

# meet

# EMMA

[easily  
manipulated  
mechanical  
arm]

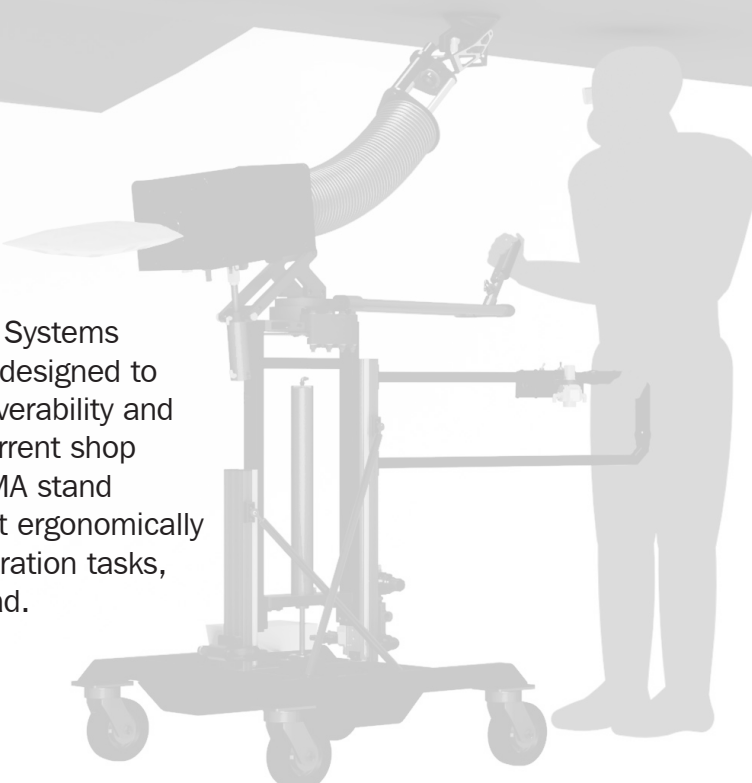
## Telescoping Stand Systems

TEMPLE ALLEN INDUSTRIES

ROCKVILLE, MD | WWW.TEMPLEALLEN.COM | 301.541.3662

EMMA (Easily Manipulated Mechanical Arm) from Temple Allen Industries is a 100% pneumatic arm that can deliver a variety of surface preparation tools while effectively shielding artisans from the health and safety problems associated with manual sanding.

All EMMA systems include the core EMMA module combined with a deployment structure designed to best position the artisan and the End-Effector for a given application.



EMMA Telescoping Stand Systems are ground deployed and designed to provide maximum maneuverability and easy integration within current shop infrastructure. These EMMA stand systems address the most ergonomically challenging surface preparation tasks, including sanding overhead.

