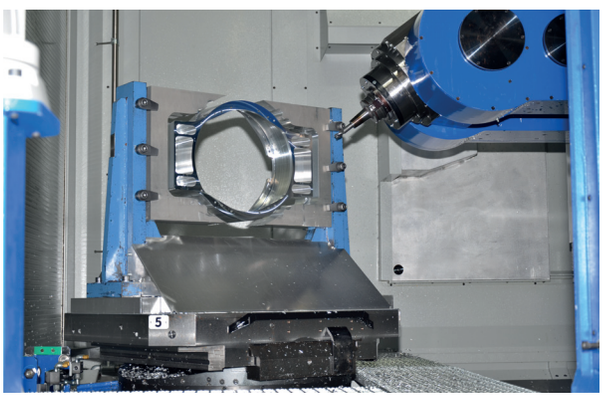
by Fabrizio Daina

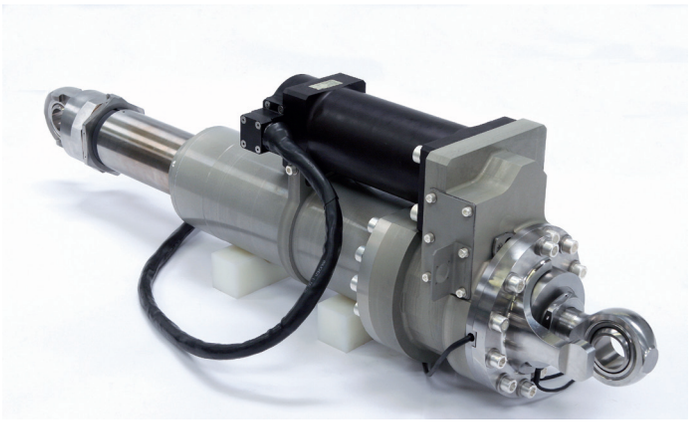
TOP QUALITY. IN EVERYTHING!

This has been S.A.B.C.A.'s dogma for about 100 years in every department, an essential dogma for any company aiming at maintaining its market leadership. Strategic the partnership with Mandelli.

S.A.B.C.A. was founded in 1920 with the aim of designing and manufacturing aircraft for the emerging national air transport. Several original projects were placed on the market before the Second world War together with its licensed production of numerous civil and military airplanes. After the Second World War, S.A.B.C.A. became one of the most important partners mainly for the production of military airplanes such as the Hunter, the F-84, the F-104G, the Dassault Mirage 5, the Lockheed F-16, the Agusta 109 and others that a new plant was inaugurated in 1955 at the Charleroi Airport, becoming the second plant after the original one near Haren, in the Brussels suburbs. With a spur towards diversification in the high technology field, S.A.B.C.A. was among the first participants in the European aerospace programs more than 40 years ago and since then it has designed and manufactured the most important components involved in the European space missions among which the Ariane and Vega launchers. Yet S.A.B.C.A. is also civil aviation, although this has had a more gradual evolution compared to the military one. Starting from the Fokker 27/50 family, the Mercure Dassault and VFW-614 flaps and other more or less famous projects, the civil aviation department started to have a big impulse in 1989 when S.A.B.C.A. had its first contacts with Airbus and signed its first major contract. Since then S.A.B.C.A. has always been an Airbus partner for all the new projects including the giant A380, the A400M and the new A350 XWB followed by other metal and composite components for the Dassault (900/2000/7X and SMS) and Gulfstream jets.



Left : working area of a Mandelli Spark HMC
Below : the cooperation between S.A.B.C.A. and Mandelli dates back to 2006 with the first supply of a 5-axis HMC Storm 1400 for aluminium applications

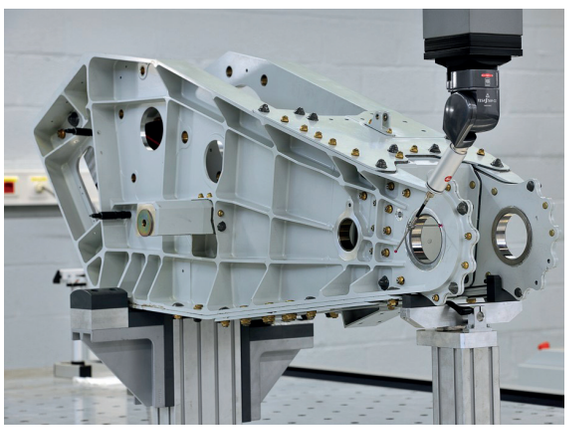


Two particularly complex pieces produced by S.A.B.C.A.

