

iNews

IBARMIA NEWS JOURNAL
N° 07 - 2025

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DEAR READER

WELCOME TO OUR JOURNAL



Querido lector_ Vivimos una época de incertidumbre y cambio constante. Incluso cuando creemos haberlo visto todo, la realidad vuelve a sorprendernos, ya sea en lo tecnológico, lo social o lo político.

Ante nuevos gobiernos, conflictos y desafíos globales, la humanidad busca recuperar el control, especialmente a través de la autonomía industrial. Y es una buena noticia, porque la industria moderna, impulsada por la automatización, la digitalización y la sostenibilidad, genera prosperidad, empleo de calidad y esperanza para el futuro.

La máquina-herramienta es clave en esta transformación. IBARMIA, con 72 años de experiencia, sigue acompañando a sus clientes con soluciones tecnológicamente avanzadas — ahora aún más de la mano de nuestro partner **MODIG Machine Tools Sweden AB**, una empresa familiar sueca con valores y visión muy afines a los nuestros; más Personas, más tecnología, más capacidad, más cercanía al servicio de nuestros clientes.

Deseamos que esta edición de iNews sea de tu interés.

Te esperamos en **YOUR MACHINE TOOL POINT**.

Saludos.



Dear Reader_ We live in a time of uncertainty and constant change. Even when we think we have seen it all, reality surprises us again—whether in technology, society, or politics.

Faced with new governments, conflicts, and global challenges, humanity seeks to regain control, especially through industrial autonomy. And this is good news, because modern industry—driven by automation, digitalization, and sustainability—creates prosperity, quality employment, and hope for the future.

The machine tool is key in this transformation. IBARMIA, with 72 years of experience, continues to support its customers with technologically advanced solutions—now even more closely with our partner **MODIG Machine Tools Sweden AB**, a Swedish family company with values and vision very much aligned with ours: more people, more technology, more capacity, closer to serving our customers.

We hope this edition of iNews is of interest to you.

We look forward to seeing you at **YOUR MACHINE TOOL POINT**.

Best regards.



Irakurle maitea_ Ziurgabetasun eta etengabeko aldaketa garaia bizi dugu. Dena ikusi dugula uste dugunean ere, errealitateak berririo harritu egiten gaitu, arlo teknologikoan, sozialean eta politikoa.

Gobernu, gatazka eta erronka global berrien aurrean, gizateriak kontrola berreskuratatu nahi du, batez ere autonomia industrialaren bidez. Eta berri ona da, industria modernoak — automatizazioak, digitalizazioak eta jasangarritasunak bultzatuta — oparotasuna, kalitatezko enplegua eta etorkizunerako itxaropena sortzen dituelako.

Makina-erreminta funtsezkoa da eraldaketa horretan. IBARMIAk, 72 urteko esperientziarekin, bere bezeroei laguntzen jarraitzen die teknologikoki aurreratuak diren soluzioekin — orain are gehiago gure partner **MODIG Machine Tools Sweden AB**ren eskutik, gure antzeko balioak eta ikuspegia dituen suediar enpresa familiarra.

iNewsen edizio hau zure interesekoa izatea nahi dugu.

YOUR MACHINE TOOL POINTen zain gaituzu.

Agurrak.



Cher lecteur_ Nous vivons une époque incertaine et en perpétuelle mutation. Même lorsque nous pensons avoir tout vu, la réalité nous dépasse encore – que ce soit sur le plan technologique, social ou politique.

Face à de nouveaux gouvernements, conflits et défis mondiaux, l'humanité cherche à reprendre le contrôle, notamment en retrouvant une autonomie industrielle. C'est une bonne nouvelle, car l'industrie moderne – portée par l'automatisation, la digitalisation et la durabilité – est source de prospérité, d'emplois de qualité et d'espoir pour l'avenir.

La machine-outil joue un rôle essentiel dans cette dynamique. IBARMIA, forte de ses 72 ans d'expérience, continue d'accompagner ses clients avec des solutions technologiques avancées – renforcé aujourd'hui avec le soutien de notre partenaire **MODIG Machine Tools Sweden AB**, une entreprise familiale suédoise partageant nos valeurs et notre vision: plus de personnes, plus de technologie, plus de capacité, plus de proximité au service de nos clients.

Nous espérons que cette édition de iNews saura retenir votre attention.

Nous vous attendons à **YOUR MACHINE TOOL POINT**.

Cordialement.



Koldo Arandia
PRESIDENT & CEO
OF IBARMIA



Lieber Leser_ Wir leben in einer Zeit der Unsicherheit und des ständigen Wandels. Selbst wenn wir glauben, schon alles gesehen zu haben, überrascht uns die Realität aufs Neue – sei es technologisch, gesellschaftlich oder politisch.

Angesichts neuer Regierungen, globaler Konflikte und Herausforderungen strebt die Menschheit danach, wieder Kontrolle zu gewinnen – insbesondere durch industrielle Eigenständigkeit. Und das ist eine gute Nachricht. Denn die moderne Industrie, angetrieben von Automatisierung, Digitalisierung und Nachhaltigkeit, schafft Wohlstand, hochwertige Arbeitsplätze und Hoffnung für die Zukunft.

Die Werkzeugmaschine spielt dabei eine Schlüsselrolle. IBARMIA – mit 72 Jahren Erfahrung – steht seinen Kunden weiterhin mit technologisch fortschrittlichen Lösungen zur Seite. Ab sofort noch enger in Partnerschaft mit unserem neuen Partner **MODIG Machine Tools Sweden AB** – einem schwedischen Familienunternehmen mit ähnlichen Werten und einer gemeinsamen Vision: Mehr Menschen, mehr Technologie, mehr Kompetenz und mehr Nähe im Dienst unserer Kunden.

Wir hoffen, dass diese Ausgabe der iNews Ihr Interesse weckt.

Besuchen Sie uns bei **YOUR MACHINE TOOL POINT**.



亲爱的读者，我们生活在一个充满不确定性和不断变化的时代。即使当我们以为已经见过一切，现实依然会让我们惊讶——无论是在科技、社会还是政治领域。

面对新的政府、冲突和全球挑战，人类正在寻求重新掌控，尤其是通过工业自主权。这是一个好消息，因为现代工业——依靠自动化、数字化和可持续发展驱动——带来了繁荣、高质量就业和对未来的希望。

机床在这一转型中起着关键作用。拥有72年经验的IBARMIA，继续为客户提供技术先进的解决方案——现在更是与我们的合作伙伴瑞典MODIG机床公司携手同行，这是一家具有与我们高度契合价值观和愿景的瑞典家族企业。更多的人力，+ 更多的技术，+ 更强的能力，+ 更贴近客户的服务。

我们希望您对本期iNews感兴趣。

期待在**YOUR MACHINE TOOL POINT**与您相见。

致以问候。

IBARMIA.

THE
POINT

EST 1953

IBARMIA ROOTS

FROM EUROPE TO THE WORLD_
THE BEGINNING OF A NEW ERA

THE BASQUE COUNTRY_ COMMITTED TO MORE INDUSTRY AND MORE EUROPE



Mikel Jauregi
MINISTER OF INDUSTRY, ENERGY TRANSITION,
AND SUSTAINABILITY
BASQUE GOVERNMENT



Projects like IBARMIA, which have grown and remain deeply rooted in the Basque Country, sharing its values of commitment, collective effort and innovation, have our strongest support when are a clear example that competitiveness in the international market requires a strategic and collaborative vision joining forces and combining complementary capabilities to face the challenges posed by ongoing global instability.

We are living in times of global uncertainty. The new tariff policies of the United States government are bringing an end to the globalized world we have known since the fall of the Berlin Wall.

In response to a world that is increasingly closing off commercially, Europe will focus on defending and strengthening its industrial base. And we are firmly convinced that the Basque Country is fertile ground for Europe's upcoming reindustrialization. We are one of the most industrialized regions in the European Union, with 40% of our GDP dedicated to industry and advanced services, along with a high level of innovation and leading companies in future-oriented sectors. We can and must play a key role in Europe's reindustrialization. That is where the opportunity lies. And that is also our challenge—to find avenues for growth amid these turbulent times.

In the Basque Country, our direction is clear. Our future depends on more industry and a stronger Europe. We are a Europeanist nation. And we believe in industry as a source of wealth, progress, and well-being.

The Basque Government is already taking steps to support our industry and our companies. We have launched the Industrial Defense Group in response to the tariff war, and we are activating our own financial resources so that Basque savings and capital can be directed toward strengthening, growing, and anchoring our industrial and technological

fabric. This is the goal of the Basque Financial Alliance, which aims to mobilize €4 billion in support of our industrial sector.