# EMMA [technology]

## ARM

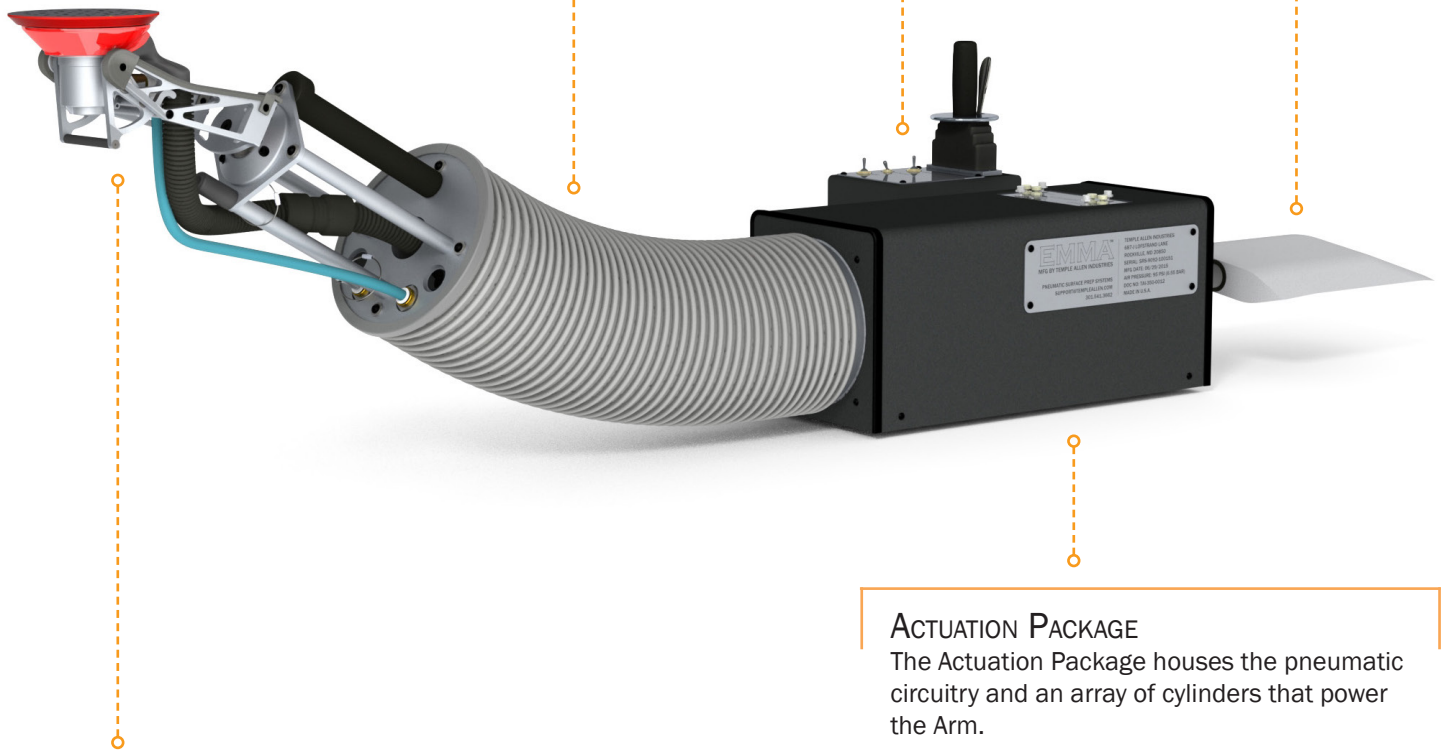
The Arm is a sheathed set of control cables and a polyurethane core that generates EMMA's smooth motion.

## JOYSTICK BOX

With intuitive joystick controls, an EMMA operator is always in full control of the sanding system and material removal rate.

## INTEGRATED VACUUM

The optional Integrated Vacuum allows operators to utilize easily disposable 3M Clean Sanding Filter Bags or simply boosts collection efficiency while connecting to existing facility



## END-EFFECTOR

The End-Effector is the mounting assembly that holds the sander(s) at the end of the Arm. In an EMMA End-Effector frame, the sander(s) independently pitch and roll and are balanced to allow abrasive discs to conform to the working surface. EMMA End-Effectors always hold sanders flat (normal) to the surface. EMMA's can be outfitted with a variety of End-effectors to tackle different surface preparation challenges.

## ACTUATION PACKAGE

The Actuation Package houses the pneumatic circuitry and an array of cylinders that power the Arm.

## AUTO-ADJUST

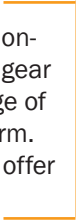
Each EMMA has an Auto-Adjust mechanism that accommodates both flat and curved surfaces, ensuring the consistent application of user-specified contact pressure over the skin of an aircraft.

## EMMA STAND SYSTEM - OVERHEAD SANDING MODELS

The EMMA Stand System Overhead Sanding models perform surface preparation overhead, and can roll independently along the floor or take guidance from a track or rail. The operator stands comfortably upright and uses our directly-linked Turntable Control Handle or Pneumatic Joysticks to guide the Arm and End-Effector.



