

Assembly Instruction Documentation for Power Equipment Manufacturer

Enventure supports a large global alternative power equipment manufacturer to improve their product assembly process, by introducing graphically-enhanced Assembly Instruction Manual.



About the Client

The Client is a world leader in alternative power products and IT infrastructure, with over 150 models in their active product portfolio. The Client is known for its high industry standards of reliable power and physical IT infrastructure. Their glorious history of creating innovative power supplies, electrical peripherals and data center products have been awarded several times across various global platforms. As on date, many breakthrough products developed by the Client are leading the market.



Business Need

The Client intended to develop a 3D model-based work instruction manual to improve their shop floor productivity. Their nature of business being low-volume high-mix, the manufacturing plants faced difficulties arising from daily changes in the product model being assembled. In some cases, there were multiple changes required for a product model (within a single shift); every change called for rapid replacement of the assembly instruction provided to line personnel, such that the transition was seamless.

Additionally, the available instruction sheets were ambiguous and in some cases had a lot of text-based details that would take time to be read and understood. The photographs used were generic instead of being focused on the specific segment of a given assembly. All of these caused issues on the shop floor, such as:

- Errors in assembly
- Material wastage
- Safety Issues
- Increased down time during product changeover
- Extensive training needs



Why Enventure?

Enventure, being a global Design Engineering services provider was one of the Client's preferred partner for the technical documentation project. The Client chose the team, based on the following unique advantages:

- In depth knowledge of hi-tech industry manufacturing best practices and assembly processes
- Domain expertise in providing innovative solutions for enhancing productivity
- Matured Engineering team with vast experience in technical documentation

The Solution

The Enventure team carried out detailed research on the Client's manufacturing facilities and assembly lines. Based on the key issues highlighted by the executive management, the team interacted and interviewed Production Managers, Supervisors and Line Operators, to get a full understanding of the practical problems faced and to identify the root cause of the issues. The documentation team also studied existing documentation and other available design data, to complete gap analysis and define a road map.

Based on this initial study, Enventure proceeded to develop manual in a phased manner. The team of engineers generated BOM & an exploded view version, for the sample assembly instruction manual creation. The process was interactive, with the Client's team reviewing documentation at all important stages and providing continuous feedback. The combined expertise of Enventure and the Client's personnel enabled the successful completion of the manual, that could be easily deployed in the production environment.



Benefits

Assembly instruction documentation plays a critical role in achieving the stringent production quality objectives. The 3D-based work instruction created by the team were linked to the design files and could be used for developing more illustrative content, at a later date.

The immediate benefits achieved by the customer included the following:

- Reduced assembly errors
- Reduced training efforts
- Better quality assembly instruction
- Lower wastage
- Reduced product changeover time
- Globally adoptable instruction format
- Improved speed, efficiency, safety and productivity on the production line
- Better document revision management



Conclusion

Enventure's mature engineering team had vast experience in a variety of technical documentation that had been previously done for various industries and equipment. This project was deemed successful by the Client as the documentation was completed in time to help the Client curb operational hazards and loss of productivity.



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