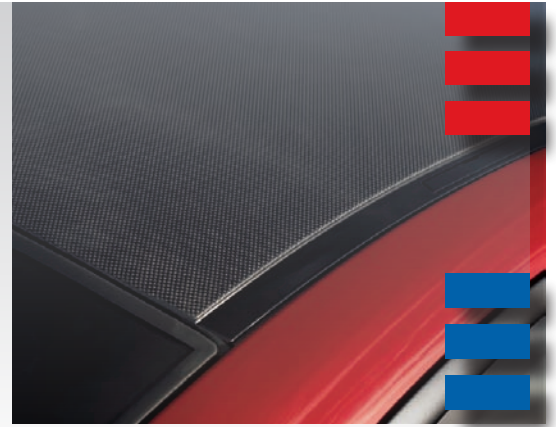


KMT Robotic Solutions Success Story: BMW

KMT Robotic Solutions Precision Grinding System Helps BMW Improve Quality, Safety and Productivity



When world renowned car maker BMW needed a precision grinding system to manufacture the carbon fiber roof on their 2008 M3, they teamed with KMT Robotic Solutions to create an automated manufacturing process that improves quality and safety while increasing productivity.

Challenge

BMW decided to give their customers the option of a carbon fiber roof on their 2008 M3 coupe. The new roof would give the car significant weight savings while also giving it a refined look. But in order for their new carbon fiber roof to obtain the aerodynamics and distinct look they desired, BMW needed a precise surface finishing process for the clear coat varnish. They found that manual finishing led to high cycle times, inconsistencies in quality and worker safety concerns.

Solution

KMT Robotic Solutions responded to BMW's needs by developing a fully enclosed robotic surface finishing system that cuts the manual finishing time while improving quality and increasing worker safety.

The system features a robot guided compliant grinding head that can adapt automatically to the curvature of the roof. To facilitate cost and time effective robot programming, the system features a custom KMT programming tool that can generate complex robot paths from 3D-CAD-data in under two minutes. This allows the robot to move at a constant speed while the grinding head makes all necessary adaptive movements in real-time. These technologies working together allow for constant grinding conditions over the entire surface of the roof, resulting in the constant surface quality required.



BMW roof being wet ground by KMT RS Robotic System

Results

KMT set out to create a system that would be fast, precise and safe. With the new grinding system it takes BMW just 50% of the manual cycle time to finish a roof and the level of precision KMT's system offers simply isn't possible through manual processing. Also, since the physical challenges inherent in manual grinding are delegated to the robot, employee safety is significantly increased.

BMW's new KMT designed carbon fiber finishing solution has helped the company create a new high tech roof of outstanding quality. With help from KMT, BMW continues to uphold the exceptional quality that their customers expect.



KMT Compliant grinding head



KMT Robotic Solutions
Creating Value through Automation

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