DALIC®

EXPERTS IN BRUSH PLATING

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Experts in selective plating

About DALIC

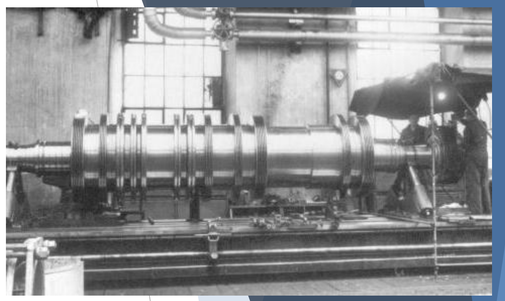
Founded in **1932**, Dalic is the pioneer of surface treatment by selective electrochemical metallization : **Brush plating**. Our technology allows to restore or give specific characteristics to metal parts locally. To do this, layers of metal are electrochemically coated using a brush.

Our process is applied to **new parts** or **damaged parts**, is used in various industrial sectors such as aeronautics, defense, energy, railway, or printing sector and is under continuous improvement by our **R&D** teams.

DALIC technology is performed **without any immersion** of the part. Unlike tank plating, anodic tools are soaked or filed with electrolytes and then brushed on the area to be treated.

This **cold process** doesn't affect heat treatments, but electrolytic process creates the deposit of metal on part.

Micron by micron, it will increase the thickness of coating or anodizing with a **very good precision**.



The **main functions** of the Dalic process are :

- Prevent or treat corrosion, wear, abrasion;
- Increase hardness of part;
- Repair impacts, scratches, grooves;
- Restore geometry of an uncompliant machining;
- Improve surface condition, electrical continuity;
- Facilitate sliding, friction, or avoid seizing of gears;
- Improve the wear resistance of aluminum (anodizing);

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DALIC Services

A wide range of services is proposed to support your activities, current and future strategy :

PLATING JOBS

In-situ, AOG or job shop; plating jobs by our technicians

TECHNICAL TRAINING

DALIC training for all types of selective plating, either in your workshop or in our training center in France

CALIBRATION & MAINTENANCE

In case of breakdown, our maintenance team can repair and calibrate your equipment

RESEARCH & DEVELOPMENT

Our R&D team works on the development of chemicals, equipment & anodic tools

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DALIC Products

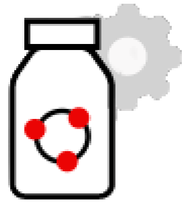
For internalize strategy, you can rely on Dalic equipment. The choose technology will depend on your needs and process :

BRUSH PLATING EQUIPMENT

Standard tool for most uses in industry. Size can vary from small to large area of plating.

DALISTICK® TECHNOLOGY

Non-drip equipment mainly use in Aircraft MRO. This technology add safety by avoiding contact with chemicals. Main uses for small to medium area.



ELECTROLYTES

Our range of chemicals cover coatings, anodizing and etchings. The production line is based in our workshop in Vitré, France.

TOOLS & CONSUMABLES

Consumables are needed to operate equipment, from electrical and mechanical to masking components.

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DALIC Equipment

Layout of DALIC equipment

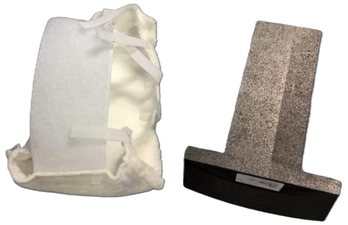
Specific Rectifier for brush plating

Anodic tools

Perilstatic Pump resistant for chemicals

Dalistick® non-drip tools

Electrolytes and consumables



Custom made tools

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Brush Workstation

Dalic Brush plating equipement is a versatile tool that allows to perform various job. With a wide range of tools and chemicals, low weight and user friendly interface, this equipment can be mobile or set for static workstation.

MAIN FEATURES
Perform Cadmium, Copper, Zinc, Zinc Nickel plating
« Plug and play » systems
Easy movable & light device
User friendly interface
Possibility to add pumps to perform more treatments
Versatile with a wide range of tools

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D1000 DALISTICK® Workstation

Dalistick plating is a patented process derived from brush plating technique that permits total control over the flow of electrolytes. This environmentally-friendly devices guarantees maximum safety.

