

E.R. Carpenter Company Uses Twin City Monorail Crane for Foam Rubber Handling

A unique materials handling need by the E.R. Carpenter Company shows again the versatility and practicality of cranes designed by Twin City Monorail, Inc.

One of the products manufactured by the E.R. Carpenter Company is polyurethane foam. Everyone is familiar with this product because it is used in countless applications requiring comfort cushioning—chairs, couches, automotive dashboards, and so many other uses that the list could continue on and on.

The company purchased a 100 foot span truss crane from Twin City Monorail for a plant in Elkhart, Indiana and came back to Twin City Monorail for another long span crane for their plant in Lathrop, California. In the handling operation at the Lathrop Plant, the foam is transported from a pouring operation to storage areas and then to cutting areas. This sounds like a simple matter until you consider that the foam



End view of crane. Tractor, tow bar and two twin hook hoist units visible on center bridge beam form a unit with 4 hooks spaced at 25'0" to pick up a long load.

Single Girder, Double Truss Cranes



Note the double truss framework with a single bridge girder and tandem drivewheel assembly on the end truck. To place the crane in perspective, note the worker to the rear of the crane. (Photo taken during installation and testing.)

is manufactured in a continuous pour process which results in slabs that are 8 feet wide, 4 feet high, 100 feet long and up to 16,000 pounds!

The polyurethane product manufactured by E.R. Carpenter must be supported every 25 feet and is picked up with a special grab designed by Carpenter. The grab is used to pick up the foam is a unique device (not shown due to its proprietary nature) which needs a reliable, trouble-free economical crane as a compatible partner in the operation. The grab must be positioned over the slab so that it can be transported the length of the runway and set in a storage area or moved to and from the cutting operation.

With the particular requirements of the customer's needs, taking into account the size of the building, the product to be handled and the desire for greatest engineering economy, the answer was a Twin City Monorail single girder, double truss, underhung crane of 20,000 pound capacity. It has a 109 feet span, two speed drive (41/100 FPM) with solid state acceleration control and a tandem drive wheel assembly on each end truck for positive

traction. The trusses were specially designed and fabricated by Twin City Monorail for maximum load carrying capacity with minimum deflection and weight in an area with close headroom requirements. A splice in the center of the bridge beam and the 5'6" high trusses facilitates shipping. Riding on the bridge beam is a special Twin City Monorail drivetractor and two 5 ton, twin hook hoists with 25 foot hook centers. To each side of the tractor is a long tow bar which positions the two hoists so that the four hooks are spaced at a constant 25 foot centers.

This combination of design detail and field performance has met all the customer requirements. In the past, a handling requirement such as this may have used a box girder, top running crane. The Twin City Monorail truss crane proved to be the most economical and efficient choice with excellent specification to fit the building limitations...the headroom required is minimized (the runway treadline to hook is only 4'2", and the top of the trusses are the same height as the top of the runway) and the total crane weight, less hoists, is 25,000 pounds.



Single girder, double truss crane used in manufacturing plant to handle long, cylindrical tanks. This type of crane fits the long span requirement, yet does not sacrifice headroom or capacity.

Truss Crane Advantages

Twin City Monorail single girder, double truss cranes use a single patented track bridge beam which is supported and reinforced with the addition of two truss structures to increase load carrying capacity of the bridge beam over a long span. The advantage of this type of structure

over a box girder, top running crane (a possible alternative) is that the single girder, double truss crane is lighter in weight for a given span, more economical, plus more adaptable to various building structures, suspension limitation and hook coverage requirements. Any one or a

combination of these can translate into savings for the customer through more efficient use of space, lower capital and operating costs plus the potential for greater operational flexibility during the lifetime of the unit.



Above left: A single girder, double truss crane is manufactured in the shop. Above right: A view of a single girder, double truss crane in a manufacturing shop. Note the crane structure with the two trusses, the single bridge girder and the associated framing. This crane provides excellent floor coverage with a full-load rating while working in a shop with ceiling height restrictions.