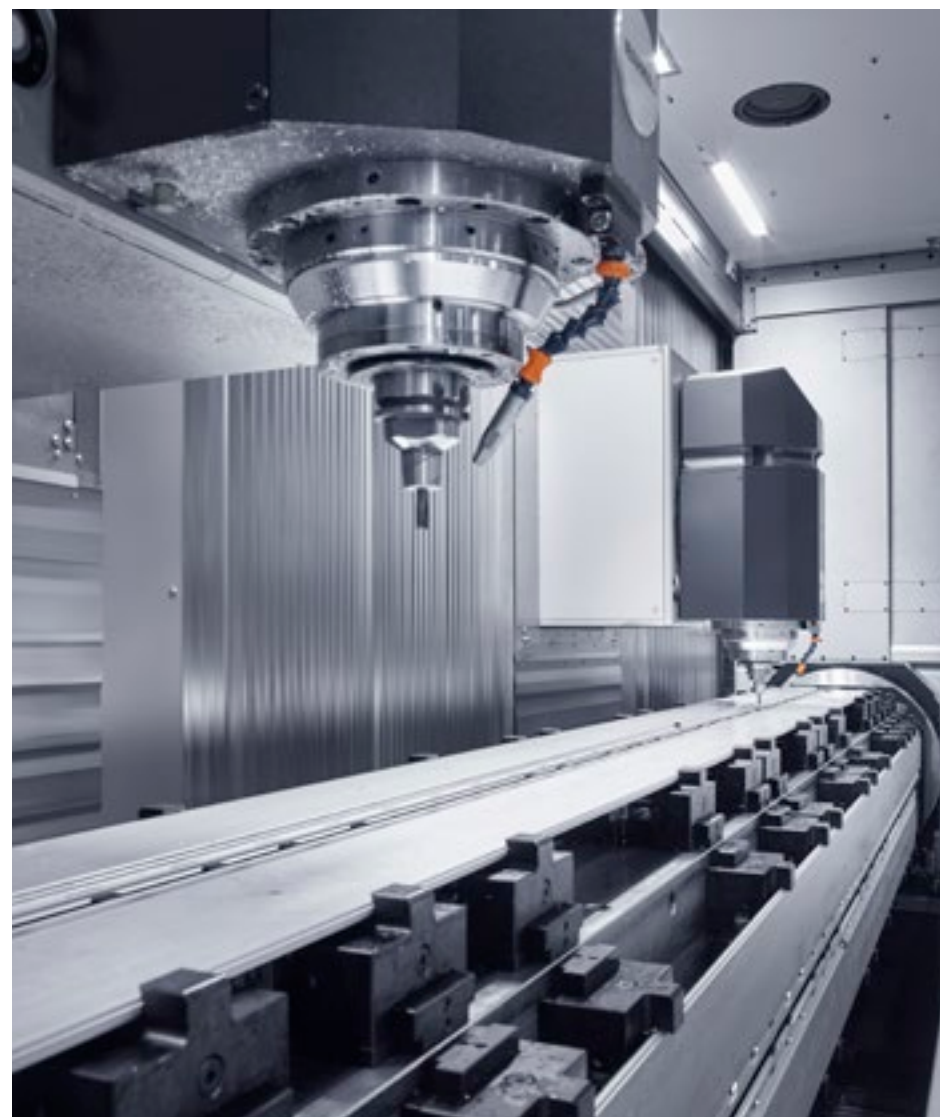
All of this is being carried out through the public-private collaboration model that so strongly defines our region. And we are applying the principles outlined in the Draghi Report to ensure that Basque public investment plays a catalytic role in private investment, at a ratio of one to four.

At the same time, we must look to the future and envision a new industrial Basque Country—just as our predecessors did during the industrial restructuring of the 1980s and 1990s. Although our current situation is significantly better, this new era demands a renewed drive. For that reason, we have presented the Basque Country Industrial Plan 2030 this June, which will guide us in building the industry of the future upon our existing strengths.

Through collaboration and joint effort between public institutions, businesses, and society, we can make all of this a reality.

And this is exactly what projects like IBARMIA and MODIG have successfully understood: Unity is strength—something we all know, but putting it into practice by moving from words to action confirms that we are on the right path.

We will continue working for our country—moving forward with caution, yes, but also with optimism and enthusiasm.



BASQUE INDUSTRY

BASQUE COUNTRY

Innovation land

The European Commission has recognized the Basque Country as a "Pocket of Excellence in Innovation".

Innovation at the service of industrial development, science, technology, energy transition, decarbonization, sustainability and digital transformation.

Basque Country, Innovation Land.

Euskadi
**POCKET OF
EXCELLENCE
IN INNOVATION**
STRONG INNOVATOR

Source: European Commission
Regional Innovation Scoreboard 2023

EUSKO JAURLARITZA GOBIERNO VASCO

INDUSTRIA, TRANSIZIO
ENERGETIKO ETA
JASANGARRITAGIN SAILA

DEPARTAMENTO DE INDUSTRIA,
TRANSICIÓN ENERGÉTICA Y
SOSTENIBILIDAD

AN IDEAL LOCATION TO MANUFACTURE MACHINE- TOOLS AND MUCH MORE_



7.234 km²

Total
surface area



67,8 %

Forest
surface area



2.242.568

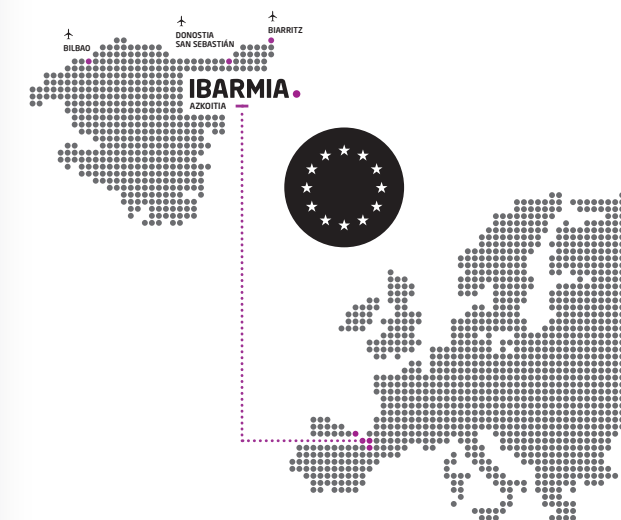
Number of
inhabitants



0,948

Human
development index

A region with a vast industrial tradition, hard working men and women, responsible and committed, a rich component and support industry, a market leading technology environment, mild climate and protected from natural disasters, well connected with the world by road, sea and air, a government sensitive to the importance of industry. From here, from this ideal environment, we approach the world.



39.547 €

Per capita income



24 %

Contribution (%) of
Industry to the GDP



37,2 %

Export weight (%)
on GDP



179.454 €

Labour
productivity

BASQUE COUNTRY

IBARMIA & MODIG

IBARMIA & MODIG

IT IS TIME TO SEAL THE CONFIDENCE IN OUR POTENTIAL

IBARMIA & MODIG 150 YEARS OF EXCELLENCE_ A SHARED LEGACY OF INNOVATION

In 2025, IBARMIA and MODIG proudly celebrate a combined legacy of over 150 years in the metalworking industry. This remarkable milestone is not just a number—it represents generations of commitment, innovation, and collaboration with thousands of manufacturers around the globe. It is the story of two family-run companies from different corners of Europe that have grown into global leaders in advanced machining technology.

Koldo Arandia, President & CEO of IBARMIA and David Modig, chairman of MODIG, seal the collaboration agreement between these two historic European Machine Tool companies.



For IBARMIA and MODIG, history is not something to look back on—it's the foundation upon which the future is built. Each machine, each innovation, each customer relationship reflects decades of hard-earned knowledge and a forward-looking spirit that defines who we are today.

A Meeting Point of Tradition and Progress

Both companies were founded in the aftermath of significant world changes—MODIG in 1947, and IBARMIA in 1953. While separated by geography, they were united by a common vision: to offer high-quality, precision-driven solutions to a rapidly evolving industrial landscape.

The journey that began with manual lathes and conventional mills has today evolved into fully automated, digitalized, and sustainable production systems. Both firms have kept pace with change by investing in R&D, nurturing talent, and staying close to the needs of their customers.

1_ IBARMIA ROOTS - FROM THE BASQUE MOUNTAINS TO THE WORLD

IBARMIA was founded in the small town of Azkoitia, located in the Basque Country, a region known for its strong industrial heritage and engineering talent. The company started as a family-owned machine tool manufacturer, producing simple drills and equipment for local workshops. But the drive for improvement and the hunger for innovation soon propelled IBARMIA beyond local borders.

By the 1980s, the company had already made its mark in vertical machining centers. Over the following decades, IBARMIA became synonymous with modularity, multitasking, and custom-built machines that adapt to every customer's specific needs.

What truly defines IBARMIA is its customer-centric philosophy. Each machine is not just a product, but a solution tailored to integrate

IBARMIA & MODIG

seamlessly into the customer's production strategy. Whether in aerospace, railway, energy, or general mechanical sectors, IBARMIA machines are designed with real manufacturing challenges in mind.

Local Values with a Global Vision

Azkoitia remains IBARMIA's home and production center. The connection with local suppliers, engineers, and communities has been key to preserving the quality and flexibility the brand is known for. At the same time, IBARMIA has expanded its reach with a solid international network and exports to more than 60 countries.

Despite its global growth, the company has never lost sight of its roots. The Basque spirit of resilience, integrity, and cooperation runs through every aspect of its operations.



Early 1950s_ Azkoitia and Virserum.

2_ MODIG ROOTS - SWEDISH ENGINEERING AT ITS BEST

MODIG, founded in 1947 in Virserum, Sweden, carries a legacy of excellence in high-speed machining and automation. From the beginning, MODIG set out to challenge conventional limitations and push the boundaries of what was possible in metal cutting.

The company's breakthrough came in the 1980s with the development of the world's first aluminum profile machining center. This innovation changed the game in the aerospace industry and positioned MODIG as a global technology leader.

Today, MODIG continues to lead in light-weight component machining—particularly in the aerospace and automotive sectors. Their machines are recognized for speed, accuracy, and rigidity, often setting benchmarks in productivity and performance.