MAIN FEATURES
Perform Cadmium, Copper, Zinc, Zinc Nickel plating
Perform anodising touch up
« No drop, No leak » process
No vaccum is needed
« Plug and play » systems
Work in all positions (vertically, horizontally)
Easy movable
No direct contact with chemicals
Possibility to add pumps to perform more treatments
Reduction of masking steps

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DALIC®

Experts in selective plating

D2000 DALISTICK® Workstation

Dalistick plating is a patented process derived from brush plating technique that permits total control over the flow of electrolytes. This environmentally-friendly devices guarantees maximum safety.

MAIN FEATURES
Perform Cadmium, Copper, Zinc, Zinc Nickel plating
Perform anodising on larges parts
« No drop, No leak » process
No air vaccum is needed
Multiple tools type available
Work in all positions (vertically, horizontally)
Easy movable
No direct contact with chemicals
Temperature control & monitoring unit – 5 to 65°C
Reduction of masking steps

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DaliNickle Workstation

DaliNickle Workstation is the Heavy-Duty version of the brush workstation. With high power supply, bigger tools and devices, this station is tailored to perform rebuilding on heavy industries and naval environment.

MAIN FEATURES
Perform Nickel sulfamate, Chrome, Copper, Zinc Nickel plating
Rebuilding high thickness coatings
Perform with large tools
Easy movable with modulable equipment
Multiple tools type available
Custom made tools on demand for your projects
Ideal for rebuilding
Temperature control & monitoring unit – 20 to 65°C

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OCTG Workstation

OCTG Workstation allows to perform copper plating on connection threads. Since decades, specific power packs and anodic tools have been developed to ensure the best adhesion and quality treatment.

MAIN FEATURES
Perform Copper on Threads
Reduce galling at the make-up stage
Size from **2” 3/8** to **16”** threads
Easy movable with modulable equipment
Multiple tools type available
Reliable equipment and high quality chemicals
Compatible with other coatings
Low copper consomption

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DALIC Sectors

- Aerospace
- Energy
- Railway
- Defense
- Marine
- Printing
- Nuclear

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When can you use DALIC technology

For worn parts in maintenance :

A damaged part, configuration and can be repaired by different processes :

- Changing the part and mounting a new one
- Dismounting entirely the part, then treat it in bath, and reassemble the part
- Welding
- Machining + ring fixing
- Thermal projection + machining
- **Use DALIC selective plating**

The DALIC process has many advantages over these processes :

- It is a cold process, so there are no changes in the characteristics of the metal around/on the repair
- Resizing without going through a machining process
- Making very thin plating (a few microns) to a few hundred microns
- Ability to intervene everywhere due to easily transportable equipment
- A very good precision (few microns)

Impact Allen Key on printing cylinder

Groove caused by O ring

Wear and tear on shaft

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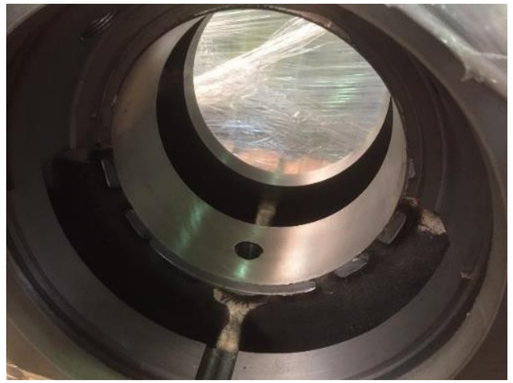
When can you use DALIC technology

Non-compliant part after machining

If after machining the required tolerance is not good, we can restore geometry with a very precise deposit.

Nickel or Copper will be used for these cases.



Nickel plating to restore geometry after machining on a huge part.

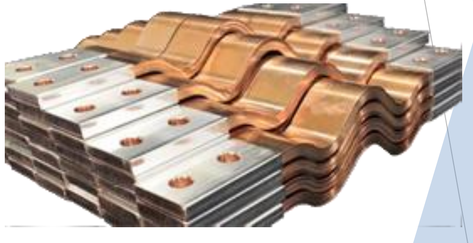
No machining needed.

Localized feature on new part

On a new part, a customer may need to combine different characteristics. In this case, the designers will use the material that suits them best (for example: aluminum for its lightness).