OVER 10 YEARS OF PARTNERSHIP

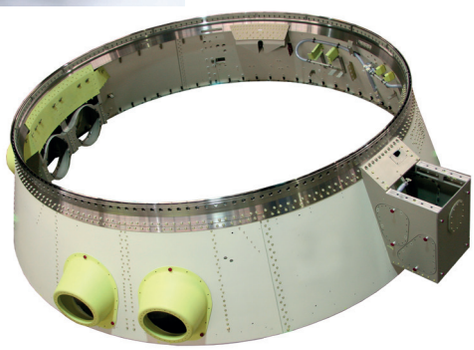
The cooperation between S.A.B.C.A. and Mandelli dates back to 2006 with the first supply of a 5-axis HMC Storm 1400 for aluminium applications. With the recent installation of two big Spark machines and the crucial role played by all the Mandelli machines in the Customer's production, S.A.B.C.A.'s major need to guarantee the continuous and reliable production flow of the critical components has been complied with and tackled by Mandelli with periodical thorough checks of the HMCs status. Every month the technicians from the Mandelli branch in Brussels meet S.A.B.C.A.'s production, maintenance and planning managers to investigate any possible problem which may have occurred since their previous meeting, to have a feedback about the technical interventions carried out and to analyse all the improvement proposals suggested.
Regular and frequent checks have thus allowed both companies to increase the HMCs Technical Availability, both in terms of a smaller number of failures (MTBF – Mean Time Between Failures) and shorter restart timing (MTTR – Mean Time To Repair), thanks to the ability of forecasting in advance the wear of certains components.

CONTINUOUS AND RELIABLE PRODUCTION GUARANTEED



A piece produced by S.A.B.C.A. while being measured

With S.A.B.C.A.'s additional adoption of Mandelli's preventive maintenance program, the 6-month interventions contribute to guaranteeing the performances in time, Mandelli's production philosophy based on the notion of ENDURANCE, much appreciated by all the Mandelli Customers all over the world.



ACCURATE FINISHING

In recent years, with the ramp-up in the production of Airbus aA350s, S.A.B.C.A. has acquired an important contract for the design and production of flap support systems. Mandelli's spark 2600 has been selected specifically for its finishing and hole drilling performances on these components. The hmc's accuracy and its thermal stability together with the possibility of carrying out sophisticated automatic measurements as well as automatically handling angular transmission heads for the execution of the holes inside narrow pockets are crucial aspects for reaching the accuracy required by these surfaces which may be as long as 2500 mm. With its 14000-rpm spindle and its outstanding tracking capabilities on complex shapes, the Mandelli Spark HMCs are used by S.A.B.C.A. also for the roughing and finishing operations on aluminium plates where it is required from the HMC a high stock removal while maintaining high finishing surface quality.

S.A.B.C.A'S COMMITMENT TOWARDS THE ENVIRONMENT

Aware of the importance of the environment, S.A.B.C.A. has activated an environmental project named ENVIRO which started in 2010/2011 with the gradual adoption of the Environmental Management System (EMS) on the basis of the ISO 14001 norms and the definition of an ISO 14001 roadmap. Starting from simple actions like encouraging staff to turn off unnecessary lights, reduce room temperatures and use paper back/front, S.A.B.C.A. has also adopted environmentally friendly measures in its own production process. Not only a drastic reduction of dangerous products or the construction of a wind-mill turbine for the production of electricity to serve the main plant but also the indispensable need for HMCs capable of reaching the required results in the most eco-friendly way. And Mandelli machines take pride in being part of such an ethically invaluable plan.
To this end, Mandelli has developed a partnership with its Customers, Suppliers and Research Institutes in order to constantly improve its Spark Machining Centers.
New structures designed to optimize the ratio between movable masses, innovative solutions to increase the HMC rigidity and decrease strain, spindles equipped with Spindle Speed Variation (SVV) and Spindle Speed Tuning (SST) for optimal results on materials like aluminium, steel, titanium and HRSA alloys, high quality components among which a Smart Controller that, thanks to a series of sensors distributed all around the HMC, activates vibration damping devices for major efficiency and reduced energy consumption. And the results haven't been long in coming. A 12% reduction in energy consumption and a 30% increase in performances thanks to which Mandelli is the proud holder of the BLUE PHILOSOPHY label, awarded by UCIMU, for its remarkable results. A label that Mandelli shares with its partners every day.