Automotive Line Part Kitting and Sequencing

One of the world's largest automotive manufacturers needed to add more models and styles to their production line without adding floor space. Their assembly line was already overcrowded and the addition of more parts seemed impossible. Operators were becoming frustrated with time wasted searching for parts that led to line interruptions. They needed a partner to design and integrate an inventory management solution to orchestrate the delivery of parts and then sequence them with production schedules.

The Problem: A large U.S. based automotive manufacturer needed to increase the number of models and styles on their already crowded assembly line.

The RedViking Solution: Part Kitting and Sequencing, Error Proofing and Track and Trace were installed, allowing them to build hundreds of new model variations without expanding their facility or compromising quality.

Part Sequencing Shortens Operator Walk Time

Large parts such as mufflers, headlines and axles came in several forms and were in various places on the assembly line floor. Valuable time that should have been spent on part assembly was lost finding the correct parts.

To solve this problem, RedViking configured a sequencing system for off line part pickers to stagger or reverse order parts before placing them line-side for assembly. Sequencing instructions are automatically updated based on real-time production schedule so parts arrive in time.

Gated Quality Checks and Traceable Parts

This solution also included our Error Proofing and Track and Trace applications. Correct part placement is verified before a car moves further down the line. Vision inspection systems check for incorrect or absent parts, like model badges.

At each station where off-line pickers are kitting or sequencing parts, RedViking installed light indicators to notify workers of low part inventory or improper bin placement. With the addition of highly accurate error proofing systems, off-line pickers are able to adjust quickly, preventing line shutdowns.

Parts are continuously tracked, giving Purchasing better visibility into inventories, so shortfalls and excesses are avoided. A traceable birth history is created for each car to minimize the financial impact of recalls.

Kitting Eliminates Lineside Clutter & Reduces Waste

Part storage bins were crowding the assembly line. Infrequently used parts were kept in large bins, taking up valuable floor space. Excess ordering occurred when parts went unnoticed in other areas of the plant.

We resolved this by creating both line-side and ride-along part kits. For ride-along, off line pickers place parts for a model build in a container that travels with the car through the line, using the RedViking system to align with the build schedule.

Now, operator walk paths are clear and just-in-time lineside inventory eliminates waste.

From Dozens of Car Models to Hundreds

Doing more with less is critical to remaining competitive in manufacturing. As customers increasingly expect custom products, multi-model manufacturing becomes increasingly complex. The combination of a strong Part Kitting and Sequencing application combined with Error Proofing and Track and Trace has given this automaker the ability to produce hundreds of model variants without having to expand their facility. In the plant where they used to produce dozens of models, they can now produce hundreds.

Easy to replicate and scale

With Argonaut, you don't need to buy an entire MES just to kit and sequence parts. And you won't get locked into a stand-alone kitting and sequencing application. Buy only the apps you need, when and where you need them, and easily add more when you're ready. And once configured, your Argonaut apps are easy to replicate and scale. You can start with one operation, one plant, or your entire enterprise.

The Affordable, Flexible Alternative to Traditional MES

Because Argonaut is offered software as a service (SaaS), you don't have to pay up front software licensing fees. Because hardware requirements are minimal (no PCs) and are available for purchase or lease, your capital investment is low. And because all Argonaut apps are written in current web technology, you'll have access to an extensive talent base if you decide to customize. You'll never need to hire an elite programmer who works with one particular brand of MES.

As with all Argonaut apps, you can control them all from one central location and deploy and update them anywhere in your enterprise.

Room to Grow

Argonaut apps are offered individually or as part of an entire MES suite. Choose the apps you need now, easily add more as you grow.

Argonaut currently offers the following manufacturing apps, with more under development.

- **OEE/Factory Information System** for process management and reporting
- **Track and Trace** for part, product and process traceability
- **Pack Out:** Identify, verify and track completed groups of components
- **Error/Mistake Proofing:** Quality check for gated operations
- **IIoT Gateway:** Securely broadcast PLC data to subscribers for interpretation and analysis
- **HMI Bridge** for 3rd party manufacturing apps deployment
- **Part Kitting and Sequencing** for assembly line optimization
- **Automated Work Instructions** for each operation
- **Media Casting** for delivering websites, videos, and images to remote locations

Want to learn more? Use our contact form or email us at engineering@redviking.com. Our phone number is +1.734.454.0500.