

# SMART AUTOMATION EMMA SYSTEMS

DRAMATICALLY FASTER, MEASURABLY BETTER SANDING FOR COMMERCIAL AIRCRAFT



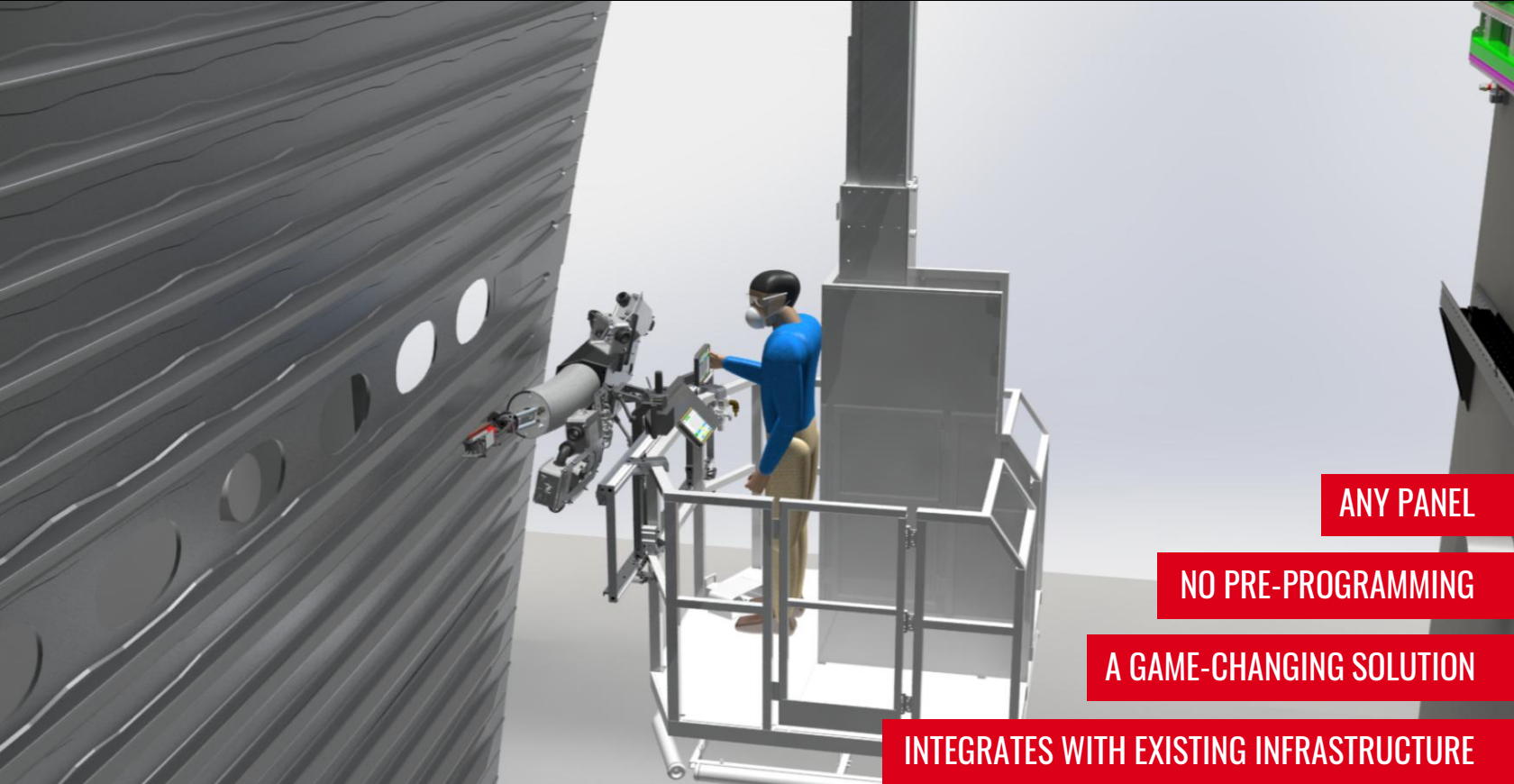
**SA EMMA SYSTEMS FOR  
PANEL SHOPS**



[TEMPLEALLEN.COM](http://TEMPLEALLEN.COM)

# NEXT-GEN SURFACE PREPARATION

## A NEW STANDARD FOR AIRCRAFT PARTS, PANELS, & COWLINGS



ANY PANEL

NO PRE-PROGRAMMING

A GAME-CHANGING SOLUTION

INTEGRATES WITH EXISTING INFRASTRUCTURE

SPEED

### ACCELERATES THE PRODUCTION SCHEDULE

Smart Automation EMMA systems have reduced the scheduled calendar time for a wide-body de-paint by 63%. This productivity improvement is now coming to panel shops

