


GRINDING TECH TO TACKLE
IN YOUR BUSINESS RIGHT NOW



ANCA
CNC MACHINES



The world of CNC grinding thrives on innovation. Machines, cutting tools and software are constantly evolving to be more efficient, streamlined and automated.

Businesses now face a tipping point. As more manufacturers connect tech solutions to their business goals, not understanding the advantages of investing in technology could put your business way behind its competitors in terms of capabilities and the cost of doing business.

As we move towards an even more technologically advanced future, it's time to take a fresh look at your business plans and the tech you need to realise your ambition.

“ Starting out in business was like jumping on a treadmill and the customers were driving the speed. You just needed to keep running.

Designing the best technology required a multi pronged approach. We immersed ourselves in the market; were continually inventing; kept a keen eye on new developments and brought them into our applications; sought out intelligent, talented people and interacted with customers daily to understand their specific needs - this is how we came up with the technology solutions we are famous for. ”

PAT BOLAND, CO-FOUNDER AND JOINT MANAGING DIRECTOR, ANCA



At ANCA, we understand the nature of competition means running hard and chasing customer requirements to find the next challenge to solve. Developments that had been considered cutting-edge are now business as usual—even at ANCA, we reflect on how revolutionary our early products felt fifty years ago.



For instance, we can recall a time when it was almost impossible to sharpen cutting tools on a CNC machine. That was until 1986, when we launched our TG4, the first machine in the world to automate the measurement of tool geometry and regrinding through probing.

Or when we introduced the System 32 which, for the first time, applied advanced robotic software to tool grinding, enabling significant opportunities. For example, the soft axis or soft machine kinematics which simplified the grinding of cutting tools.

So, we've come a long way, from probing for cutting tools, leading the competition in five-axis grinding and simulating grinding processes before grinding with CIM3D.

One of the most important pieces of advice we can share, is to connect the tech you use with the business you want to be. Where do you see yourself in five years, ten years? What innovations can you put in place now that'll still be serving you as you reach your goals and create new ones?

YOU WANT TO:



GROW
CAPACITY



IMPROVE PROFIT
MARGINS



GAIN
EFFICIENCIES

IT MAY BE SIMPLER THAN YOU REALISE.

The innovative tools you choose should be designed to meet your business goals, working with existing objectives, processes, data and ideas to move your business forward. They may not all be new. The best options for your business could be a combination of the familiar, tried-and-true machines as well as the cutting-edge tech that's only just emerging.

We understand it can feel challenging to predict what will help to gain a competitive advantage. Innovation moves quickly, but partnering with industry leaders will keep you ahead of the curve.

WE'VE GOT THE INSIDE SCOOP ON THE TECH YOU NEED TO TACKLE NOW TO WIN.

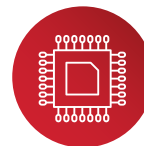


Where are the opportunities for you?

Cutting tools will continue to be an essential component across many industries. As these industries expand their own product range and complexity of cutting tools, manufacturers increasingly demand high-quality cutting tools that meet their individual requirements.

Globally, the cutting tools market is estimated to be worth more than [\\$34 billion](#), with growth opportunities across a range of developing industry sectors, including electric vehicles and construction.

OUR MARKETS:



ELECTRONIC



POWER
GENERATION



MEDICAL



AUTOMOTIVE
(INCLUDING ELECTRIC
VEHICLES)



AEROSPACE

In terms of application, the demand for precise cutting tools in milling applications is [predicted](#) to be one of the fastest growing segments over the next five years. You have opportunities now to develop and manufacture more advanced designs to take advantage of this opportunity.

Unique supply chains are being developed in brand new areas of industry, including electric vehicles and renewables, in particular to support the demands of [India and China](#). With these changes comes a need for upskilling and innovative methodologies—transforming your existing tool manufacturing into an agile, responsive business that can adapt to new criteria.

You might streamline your offering or add custom cutting tool designs with features such as tool simulation, using 3D and CAD-CAM technologies. The ability to produce small batch sizes can further increase your flexibility and expand your value to customers.