Then, he will add locally the needed characteristic :

- Gold or silver for its high electric conductivity
- Zinc Nickel for corrosion protection
- Nickel ST for Hardness, etc.
- Copper, tin, Chrome, etc.



Silver or Tin on copper busbar

Copper plating on an off-shore connection

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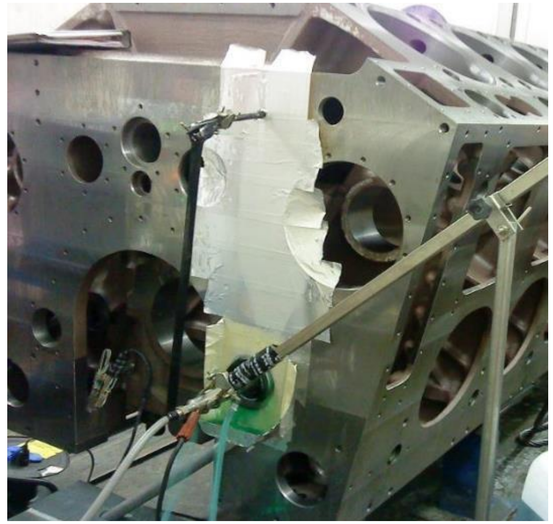
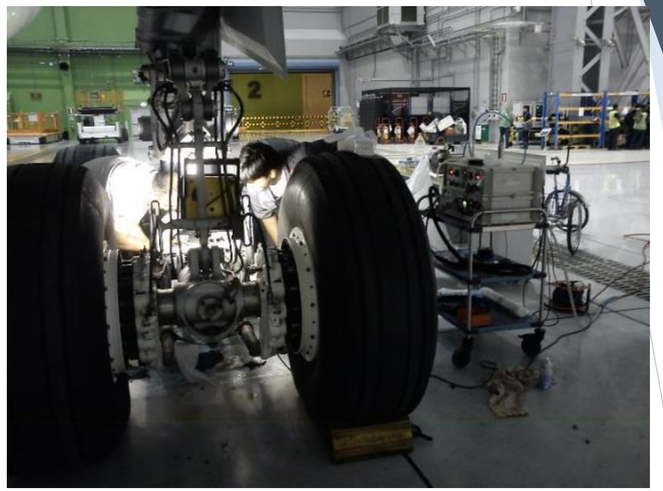
DALIC Application



Geometry restoration of a bore on an engine

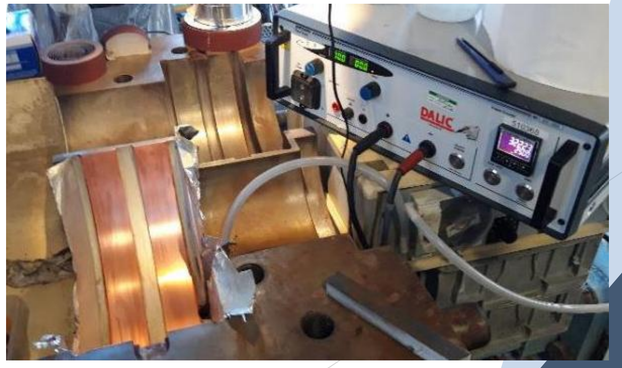
Corrosion protection on a submarine mast



Corrosion protection on landing gear

Silver plating on bus bars for electric conductivity

Groove repair on a rudder shaft



Restoration and hardness of a casing

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Limits of DALIC technology

Dalic process is an electrochemical process

- The part must be conductive : brush plating only on metallic parts
- This is mainly used for thin thicknesses, (i.e. for 5 to 500 µm, sometimes up to 1 or 2 mm locally). Time and cost will increase significantly with the thickness of deposit
- If there are porosity into the subtract, the plating will grow up around the porosity, so the issue will remain
- If the area to plate is too big, it could be more interesting to make a tank repair
- The plating layer will follow the shape of the part. So, if the shaft is oval or conical, you will need to machine before or after processing
- Dalic Chrome VI free (trivalent) can not give the same features than hard Chrome VI in tank (hexavalent chrome)