PRECISION

### TOTAL CONTROL OF MATERIAL REMOVED

Preps metal or composite surfaces with a degree of precision and consistency that is impossible to achieve with manual techniques. Safely creates a smooth, well-faired surface at unprecedented speeds

SAFETY

### SAFETY FIRST

EMMA works safely alongside artisans. Able to see and react to the part and environment in real time, EMMA avoids obstacles. Improved dust collection also reduces toxic dust released into the environment

QUALITY

### DELIVERS CONSISTENT RESULTS

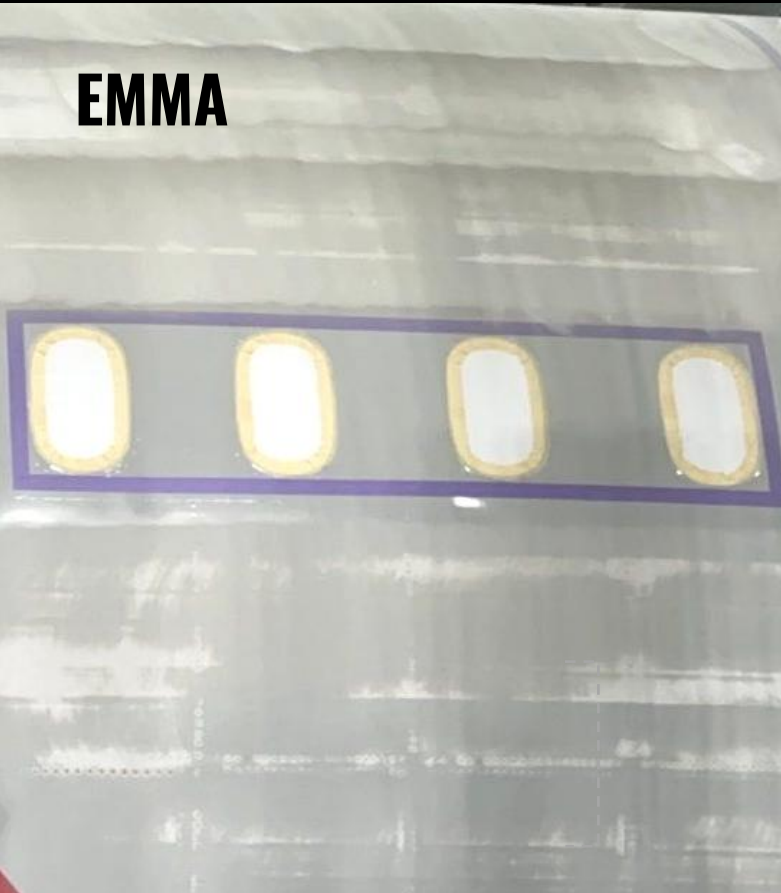
Higher quality and consistent results all day, every day, from every artisan, from every shop or booth. Meaningfully improves DOI (distinctiveness of image)



# MEASUREABLY HIGHER QUALITY

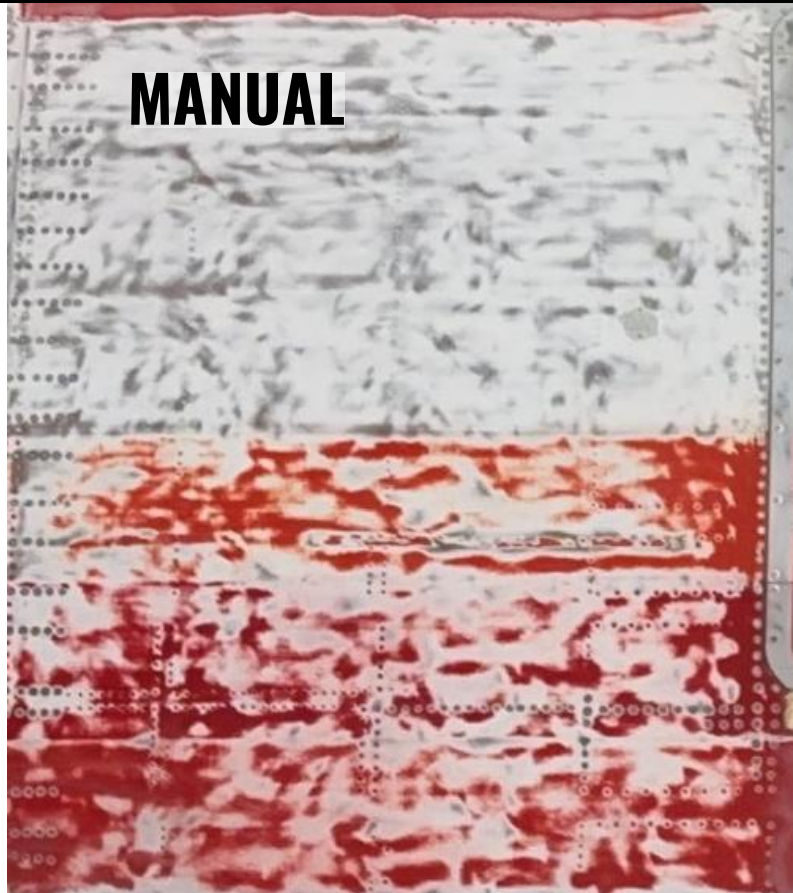
## BETTER SURFACE PREP YIELDS BETTER FINAL FINISH