**THE FUTURE OF GRINDING IS FULL OF OPPORTUNITY.
YOUR FUTURE. HERE'S HOW TO MAKE IT WORK FOR YOU.**



CUSTOMER STORY: TAKING A BUSINESS FURTHER

When we founded ANCA in 1974, we had a mini-computer and not much else. Our idea was to replace the hardwired logic designs of the time with a standard computer.

Over time, we embraced new technology, guided by our team of experienced technicians and application engineers. Now, we employ over 1,000 people, delivering world-class grinding machines and innovative products around the globe.

Make tech work for you: your new priorities

BUSINESS PRIORITY 1: PIVOT AND STAY FLEXIBLE

It's never been more critical to be agile in business. Many customers work with the technology ANCA provides, in combination with skilled machinists and designers, to reduce costs and respond quickly to new opportunities.

As the market changes, the right tech will help you to make the most of the market and maximise your bottom line. Automating processes makes it simple to change them with minimal disruption. With everything centralised, you have access to all the data necessary to make informed decisions and take your manufacturing where the demand exists.

1

ANCA has a long history of enabling manufacturers to shift as their business changes.

THE TECH TO TACKLE:



SOFTWARE

offering fast, flexible custom tooling for diverse applications, allowing you to supply purpose-built products to multiple customers



CENTRALISED, REAL-TIME DATA

providing access to customer demand and supply chain performance, to identify and respond to new opportunities with confidence

ANCA'S SOFTWARE:

offers the flexibility to design multiple cutting tools for different industries and applications in the same batch. Combined with designer ball nose, it allows you to rapidly create a suite of cutting tools with variable designs, to appeal to diverse markets.



CIMULATOR



iFLUTE



MANAGEMENT
SUITE



REDAX



TOOLDRAFT



TOOLROOM

GCX LINEAR:

is revolutionising electric vehicle manufacturing, by producing an extremely accurate skiving cutter. When machining gears, skiving cutters are five to ten times more efficient than shaping applications and more flexible than broaching.



CUSTOMER STORY: A PIONEER PUSHING WHAT'S POSSIBLE

Italian cutting tool manufacturer Cerin SpA was founded in 1971 and has always been on the forefront of developing new materials for emerging industries. As one of the first Italian companies to work with solid carbide, they've begun exploring the potential of high temperature alloys to meet the growing demand for energy efficient engine performance within many industries, from aerospace to construction, shipbuilding, energy and automotive.

At Cerin SpA's Custom Development Centre new designs are tested, in some areas with unmanned shifts which helps contain costs and increase capacity. Using mostly ANCA machines and software, it responds to customer production requirements to deliver exactly what they need, even if it's never been done before.



“ We were a pioneer with many challenges working in unknown territories but on reflection I would say that taking on these challenges was key to our success. ”

IVAN CUSCOV, PLANT DIRECTOR, CERIN SPA



2

BUSINESS PRIORITY 2: GROW CAPACITY

Pivoting and growing capacity go hand in hand. Customisable machines, like ANCA's, assist your business to extend into relevant new opportunity areas without compromising existing customers.

Get to know your manufacturing process. Each step of your production line could work harder to reduce processing times, improve precision and still run safely. Production monitoring tools will show you where and how you could be expanding your offering, taking advantage of market growth.

ANCA has a range of solutions to help you grow your production and customer network. Combined, they can revolutionise your production line.

THE TECH TO TACKLE:



MACHINE EFFICIENCIES

to produce complex, precision parts efficiently and effectively



PRODUCTION MONITORING

for quality control and waste reduction

BESPOKE AUTOMATION SYSTEMS:

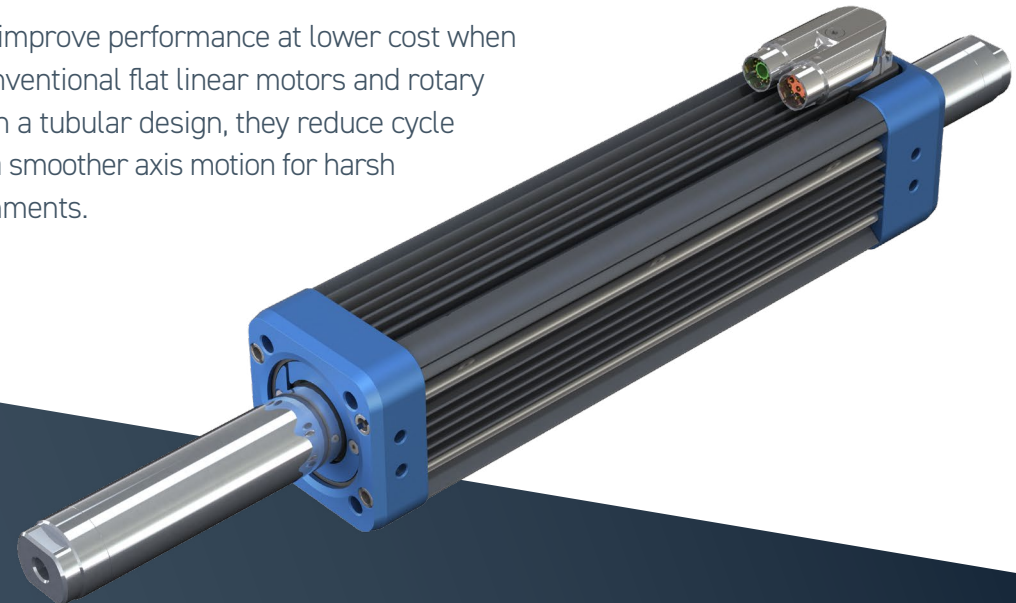
can load, measure, clean and handle customised processes.

PROBING:

delivers in-process measurement and compensation of core diameter after fluting operations. Grinding multiple cutting tools by determining the frequency of core digitising improves cycle time.

LINX® LINEAR MOTORS:

are designed to improve performance at lower cost when compared to conventional flat linear motors and rotary ball screws. With a tubular design, they reduce cycle times and offer a smoother axis motion for harsh grinding environments.



SOFT AXES:

are virtual axes that allow for a more flexible position, in addition to the five physical axes. Our machines can record data based on up to nine axes, simplifying even the most complex calculations.

MTC (MOTOR TEMPERATURE CONTROL):

is a patented (US PAT. 11,394,331, patents pending elsewhere) invention that actively manages and maintains spindle motor temperature, regardless of operating conditions. The tool grinder can quickly reach thermal stability, and thermal variation of the grinding spindle is drastically reduced.

ANCA MOTION SPARKX (EDG POWER GENERATOR):

maintains optimum spark erosion gaps to ensure high efficiency. It's a highly versatile platform with an integrated direct-driven dual erosion and grinding spindle, allowing for supreme flexibility.

CUSTOMER STORY: GROWING WITH ANCA

Gorilla Mill started life as Carbide Grinding Company, a small, specialist toolmaker. Forty years on and it's grown production exponentially, now employing 48 staff and working with 300 distributors worldwide. Its secret? ANCA CNC machines that allow the company's production to grow and pivot as it does. Simulation enables simple tool design that meets customer demands, while connecting everything to a centralised network means a design can be sent to a machine, ready to grind, in moments.



“ We were able to mess around with geometries in a virtual space and not waste materials and machine time and everything else. ”

KEVIN CRANKER, GORILLA MILL



3

BUSINESS PRIORITY 3: IMPROVE QUALITY

Reliable, well-produced cutting tools maintain your reputation with customers, keep your margins high and deliver strong returns on your investments.

Maintaining your machines ensures you're always producing to the highest precision without compromising on efficiency and also getting the greatest value from your high-quality raw materials. The best advocate for your manufacturing business is the quality of your products.



ANCAcrete reduces vibrations and increases machine rigidity.

THE TECH TO TACKLE:



CONSOLIDATING MANUFACTURING STEPS

into a single machine



PREDICTIVE MAINTENANCE

to monitor a machine's condition



GRINDING GEOMETRY

for better quality cutting tools

PROBING:

delivers in-process measurement and compensation of core diameter after fluting operations. Grinding multiple cutting tools by determining the frequency of core digitising improves cycle time.

