INTEGRATED TECHNOLOGIES LIMITED
ADVANCING MEDICAL DEVICE MANUFACTURING AND ASSEMBLY WITH SOLIDWORKS COMPOSER

Using SOLIDWORKS Composer technical communication software, the ITL Group has automated the creation of manufacturing and assembly instructions for the medical devices that it develops, saving time and cutting costs in the process.

Challenge:
Accelerate and streamline the development of manufacturing and assembly instructions for medical devices to save time, reduce costs, and improve quality.

Solution:
Add SOLIDWORKS Composer technical communication software to its SOLIDWORKS CAD implementation.

Benefits:
- Cut manufacturing and assembly instructions development time by 60 percent
- Saved £100 (US$130) on every production run
- Reduced number of ECOs dramatically
- Paid for manufacturing instructions viewing with first year's savings

ITL Group is an award-winning medical device design, development, and manufacturing partner to companies that produce life-saving medical technologies, diagnostic devices, and analytical instruments. Since 1977, ITL has worked on more than 400 projects at various stages of the product development lifecycle. With facilities in the United Kingdom, the United States, and China, ITL offers its clients worldwide support and access to global supply chains and markets.

The full-service medical device design and manufacturing consultancy continually seeks to leverage technology and automation to improve its internal processes and control costs to the benefit of clients. This is why, in 2006, ITL Group replaced the Pro/ENGINEER® 3D design system that it had utilized, according to Mechanical Design Engineer Dan Hollands.

"We moved away from Pro/ENGINEER because the solution had become more expensive, with mandatory upgrades and service plans," Hollands recounts. "There were also regular changes to the user interface, which necessitated more user training and cost, as well as the software continually requiring more expensive hardware."

ITL evaluated the Autodesk® Inventor®, SOLIDWORKS®, and Solid Edge® 3D design platforms before choosing to standardize on SOLIDWORKS software because of the software's superior cost versus performance ratio. Initially the company implemented six SOLIDWORKS Professional design and one SOLIDWORKS Premium design and analysis software licenses. In 2015, ITL added two SOLIDWORKS Composer technical communication software licenses after value-added reseller Solid Solutions suggested that the software could help the company automate the development of manufacturing and assembly instructions.

"Before we implemented SOLIDWORKS Composer, we had to wait for a prototype before we could develop manufacturing and assembly instructions," Hollands explains. "We would then take the prototype apart, take photographs at each step,

reverse the order of the photographs, and take the photographs into CorelDRAW® graphics software to add illustrations and written instructions. That took a long time. As a part of our improved SOLIDWORKS system, we had already automated the routing of tubing and cabling with SOLIDWORKS Premium software, so we had confidence in the automation capabilities of SOLIDWORKS solutions."

SAVING TIME, CUTTING COSTS RELATED TO MANUFACTURING

After implementing SOLIDWORKS Composer software, ITL realized significant time and cost savings. Using SOLIDWORKS Composer to generate paperless assembly instructions enabled manufacturing staff to view them on inexpensive Windows® tablets. ITL also has simplified the development and use of its manufacturing and assembly instructions with SOLIDWORKS Composer.

"We've seen a significant time reduction of 60 percent

"The transition from design to production used to be a bottleneck for us as the two departments worked out design and production issues. Even taking that additional time, we still had a fairly high number of engineering change orders [ECOs] that had to be addressed during production. With SOLIDWORKS Composer software, the two groups are communicating and collaborating more effectively, resulting in a dramatic decrease in the number of ECOs."

— Dan Hollands, Mechanical Design Engineer

using SOLIDWORKS Composer to create these instructions," Hollands stresses. "In addition to cutting paper and printing costs, we're saving roughly £100 (US$130) on each production run by eliminating the need for antistatic measures—such as antistatic wallets and folders—which are required when referring to paper instructions when assembling electronic components. We've used the savings to purchase Windows tablets for viewing manufacturing instructions by our production personnel. We now can view the instructions on any platform that can view HTML files, including tablets and smartphones, and the cost savings of the new system paid for the tablets within the first year."

DEVELOPING MANUFACTURING AND ASSEMBLY INSTRUCTIONS CONCURRENTLY

The benefits of implementing SOLIDWORKS Composer software for developing manufacturing and assembly instructions extend beyond the direct time and cost savings. Because SOLIDWORKS Composer and SOLIDWORKS CAD software are integrated, ITL's Production Engineering Department can prepare manufacturing instructions concurrently with the Research & Development Department's design work. This means that the company no longer needs to wait for a prototype to create instructions. Concurrent collaboration also identifies design and production issues that are less costly to address early in the process.

"The transition from design to production used to be a bottleneck for us as the two departments worked out design and production issues," Hollands notes. "Even taking that additional time, we still had a fairly high number of engineering change orders [ECOs] that had to be addressed during production. With SOLIDWORKS Composer software, the two groups are communicating and collaborating more effectively, resulting in a dramatic decrease in the number of ECOs."

MINIMIZING POTENTIAL FOR ERROR

ITL's use of SOLIDWORKS Composer software is also minimizing the likelihood of design errors. "SOLIDWORKS Composer is helping us improve quality and tighten up on the potential for error," Hollands points out. "In addition to eliminating the practice of production personnel saving their own notes or documentation in a drawer for future reference, the implementation of SOLIDWORKS Composer has had the effect of forcing discussions and collaboration that improves quality.
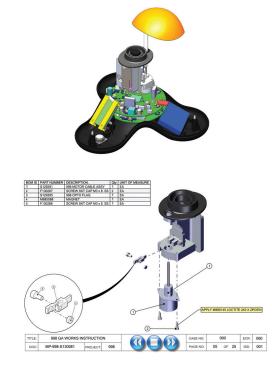
"As a company, ITL strives to do the best for our clients," Hollands adds. "With the combination of SOLIDWORKS and SOLIDWORKS Composer software, we are generating the savings and quality improvements that help us achieve that goal."

BOM ID	PART NUMBER	DESCRIPTION	Qty	UNIT OF MEASURE
1	S129291	998 MOTOR CABLE ASSY	1	EA
2	F130287	SCREW SKT CAP M3 x 8 SS	2	EA
3	S129305	998 OPTO FLAG	1	EA
4	M885588	MAGNET	1	EA
5	F130286	SCREW SKT CAP M3 x 6 SS	1	EA

APPLY M990145 LOCTITE 243 X 2POS'N

TITLE:	998 GA WORKS INSTRUCTION			CASE NO:	000	ECR:	000
DOC:	MP-998-S130081	PROJECT:	998	PAGE NO:	05 OF 25	ISS:	001

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