**EMMA**



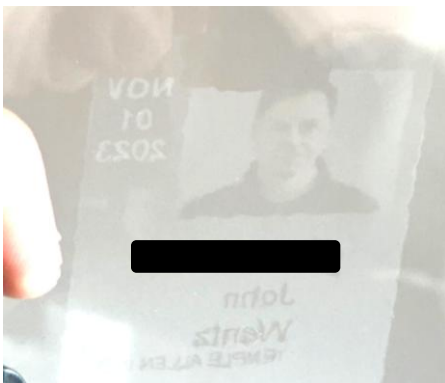
Note: these photos are from adjacent areas of the same aircraft

**MANUAL**



EMMA SUBSTANTIALLY REDUCES INSTANCES OF NON-CONFORMANCE ASSOCIATED WITH BOTH FINISH DAMAGE AND AIRPLANE DAMAGE

**VASTLY IMPROVED DOI  
(DISTINCTIVENESS OF IMAGE)**



**EMMA FACILITATES PAINT  
SO SMOOTH YOU CAN  
READ A REFLECTION**

**EMMA PREVENTS:**

**DIVOTING – CUPPING – DISHING – SCALLOPING**

**EMMA REMOVES EXACTLY  
THE LAYERS YOU WANT**

**WHILE USING UP TO 80%  
LESS SANDPAPER**



# EMMA SMART AUTOMATION SYSTEMS

SAFETY - FOR YOUR PEOPLE, YOUR PARTS, AND OUR PLANET



CAN BE C1D1 / ATEX / IECEx CERTIFIED

ALWAYS-ON SAFETY OVERSIGHT

## ERGONOMIC

### REMOVES ROOT CAUSE OF INJURIES / FATIGUE

All the ergonomic issues with manual sanding - high grip forces, vibration exposure, repetitive stress, awkward postures, and fatigue – go away when the artisan no longer wields the sander – EMMA does

## CLEAN TECH

### ENVIRONMENTALLY FRIENDLY

Our Smart Automation systems have better dust capture than manual tools. By reducing hazardous waste, we help organizations implement sustainable production processes and achieve their environmental reporting targets

## AOSO

### ALWAYS ON SAFETY OVERSIGHT

EMMA sees her immediate environment and responds to the presence of personnel and the part in real time – creating a completely safe opportunity for artisans to work right alongside

## C1D1 CERTIFIED

### SAFE IN HAZARDOUS ENVIRONMENTS

Smart Automation EMMA Systems are available configured and certified for safe operation in all types of hazardous aerospace environments – C1D1, ATEX, IECEx, etc. Temple Allen equipment has been safely operating in such environments for over 20 years

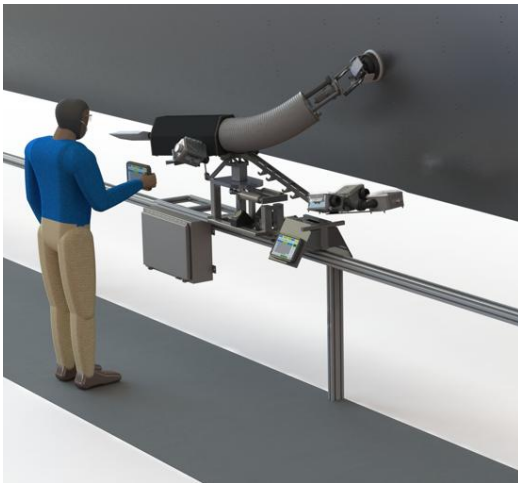
# FLEXIBLE DEPLOYMENT OPTIONS

## FOR COMPOSITE SHOPS, PREP BOOTHS, PRODUCTION LINES

### RAILING

#### RAILING DEPLOYMENT

- Configurable to sand vertical panels, and tops or bottoms of horizontal panels
- Mounts on railings of any length
- Sands both flat and curved surfaces