AXES MECHANICAL LAYOUT:

controls the axis configuration or kinematics of the machine to cut complex cutting tools. We introduced the industry first and patented MPG (Manual Pulse Generator) to run through the grinding program before the tools are ground, while providing the optimum axes configuration for grinding cutting tools to ensure the highest rigidity and precision.

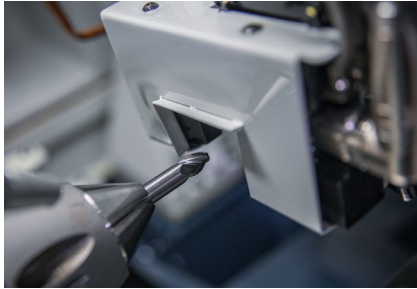
ANCACRETE:

Since 1991 we have been using the polymer base technology which forms the stable foundation base of all ANCA machines. Customers often ask us to explain the benefits of polymer concrete and we explain that polymer concrete by its very nature has a high thermal mass, so our bases are good at absorbing a lot of heat.



[Click to watch the ANCAcrete polymer video](#)

Learn why the ANCAcrete polymer concrete base is a proven ANCA strength.



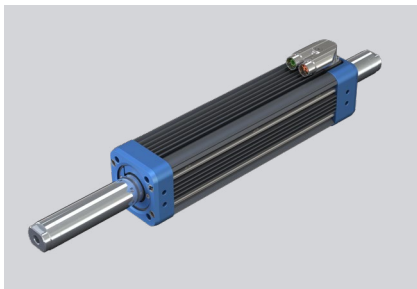
LASER ULTRA:

ANCA's newest smart factory tool offers analogue measurement, enabling operators to perform accurate measurements and compensation without removing tools from the machine. This makes the process 70% faster than previous external tool measurement options.



iBALANCE:

is a unique ANCA software product, designed to monitor wheel vibrations and balance wheels. It can determine whether a wheel pack is out of balance, then prompt and guide the operator through a series of steps to bring the wheel pack into balance.



LINX® LINEAR MOTORS:

are designed to improve performance at lower cost when compared to conventional flat linear motors and rotary ball screws. With a tubular design, they reduce cycle times and offer a smoother axis motion for harsh grinding environments.

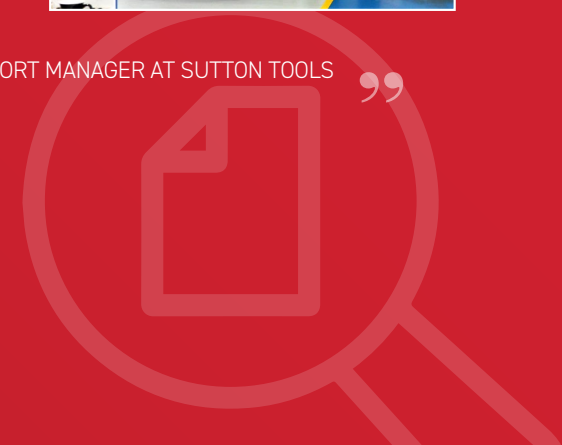
CUSTOMER STORY: WINNING WITH WORLD CLASS QUALITY

Sutton Tools, Australia's largest manufacturer of rotary shank cutting tools, is achieving 10% improvement on its surface finish using the linear motor technology on ANCA's MX7 machine." The result? "Better surface finish meaning superior adhesion of the coating and stable performance to the cutting tool. Now, their customers can confidently forecast their production schedules and reduce their own machine downtime—a win for all involved.

“ We can manage our quality levels to a level of accuracy which is world class in the industry. ”



JEFF BOYD, EXPORT MANAGER AT SUTTON TOOLS



4

BUSINESS PRIORITY 4: STREAMLINE PROGRAMMING AND OPERATIONS

When your machines are performing at their best, they work harder for your business. It starts with monitoring the operational performance of machines, including live production and machine data round the clock, even if you're not in the factory.

Having complete visibility makes it easy to monitor performance issues, reduce machine downtime and identify bottlenecks and other steps where streamlining is possible.

Remote diagnostics facilitates operators to monitor performance from anywhere. Easily identifying issues minimises machine downtime and maximises production efficiencies.

