

## STANDARD DOUBLE GIRDER CRANES

Standard 2-runway, double girder Trambeam cranes are cataloged for rated loads to 15 tons and for spans to 100'-0. Multiple runway and heavier rated load cranes are available; consult factory for assistance on these applications. Selection of 2-runway double girder cranes is made in accordance with the procedure outlined on Page CR-47.

These cranes may be hand propelled, hand racked or motor driven depending on travel distance, frequency of operation, span, elevation and rated load. However, they are generally motor driven and the data that follows applies to motor driven cranes. When electric hoists operate on the crane, they are equipped with an electrification system as described in the Electrification Section.

Service classifications for cranes are described in ANSI MH 27.1 Specifications for Underhung Cranes and Monorail Systems. Cataloged cranes will generally meet the service classification of the hoist selected to operate on the crane and the requirements of the comparable ANSI MH 27.1 service classification.

For Class D heavy duty cranes with speeds greater than 200 FPM and all class E severe duty cranes, consult factory for recommendations.

Complete specifications for bridge girders, girder connections, end trucks, crane drives and crane electrification are described below and on subsequent pages.

## BRIDGE GIRDERS

All heavy rail track sections (Nos. 34037 through 34079) are used for bridge girders of double girder cranes. These sections are described in the Track & Fitting Section.

Three types of bridge girders have been established to: (1) maintain a constant headroom dimension from the top of the girders at the end trucks to the hook in the high position and (2) provide a simplified carrier design. Type 1 girders are fabricated from Nos. 34037 or 34041 track and have a 12-1/2 inch depth at the end trucks. Type 2 girders are fabricated from Nos. 34046 through 34076 track and have a 16 inch depth at the end trucks. Type 3 girders are fabricated from Nos. 34077 through 34079 track and have a 22-1/2 inch depth at the end trucks.

Bridge girder deflection is limited to 1/450 of the span for cranes with spans of 46'-0 or less. For spans greater than 46'-0, the ratio is reduced so that the actual deflection does not exceed 1-1/4 inch.

Bridge girders are structurally framed together on the

gauge of the carrier by steel angles attached to the top flanges. This framing provides lateral stability and maintains the gauge between the girders.

### NOTE:

Where the depth of the girder cope is large, i.e. No.34076 (30 inch) tracks arranged as Type 2 girders are coped to 16 inch depth at the end trucks, check the clearance above the girder top flanges and bracing for possible interference with the building structure, lights, heaters, etc.

## GIRDER CONNECTIONS

Girder connections to the end trucks utilize keys which are welded to the end truck load bars when the crane is assembled at the factory. The keys are welded into position adjacent to the girder flanges after the load bars have been aligned with the girders. The keys provide a rigid connection which does not rely on the fit of the attaching hardware in the mounting holes.

## END TRUCKS

A complete line of end trucks is available with rated loads from 8,000 to 60,000 pounds. The end truck wheel base is variable and depends on the gauge between the bridge girders. The girder gauge may be determined by referring to the appropriate clearance drawing in the Carrier Section for the hoist and carrier selected for the crane.

End truck load bars consist of steel channels, plates and bars which are welded into a rigid assembly. After welding, the load bar is machined to control vertical dimensions and squareness of trucks. Lugs are provided in the load bar to limit the drop of the end truck to 1 inch or less in the event of wheel or axle failure.

Cranes with trucks having 5 inch diameter wheels can operate on any size Trambeam track. Cranes with trucks having 6-1/2 inch and 8 inch diameter wheels can operate only on heavy rail track sections. Cranes with No. 180209 end trucks can operate only on No. 34041 or larger track because of the height of the load bar channels. These runway restrictions are noted on Pages CR-44, CR-45 and CR-46 and in the crane tables.