Engineering Without Compromise

What sets MODIG apart is its engineering-first culture. Every machine is designed, manufactured, and assembled in-house at the Virserum facility, ensuring full control over quality and innovation. The company's vertical integration enables fast response times and tailor-made solutions that meet the most demanding technical specifications. Moreover, MODIG's commitment to sustainability and smart manufacturing reflects Sweden's deep-rooted values of environmental responsibility and innovation.

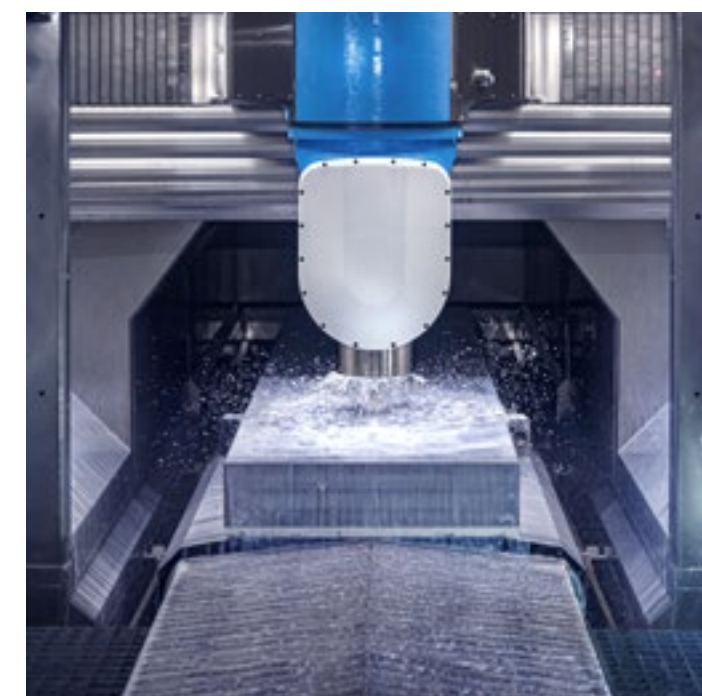


2025

IBARMIA.
YOUR MACHINE TOOL POINT

MODIG
MACHINE TOOL SWEDEN

**Celebrating over 150 years
of combined expertise**



IBARMIA & MODIG

IBARMIA & MODIG
IT IS TIME TO SEAL THE CONFIDENCE IN OUR POTENTIAL

3_ LOOKING TO THE FUTURE

With 150 years of combined experience behind them, IBARMIA and MODIG are not slowing down—they are accelerating toward the future. The challenges of Industry 4.0, energy efficiency, and supply chain resilience demand more intelligent, connected, and flexible manufacturing systems.

Both companies are heavily investing in digitalization, automation, and green technologies to support their customers through the transformation of the industry. Initiatives like digital twins, AMR logistics, and energy-efficient machining systems are not optional—they are the new standard.

And while the tools may change, the values remain the same: trust, precision, quality, and partnership.

Built by People - Powered by Values

Behind every milestone, there are people. Engineers, operators, designers, technicians, partners, and customers—each playing a vital role in building what IBARMIA and MODIG are today. Though innovation often starts with machines, progress is only possible when it is driven by human passion and expertise.

Both companies continue to invest in talent development, with training programs that empower the next generation of machinists and engineers. In an industry often perceived as rigid and mechanical, IBARMIA and MODIG emphasize adaptability, creativity, and teamwork.

Their shared belief: Technology must serve people, not the other way around.

That's why, from shop floor to boardroom, both companies foster cultures of respect, transparency, and continuous learning. It's not uncommon to find third-generation workers in their factories—testament to a deep-rooted commitment to community and continuity.

More Than Machines - A Broader Impact

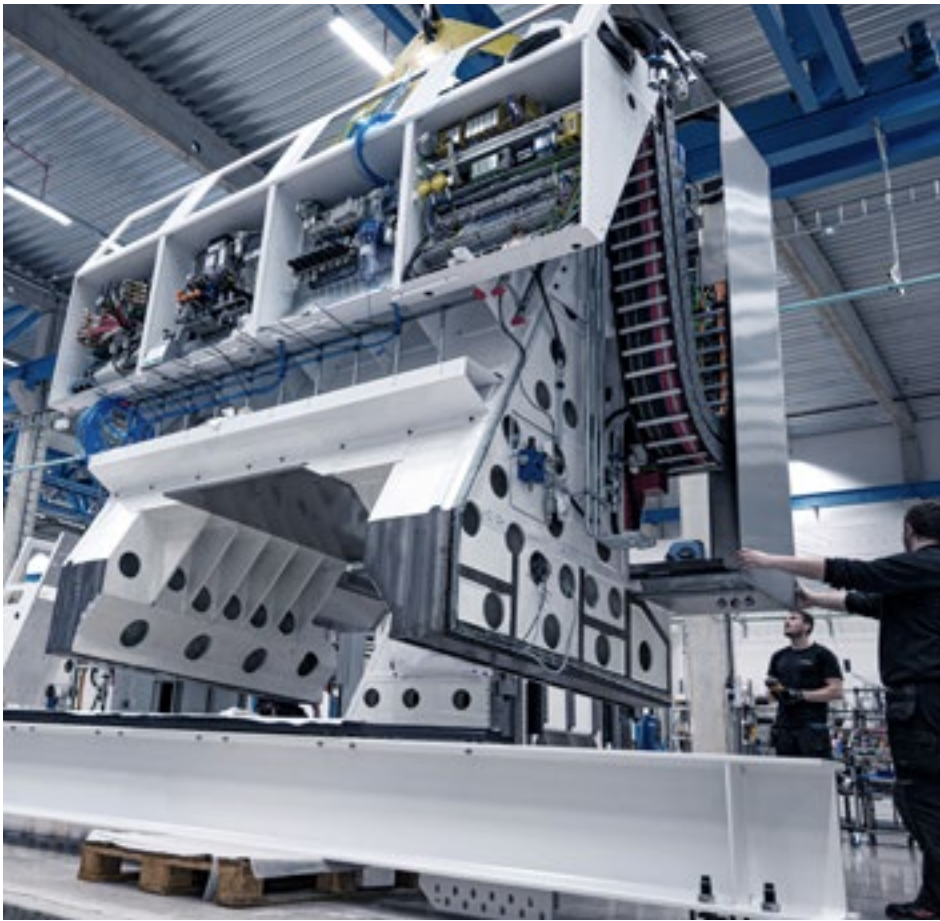
The story of 150 years is not only one of industrial evolution—it is also a narrative of social impact. The machines built by IBARMIA and MODIG have shaped sectors as diverse as aerospace, rail, wind energy, and medical technology.

Their work enables critical manufacturing processes that influence everything from infrastructure to global mobility. In this sense, their legacy reaches far beyond factory walls—it touches lives.

In the Basque Country, IBARMIA plays an active role in promoting technical education and collaborating with regional innovation clusters. Similarly, MODIG contributes to the Swedish industrial ecosystem through its partnerships with technical universities and industry forums.

As automation and AI redefine the future of work, both companies remain grounded in the idea that people and machines must

1947 / 1953_ MODIG AND IBARMIA BORN UNITED BY A COMMON VISION THAT REMAINS STRONG TODAY: TO OFFER HIGH-QUALITY, PRECISION-DRIVEN SOLUTIONS TO A RAPIDLY EVOLVING INDUSTRIAL LANDSCAPE



evolve together. This human-technology harmony is one of the most important lessons from their long-standing history.

A Legacy to Be Proud Of

Celebrating 150 years is also an invitation to pause and reflect. It means acknowledging challenges overcome—economic crises, global shifts, technological disruption—and taking pride in the resilience shown along the way.

For IBARMIA and MODIG, the past is a springboard. They know that staying relevant means never standing still. As they look ahead to the next decades, their mission is clear: to remain bold, reliable partners to the world's most ambitious manufacturers.

With their foundations deeply anchored in history—and their eyes firmly set on the horizon—IBARMIA and MODIG step into the future not just as machine builders, but as enablers of progress.

IBARMIA & MODIG

IBARMIA.
YOUR MACHINE TOOL POINT

Z SERIES
MOVING COLUMN MACHINING CENTERS



MACHINE PROGRAM_
4 or 5 axis models. For the largest variety of sizes and shapes, pendulum work and swing up to ø2000 mm. Multitasking available.

T SERIES
5 AXIS UNIVERSAL MACHINING CENTERS



MACHINE PROGRAM_
5 axis universal moving column models. For large diameters up to ø3600 mm and automatic pallet changing. Multitasking available.

P SERIES
5 AXIS UNIVERSAL PORTAL MACHINING CENTERS



MACHINE PROGRAM_
5 axis universal portal structure models. For large diameters up to ø3600 mm and automatic pallet changing. Multitasking available.

C SERIES
MACHINING SOLUTIONS FOR LARGE RINGS



MACHINE PROGRAM_
Machinery range that offers integral solutions for the complete machining of large rings. Multitasking available.

MODIG
MACHINE TOOL SWEDEN

RIGIMILL MC

3- 4- or 5-axis single spindle moving gantry vertical machining center.



RIGIMILL MT

3- 4- or 5-axis single spindle vertical moving table machining center.



MILL-EX

4- or 5-axis double spindle horizontal machining center.



HHV

4- or 5-axis single spindle horizontal machining centers with rotary tables.



IM

4- or 5-axis single spindle inverted trunnion machining center.



FMT DUO

5-axis double spindle horizontal machining center with dual work zones.



FLEXIMILL

6-axis single spindle horizontal moving column machining center.



MHM

5-axis single or double spindle horizontal machining center.