THE TECH TO TACKLE:



AUTO TOOL LOADING SOLUTIONS

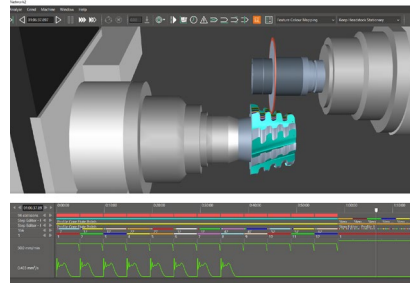


CLOUD TECHNOLOGY

offering easy access to tool data

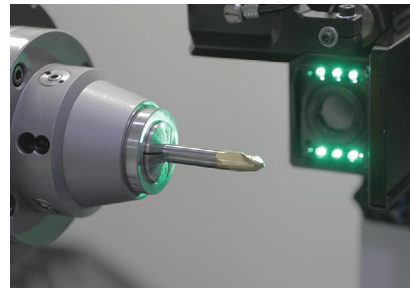


SCRIPTING AND REPEATABLE PROCESSES



CIM3D:

is 3D simulation technology that equips operators to examine tool geometry from any perspective via panning, rotating, zooming and measurement mode. It delivers advanced cutting tool simulation quality for high performance and increased efficiency.



iVIEW:

allows measurement of the ground cutting tool while it's still in workholding. The image is compared with an ideal overlay profile, then automatically compensated based on the overlay.

**AR300:**

is a SCARA robot auto tool loading solution designed and developed by ANCA, reducing tool unload/load time to only 15 seconds. It facilitates tools being passed directly from the pallet to the collet in a single action.

SCRIPTING:

allows automation of tasks within iGrind and iPunch tool design applications, so you don't have to do them manually. Simple programming tools will help reduce errors and build on your existing design knowledge base.

COMPLIANT GRIPPER:

helps to load cutting tools into collets with tight clearances and reduce runout while maintaining consistent loading. This ground-breaking design removed the problem of misloading while ensuring increased productivity.

CUSTOMER STORY: SIMULATING TO STREAMLINE

Mictu's business extends from eyewear to aerospace. Producing 200,000 tools per year, it's always looking for new ways to streamline production while maintaining the quality output its customers expect.

It uses ANCA's 3D simulator software to simulate custom tools before grinding, ensuring only the right design ends up on the production line. Using the best materials completes the job, guaranteeing Mictu's processes are simple, accurate and of the highest quality.



“Customers are very impressed which helps us build trust in our products and services. Customers choose to work with us because we are very lean and listen to their needs.”

ANDREA COLLAVO, PRODUCT DEVELOPMENT ENGINEER, MICTU

Transform through innovation

Automation has revolutionised the manufacturing industry. Whether you're looking to improve output to customers, grind higher quality cutting tools, fill labour gaps or ensure maximum safety, increased automation has a solution.

The future factory is efficient, automated and runs round the clock. It uses scripts, remote access, and cutting-edge machines to operate at maximum efficiency. Smart automation processes, connected devices and secure networks keep you grinding through the night without compromising on quality.

