

meet

EMMA

[easily
manipulated
mechanical
arm]

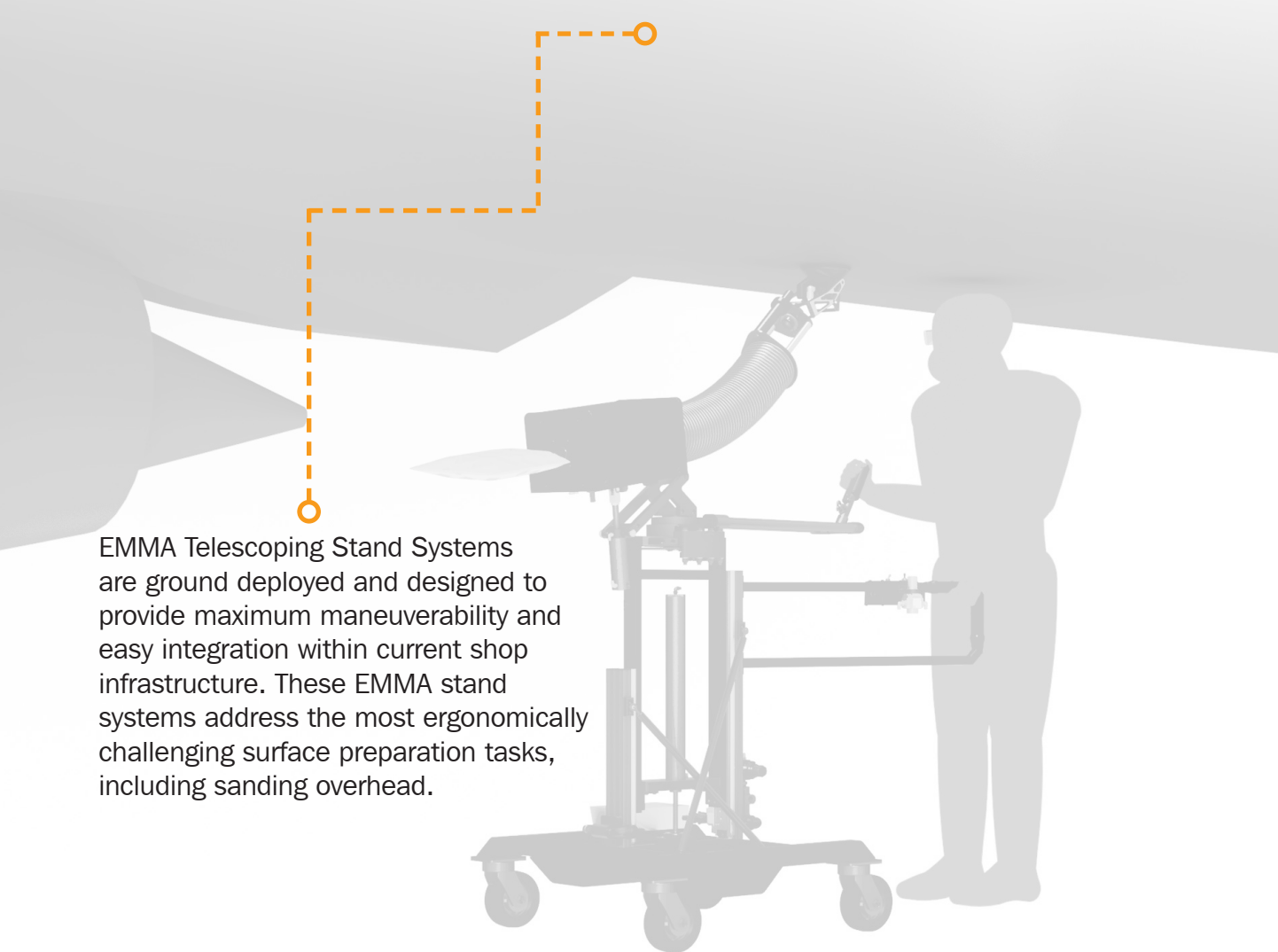
Telescoping Stand Systems

TEMPLE ALLEN INDUSTRIES

ROCKVILLE, MD | WWW.TEMPLEALLEN.COM | +1 (301) 541-3662

EMMA (Easily Manipulated Mechanical Arm) 100% Pneumatic TSS (Telescoping Stand Systems) from Temple Allen Industries move easily underneath aircraft and the easily-swapped selection of EEF (End Effectors) deliver a variety of surface preparation tools while effectively shielding artisans from the health and safety problems associated with manual sanding while they comfortably monitor progress and quality.