MTX

5-axis single spindle universal machining center.



MZX

5-axis single or double moving column machining center with trunnion fixture.



 IBARMIA MACHINING SOLUTIONS

THE LATEST TECHNOLOGY FOR YOU
OUR MACHINE PROGRAMS



Z SERIES GEN6 THE BEST IN THE CLASS

SINCE 1986

It has been more than a quarter of a century since IBARMIA presented in 1986 their first machining center of fixed table and moving column, ZVL-2000. Every day more and more manufacturers highlight the advantages of this architecture; at IBARMIA we understood this from the very beginning and our specialization and bet on this concept have taken us to create the widest range of models, always faithful to the inspiring principle.

P/2



IBARMIA MACHINING SOLUTIONS

THE LATEST TECHNOLOGY FOR YOU
OUR MACHINE PROGRAMS

Z SERIES GEN6
A NEW GENERATION
OF MOVING
COLUMN MACHINING
CENTERS

Every customer, every piece, every material, every process requires a specific performance from the machine and IBARMIA give the optimal solution thanks to the New Z SERIES program.



NEW GENERATION
MACHINING CENTERS

Besides high quality, capacity and precision, our machining centres of fixed table and moving column offer superior ergonomics and flexibility.

Every customer, every piece, every material, every process requires a specific performance from the machine. At IBARMIA we give the optimal solution for every case but always following a quality standard ensuring a good performance in terms of rigidity, dynamics, material removing capacity, precision and productivity.

The high configurability and the combination possibilities offered by the fixed working table combined with the large range of rotary tables available, provide an unlimited field of work, a differential value for the customer and a return of investment of maximum viability.

The revolution is here.

After more than 30 years of experience manufacturing moving column machines and with more than 500 units on the market, we

have listened to our customers to take the Z series to the next level. We asked them what they would add, what they would remove, what they would change, and what makes our product unique.

With their feedback and after a process of iteration until we found the perfect formula, we have designed the best range of moving column centres on the market.

A NEW DESIGN
THAT BECOME
THE MACHINE
STRONGER,
FASTER AND
MORE EFFICIENT

Z SERIES GEN6_ MACHINE PROGRAM ROUTE

M Size
ZMS 4/5 Multiprocess / Extreme



Y 800 / 1000 mm
Z 800 / 900 mm

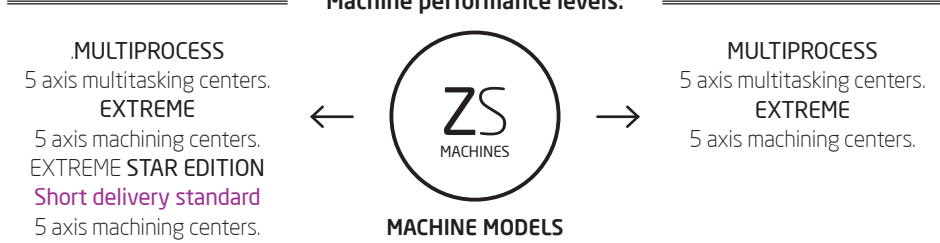
L Size
ZLS 4/5 Multiprocess / Extreme



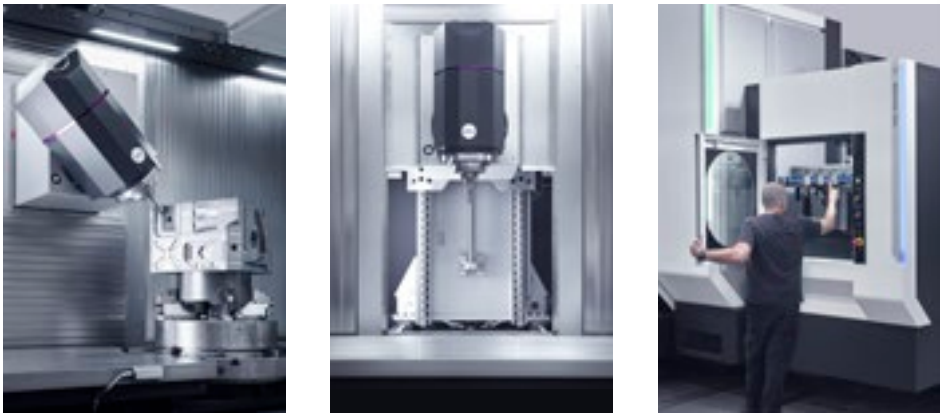
Y 800 / 1000 / 1100 mm
Z 1100 / 1300 mm

A wide range of longitudinal travels lengths available
For M & L machine size models:
1500 / 3000 / 4000 / 5000 / 6000 / 7000 / 8000 / 9000 / 10.000 / 11.000 / 12.000 mm.
Possibility of integrating SK 40 and SK 50 type electrospindles
in both machine size models:

M Size		L Size	
Tool holder: SK 40 / BT 40 / HSK A-63 / CAPTO C6	Tool holder: SK 50 / BT 50 / HSK A-100 / CAPTO C8	Tool holder: SK 40 / BT 40 / HSK A-63 / CAPTO C6	Tool holder: SK 50 / BT 50 / HSK A-100 / CAPTO C8
Up to: 46 kW • 200 Nm • 12.000 rpm	Up to: 43 kW • 260 Nm • 8000 rpm	Up to: 46 kW • 200 Nm • 12.000 rpm	Up to: 84 kW • 452 Nm • 12.000 rpm
ZMS4	ZMS5	ZLS4	ZLS5



Z SERIES GEN6_ IMPROVEMENT POINTS



New Optimized
B-axis tilting Head_

1

The optimized tilting head system (tilting range: +/- 120°) allows to make bigger parts in the same space.

Highlights_

- B-axis upsize: More torque.
- Minimized distances:
(1) B-axis pivoting distance.
(2) Distance from table to B-axis head in horizontal position.

New Robust and
Agile Column_

2

The column is now even stronger and more dynamic, that will dramatically reduce your cycle times.

Highlights_

- Quicker acceleration for head-column-saddle movement-
- More rigid machine.

New World-Class
tool changer_

3

A New Design that allows to easily load tools while the machine is running, faster tool changes and an easier access to the maintenance elements.

Highlights_

- Chain-type universal Big Plus friendly tool magazine without taper restrictions.
- Modular design for M and L machine size models.
- Risk-free changes outside the working area

IBARMIA MACHINING SOLUTIONS



MACHINE PROGRAM

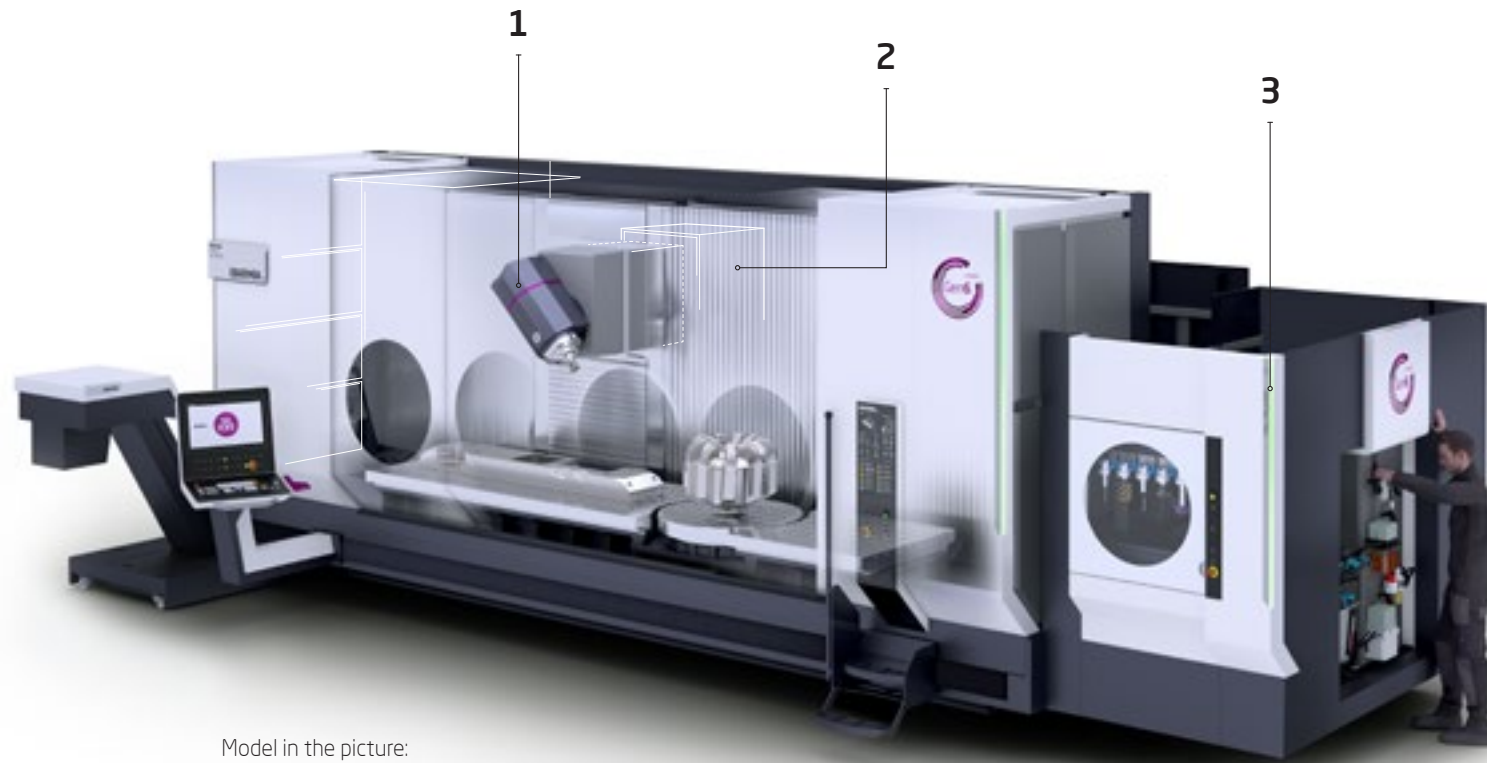
Key features of the new Z SERIES:

- The largest portfolio of solutions on the market. If you are looking for a moving column machining center, IBARMIA can offer it to you. Tailored to your needs. And if not, the solution does not exist.
- Combination of processes in a single machining center: milling, turning, grinding, gear hobbing, gear skiving... and even additive manufacturing.
- Easy to use: physical ergonomics combined with intelligent functions that guide the operator to get the most out of the machine.
- Extraordinary utilisation of the working area.
- Maximum productivity, combining machining with tool loading and unloading and a pendulum working solution to follow the same strategy with the part.
- Greater rigidity and greater dynamics, the result of structural and drive optimization.
- Leap to the next level of precision thanks to structural thermometry and the development of thermal digital twins to simulate machine behaviour.
- Reduced environmental impact through intelligent functions for the most advanced processes.
- Automation solutions adapted to all customer requirements.



(3)

This New Design ATC located at the right of the machine is the second key factor in the GEN6 concept. The program offers two type of magazines:
Standard chain-type magazine for 50, 100 or 150 tools. Max tool: M size: 350 mm / 10 kg; L size: 400 mm / 20 kg.
Optional polar type magazines with 220 tools for SK 40 spindle taper and 134 or 255 for SK 50 spindle taper models.



Model in the picture:
ZLS5_45.10 EXTREME

IBARMIA MACHINING SOLUTIONS

THE LATEST TECHNOLOGY FOR YOU
OUR MACHINE PROGRAMS



NEW GENERATION
MACHINING CENTERS



IBARMIA MACHINING SOLUTIONS



MACHINE PROGRAM



Two fundamental
characteristics
define the program



1_ Highest Flexibility

Customize the fixed table_ Integrating different clamping systems on the fixed table, such as ZERO points, vacuum systems etc (1). Combine the fixed table with integrated rotary tables and/or bolt-on rotary tables (2-3). Combine the B-axis head with integrated C-axis rotary tables up to ø1500 mm swing for parts up to 3500 kg. Add turning capacity to these tables (Multiprocess; 4). Configure your working area with large diameter rotary tables for big parts that can be integrated in the fixed table, or replace it (5).

Replace the fixed table_ 3. With trunnion fixtures by using a rotary table with a support (motor-support), or 2 rotary tables (double motor system (6). The sliding platforms on guideways are moving platforms that can be quickly re-positioned, adapting the machine setup to different part lengths and shapes without the need of screws or cranes (7).

Integrate advanced technology_

Combining axes and processes by integrating vertical and/or horizontal turning capacity, including up to 4 meters long boring bars for internal diameter turning operations (Multiprocess; 8). The Multiprocess level offers advanced gear machining functions as well as grinding capability for a complete manufacturing of complex parts in one setup (9-10-11).

2_ Maximum Polivalence

A/C-axis turning & milling machine_ Be able to machine complex parts in only one setup thanks to MULTIPROCESS machines; the top of the range. Depending on the machine configuration, these models reach the maximum polivalence in the market, combining vertical & horizontal turning capacity into a 5-axis model with the most advanced gear machining manufacturing technologies and grinding capacity. In short, a whole workshop in a single machine (12).



IBARMIA MACHINING SOLUTIONS

THE LATEST TECHNOLOGY FOR YOU OUR MACHINE PROGRAMS

What if we also improve the delivery time and price of the most popular machine configuration without losing any of its advantages? Here is our STAR edition.

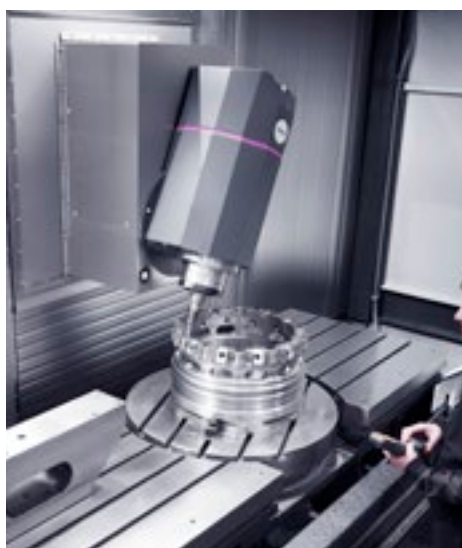
The new winning standard of IBARMIA, based on the most demanded machine configuration items in the market, for a fast answer to the widest manufacturing requirements thanks to these well balanced short delivery time machines selection.

The new STAR edition combines linear and rotary axes in a generous 3 meters long working area for machining a wide range of size and shapes; uses the entire long of the high load capacity fixed table (1500 kg/m²) for machining long parts, and the integrated rotary table for manufacturing complex parts up to in 5 faces / axes.

B-axis head combined with ø800 mm integrated high dynamics milling rotary table for 5 faces / 5 axis machining. Freedom to choose between the latest generation CNC controls: HEIDENHAIN and FANUC.

Chain-system or polar type ATC magazines available, in both cases located at the right side of the machine for a easy load / upload tools while the machine is running.

Over 100 customers are already working with their STAR edition, and we continue to be amazed by its performance and capabilities. What will be the limits of this new generation? **Discover them.**



ZMS4_30.08 EXTREME STAR EDITION

Highlights →

MACHINE TRAVELS
X 3000 / Y 800 / Z 800 mm
B +/-120° / C 360°.

FIXED TABLE
5 T slots / Up to 1500 kg/m².

B-AXIS TILTING HEAD
Torque motor continuous tilting head
Tilting range: +/-120°.

ELECTROSPINDLES AVAILABLE
SK 40 Standard
Up to: 46 kW / 200 Nm / 12.000 rpm.
SK 50 Optional
Up to: 43 kW / 260 Nm / 8000 rpm.

C AXIS ROTARY TABLE
For 5 faces / 5 axis machining.
Up to: ø1000 mm swing / 25 rpm.

ATC MAGAZINES
Standard chain-type magazine.
Standard: 50 tools. Option: 100 / 150 tools
for SK 40 taper; 100 tools for SK 50 taper.

Optional polar type magazines:
220 tools for SK 40 spindle taper.
134 or 255 for SK 50 spindle taper.

CNC CONTROLS Available
Heidenhain TNC7
Fanuc 31iB.



Unai Antero Urruticoechea
TECNALIA
STRATEGY AND VENTURES
-INDUSTRY AND MOBILITY

WHEN MACHINES BECOME WORKING COLLEAGUES: THE HUMAN SIDE OF INDUSTRY 5.0

Humans have always been social creatures, eager to connect and communicate. We crave interaction—and the popularity of social networks proves it. Social media platforms reached 100 million users in just a few years, while some other political efforts take decades.

What's even more interesting is that our desire to communicate isn't limited to other humans. ChatGPT reached 100 million users in only two months. Why? Because, for the first time, we can speak directly to machines in our own language—and they respond helpfully.

This is the promise of generative AI. It breaks down barriers, making advanced technology accessible to everyone (regardless of age or education). It doesn't just answer questions—it adapts, creates, and amplifies our abilities. In doing so, it brings to life the long-held dream of technology truly empowering people.

And there's an even more urgent reason this matters now. Across Europe, industries are facing two major challenges: an aging workforce and a shortage of skilled talent. In Spain, for example, over half the workforce is over 45, and nearly 60% of companies report difficulty finding qualified personnel. This puts pressure on organizations to increase productivity while also supporting their employees.

This is where AI can make a real difference—by bridging the gap between workers and technology, making work easier and more productive. In other words, by helping create true "hybrid teams" of humans and machines. This is the essence of Industry 5.0: a new era where people and machines don't just coexist—they collaborate. With tools like multimodal interfaces (combining touch, voice, and gestures), adaptive AI, and human-centered design, technology becomes more like a teammate than a tool.

Of course, challenges remain. Europe still relies heavily on large foreign tech providers and must address critical issues such as privacy and ethics. Yet with forward-thinking companies, strong regulations like the EU's AI Act, and bold visions like Tecnalia's "Augmented Interaction initiative" the outlook is promising.

The future of work isn't just high-tech—it's deeply human. And it's already beginning.

tecnalia

tecnalia

MEMBER OF BASQUE RESEARCH
& TECHNOLOGY ALLIANCE

Anticipating is an attitude.

In 1963, Dick Fosbury set out to jump a different way.

In 1968, only he jumped that way and he took away the gold medal.

In 2025, everyone jumps using his technique.

It is about creating the team and then creating the problem. It is thinking easy to solve the difficult. It is living in the future, not adapting to it. It is much more than innovation.

TECNALIA is made up of 1,500 people who are experts in R&D&I and in turning anticipation into a competitive advantage.

