A photograph of an industrial automation setup, likely in a medical device manufacturing plant. It shows a robotic arm with a gripper mechanism, surrounded by various cables and structural components. The scene is brightly lit, and the background is slightly blurred, emphasizing the machinery in the foreground.

# MISCONCEPTIONS *about* AUTOMATION

IN THE MEDICAL DEVICE INDUSTRY



## INTRODUCTION

Over the last 25 years, we have watched automation technology evolve and deliver new possibilities to the assembly, inspection, and testing of medical devices. From force testing surgical devices to inspecting trocars for microscopic defects to loading drug delivery systems, automation helps complete intricate processes with repeatable results.

Yet, according to many manufacturing trends, the medical device industry is slower to truly embrace automation than other fields. While most medical device manufacturers understand the benefits of shifting from manual processes to incorporate automation, there is confusion and hesitation in the industry when it comes to leveraging it effectively. The disconnect? *Misconceptions about what automation is, and what it can or cannot do.*

So, we surveyed our customers—manufacturers of non-invasive surgical devices, cardiovascular technology, drug delivery systems, and bioMEMs—to learn what initially concerned them about automation, and how they overcame those challenges.

**In this e-book, we'll reveal the most common misconceptions about automation that medical device manufacturers have expressed to us, and help alleviate any uncertainty that may have originated from them.** We'll also show you how involving an equipment provider—like Invotec—earlier in the manufacturing process can help you maximize your ROI.



# MISCONCEPTIONS ABOUT AUTOMATION IN THE MEDICAL DEVICE INDUSTRY

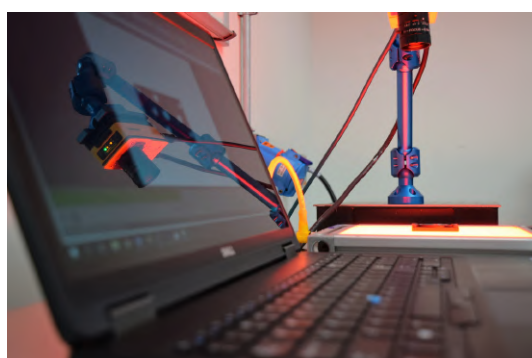
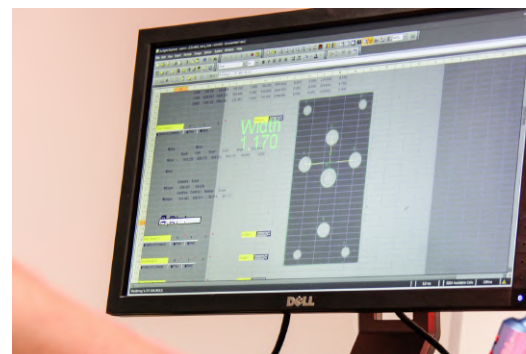
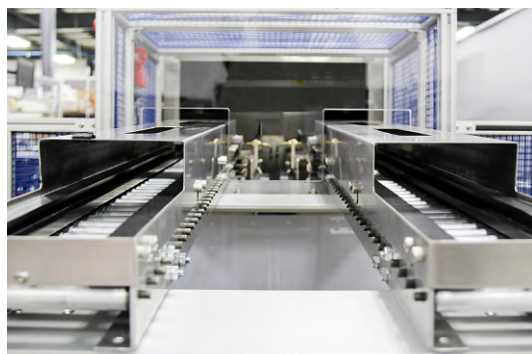
## 1 MISCONCEPTION: **AUTOMATION ONLY REFERS TO ROBOTS.**

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Automation refers to anything that replaces or improves a task that an operator had to do manually. For instance:

- A vision system or sensor that ensures the operator correctly places a part into a nest
- A part feeder that presents a part to the operator because dexterity is an issue
- A station where a part is clamped in place and only released after passing an inspection or finishing an assembly process

Essentially, wherever technology is adding to the operator's capability, assisting them in their tasks, or directly performing the operation—*that* is automation.



MISCONCEPTION:

### 2 **AUTOMATION IS TOO EXPENSIVE.**

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On the surface, automation inevitably seems more expensive than an operator performing a task manually. However, it goes beyond an apples-to-apples comparison because you're ultimately paying for more efficient, consistent processes with an automated system. The price largely depends on what you are trying to accomplish and what level of automation your process requires. Also, how many operators would you need for a matched level of efficiency and reliability in contrast? There's always more to the cost and value conversation.

MISCONCEPTION:

### 3 **SHIFTING FROM MANUAL TO AUTOMATED MEANS REPLACING OPERATORS.**

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Many medical device manufacturers aren't looking to reduce their workforce—what they actually want to accomplish (and what automation can help achieve) is freeing up operators for other tasks or projects that don't lend themselves to automation and instead require human capabilities.

