

RAIL SANDING INSTALLATION AT LOS ANGELES COUNTY METRO RAIL SYSTEM



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ARTICLE TAKEAWAYS:

- 5 year project challenges
- New dust collection and sand management technologies

Case Study - Project Summary

The Los Angeles County Metro Rail System (L.A. Metro) needed to expand its Light Rail Vehicle (LRV) line through Crenshaw and eventually connect the LAX airport to the new rental car facility. In order do to so, it would need the facilities and infrastructure to fully achieve its goal. Ridership was increasing on their other lines therefore; keeping the new transit line in working order during the installation was paramount. This would be installed in Los Angeles, and like many other cities, they wanted to be on the forefront of equipment and design. L.A. Metro would also require a facility for the servicing of these vehicles in addition to the new Southwestern Yard to serve the new Crenshaw/LAX transit line. We had the additional challenge of being sold to another company during this time!

MAINTENANCE FACILITY

The maintenance facility for the Southwestern Yard Maintenance Facility project would need to include a traction sand supply system for the LRV equipment so that it could safely use the line for servicing of the ridership. This facility needed a maintenance platform containing a stationary rail sanding system arranged to fill the traction sand on board the LRV. The companies involved with the design of the Southwestern

Yard Maintenance Facility contacted us due to our past involvement in the North American and European rail market (under the name ALB Klein Technology Group). During the concept and engineering of this system, Alb. Klein Technology Groups was sold to Palmer Manufacturing & Supply and renamed Klein Palmer Inc. During the transition, all employees worked diligently to keep the L.A. Metro project moving seamlessly forward. This same drive for customer service during the transition could be identified in the project from start to finish which allowed the L.A. Metro facility to be delivered on time and on budget for its well documented January 2019 completion.

The L.A. Metro Southwestern Yard project was a five-year project. It was important that we were able to demonstrate our ability to continue to keep the project efficiently moving forward with changing technologies.

For example, a special segmental closing mechanism at the tip of the filling nozzle was implemented to specifically prevent sand from being spilled on the platform after the nozzle has been removed from the LRV traction sand box. Thanks to this special design of



the closing mechanism, there was no pressure built-up in the hose even when the sand dispensing station is switched on. The result is a slow start filling process. The mechanical connection from the operators control to the segmental closing mechanism is located in the filling valve and is protected by a supporting inner sleeve, all of which is Klein's unique design. Also to note is the automatic ability of the system to stop providing sand into the traction sand box once the sand box becomes full.

Another system design feature that was important to the customer was the system's ability to collect the dust from the transport and filling process to a single collection point where it can

be easily accessed and maintained by the facilities employees or an outside contractor. This dust collection system mounts on the ground for ease of maintenance thus preventing the facility employees or contracted workers from being required to climb to the top of the silo for maintenance purposes. Also, the removal of the fines from not only the LRV sanding process but also the sand conveyance and sand delivery process reduces the collection of fines in the LRV sanding equipment where collection of fines can often lead to LRV traction sand system maintenance issues.

Of significant importance was the system's specific ability to have a

small footprint, a variable capacity, as well as the ability for adjustment of the control panel's color display screen thus allowing provision of clear and concise operation status in a manner that the employees can easily understand.

There are always changes on any project of this size. For example, even as the delivery of the silo neared, we were informed that the silo needed to be relocated. Our support team assisted with the identification of the best method for the relocation and then adjusted the supplied system assembly kits in order to support the project and its installation crews.

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SIMPLE SOLUTIONS THAT WORK!

Having system assembly kits provided the flexibility needed for this change. As we all know, large installations can be riddled with changes and fluctuations throughout the project. Having a system that can easily adapt to changes and adjustments proved very important to this project.

As the installation continued through its natural phases, high levels of communication remained paramount. As anyone in the building of systems knows, understanding all of the changes and adjustments as they are occurring is critical to a successful installation.

Once the installation activities neared completion, because we had been kept in the loop on all changes, very little briefing was required before making our way to the job site location for the startup and commissioning of the system. The clear and concise installation support documentation provided with the system allowed the initial startup and testing of the sanding stations to be done in a very short amount of time.

We remained on site and provided in depth training for the facility employees that were brought to the maintenance platform for a hands-on class covering not only the sanding stations but the function of the entire rail sanding system. The safe and gentle conveyance of the traction sand from the filling nozzle was identified as highly desired by the customer and again identified



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as a value added feature of our stationary sanding system.

As a US based company, we were able to easily visit our customer's location to provide support and training. Another critical selection factor was our ability to completely provide training, assembly, and testing all in-house, in one location (our Ohio production facility). Additionally, it was important that we stocked spare parts in the US.

Installations of this size are not for all companies. This fit our sweet spot because of our US - based manufacturing operation and state-of-the-art rail sanding technology. Additionally, we credit our customer with communications that were second to none.



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