### OVERHEAD RAIL

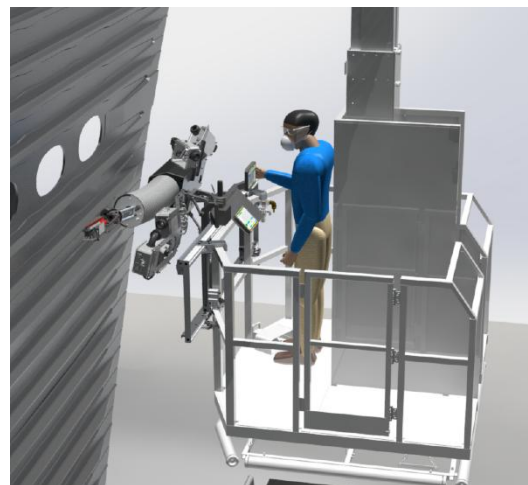
#### OVERHEAD RAIL DEPLOYMENT

- Configurable to sand vertical panels, and tops of horizontal panels
- Uses overhead track or jib arm for deployment, helps raise excess hosing and tubes out of the working environment
- Sands both flat and curved surfaces

### TELESCOPING STAND

#### TELESCOPING STAND DEPLOYMENT

- Configurable to sand vertical panels, and tops or bottoms of horizontal panels
- Operates on flat or grated flooring with no additional infrastructure
- Sands both flat and curved surfaces



### PERSONNEL LIFTS

#### PERSONNEL LIFT DEPLOYMENTS

- Configurable to sand vertical panels and tops or bottoms of horizontal panels
- Mounts on existing lifts used in the facility
- Sands both flat and curved surfaces



# SANDS ANY PART OR PANEL

FOR COMPOSITE SHOPS, PREP BOOTHS, PRODUCTION LINES

**COWLINGS**



**CONTROL SURFACES**



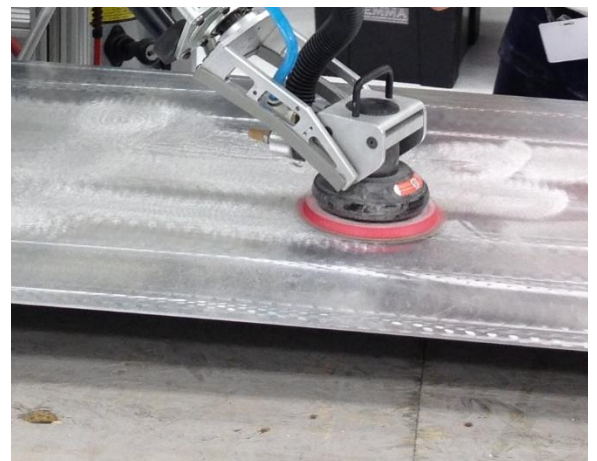
**AIRPLANE SECTIONS**



**COMPOSITE PANELS**



**ALUMINUM PANELS**



# A DAY IN THE LIFE

A MORE PRODUCTIVE DAY FOR ARTISANS, SUPERVISORS, & MANAGEMENT



**DATA ANALYTICS SUPPORTS DETAILED REPORTING**

**COORDINATED SANDING STRATEGY LETS EVERYONE FINISH AT THE SAME TIME**

## ARTISAN MORALE

### PAIN & FATIGUE-FREE ARTISANS PERFORM BETTER

- Artisans monitor EMMA progress and guide performance of system via tablet
- Artisans able to perform remaining hand sanding with more energy
- Experienced artisans stay healthy and able to work longer, postponing retirement
- Younger workers easier to recruit, as the job is no longer painful and dangerous

## MANAGEMENT INSIGHTS

### DATA ANALYTICS DOCUMENTS SANDING PROCESS

- Detailed tracking reports include abrasive consumption, sanding modes used, tool on time, and various crew performance metrics
- Compatible with facility digital documentation initiatives
- Above-the-shop-floor benefits include activity tracking, quality and production metric trending, and customer sanding status and quality report generation

