trolley wheel and brake wheel use mid frequency induction hardening and Industrial frequency quenching processing, and Leeb hardness tester control heat treatment hardness
   7. QS trinity-drive and special wheel for double-girder crane

3. Electric Parts
   1. Safe touch line conductive rate is high, low pressure, set electric taxi speed is high
   2. The wire ropes in electrical box are in order, convenient to repair
   3. Trolley moving’s power is supplied by flat cable
   4. Sliding smooth, and beautiful outlookling

4. Protection Devices
   1. Outdoor cranes are equipped with lifting mechanism, electrical control box and rainproof devices
   2. Set the trolley trip spacing device
   3. Anti-collision device
   4. Audible and visual alarm device

5. Operation Device
   1. Ground control and cabin control
   2. Special cabin for bridge crane or capsule driver room
   3. Open vision, comfortable operation
   4. Cam controller, linkage platform controller
   5. The cabin has open style, close style, can fixed on left or right
**Part 2: Diagram Part**

- Overall structure sketch
- Main girder section view

**Mid-rail beam**

**Bias-rail beam**

**Part 3: Parameter**

<table>
<thead>
<tr>
<th>Electric Overhead Crane with Hoist</th>
<th>5t</th>
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<tbody>
<tr>
<td>span (S) m</td>
<td>7.5</td>
</tr>
<tr>
<td>Lifting Speed (slow) m/min</td>
<td>8 (0.8)</td>
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<tr>
<td>Trolley Speed m/min</td>
<td>20</td>
</tr>
<tr>
<td>Crane speed m/min</td>
<td>20 (ground control)</td>
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<tr>
<td>Lifting Motor kw</td>
<td>7.5/0.8</td>
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<tr>
<td>Trolley Motor kw</td>
<td>0.8×2</td>
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<tr>
<td>Body weight (ground control) kg</td>
<td>5230</td>
</tr>
<tr>
<td>Body weight (room control) kg</td>
<td>5730</td>
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<tr>
<td>Max wheel load KN</td>
<td>39</td>
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<tr>
<td>Recommended Rail P36</td>
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<tr>
<td>Main dimension mm</td>
<td>7.5</td>
</tr>
<tr>
<td>Wheel tread to hoist top H</td>
<td>1350</td>
</tr>
<tr>
<td>Wheel tread to main girder bottom H2</td>
<td>165</td>
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<tr>
<td>Wheel tread to hook centre H4</td>
<td>385</td>
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<tr>
<td>End girder wheels' distance W</td>
<td>3200~3900</td>
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<tr>
<td>End girder length B</td>
<td>2700~3100</td>
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<tr>
<td>Trolley truck gauge K</td>
<td>1400~1800</td>
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<tr>
<td>Hook left limitation S1</td>
<td>1200</td>
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<tr>
<td>Hook right limitation S2</td>
<td>1200</td>
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Part 4: Easily Damaged Parts

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<tr>
<td>1</td>
<td>Active drive wheel</td>
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<tr>
<td>2</td>
<td>Passive drive wheel</td>
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</tr>
<tr>
<td>3</td>
<td>Taper brake ring</td>
<td>45</td>
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<tr>
<td></td>
<td>Plane brake ring</td>
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</tr>
<tr>
<td>4</td>
<td>Gear axle</td>
<td>45</td>
</tr>
</tbody>
</table>

Part 5: Manufacture

1. The main bearing carrier (main girder) accord with JB/T3695-2008. We also purchase the steel plate according to client's requirement or crane's application.
2. The wheel material is 45# steel, gear is 20CrMnTi, axle is 45# steel.
3. Wheel heat-treating rigidity: 300 HB ~ 380 HB, smallest hardening layer 20mm, rigidity is 260HB, there is no imperfection on wheel tread and rim inside.

Part 6: Standards for Design, Manufacture and Installation

1. GB3811-2008 Crane Design Rules
2. GB5905-86 Crane Testing Criterion & Procedure
3. GB6067-85 Crane Safety Rules
4. GB8918-1996 Steel Wire Rope
5. JB/T3695-2008 Electric Overhead Crane with Hoist
6. GB8197-87 Mechanical Equipment Shields Safety Requirements