DontReactAnticipate.com

anticipate

SUCCESS CASE / SCHERRER

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SCHERRER_ NEXT GENERATION IBARMIA DELIVERS FUTURE-PROOF FLEXIBILITY



Situated in the heart of Europe’s most dynamic manufacturing corridor, Scherrer Fertigungstechnik in Feldkirch, Austria, is strategically located at the confluence of Austria, Germany, Switzerland, and Liechtenstein. At its 1000sqm facility, the manufacturer of industrial machinery has recently installed a large bed IBARMIA ZMS4_30.08 STAR EDITION Gen6 machining center to enhance flexibility and productivity.



Scherrer’s approach to technology investments represents a sophisticated understanding of competitive advantage in precision manufacturing. Unlike many manufacturers who adopt a reactive purchasing strategy driven by specific production challenges, Scherrer’s proactive investment philosophy demonstrates continuous technological leadership. This is why the company is recognized as an early adopter of new technology and the first customer of Ibarmia’s new Generation 6 technology. “We buy a new machine every two to three years, always investing in the next generation of technology,” explains Norbert Scherrer, the Company Owner. “We want to work smarter, not harder. That is why we specify machines with the newest control, high-quality spindle and high performance. When you buy a new machine, you want new technology, not old technology.”

This systematic approach to modernization has kept the company at the forefront of innovation as it approaches 30 years in business in 2026. Scherrer’s evolution reflects the broader transformation of this Alpine region, which has transitioned from traditional agriculture to become one of Europe’s most sophisticated precision engineering centres.

The Generation 6 Investment Decision
Scherrer made a significant strategic investment, purchasing an IBARMIA ZMS4_30.08 STAR EDITION Gen6 machining center from Ibarmia’s sales agent in Austria, IWM. This acquisition represents more than a simple equipment upgrade; it embodies a calculated enhancement to the company’s manufacturing flexibility and technical capabilities in response to increasingly demanding customer requirements.

The decision to acquire the spacious moving column machine with a 3 m X-axis was influenced by Scherrer’s increasingly varied production needs, and close collaboration be-

tween Scherrer and IBARMIA ensured several customised adaptations were incorporated into the solution.

“Our parts and the materials are always so different and varied. So, we needed a machine with incredible flexibility,” Scherrer notes. The company explicitly sought a machine featuring a large table and X-axis stroke for accommodating long parts, as well as a rotary table, and a tilting head with through-spindle coolant capability. This list of features would enable Scherrer to maximise its manufacturing versatility – the ‘wish list’ was easily fulfilled by the versatile IBARMIA ZMS4_30.08.

Operating with a lean team of four employees plus ownership, Scherrer has created a highly skilled, versatile workforce that embodies the multi-skilled approach characteristic of successful precision manufacturing operations in this region. Each team member handles responsibilities from customer communication, CAM and CNC programming to machine operation and quality control. This comprehensive skill development approach ensures operational flexibility while providing employees with diverse, engaging work experiences.

Technical Excellence and Advanced Capabilities
While the fundamentals of quality, performance and service are assured by Ibarmia, the fundamental logic behind this acquisition was investing in flexibility to accommodate both existing and future workloads. The IBARMIA ZMS4_30.08 STAR EDITION Gen6 machine offers several essential technological benefits that directly support this ethos. Its 800 mm rotary table design allows complete five-sided machining of parts in a single setup, significantly enhancing positional accuracy while cutting down handling time and the risk of positioning errors. Combining with the B-axis milling spindle, this feature enables complete 5-side machining of complex shapes that previously required multiple machining steps.

SUCCESS CASE / SCHERRER

This streamlines traditional methods of multiple setups that could lead to cumulative tolerancing mistakes. While the IBARMIA ZMS4_30.08 has 50 tools as standard and options of 100, and 150 tool positions, Scherrer opted for the new tool changer architecture that offers a colossal 224 position tool changer. This static Indunorm magazine with 224 HSK 63 tools allows Scherrer to maintain multiple tool configurations simultaneously for different materials and component types, dramatically reducing changeover times. “You can save a lot of time when you’re changing to the next product, and you already have all the tools inside the machine. It means you get parts to market faster than your competitors,” Scherrer explains.

The machine features Heidenhain’s latest TNC7 CNC control system, providing enhanced user interface capabilities, improved security features, and superior graphics processing. As Norbert continues: “We use Heidenhain controls on all of our machines, and the new Heidenhain TNC7 is an improvement on previous versions. The touchscreen interface and advanced security and visualisation tools give us more efficient programming and operation, while the rotation of the panel is ergonomically friendly for staff. This reduces our setup times and improves operator productivity.”

“OUR PARTS OR MATERIALS ARE SO DIFFERENT THAT WE NEEDED A MACHINE WITH INCREDIBLE FLEXIBILITY”

Norbert Scherrer

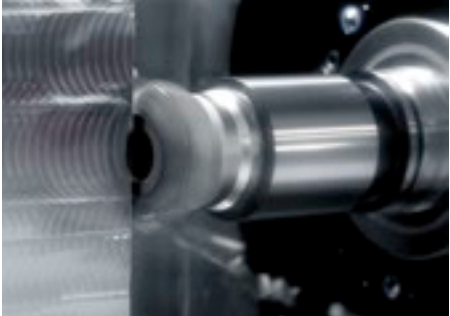
Critical to Scherrer’s quality requirements, Norbert adds: “The machine incorporates built-in measurement systems within the slideways, providing exceptional thermal stability and positional accuracy. The machine has guideways from Schneeberger that make the machine extremely accurate and thermally stable. We maintain shopfloor temperatures from 19 to 23 degrees Celsius throughout the winter or summer while the machine’s thermal compensation systems maintain precision throughout this range. This ensures consistent quality regardless of seasonal variations or daily temperature fluctuations.” Supporting this level of precision is a spindle head with a long tilting motor design that enables the machine head to reach within 200 mm of the table. This significantly improves structural rigidity and stability when conducting heavy-duty machining.



Additionally, working in close proximity to the workpiece on complex and challenging geometries reduces tool overhang to improve precision, surface finishes and overall component quality. The robust kinematics and rigidity of the IBARMIA ZMS4_30.08 are underpinned by a reinforced base structure with advanced cooling and filtration systems that maintain thermal integrity and precision under the most extreme of machining conditions. The Generation 6 STAR EDITION of the IBARMIA ZMS4_30.08 EXTREME at Scherrer has been installed with a powerful 200 Nm / 12.000 rpm spindle that includes through-spindle coolant capability with a high-pressure pump delivering up to 60 bar pressure. “This is essential for deep hole drilling operations and delivering efficient chip evacuation when machining challenging materials such as hardened steels and exotic alloys,” Norbert Scherrer adds.

Operational Impact and Regional Advantages
The IBARMIA installation has delivered measurable improvements across several operational metrics, validating Scherrer’s investment strategy. The machine’s configuration enables Scherrer to manage an increasingly diverse range of components and materials while significantly enhancing quality and efficiency on large components. The 5-axis capability eliminates multiple setups that would typically be required on conventional three-axis equipment, thereby reducing cycle times and the risk of cumulative errors.

Scherrer’s relationship with IBARMIA extends well beyond the initial purchase transaction, encompassing comprehensive support and technical service capabilities. “It’s comfortable to order the machine at the Ibarmia facility in Spain. They have good service here in Austria and Germany too, and you get all the information you need,” Scherrer reports. This local support infrastructure proves particularly valuable where rapid response times and technical expertise are essential for maintaining production schedules. “If we had more space here in the shop, we would buy another Ibarmia - a bigger one. That’s because our customers’ parts keep getting bigger and longer, so maybe in two to three years, we’ll buy the next one,” concludes happy Norbert Scherrer.



IBARMIA MACHINING SOLUTIONS

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T SERIES THE NEW GENERATION OF T12 AND T16 MACHINE MODELS

The IBARMIA philosophy embraces the concepts of product improvement, high added value technology and the ability to develop tailor-made projects according to the customer's specific needs. Therefore, with the aim of tackling the markets by providing an upgraded solution for today's most demanding applications and processes, the New Release of the T12 and T16 models has emerged.

The range of the T-Series consists of 5-axis universal machining centres with turning diameters up to ø3600, diverse automatic pallet changer solutions and multiple customization options. This range of machines allows large part turning or processing in a single setup. Additionally, high productivity and precision are guaranteed by the multifunction technology and diverse machine automation options.

The T-Series owes its name to the T shape of the machine bed. The column moves along the top side while the rotary table moves on the vertical line. The column, bed and spindle head are made of steel which provides great rigidity and stability due to the well-studied nervure and thermal treatment applied. All the structural elements are designed applying the Finite Element Method studies and manufactured following rigorous quality standards. The chip evacuation system is located on both sides of the bed which guarantees an efficient chip removal. Finally, the total closing of the working area with steel protections and an attractive design covering the roof leads to an outstanding machine design and performance.

All IBARMIA T Series models can be conceived as T Multiprocess or T Extreme versions. Additionally, the series can be configured with Universal B axis heads with a rotation

plane at 45° (THC Headstock) or an A axis forkhead for negative angle machining (THR Headstock).

Regarding the diverse automation systems, T12 and T16 models can be fully automated with a self-designed Rotopallet or with a high-capacity Pallet Pool. However, bigger machines models, T22 T30 and T36, are automated with an in-house developed Automatic Pallet Changer with a maximum weight on pallet from 6 t to 12 t.

Among T-Series we highlight the multi-purpose T12 and T16 machine models with Rotopallet. A compact solution to process parts up to ø1600 swing and 6 t weight. The Rotopallet consists of a quick pallet change system executed by a double fork in the machine front. This increases the autonomy and production by considerably minimizing the floor space. While one of the parts is being machined the operator prepares the subsequent part reducing all the set-up times. This loading position can also be turned manually for a more ergonomic access to the workpiece.

