



VAC AERO

VAC AERO INTERNATIONAL INC.

VAC AERO

- **R&D Activities**
- **Processes and Equipment**

Rzeszow, March 2, 2009

A WORLD OF INNOVATIVE MATERIALS SOLUTIONS



VAC AERO

VAC AERO INTERNATIONAL INC.

CANADA:

**HEAD QUARTER, FURNACE MANUFACTURING &
ONTARIO THERMAL PROCESSING DIVISION :**
1371 SPEERS ROAD; OAKVILLE, ONTARIO

QUEBEC THERMAL PROCESSING & COATINGS DIVISIONS:

Plant 1: 7450 RUE VERITE; ST. LAURENT QUEBEC

Plant 2: 1365 NEWTON; BOUCHERVILLE, QUEBEC

POLAND:

THERMAL PROCESSING & COATINGS DIVISION:

VAC AERO KALISZ

ul. ELEKTRYCZNA 8; 62-800 KALISZ (Poland)

THERMAL PROCESSING & COATINGS DIVISION:

VAC AERO RZESZOW (opening 2nd quarter 2010)

Jasionka FEZ

INDIA:

HIGHTEMP VAC AERO PRIVATE Ltd.

2/2B Veerananjiipura village KASABA HOBLI



VAC AERO

HEAT TREATMENT & BRAZING



SELECTED PROCESSES OFFERED:

- High temperature vacuum heat treatment of numerous materials including steels, stainless steels, cooper alloys, super alloys, titanium & ceramics;
- High temperature vacuum brazing;
- Tempering
- Stress relieving

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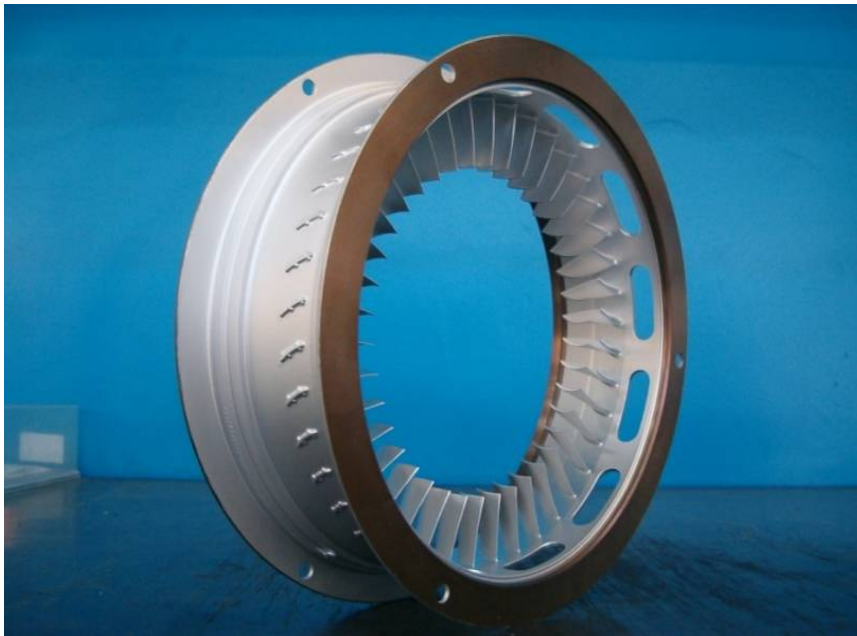


VAC AERO

INORGANIC PAINT COATINGS (COLD COATINGS)

VAC AERO offers high- temperature, corrosion and oxidation resistant coatings for ferrous alloys.

Paint composition combines thermal stability and hardness along with good flexibility, superior adhesion, and excellent corrosion and oxidation protection at high temperatures.