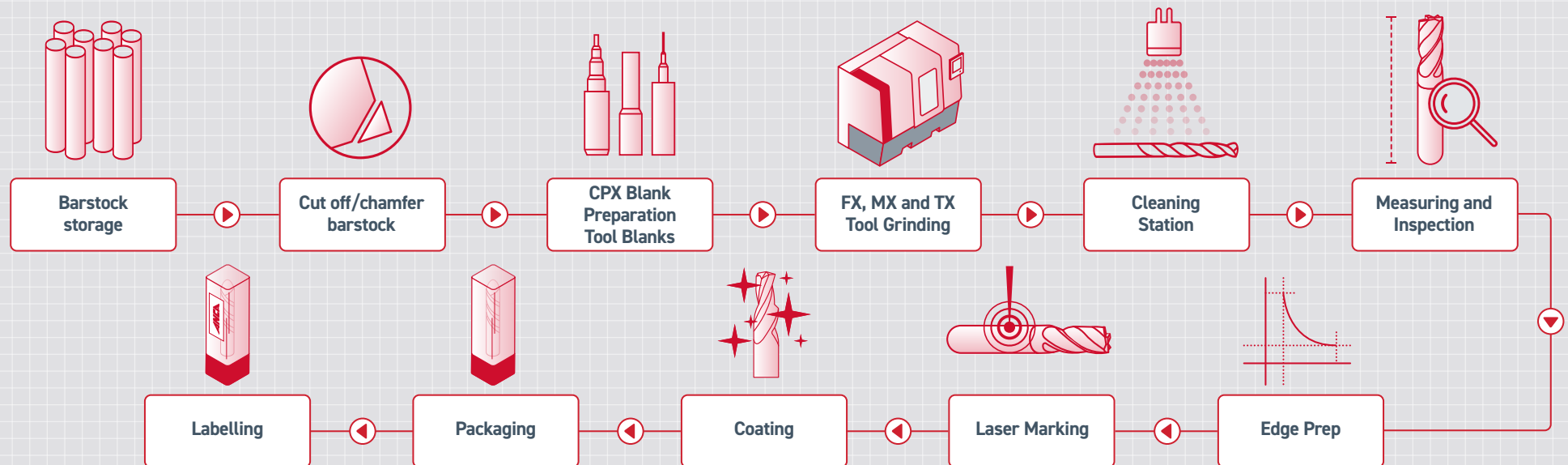
Continuous improvement depends on your willingness to investigate the right tools for the job and their application to your unique business needs. Our integrated manufacturing system (AIMS) has streamlined processes from end to end. Raw materials can be added at the front end and finished cutting tools packaged at the back end without a single manual input from operators.

AIMS is the future of optimised cutting tool production. Through streamlined manufacturing and connectivity, AIMS has driven innovation in this space. With ANCA and AIMS, you can enjoy continuous, unattended

production that dramatically reduces non-productive machine time, with smart automation that connects sequential tool production processes and offers connectivity across the whole factory. This is Industry 4.0—factory-wide integration. We look at the factory as a single machine, rather than separating it into many different elements of design, blank preparation, grinding, laser marking, washing, packing and shipment.

THIS IS A POWERFUL CONCEPT THAT BRINGS TOGETHER ONE ECOSYSTEM AND BUILDS IT TO BE AS EFFICIENT AS POSSIBLE.

AIMS IS THE FUTURE OF OPTIMISED CUTTING TOOL PRODUCTION





CONCLUSION

AIMS represents a significant move towards the future of the cutting tool industry. We're actively working with customers around the world to understand how to make this a reality, in a quest to design the most powerful solution we can. As we move towards the future, we're broadening our focus from just CNC machines to complementary technologies, to create a one-stop shop for automation.

Bringing your manufacturing processes up to speed doesn't have to be difficult. We can create connected systems for businesses of every size and output, with award-winning machines that'll drastically improve your production and deliver happier, more efficient customers, too.



Why choose ANCA?

Founded in 1974, ANCA is a world-leading manufacturer of CNC grinding machines, motion controls and sheet metal solutions, with over 1,000 employees worldwide.

We're pleased to have been recognised with more than 25 industry and business awards, including our induction into the Australian Export Award Hall of Fame. The AFR recognised us as one of Australia and New Zealand's most innovative companies.

We hold patents for many products, processes and components, from pulse and gap control for electrical discharge machining equipment to collet adaptors and clamping devices.

With global headquarters in Melbourne, Australia, ANCA exports 99% of products to customers across the globe, servicing 45 countries and delivering leading solutions from offices in the UK, Germany, China, Thailand, India, Japan, Brazil and the USA.

Sign up to ANCA's monthly E-Sharp newsletter for the latest product news and tips – go to: www.anca.com/subscribe



[@ANCACNCmachines](https://www.facebook.com/ANCACNCmachines)



[@ANCA](https://www.linkedin.com/company/anca)



[@ANCAVision](https://www.youtube.com/channel/UCANCAVision)



[@ANCACNCmachines](https://www.instagram.com/ANCACNCmachines)

www.anca.com