

SPIRIT AEROSYSTEMS CHEMICAL PROCESSING

Capabilities Specifications

Chemical Processing Overview: Spirit AeroSystems' chemical processing capabilities accommodate a comprehensive range of hard and soft metals with one of the largest automated lines in the industry. Capable of processing parts up to 48 feet in length, Spirit can manufacture a wide range of finished products — from machined fittings to large fuselage skin panels. Anodizing, chemical milling, cleaning, coating, penetrant processing, plating and surface preparation can be accomplished on a wide variety and size of parts. Also, Spirit's high-volume, high-velocity processes deliver reliability and industry-leading turn times.

conveyor stretches
4.5 miles

hood launch every
34 minutes

parts produced annually
4 million

square footage
276,378



Soft Metal Capabilities

- 16 large tanks (automated)
 - Hood launches every 34 minutes
 - 50' x 6.5' x 13'
- 18 small tanks (manual)
 - 25' x 5' x 6.5'
- 17 plating tanks (manual)
 - 10' x 3' x 4.5'

Hard Metal Capabilities

- Chemical line
 - Maximum processing length of 12'
 - Processing basket envelope of 2' x 4' x 12'
 - Maximum weight of 1,500 pounds
- Paint shop
 - Maximum processing length of 10'
- Penetrant inspection
 - Maximum processing length of 12'
 - Processing basket envelope of 2' x 4' x 12'
 - Maximum weight of 1,500 pounds
- Magnetic particle inspection
 - Maximum processing length of 39.5'

SPIRIT AEROSYSTEMS CHEMICAL PROCESSING (continued)

Anodizing

- Aluminum, type 1 non-hexavalent chrome (e.g., boric / sulfuric)
- Seal

Conversion Coating

- Aluminum
- Titanium

Heat Processes (Part Drying) Passivation Plating

- Electroplating
- Cadmium plating

Penetrant Processing

- Automated penetrant line
- Manual penetrant
- Pre-penetrant etch

Stand-alone Cleaning and Descaling Processes

- Acid cleaning
- Alkaline cleaning
- Emulsion cleaning
- Solvent cleaning
- Titanium cleaning – acid
- Titanium cleaning – alkaline

Surface Preparation for Metal Bond

- Testing performed internally in support of the Chemical Process Accreditation
- B03 – Metallographic preparation
- B05 – Salt spray testing
- B10 – Adhesion testing (adhesion tape testing)
- B12 – Adhesion testing (adhesion bend testing)
- Coating weight testing
- Conductivity testing
- Coating thickness measurement
- Adhesion testing (climbing drum peel)
- Other testing