

## TEACH PENDANT

Requires robotics and coding experience

Trial-and-error process to achieve desired results, even with experienced users

Teach pendant and programming language unique to each robot brand

Doesn't require computer proficiency



### Learning curve

## OFFLINE PROGRAMMING (OLP) SOFTWARE

Simple workflow and easy to learn

Includes easy-to-use optimization and error correction tools

Little to no robotics or programming experience needed

Uses same programming interface for all robot brands, eliminating the need to be familiar with multiple systems

Requires the user to be comfortable using a computer

Hard-to-reach areas can be very problematic and time-consuming when programmed via teach pendant

Risk of collision between the tool or robot and the part



### Complex shapes

Automatically optimizes paths to best avoid collisions and other robotic errors

Solves a lot of issues when programming complex part profiles making it easy to program in hard-to-reach areas

In low-mix, high-volume applications, this method offers excellent ROI. A single programming job can sustain production for a long time



### Production style

In high-mix, low-volume applications, programming time is extremely impactful to margins. The ability to quickly and flexibly program more jobs greatly improves profitability

Allows for "on-the-fly" adjustments for variations in parts or desired finishes

Subject to human error; nearly impossible to achieve the same results every time

Unable to distribute program across many facilities, resulting not just in discrepancies within the facility but also varying results across multiple locations



### Repeatability

OLP software takes a CAD-to-path approach. The program is created based off the features of the CAD model

Some OLP, like Robotmaster, gives users the ability to save the strategies and "recipes" used in a program library that can later be called upon or distributed across facilities