All the surface of the jack needs to be rebuilt ➔ Tank plating

Many porosities on several millimeters thickness

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MAIN COATINGS

Coatings	DALIC code	Hardness	Salt spray corrosion test (hours)	Usual thickness (µm)	Main features
Silver ECO	**13016**	150HV	20	15 to 100+	Without cyanide, for electrical conductivity and friction
Silver S	**13009**	120HV	380	0,5 to 100+	With cyanide, for electrical conductivity, friction and rebuilding
Gold 100	**13001**	150 HV		0,5 to 3	With cyanide, for electrical conductivity
Certified LHE Cadmium 2023	**11028**	15HV	300 / 700 (P)	5 to 15	Protection against corrosion, LHE tested
Cadmium N	**11003**	20HV	300 / 700 (P)	5 to 15	Protection against corrosion
Zinc-Nickel Zinidal	**11040**	300HV	200 / 500 CrIII finish 1000 CrVI finish	15	Protection against corrosion, LHE tested
Zinc N	**11027**	30HV	100 / 380 (P)	10 to 25	Protection against corrosion
Hard Coat Chrome	**11005**	620HV		3 to 10	Friction, hardness
Rebuilder Copper ALC	**11008**	240HV		20 to 300	Rebuilding
Copper high speed	**11093**	220HV		20 to 300	Quick rebuilding
Copper NEU	**11012**	200HV	72	5 to 15	Rebuilding, protection against binding in thread
Copper S	**11010**	230HV		20 to 300	Rebuilding, protection for cementation
Tin – Cadmium alloy	**12009**	20HV	3500	50	Protection against corrosion
Antico Tin	**11014**	10HV	96	25	for electrical conductivity, weldability
Indiage N	**13010**	5HV		10	Friction, sealing
Nickel Dalinickle Plus	**11060**	300HV	1000	20 to 300	Protection against corrosion and fretting, rebuilding
Nickel Cobalt Super Alloy NCB	**12003**	470HV		15 to 100	Rebuilding, anti-fretting, hardness
Nickel tin lead Super Alloy ACB	**12014**	7HV		5 to 20	Protection against friction
Nickel Rebuilder ST	**11019**	600HV		10 to 100	Low thickness rebuilding, hardness
Chromic Acid Anodising Y1	**10025**	350HV	500	5 to 10	Protection against corrosion, hardness, insulation
Hard anodising S2	**10055**	350-450HV	500	15 to 60	Protection against corrosion, hardness, insulation
Sulphuric Acid Anodising S2	**10055**	350HV	336	5 to 15	Protection against corrosion, hardness, insulation
Tartaric Sulphuric Anodising TSA1	**10066**		500	4 to 8	Anodizing on aluminium, protects paint
Titanium anodizing TA91	**10051**			1 to 3	Protection against galvanic corrosion