Nowadays, in hand with the machine automatization systems, the machining cycle time of each part to be machined is becoming more and more important in multiple workshops. In various industries, every second counts and can lead to a great loss of money if the machining times are not optimized.



NEW GENERATION
MACHINING CENTERS

T SERIES_ NEW WORKING VOLUME

T12 → Max piece, NOW
ø 1250 mm
h 1600 mm
Max load
4500 kg

T16 → Max piece, NOW
ø 1600 mm
h 1700 mm
Max load
6000 kg

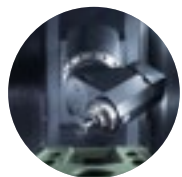
T22 Max piece
ø 2200 mm
h 1750 mm
Max load
10.000 kg

T30 Max piece
ø 3000 mm
h 1950 mm
Max load
20.000 kg

T36 Max piece
ø 3600 mm
h 2150 mm
Max load
25.000 kg

T SERIES_ HEADSTOCK AVAILABLE

IBARMIA can provide two types of spindle heads to adapt the machine to specific jobs.



THC_ B-axis head
Maintain the same tool center point across the full range.
-15°/+195°



THR_ A-axis head
Fork type spindle head ideal for machining negative angles.
-45°/+135°

T SERIES_ MODELS AVAILABLE

The T SERIES program offers two levels of performance for the most demanding jobs.



T MULTIPROCESS

Universal machining center for 5-axis vertical milling and turning operations.



T EXTREME

Universal machining centres for 5-axis-5-sided milling operations.

IBARMIA MACHINING SOLUTIONS



MACHINE PROGRAM

The T12 and T16 machine models stand out for their high load capacity and their high adaptability to special requirements. In this New Release, pushed by markets/processes demands, the machine dynamics have been increased and several features have been upgraded, designing a machine that is Ready For Reality. With this new generation of T12 and T16 models, IBARMIA will position alongside the giants of the machine tool industry providing a product of high technological value, top performance and competitive price.



Rotopallet APC system for T12 & T16
A rotary double fork device on the frontside of the machine makes a quick change of two pallets.

THE T12 AND T16 MODELS HAVE BEEN RENEWED AND FURTHER UPGRADED BEING ADAPTED TO THE CURRENT PROCESSING

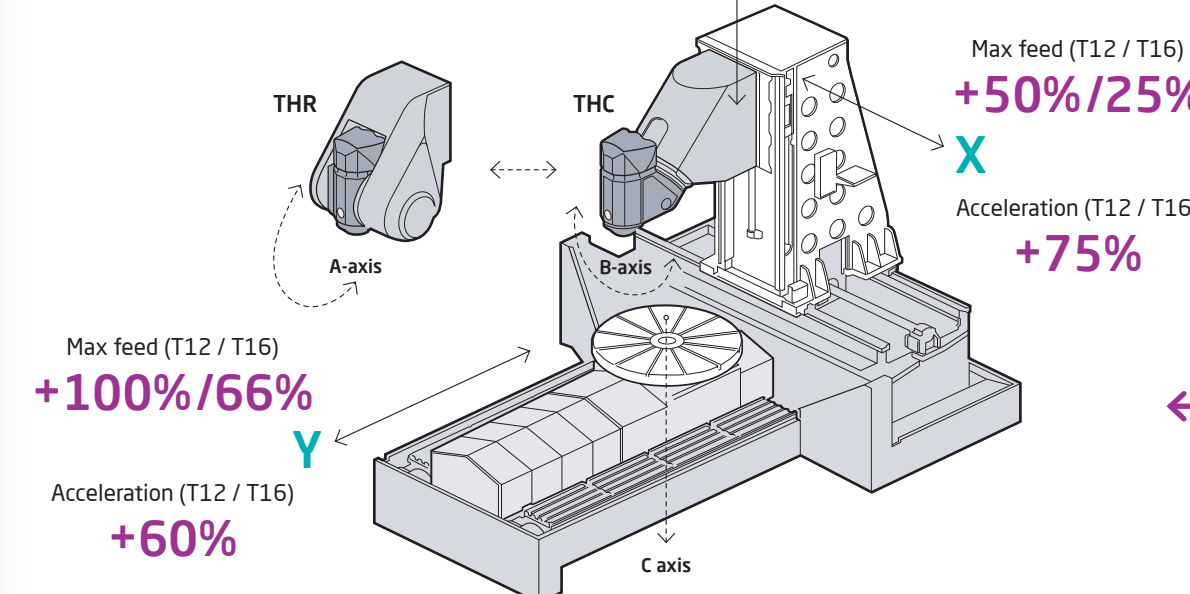
T12 & T16 MODELS_ DYNAMIC UPGRADE OF THE LINEAR AXES

• X / Y / Z axes

Max feed from 40 / 30 / 40 m/min to 60 m/min in T12 and 50 m/min in T16 (in all axes).
Acceleration from 2,3 / 3,1 / 3,7 m/s² to 4 / 5 / 5 m/s² in T12 and to 4 / 4 / 5 m/s² in T16.

Max feed (T12 / T16)
+50%/25%

Acceleration (T12 / T16)
+35%



The dynamic upgrade of the linear X-Y-Z feed axes is based on a complete redesign of the kinematic chain with the aim of achieving feed speeds of up to 60 m/min on the T12 model and 50 m/min on the T16 model. Through the use of more powerful motors in a direct drive transmission, the accelerations are increased up to 4, 5, 5 m/s² on the X-Y-Z axes accordingly.

This dynamic enhancement also includes additional cooling measures on the standard machine equipment, while the optional thermal package further improves the machine's performance and precision requirements. The dynamic structural stiffness of the machine has been optimized

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by means of Finite Element Method studies and the control parameters have been tweaked in the tune-up phase to achieve a refined and precise machine performance. All these upgrades are available for the diverse control platforms.

The second main improvement focuses on the machine rotary table. The current Multiprocess models are equipped with direct-drive rotary tables with a high turning capacity of 2250 kg at a maximum speed of 500 rpm in T12 model. In this New Release, in order to provide more dynamics without losing the load capacity, the Extreme version of machines will also include Direct Drive Technology rotary tables based on the 800x800 and 1000x1000 standard tables. For the T12 model, the rated speed has been increased to 20 rpm with a load of 4 tons and 35 rpm with a load of 2 tons. The maximum speed can be up to 50 rpm on the T12 model and 40 rpm on the T16 model.

In addition to the improved dynamic performance, the torque motor technology offers several advantages compared to the mechanical transmissions. In particular, the zero-torque backlash during clockwise and counterclockwise rotation, the zero wear to the transmission and the lack of damage in case of collision can be considered as important benefits.

Furthermore, based on the 60-positions standard chain tool magazine the tool maximum length has been increased from 450 mm to 600 mm. In addition, the tool change process has been optimized to minimize the dwell times. Moreover, further improvements have been incorporated to the globoidal change cam box and the tool change door opening-closing system has been redesigned. These actions result in a chip-to-chip tool change time of 7 seconds for the T12 model and 8 seconds for T16 model.

To maximise the working volume, on the T12 model the maximum turning diameter has been increased up to 1250 mm, the maximum workpiece height has been extended from 1250 mm to 1600 mm and the Y-axis travel has been enlarged up to 1300 mm in the standard version. However, on the T16 model, the maximum workpiece height is increased from 1450 mm to 1700 mm and the Y-axis travel is enlarged from 1300 mm to 1600 mm. In addition, the positioning accuracy performance has been improved resulting in a 6 µm positioning error with a repeatability of 5 µm under controlled thermal conditions.

In short, IBARMIA'S T12 and T16 models have been renewed and further upgraded being adapted to the current processing tendencies and the new market demands. Coupled with the Rotopallet solution and the upgrades of the New Release the new generation of T12 and T16 machines are standing as a strong machine-tool alternative in terms of performance, technology and quality.



T12 & T16 MODELS DYNAMIC UPGRADE OF THE EXTREME MODELS ROTARY TABLES

Nominal speed from 1,5 rpm
to 35 rpm in T12 and 30 rpm in T16
Maximum speed from 8 rpm
to 50 rpm in T12 and 40 rpm in T16



Tool change time upgrade project:
• Servo-driven tool change arm possible.
• Improved door opening and closing system.
• Tool change according to length and weight possible.



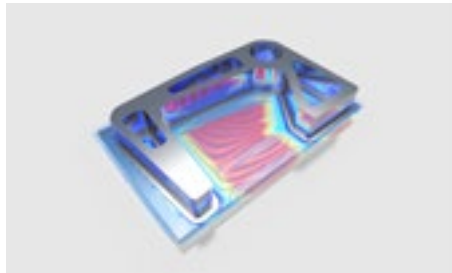
Bernhard Aicher
DR. JOHANNES HEIDENHAIN GMBH
CNC CONTROLS
SENIOR PRODUCT MANAGER

HEIDENHAIN TNC7 CONTROL AND TS TOUCH PROBES: FASTER MACHINE SETUP

Achieving fast and reliable first-part results regardless of batch size and automation requires a holistic perspective. Optimizing the cutting process alone, for example, would miss other low-hanging fruit, especially machine setup. Users can reach this fruit with the HEIDENHAIN TNC7 control and TS 460 touch probe. The control's DCM and MAS software options improve efficiency and reduce human error by graphically guiding users through the setup process. The TS 460 touch probe's high-performance hardware makes probing faster and more reliable. More productive time and a smaller carbon footprint are just two of the many benefits.

