

Optimizing Motor Production Projects: Key Factors To Consider For Optimal Motor Winding and Assembly Automation

SPEAKER



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MARSILLI

MARSILLI has been working for over 80 years standing out for its research and technological innovations. This has allowed the company to reach a global consolidated position as a Solution Provider for Factory Automation covering different industries such as automotive, appliances, electromechanical applications, RFID, consumer electronics, and more. MARSILLI has developed in depth and ground breaking expertise in all the assembly processes which have a winding phase as the core. Today, MARSILLI is a worldwide leader in Winding & Assembly Systems for coils and motors where precision, flexibility and customization are mandatory. Designing, assembling and delivering equipment with a unique passion, MARSILLI provides absolutely reliable solutions together with outstanding quality.

BIO

Kumar Rajasekhara holds a degree in Mechanical Engineering with a concentration in Machine Design from the University of North Carolina at Charlotte, as well as an MBA in Marketing and Finance from Loyola College in Maryland. He began his professional career as a Machine Design Engineer for packaging and steel companies. For the past 36 years, he has worked in the coil and motor winding and automation industry in various engineering, sales, and operations positions. He was appointed as President and CEO of Marsilli North America in 2004. During his tenure as head of the wholly-owned subsidiary of Marsilli, he positioned the company as one of the most significant suppliers of winding and assembly equipment in North America and expanded its presence by opening Marsilli subsidiaries in India in 2006 and Mexico in 2016.

ABSTRACT

The success of a new motor winding project relies on a harmonious blend of several key factors. Careful consideration of these factors is essential to ensure optimal results. The process begins with the selection of appropriate wire, insulation type, steel laminations, and plastic insulators. Tied to materials selection is winding equipment selection including wire tensioning to achieve precision layering and enhance the filling factor. In addition, the type of winding technology that best fits the project's needs must be carefully chosen, taking into account the project's targets and product design, and weighing the advantages and disadvantages of open stator versus closed stator winding.

While winding operations are at the core of a motor production project, there are other important considerations as well. Of course, the market demands motors that are more efficient, provide a higher torque, yield more power, as well as being more compact than ever before. However, the market also requires motor manufacturing solutions that are reliable, consistent, automated, and allow for full trace-ability of both processes and materials, resulting in unsurpassed quality in factory automation. There are various automation technologies that can be incorporated into motor production projects such as automatic loading, pre-assembly of stators, winding, wire stripping, connection technologies, post-assembly, laser-welding, taping, palletizers, robotic integration, over-molding integration, etc...

This presentation aims to provide a guide to best practices for motor production projects, starting with an introduction to the key factors that must be taken into consideration. It will then focus on the available automated winding technologies (linear, flyer, and needle winding), outlining the advantages and disadvantages of each and identifying the circumstances in which one may be more beneficial than the others. Finally, the presentation concludes by delving into the various automation possibilities that can be incorporated to take a motor project from yielding just average results to one that yields exceptional results and exceeds



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