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DALIC QUALIFICATION

Client	Metal coatings	Dalic Code & product names	Description	Specifications numbers
AIRBUS	Nickel & cadmium	11060 Dalinickle + 11003 cadmium N (Antico CDN)	Nickel & cadmium plating on aluminium alloys	**ADET 0147**
AIRBUS	Cadmium	11003 cadmium N (Antico CDN)	Cadmium touch-up on steels	**CF19/11**
AIRBUS	Nickel et cadmium	11020 Nickel EP (Undercoat UN) 11028 cadmium 2023 (Antico CD 2023)	Nickel + cadmium on bushes	**TD-K4-S2-40402-2012**
AIRBUS	Cadmium	11003 cadmium N (Antico CDN) 11004 cadmium 408,4 (Antico CD 408.4)	cadmium with brush plating on 2618 a (A-U2GN)	**PV38 999**
AIRBUS	Cadmium	11028 cadmium 2023 (Antico CD 2023)	Protective treatment for metal parts	**SRM 51-21-11**
AIRBUS	Everything	cadmium, Nickel, etc.	Selective brush plating coatings	**80-T-35-3320**
AIRBUS	Everything	Everything	DALIC selective plating	**PMS 01-02-21**
AIRBUS	CAA with Dalistick	10025 OAC Y1 (CAA anodising AL Y1)	Anodising : CAA on slats	**A320-211 MS :071**
AIRBUS	CAA with Dalistick	10025 OAC Y1 (CAA anodising AL Y1)	Anodising : CAA on slats	**A330-243 MSN :369**
AIRBUS	CAA	10025 OAC Y1 (CAA anodising AL Y1)	Anodisation for structural assembly	**SRM 51 77 13**
AIRBUS	Cadmium	11028 cadmium 2023 (Antico CD 2023)	Pylon - Corrosion prevention at engine FWD and AFT attachements	**Sil nbr : 54-008**
AIRBUS	Cadmium	11028 cadmium 2023 (Antico CD 2023)	Cadmium brush plating	**ABP 1-4040**
AIRBUS	Cadmium	11003 cadmium N (Antico CDN) 11004 cadmium 408,4 (Antico CD 408.4)	PAD CADMIUM PLATING OF STEELS	**AIPS02-04-010**
AIRBUS	Cadmium	11028 cadmium 2023 (Antico CD 2023) 10121 Finish N°8 (Cr3)	NON CHROMIUM (VI) PASSIVATION FOR CADMIUM PLATING	**AIPS02-04-013**
AIRBUS Defense & Space	CAA	10025 OAC Y1 (CAA anodising AL Y1)	Torpedo hull. Preparation of the bonding surface of the frames in 7075 T7352. Unsealed CAA & primer Hysol EA 9210	**AQEB/L 00010-0120**
AIRBUS Defense & Space	CAA	10025 OAC Y1 (CAA anodising AL Y1)	M4-Jupe AR EP1. Corrosion repair study	**DCR/I-03489-91**
AIRBUS Defense & Space	CAA	10025 OAC Y1 (CAA anodising AL Y1)	Chromic acid anodising with brush plating	**DCR/I-03428-90**
AIRBUS Defense & Space	Cadmium	11028 cadmium 2023 (Antico CD 2023)	Cadmium plating on military aircraft	**I+D P77**
AIRBUS Defense & Space	CAA	10025 OAC Y1 (CAA anodising AL Y1) 10062 Dalicseal	Selective anodising process with Dalistick station	**CASA 1400-04 M**
AIRBUS Defense & Space	Cadmium	11028 cadmium 2023 (Antico CD 2023)	LHE Cadmium Brush Plating	**CASA 1400-08 M**
AIRBUS HELICOPTERS	Nickel	11017 Nickel ALC	Nickel ALC without undercoat of nickel EP	**IDM62-1071**
AIRBUS HELICOPTERS	Cadmium	11003 cadmium N (Antico CDN)	Technical standard overhaul center and customer overhaul facility	**J/CS-TS**
AIRBUS HELICOPTERS	CAA	10025 OAC Y1 (CAA anodising AL Y1)	Technical standard overhaul center and customer overhaul facility	**J/CS-TS**
AIRBUS HELICOPTERS	Cadmium, copper, CAA & Nickel	11003 cadmium N (Antico CDN) 11020 Nickel EP (Undercoat UN) 11023 Nickel S (Filler SWN) 11060 Dalinickle + 10025 OAC Y1 (CAA anodising AL Y1) 10051 Anodising on Titanium TA91 11010 Cuivrage S (Filler SWC)	Selective brush plating	**IFMA N°276**
BOMBARDIER	Cadmium	11028 cadmium 2023 (Antico CD 2023)	LHE Cadmium Brush Plating	**SRM 51 24 02**
BOMBARDIER	Cadmium	11028 cadmium 2023 (Antico CD 2023)	LHE Cadmium Brush Plating	**20-21-03**