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 TELESCOPING STAND SYSTEM - OVERHEAD & SIDE SANDING MODELS

Primary applications - Overhead Sanding

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

Primary applications - Side Sanding

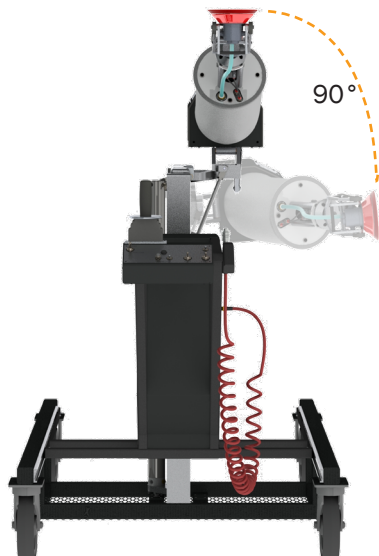
- Vertically held aircraft parts
- Fuselage of Business or Fighter Jets
- Composite Ship Hulls and Windblades

The EMMA TSS-O&SS performs surface preparation either overhead or to the side. The operator stands comfortably upright and either engages AutoSweep or uses the joystick to sweep the Arm and End-Effector across the aircraft surface.

The EMMA TSS-O&SS 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.



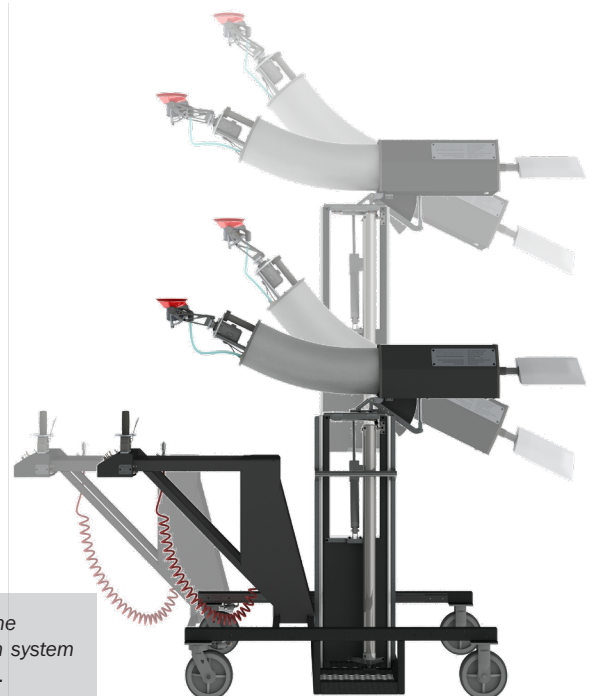
- » The 100% pneumatic EMMA TSS-O&SS is intrinsically safe, suitable for Class 1 Div 1 environments, and will automatically pull away from the surface if the air supply is cut off
- » Optimal contact pressure is established during installation, but can be modified in the range from 15-50 lbs of contact force
- » Operators enjoy a comfortable standing position that minimizes fatigue while affording an excellent view of the sanding process
- » The Controls section can extend away from the central column to reduce operator head tilt while watching overhead



max 8', 9'
min 2', 5.5'

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 TELESCOPING STAND SYSTEM - OVERHEAD SANDING

Primary applications - Overhead Sanding

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

The EMMA TSS-OS model performs 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 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.



- » The 100% pneumatic EMMA TSS-OS is intrinsically safe, suitable for Class 1 Div 1 environments, and will automatically pull away from the surface if the air supply is cut off
- » Optimal contact pressure is established during installation, but can be modified in the range from 15-50 lbs of contact force
- » Operators enjoy a comfortable standing position that minimizes fatigue while affording an excellent view of the sanding process

max 9'
min 5.5'

Horizontal surfaces
(sanding up)

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



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