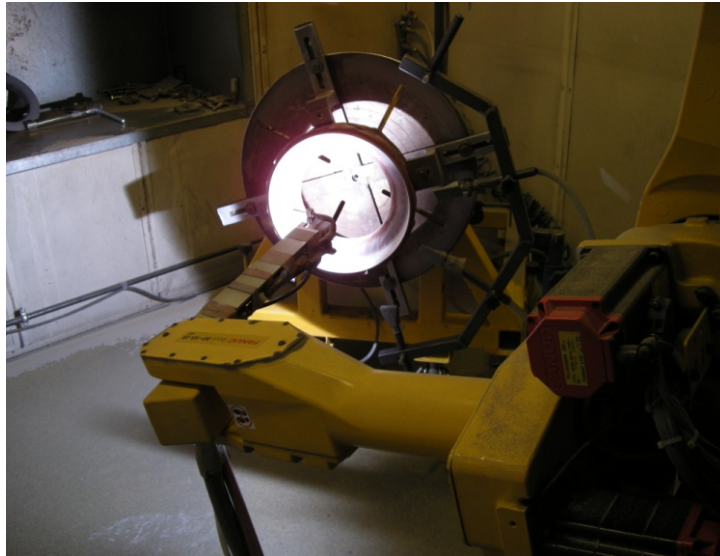
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VAC AERO

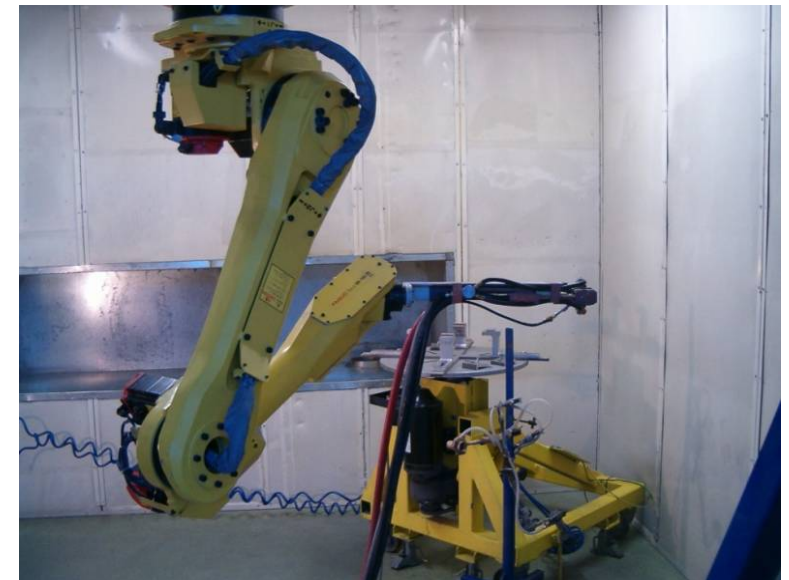
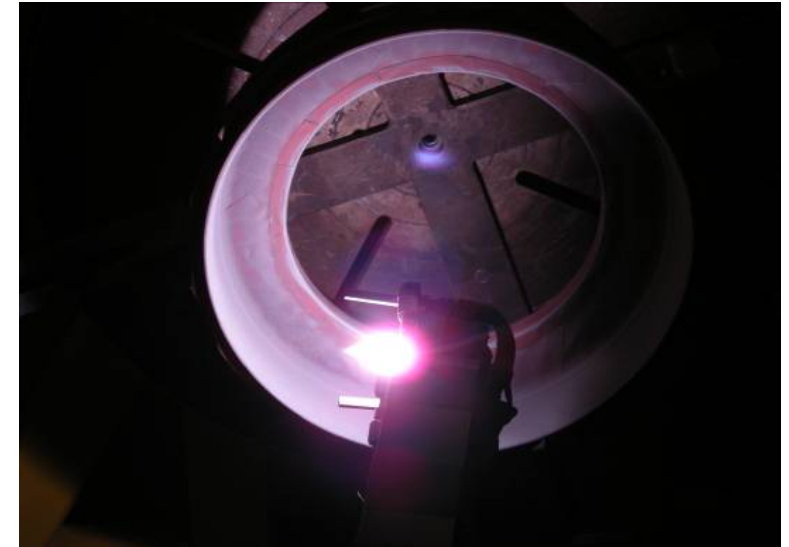
THERMAL COATINGS

VAC AERO coatings solutions are used in both new part applications and for restoration of service-damaged components. Thermal spray coatings are applied using robotically-controlled manipulators for maximum coating recurrence.



