



COURSE DESCRIPTION

The Advanced TruMark Applications Training Course is designed to enable users to maximize the capability of their TruMark machines with advanced marking techniques and additional software. The course immediately follows the TruMark Operator course, it discusses various laser parameters, marking processes, various types of materials, the TruTops Mark Navigator programming software as well as the cylindrical segmentation marking feature. The students will learn how to create, test, and analyze marked parts to achieve optimum marking results.

PREREQUISITES

Prior to taking this course, the students must take the basic TruMark Operator Training Course offered by the TRUMPF Training Department. The abilities of using TruTops Mark software to create functionally accurate CAD drawings and functionally accurate marking part programs are a must.

COURSE DURATION

2 days

OBJECTIVES

- Apply advanced application techniques for marking optimization.
- Differentiate various laser marking processes, including engraving, ablation, foaming, color change, etc.
- Compare laser parameters in relation to power density and energy density
- Correctly mark parts of various materials with optimized parameters.
- Correctly apply the TruTops Navigator to produce functionally accurate part programs
- Correctly apply the cylindrical and X/Y segmentation feature to produce functionally accurate part programs
- Analyze the quality of marked parts and apply advanced marking techniques to improve quality
- Adapt special functions and techniques to meet your own programming needs



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COURSE OUTLINE

- Advanced marking application theory
 - power density vs. energy density
- Laser parameters and marking with different materials
 - marking metals: ablation, engraving, cleaning, annealing
 - marking plastics: color change, foaming, engraving
 - marking other synthetic materials
- TruTops Navigator
 - TruTops Navigator capabilities and functionalities
 - Matrixes
 - Test files
 - Optimization and transferring of laser parameters
- Cylindrical and X/Y segmentation marking
 - cylindrical and X/Y segmentation marking functions and capabilities
 - cylindrical and X/Y segmentation programming corrections and optimization
 - required conditions and parameters for marking cylindrical parts larger than the marking field or multiple parts in pallets
- Quality control of marked parts
 - analyze quality of marked parts
 - apply advanced marking techniques to improve quality
 - troubleshoot laser marking problems, such as low contrast
- Customization
 - identify programming needs and special marking requirements
 - customization of programming and special functions to reduce work time and maximize productivity