MISCONCEPTION:

### 4 **IT TAKES UP TOO MUCH FLOOR SPACE.**

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Initially, many manufacturers picture a fully-automated, multi-process machine that won't fit into the same square footage as an operator standing on an ergonomic pad. However, there are many ways to minimize space, as you can add automation to existing processes. Additionally, automation may allow you to combine processes that were once conducted at multiple stations into a single cell.



### 5 MISCONCEPTION: **ROBOTS ARE TOO COSTLY.**

Until recently, yes, this was often true. Thankfully, within the past few years, suppliers have developed robots for simple tasks that cost closer to \$7,500—this is a vast contrast to the \$20,000-30,000 starting cost range that we've seen in the past. In some cases, robots can be cheaper than a pneumatic system, and offer future reuse opportunities that dedicated automation or tooling can find challenging.

### 6 MISCONCEPTION: **AUTOMATION ISN'T VERY FLEXIBLE.**

While there can be truth to this, equipment providers can help mitigate this by selecting components that are designed to handle multiple applications. For example, feeders may be designed to fit one part. However, if the automation equipment is intended to run multiple part variations, a flexible feeder can be used instead to accommodate part changes without replacing the entire element.

7 MISCONCEPTION:

### IT CAN DO ANYTHING.

On the opposite end of the spectrum, we've had several customers who believe that automation can solve anything. Unfortunately, this isn't true. Some processes are far too delicate or complex. When this occurs, having a partnership with your equipment provider is important in order to develop alternatives that make sense for your application and your manufacturing.

8 MISCONCEPTION:

### IT IS FAR TOO COMPLEX.

Many medical device manufacturers believe that automation can be too complex for operators and maintenance teams, but as with anything, there will be a learning curve. It's important to have an automation partner who can assess your current processes, determine how to incorporate automation in a way that is sustainable for your manufacturing environment, and can supply extended support after the equipment is installed.

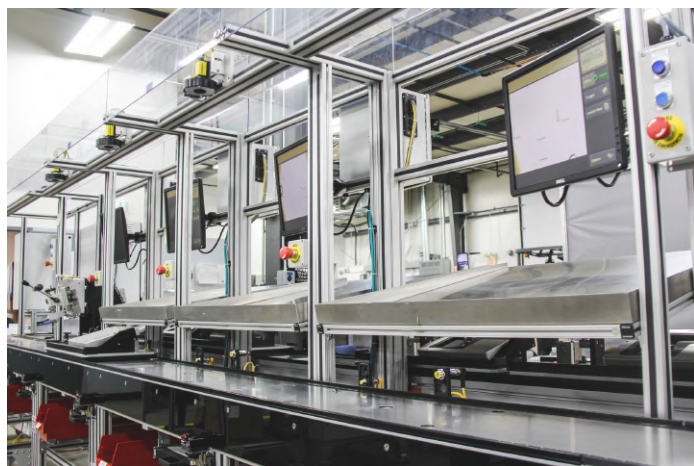
9 MISCONCEPTION:

### AUTOMATION VENDORS ARE ALWAYS LOOKING FOR A WAY TO UPSELL.

While this may be true for some, it isn't the case at Invotec. We work hard to develop an honest relationship with our customers, and if we can do something for an operator for a \$20k investment versus a \$1m system, we definitely will. We prioritize the long sell, not the upsell.







## THE **INVOTEC** ADVANTAGE

It's never just another project for us—it's a collaboration and partnership. We work exclusively in the medical device industry, and that shows when applying our experience to your project.

From the very beginning, we work with our customers to decipher what they truly need in an automation solution. We help design the equipment based on existing processes and identify where automation will be most beneficial, generating the most optimal return on investment. We engage your team at our facility to ensure any process development is reviewed as well as to make sure the equipment meets your needs. After the equipment is delivered, we will continue to train and support your team at your facility or remotely.

If we recognize risk or something that can't work, we're honest and upfront, with potential suggestions. We'll explain why and help reevaluate the process to see what solution might work.

We recognize that medical device customers need this high level of development assistance, as they are automating products and processes that haven't been tried or perfected yet. At *Invotec*, we quickly become experts in your safety standards, ergonomics, products, and so forth to maximize the automation we set up for your business.



Invotec knows what you're up against.

We design and build custom assembly, test, and inspection equipment for medical device manufacturers. From semi-automated stations to fully-automated systems, we specialize in applications with small components and intricate assemblies—providing robust, reliable solutions. And our flexible approach allows customers to refine their product design while we engineer the equipment.

Ready to weave automation into your medical device assembly processes?

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