TYPES OF THERMAL COATINGS INCLUDE:

- Air-Plasma Spray (APS)
- High Velocity Oxygen Fuel (HVOF) Spray -pending



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METALLOGRAPHIC LABORATORY



VAC AERO maintains in Kalisz (Poland) a fully- equipped metallographic laboratory approved by major aerospace prime manufacturers, including Pratt & Whitney Canada Corp. and Sikorsky Aircraft Corporation.

MAIN TESTS:

- Evaluation of Hardened Case Depth (Carburized, Nitrided and Induction Hardened)
- Microstructure
- Carburized, Nitrided and Induction Hardened Case
- Plasma Spray Coatings
- Coating and Plating Thickness
- Evaluation after EDMR, LBMR, welding, EBW, brazing





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2009 CAPITAL INVESTMENT

A. Kalisz Location

Process	Equipment
THERMAL COATINGS	HVOF System
ADDITIONAL PROCESSES	Sub Zero Treatment Equipment
	Shot Peening Line



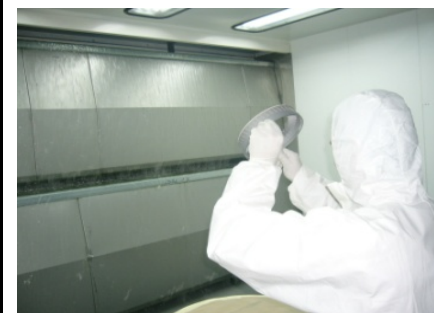


VAC AERO

2009 CAPITAL INVESTMENT

Rzeszow Location: Opening 2nd Quarter 2010

Process	Equipment
HEAT TREATMENT IN VACUUM	1. Horizontal Vacuum Furnaces Temperature Range: 580 ÷ 1180 [°C] Working zone dimensions (l x h x w) : 1200 x 1200 x 1800 [mm]
	2. Horizontal Vacuum Furnace Temperature Range: 580 ÷ 1180 [°C] Working zone dimensions (l x h x w) : 610 x 610 x 1220 [mm]
THERMAL SPRAY COATINGS	1. Plasma System 2. Plasma Guns
INORGANIC PAINT COATINGS	1. Inorganic Paint Booth Water Filter, Controlled temperature & humidity
ADDITIONAL PROCESSES	1. Cleaning/ degreasing line
	2. Glass bead grit blaster
	3. Grit blasters - 2 pcs.
	4. Atmosphere Ovens 2 pcs.
	5. Paint striping line





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LOCATION IN RZESZOW

RZESZOW AIRPORT AREA

 **VAC AERO**
Protective Coatings
Heat Treatment
Brazing



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R&D at VAC AERO

VAC AERO – Montreal:

- **Cold Spray Project with University of Ottawa**
- **Similar to Thermal Spray process family of coatings with minimal heat input**
- **VAC AERO interested in participating in an international project with CRIAQ / PWC / Canadian and Polish University**



VAC AERO

R&D at VAC AERO

VAC AERO - Poland:

- **European Commission Program**
- **CADmium Substitution in Aeronautic Connections and Components Project**
- **Replacement of Cadmium-based coatings as required by REACH Directive (alternative materials and process)**
- **19 parties involved (including Aviation Valley Association, VAC AERO, French, German Dutch, Greek, Italian SMEs associations and SME end users)**
- **Proposal met evaluation thresholds**



VAC AERO

CONTACTS

Michael J. Miasek

President

Tel. +48 62 753 88 70

Cell. +48 607 082 399

Email: mmiasek@vacaero.com

Tomasz Krążyński

Director of Operations

Tel. +48 62 753 88 73

Cell. +48 607 082 398

Email: tkrazynski@vacaero.com