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Client	Metal coatings	Dalic Code & product names	Description	Specifications numbers
BRITISH AEROSPACE	CAA	DSF8020 (10094) CAA anodising	Surface treatment of metals by selective (brush) electro déposition an anodizing	**BAEP 7701**
BRITISH AEROSPACE	Cadmium, copper plating, CAA & Nickel	11028 cadmium 2023 (Antico CD 2023)	Brush plating process	**R15 6148**
BRITISH AEROSPACE	Cadmium	11028 cadmium 2023 (Antico CD 2023)	LHE Cadmium Brush Plating	**BAEP 1506**
BRITISH AEROSPACE	Phosphoric Anod (PAA)	11092 Panta (phosphoric anodising)	Bonding light alloy components with cold curing adhesives	**BA146 HC50H9015**
COLLINS AEROSPACE (ex UTC RATIER FIGEAC)	Zinidal Aero	11040 Zinidal Aero	Lab test request. Characterisation of Zn/Ni Dalic touch-up process	**D E L N° 1037**
COLLINS AEROSPACE (ex UTC RATIER FIGEAC)	SAA	10055 ANODISATION SULFURIQUE S2 (sulfuric anodising S2)	SAA Touch-up	**SAA touch-up**
DAHER	Nickel & cadmium	11060 Dalinickle+ 11003 Cadmium N (Antico CDN)	Technical specification for the definition of surface protections (cadmium, paint, and greasing) of the immersion cones of Ariane V booster nozzles	**SR 2000/56-18**
DASSAULT	Anodization on Titanium	10051 TA91 ANODISATION TI	New electrolyte for anodisation on Titanium before MOS2	**DGT N° 179923**
DASSAULT	Cadmium, Ni-Cobalt, Silver & Copper	11003 Cadmium N (Antico CDN) 12003 27-28-3B 13009 Argenture S (Silver S) 11010 Cuivrage S (Filler SWC)	Brush plating process	**27-09-02 section 30**
DASSAULT	Nickel	11060 Dalinickle +	Metal restoration with Dalinickle Plus on diam 30H7 on mirage 2000 poles	**Expertise n°99069**
DASSAULT	CAA	10025 OAC Y1 (CAA anodising AL Y1)	Protective touch up on aluminum part	**270902-3 section 29**
DASSAULT	Cadmium	11004 cadmium 408,4 (Antico CD 408.4)	LHE Cadmium Brush Plating	**320901-3 section 15**
DASSAULT	Cadmium	11028 cadmium N (Antico CDN)	LHE Cadmium Brush Plating	**270902-3 section 15**
DASSAULT	Nickel, Zinc Nickel & cadmium	11060 Dalinickle + 11040 Zinc Nickel (Zinidal Aero) 11003 cadmium N (Antico CDN)	Selective brush plating coatings	**DGQT 38 399**
DASSAULT	Nickel, Zinc Nickel & cadmium	11060 Dalinickle + 11040 Zinc Nickel (Zinidal Aero)	Qualification of Dalic procedure (Nickel + zincNickel) for leading edge on Gardian F200	**DT/ASTME 116.147**
DASSAULT	CAA	10025 OAC Y1 (CAA anodising AL Y1)	DALIC Certification: CAA repairs on light alloys by Dalistick patented technology	**DGT/DTA/MT 77161**
DASSAULT	Cadmium	11003 cadmium N (Antico CDN)	Cadmium N brush plating on part : RA1A210151111P01	**2617373**
DASSAULT	Cadmium	11003 cadmium N (Antico CDN)	DALIC Cadmium brush plating on Dassault Mirage F1	**ARG3 MIRF1**
DASSAULT	Cadmium	11003 cadmium N (Antico CDN)	DALIC Cadmium plating on AUAG1	**DGT N° 89.591**
DGA	Silver	13009 argenture S (Silver S)	Silver touch-up on landing gears	**DEQ018**
DGA	Nickel & Zinc Nickel	11060 Dalinickle + 11040 Zinc Nickel (Zinidal Aero) 11003 cadmium N (Antico CDN)	DALIC certification on P200 Gardian	**108-07/CEP/ASA/SCA**
EMIRATES	Cadmium & CAA	11028 Cadmium 2023 (Antico CD 2023) 10025 OAC Y1 (CAA anodising AL Y1)	Maintenance process plating	**EPM 46-06**
FAG (SCHAEFFLER)	Cadmium	11004 cadmium 408,4 (Antico CD 408.4)	Quality system audit on protction again corrosion on bearing	**AC Q 1/wr**
FIAT AVIO	Cadmium		Technical specification for the definition of surface protections (cadmium, paint, and greasing) of the immersion cones of Ariane V booster nozzles	**PS 30825**
GE Aviation	Cadmium	11028 Cadmium 2023 (Antico CD 2023)	LHE Cadmium Brush Plating	**PS 137**
GOODRICH	Cadmium	11028 cadmium 2023 (Antico CD 2023)	LHE Cadmium Brush Plating	**LGPS 1102**
GOODRICH	CAA, SAA	10025 OAC Y1 (CAA anodising AL Y1) 10055 S2 Sulfuric anodising	Selective anodizing	**914-032-106**
HEROUX DEVTECK	Zinc-Nickel	11040 Zinc Nickel (Zinidal Aero)	LHE Zinc Nickel Plating	**HPS 138,5**
HINDUSTAN PROCESS SPECIFICATION	Everything	Everything	Electro deposition of metals by the DALIC Process	**HPS 216**