The optional Turntable Control Handle provides a direct but vibration-free linkage from Operator to End-Effector. An application-specific gear ratio in the linkage gives the operator access to the tool's full range of motion while only needing smaller movements of the operator's arm. Successful testing in the field and positive feedback has led us to offer this alternative control paradigm.

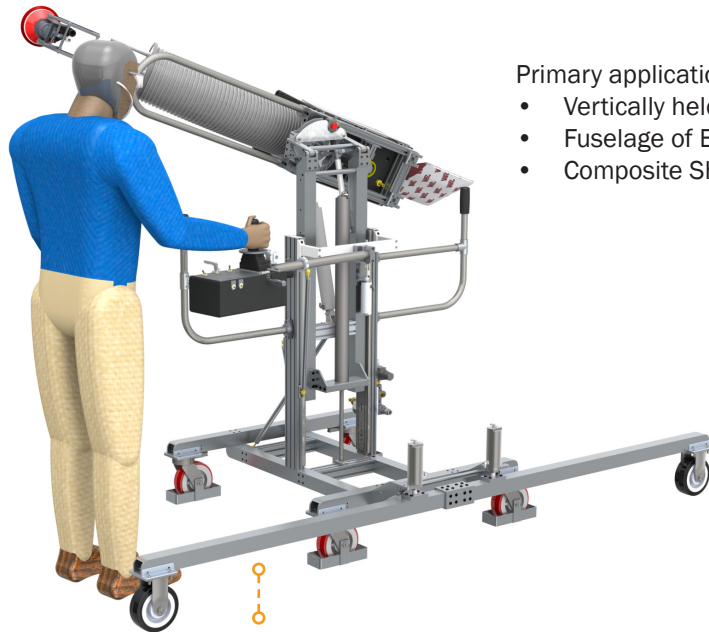


Primary applications - Overhead Sanding

- Belly of widebody aircraft
- Wings of Business or Fighter Jets

Primary applications - Side Sanding

- Vertically held aircraft parts
- Fuselage of Business or Fighter Jets
- Composite Ship Hulls and Windblades



The optional Linear Add-on wheel set allows EMMA to roll in a straight line when sanding a long vertical surface

## EMMA STAND SYSTEM - OVERHEAD & SIDE SANDING MODELS

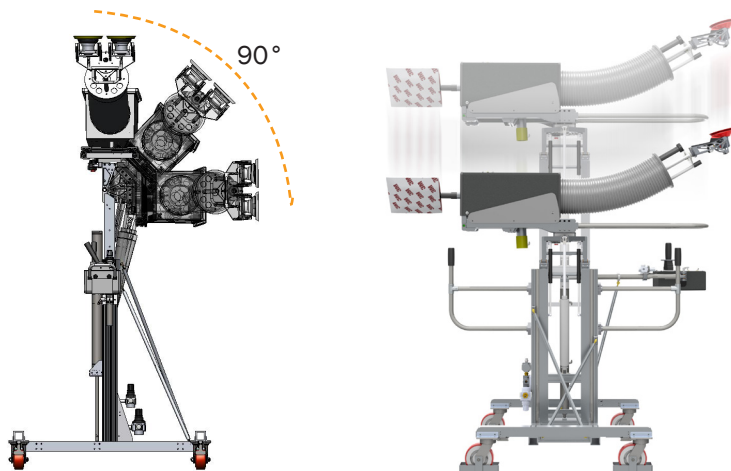


The EMMA Telescoping Stand System performs surface preparation either overhead or to the side. The operator stands comfortably upright and uses joysticks to control the Arm and End-Effector.

The EMMA Telescoping Stand System has a Turntable that enables the artisan to lock the EMMA module in various positions in the yaw axis. Combined with other degrees of freedom built into the deployment, the Turntable allows easy macro- and micro- positioning.

max 8', 8.5'  
min 2', 6'

Vertical surfaces  
Horizontal surfaces  
(sanding up)



All min and max heights are estimates based on the standard EMMA Stand model. The reach of each system can be tuned to meet the needs of the application.

**EMMA™**

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