

Verification of tools and final parts in aerospace

INDAERO, Seville, Spain



Quality control, inspection, on-machine testing, reverse engineering, virtual assembly and 3D modelling with the Absolute Arm.

INDAERO is a Sevillian company with three decades of experience in the aerospace sector. The business began operating in 2002, manufacturing engraved plates and labels for AIRBUS. Two years later, it made its way into the world of machining, expanding its services in the manufacture of aerospace parts and later becoming certified in the EN9100 Aerospace standard.

In 2010, the company expanded its area of influence and began to sell its products in Europe, specifically in Austria and Poland. In 2014, INDAERO parent company Grupo Emery formed a business partnership with UNS to offer more complete services, including sheet metal processing and the manufacture of illuminated cabin panels. One year later, the business began manufacturing hybrid tools using 3D printing on high-strength thermoplastics. The following year, it started production of soluble moulds for composites using 3D printing. And in 2018, the company acquired an Absolute Arm 6-Axis from Hexagon as a measuring system for checking tools and final parts.



At INDAAERO they have three workers trained by Hexagon to use the Absolute Arm.

INDAAERO is also investing in the space sector, to adapt both its facilities and its personnel to the manufacture of satellite structures and parts. All this with precision, tolerances and very demanding finishes. It is this sort of vision, resilience and commitment to investment in technology that has driven INDAAERO's record of optimising lead times and quickly opening up new markets.

David Sánchez is the head of the 3D Engineering department at INDAAERO and is one of the company's key experienced users of the Absolute Arm system, applying it to "check tools and final parts, and also to check all types of machinery".

"We carry out internal operations to verify plastic and mechanised aluminium products, some of which are tools of various kinds, some of which are other aerospace parts", Sánchez adds.

One of INDAAERO's main objectives is to minimise costs and production times. They consider it very important to take into account every last detail so that everything fits within the established requirements. The Absolute Arm model they are using guarantees even lower tolerances than those required for their work (touch probing measurement to within 0.051 millimetres) and complete flexibility.

Great value for money

"What I would highlight about the Absolute Arm is the lightness of the system, its adaptability to different situations and environments and its very intuitive software," Sánchez explains. "The quality/price ratio is phenomenal, and we've also had a very close after-sale experience. The service and training offered by Hexagon are very good".

INDAAERO has three workers trained by Hexagon to use the Absolute Arm, and each of them uses the arm several times a week.

○ círculo 42	Diámetro	5,610	5,707	+0,200/-0,070	0,097	Pasa	
○ círculo 43	Diámetro	5,610	5,772	+0,200/-0,070	0,162	Pasa	
○ círculo 44	Diámetro	5,610	5,683	+0,200/-0,070	0,073	Pasa	
○ círculo 45	Diámetro	5,610	5,689	+0,200/-0,070	0,079	Pasa	
○ círculo 46	Diámetro	5,610	5,682	+0,200/-0,070	0,072	Pasa	
○ círculo 47	Diámetro	5,610	4,985	+0,200/-0,070	-0,625	No pasa	-0,555
○ círculo 48	Diámetro	5,610	7,759	+0,200/-0,070	2,149	No pasa	1,949
○ círculo 49	Diámetro	5,610	5,705	+0,200/-0,070	0,095	Pasa	
○ círculo 50	Diámetro	5,610	5,613	+0,200/-0,070	0,203	No pasa	0,003
○ círculo 51	Diámetro	5,610	5,698	+0,200/-0,070	0,098	Pasa	
○ círculo 52	Diámetro	5,610	5,721	+0,200/-0,070	0,111	Pasa	
○ círculo 53	Diámetro	5,610	5,667	+0,200/-0,070	0,067	Pasa	
○ círculo 54	Diámetro	5,610	4,983	+0,200/-0,070	-0,627	No pasa	-0,557
○ círculo 55	Diámetro	5,610	5,716	+0,200/-0,070	0,106	Pasa	
○ círculo 56	Diámetro	5,610	5,686	+0,200/-0,070	0,076	Pasa	
○ círculo 57	Diámetro	5,610	5,638	+0,200/-0,070	0,028	Pasa	
○ círculo 58	Diámetro	5,610	5,724	+0,200/-0,070	0,114	Pasa	
○ círculo 59	Diámetro	5,610	5,703	+0,200/-0,070	0,093	Pasa	
○ círculo 60	Diámetro	5,610	5,689	+0,200/-0,070	0,079	Pasa	
○ círculo 61	Diámetro	5,610	4,971	+0,200/-0,070	-0,639	No pasa	-0,569
○ círculo 62	Diámetro	5,610	5,722	+0,200/-0,070	0,112	Pasa	
○ círculo 63	Diámetro	5,610	5,746	+0,200/-0,070	0,136	Pasa	
○ círculo 64	Diámetro	5,610	5,638	+0,200/-0,070	0,028	Pasa	

Our Absolute Arm guarantees even smaller tolerances than we need for our work.

The Absolute Arm range of equipment allows metrology to be placed directly in the manufacturing environment, where process improvements are most beneficial. INDIAERO have the option to make use of almost 100 types and sizes of probe sensor tips with their Absolute Arm, including straight sensors, angled sensors, touch-trigger sensors and infrared tube sensors, all in various lengths and measuring tip diameters. This is exactly the type of flexibility demanded by a versatile and progressive business like INDIAERO that is always just around the corner from entirely new commercial opportunities and an entirely new range of application challenges.

Sánchez and his colleagues have been incredibly satisfied with the way the Absolute Arm has affected their business, with INDIAERO experiencing very positive results since the incorporation of this new portable measurement system. “The implementation of the Absolute Arm has allowed us to open up new market opportunities and reduce delivery times to the customer considerably”.

INDIAERO is a perfect example of the possibilities the Absolute Arm holds for companies in sectors that demand incredibly high levels of quality like the aerospace sector.



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For measurements with tactile sensors there are almost 100 state-of-the-art sensor accessories available.



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David Sanchez

Head of the 3D Engineering department of INDIAERO



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Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Hexagon's Manufacturing Intelligence division provides solutions that utilise data from design and engineering, production and metrology to make manufacturing smarter. For more information, visit hexagonmi.com.

Learn more about Hexagon (Nasdaq Stockholm: HEXA B) at hexagon.com and follow us [@HexagonAB](https://twitter.com/HexagonAB).