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LEONARDO ALENIA	Nickel	11060 Dalinickle +	Nickel Plating process on 2219 aluminium – 2024 aluminium alloy – 7075 aluminium alloy – 7475 aluminium alloy – 6061 aluminium alloy	**SG PL AI0100**
LIEBHERR (ABG SEMCA)	Electropolishing		Chemical electropolishing	**MFT 0163**
LUCAS Aerospace	CAA	10025 OAC Y1 (CAA anodising AL Y1)	Anodising process	**PF16**
LUFTHANSA	CAA	10025 OAC Y1 (CAA anodising AL Y1)	Anodising process	**N° 116323**
Military specifications	Everything	11028 Cadmium 2023 (Antico CD 2023)	LHE Cadmium Brush Plating	**MIL-STD-865**
Military specifications	Cadmium	11028 Cadmium 2023 (Antico CD 2023)	LHE Cadmium Brush Plating	**QQP-416**
Military specifications	CAA	11025 OAC Y1 (CAA anodising AL Y1)	Anodisation of aluminum	**MIL-A-8625**
Military specifications	Everything		Brush Plating on Marine Machinery	**MIL-STD-2197**
Military specifications	Alliage Ni-W	12020 Super alloy NTH 28-74-3X	Brush Nickel Tungsten on aluminum alloy	**MIL-P-4784**
Military specifications	Cadmium	11028 Cadmium 2023 (Antico CD 2023)	LHE Cadmium Brush Plating	**AMS 2451-4B**
Military specifications	Zinc Nickel	11040 Zinc Nickel (Zinidal Aero)	LHE Zinc Nickel cadmium plating	**AMS 2451-9A**
Military specifications	Everything		Brush Plating general requirement	**AMS 2451**
Military specifications	Nickel	11060 Dalinickle+	Nickel sulfamate	**AMS 2424**
Military specifications	Cadmium	11028 cadmium 2023 (Antico CD 2023)	LHE Cadmium Brush Plating	**AMS 2400**
MOOG	Everything	11028 cadmium 2023 (Antico CD 2023) 11019 Nickel ALC 3X (Rebuilder ST) 11013 Etamage N (Antico Tin) 13009 argenture S (Silver S) 13001 Dorure 100 (Gold 100) 11020 NiEp (Undercoat UN) 12003 Super alloy NCB 27-28-3B	Selective brush plating	**PS 10**
NAVAIR US	Cadmium	11003 cadmium N (Antico CDN)	Brush cadmium plating with Dalistick	**AP/TS 5,8**
Rolls Royce Ltd	Everything		Electrodeposition of metals and metal alloys by selective (brush) plating system	**RPS 652**
SAFRAN HISPANO	Galvanising	11027 Zingage N (Antico ZN)	Galvanisation with passivation Cr3	**Pr-1120**
SAFRAN MESSIER BUGATTI DOWTY	Cadmium	11004 cadmium 408,4 (Antico CD 408.4)	Stylus electroplating process Cadmium Plating	**32-09-01**
SAFRAN MESSIER BUGATTI DOWTY	Cadmium	11028 cadmium 2023 (Antico CD 2023)	LHE Cadmium Brush Plating	**PCS 21 41**
SAFRAN MESSIER BUGATTI DOWTY	Cadmium	11028 cadmium 2023 (Antico CD 2023)	LHE Cadmium Brush Plating	**DLPS 137**
SAFRAN MESSIER BUGATTI DOWTY	Cadmium	11004 cadmium 408,4 (Antico CD 408.4)	LHE cadmium Brush Plating	**32-09-01 section 15**
SAFRAN MESSIER BUGATTI DOWTY	Zinc Nickel	11040 Zinc Nickel (Zinidal Aero)	LHE Zinc Nickel Brush Plating	**PCS 21 31**
SAFRAN MESSIER BUGATTI DOWTY	Nickel	11060 Dalinickle+	Brush Nickel plating	**PCS 21 44**
SAFRAN MESSIER BUGATTI DOWTY	Nickel	11060 Dalinickle+	Embrittlement tests	**24C**
SAFRAN MESSIER BUGATTI DOWTY	Cadmium	11004 cadmium 408,4 (Antico CD 408.4)	LHE Cadmium Brush Plating	**ITF 40-831-06**
SAFRAN	Silver	13009 Argenture S (Silver S)	Silver brush plating - Body GGHF Vulcain 2	**ITP 00128**
SAFRAN	Nickel	11060 Dalinickle +	Nickel brush plating coating on O 293 carter volute TP LH2 Vulcain	**ITP 00129**
SAFRAN	Nickel	11060 Dalinickle +	Nickel brush plating to increase thickness of SPAR VULCAIN STD C2	**ITP 00109**
SAFRAN	Ni-Sn-Pb Alloy	12013 Super alloy NTL 28-50-82	LHE Evaluation of alloy Z 2 NKD 18 with Ni-Sn-Pb	**YOTS N°30 368**
SAFRAN	CAA	10025 OAC Y1 (CAA anodising AL Y1)	CFM56	**SPM 70-62-18**
SAFRAN	Cadmium	11003 cadmium N (Antico CDN)	CFM56	**SPM 70-61-24**
SAFRAN	Silver	13009 Argenture S (Silver S)	CFM56	**SPM 70-61-23**
SAFRAN	Ni-Co Alloy	12003 Super Alloy NCB 27-28-3B	CFM56	**SPM 70-61-22**
SAFRAN	Copper plating	11010 cuivrage S (Filler SWC)	CFM56	**SPM 70-61-21**