## SERVICES

### AROUND THE CLOCK SUPPORT

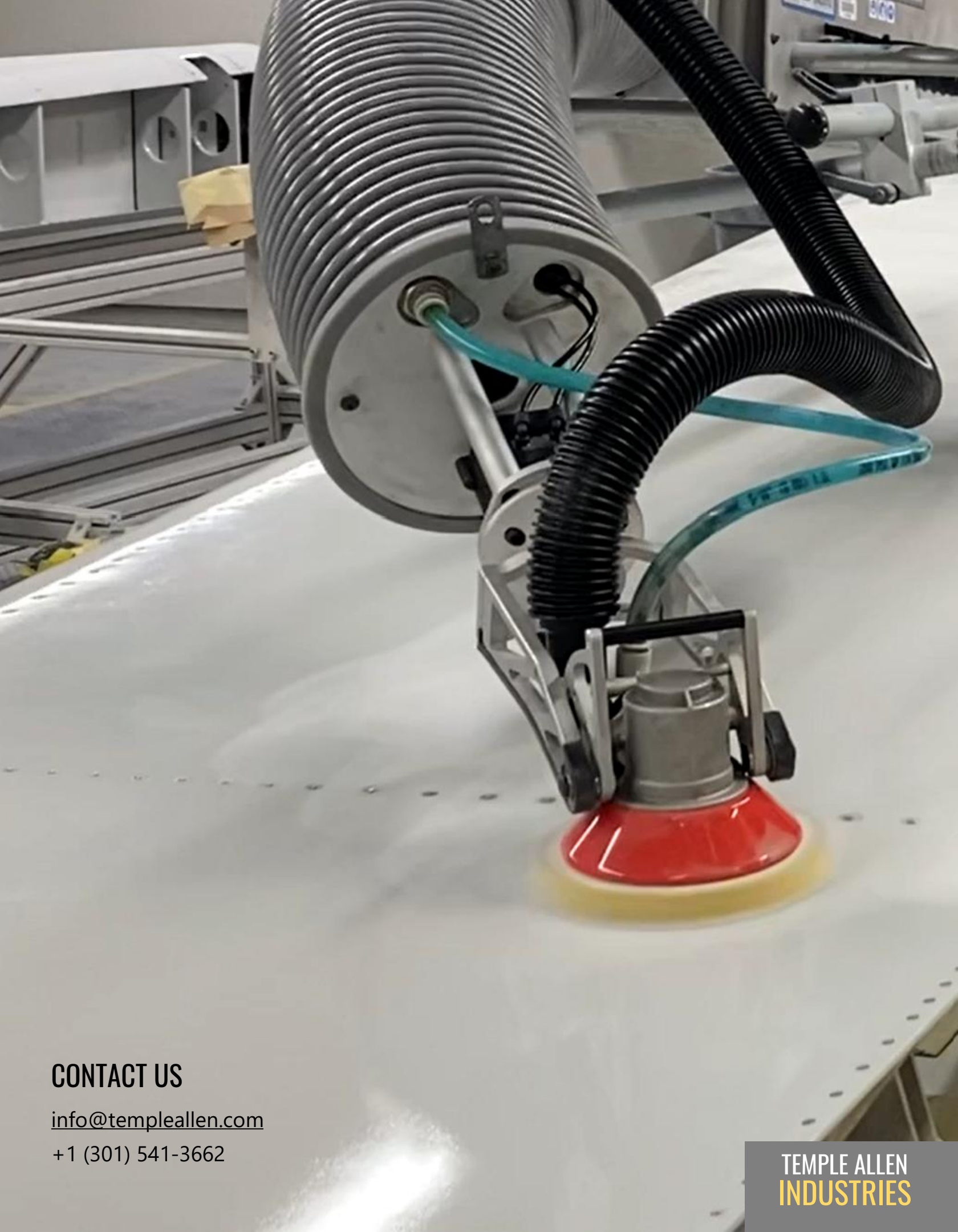
Temple Allen offers support services tailored for artisans, maintenance, and management personnel

We also offer above-the-shop-floor support - an Optimized Sanding Strategy that can reduce the burden on planning and operations staff

## UTILITIES

### UTILITY REQUIREMENTS

Smart Automation EMMA needs just shop air & 110/120 or 220/240-volt AC power to operate, while an ethernet cable & Wi-Fi enable advanced features



## CONTACT US

[info@templeallen.com](mailto:info@templeallen.com)

+1 (301) 541-3662

TEMPLE ALLEN  
INDUSTRIES