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DALIC QUALIFICATION

Client	Metal coatings	Dalic Code & product names	Description	Specifications numbers
SAFRAN	Everything	11003 cadmium N (Antico CDN) 11004 cadmium 408,4 (Antico CD 408.4) 11027 Zinguage N (Antico ZN) 11010 Cuivrage S (Filler SWC) 13009 Argenture S (Silver S) 12003 Super Alloy NCB 27-28-3B 11020 Nickel EP (Undercoat UN) 13010 Indiage N	Selective brush plating coatings	**DMP -12 123**
SAFRAN	Silver	13009 argenture S (Silver S)	Silver plating on steels and stainless steels with DALIC process	**4-261**
SAFRAN	Copper plating	11010 Cuivrage S (Filler SWC) 11008 Cuivrage ALC	Copper plating on steels and stainless steels with DALIC process	**4-262**
SAFRAN	Nickel	11020 Nickel EP (Undercoat UN)	Nickel plating on steels and stainless steels with DALIC process	**4-260**
SAFRAN	Ni-Co Alloy	Super alloy NCB 27-28-3B	Ni-Co Alloy brush plating on steels and austentic alloys	**4-263**
SAFRAN	CAA on Titanium	10051 OA TA91 Anodising on titanium	Local Anodizing of titanium	**SPM 70-61-26**
SAFRAN TURBOMECA	Cadmium, Nickel CAA & Ni-W Alloy	11004 cadmium 408,4 (Antico CD 408.4) 11020 Ni Ep (Undercoat UN) 12020 Ni-W 11060 Dalinickle+	Selective brush plating coatings	**LB599**
SONACA	CAA	10025 OAC Y1 (CAA anodising AL Y1)	Evaluation of touch-up anodizing repair process with Dalistick	**0/1100/99-9080**
THALES	Everything		Selective brush plating	**16261742-024**
THALES	Tin plating	11013 Etamage N (Antico Tin)	Certification: Tin on Aluminium	**ARS 223/15**
WESTLAND HELICOPTERS	Everything	11028 cadmium 2023 (Antico CD 2023) 11010 Cuivrage S (Filler SWC) 13001 dorure (gold) 12020 Super alloy NTH 28.74.3X 11013 Etamage N (Antico Tin) 11027 Zingage N (Antico ZN)	Selective brush plating coatings	**WHPS 097**
ZODIAC	Ni-Sn-Pb Alloy	12012 Super alloy NCD 28-50-82	Component manuel for Bell 429 Helicopters	

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Worldwide presence

DALIC around the world

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