Dynamic Collision Monitoring (DCM) and Model Aided Setup (MAS) for the TNC7 deliver interactive, 6D graphically guided setup support. MAS brings this virtual support to the workpiece setup process, enabling users to probe even the most complex workpieces up to five times faster than conventional probing cycles. DCM (v2) brings similar benefits to fixture setup. Designed with clamping towers and row fixtures in mind, DCM takes the challenge out of complex workholding. With DCM and MAS, the entire machine setup process becomes faster and more reliable.

The HEIDENHAIN TS 460 workpiece touch probe is the perfect complement to these software options. Featuring measurement feed rates of up to 3000 mm/min, the TS 460 can reduce probing time by up to 30%. For dependable accuracy inside the machine envelope, its built-in blower jets clean surfaces before measurement. Optional crash-protection hardware further enhances reliability by preventing damage while also thermally decoupling the touch probe. The TS 460 is an easy and reliable way to streamline machine setup and in-process inspection.



HEIDENHAIN

HEIDENHAIN

HEIDENHAIN TNC7 and TS touch probes Less cost and more sustainability

Save resources and make your manufacturing environment more cost-efficient with HEIDENHAIN solutions for machine tools. To improve your productivity, harness the smart functions of our TNC7. This new CNC control delivers faster results while preventing machine overload. For less scrap and greater process reliability, use our TS 460 and TS 760 touch probes to calibrate your machine, zero your parts and perform in-process inspection. Combine them with the TNC7 to leverage MAS graphically guided setup support and other innovative functions. Let the HEIDENHAIN TNC7 and TS touch probes unlock the full potential of your machining processes.

Discover powerful functions

www.heidenhain.com/tnc7

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www.heidenhain.es

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Engine compressor housing



Double helical gear



Impeller shaft



Ram Bop

T MULTIPROCESS_ Multitasking concept
High dynamics and accurate positioning tables for turning and milling advanced operations. Up to 500 rpm in T12 and T16 models; up to 4500 kg- 2250 kg (milling-turning) in T12 and 6000 kg-3000 kg in T16.
The MULTIPROCESS technology combines the following processes in one machine: turning, milling, drilling, grinding, tapping, advanced gear machining (skiving-hobbing) and boring.

T MULTIPROCESS / EXTREME_ SAMPLE APPLICATIONS



Fluid end



Engine block



Impeller



Industrial mold

T EXTREME_5 axis advanced machining
Machining up to 5 continuous axes in one clamping, combining tilting heads with heavy load capacity and high dynamics rotary tables, now with Direct Drive Technology in T12 and T16 EXTREME models.

SUCCESS CASE / BARTH

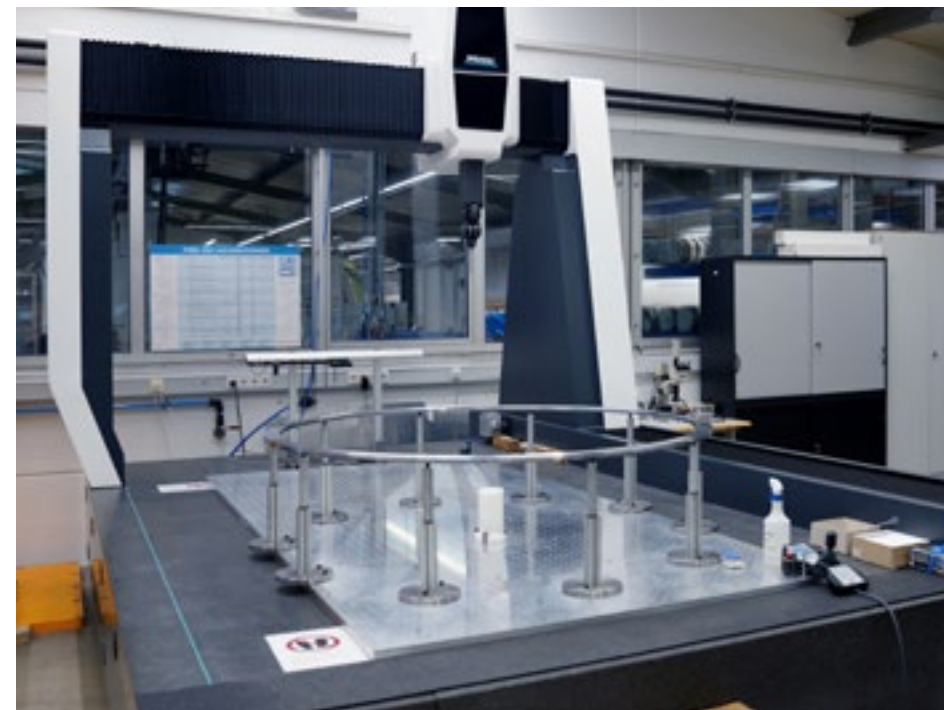
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BARTH_

AN EXAMPLE OF PRODUCTION TRANSFORMATION WITH IBARMIA



Barth Präzisionstechnik GmbH has been machining metal for over 50 years, with the Swabian family business standing for the highest standards of quality and precision since its founding in 1970. Located in Binzwangen, in the picturesque region between Ulm and Lake Constance in southern Germany, the company exemplifies German precision, reliability and flexibility. This flexible approach to diversification has been supported with machine tools from IBARMIA.



The collaboration has also been strongly enabled by Nagel Werkzeugmaschinen GmbH, IBARMIA's trusted distribution partner in the region. Barth and Nagel share a longstanding relationship dating back to the 1970s, when the very first CNC machine purchased by Barth's founder was also Nagel's first CNC sale.

With approximately 100 employees in a 6500 sqm machine park with an annual turnover of €10 million, **Wolffram Barth** explains: "Barth is a family-run business. I am the CEO and the third generation to run the company with my father." Barth manufactures everything from prototypes to production runs of 50,000+ with parts ranging from the smallest micron precision parts to workpieces over 2 tonnes. Supplying customers worldwide, Barth has a rich history of serving prestigious customers in the automotive, aerospace, construction, agricultural, food, renewables and digital construction sectors, to name a few.

The ISO 9001-registered company recently installed an IBARMIA THC 22 MULTIPROCESS Generation 2 state-of-the-art machining center designed for unparalleled flexibility and productivity when machining large parts. Purchased for machining large parts in the renewables and infrastructure sectors, the IBARMIA THC 22 has a formidable Ø2500 mm swing and an X, Y, and Z axis travel of 2.2 by 1.9m (+300) by 1.5m.

However, the company's journey towards investing in IBARMIA's THC 22 for the renewables sector was driven by the need to make larger parts following significant market disruptions in the automotive sector. Wolffram Barth provides candid insight into the automotive challenges: "I see two main reasons for the evolution. Firstly, the price pressure for automotive parts between 2015 and 2020 went up to a crazy level - it was

just impossible to earn money. The other change in the automotive market is electrification, and customers are looking for entertainment in cars more than finding the most efficient engine."

The IBARMIA MULTIPROCESS Investment Strategy

The market disruption led Barth to diversify into new sectors, with a particular focus on the energy technology segment and significant infrastructure projects. This diversification is the fundamental background behind the first IBARMIA machine arriving in 2019. Investing in an IBARMIA THC 16 MULTIPROCESS machine set the platform for a change of direction for the business. With a powerful 4000 rpm 74 kW Kessler HSK A 100 spindle and an X, Y and Z axis of 1.6 by 1.3 by 1.2 m with a 1.6 m swing diameter, the first IBARMIA was selected over competitors for its kinematics, agility and thermal stability that deliver unparalleled precision. This made the THC 16 perfect for the initial move to medium-sized high-precision work.

This key step was made possible through close cooperation with Nagel, who coordinated technical visits at their Ulm Technology Center and arranged feasibility tests on complex parts together with IBARMIA's engineering team.

The success of the first IBARMIA THC 16 led to the purchase of a second THC, a THC 16 Generation 2 model that served as a demonstration unit at the AMB 2024 exhibition. The THC 16 GEN2 features X, Y and Z axis travel of 1.6 m by 1.6 m (+300mm) by 1.2m with a Ø1.6 m swing capacity, powered by the same 74 kW spindle but with an impressive 134-tool capacity and advanced Heidenhain TNC7 control with GEN3 drives, thermal control and collision monitoring. From a hardware perspective, the earlier THC 16 MULTIPROCESS from 2019 has

SUCCESS CASE / BARTH

a smaller Y-axis travel (1.3 m) with a 120-tool capacity and Heidenhain TNC 640 control. The latest THC 16 GEN2 increases axes and tool capacity, while the state-of-the-art thermal control technology and collision monitoring systems enable Barth to gain a foothold in extremely high-precision sectors like the aerospace industry.

As Wolffram notes: "The IBARMIA journey began in 2016 when we first looked at the brand, but our first machine arrived in 2019 for producing big gearbox housings for the hydro fields." The success led to rapid expansion: "The quantity of parts we delivered into the renewables sector with IBARMIA was impressive, but it led to higher demand, which started to overwhelm us. So, we decided to get another one."

"BEING ABLE TO COMPLETE COMPLEX PARTS IN ONE SETUP MEANS WE AVOID RECLAMPING AND REDUCE TOLERANCE LOSS, A KEY ADVANTAGE FOR THE HIGH-PRECISION PARTS WE PRODUCE."

Wolffram Barth



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The centrepiece of Barth's modernization

The most recent arrival, the IBARMIA THC 22 GEN2 MULTIPROCESS has been another gamechanger. Driven by specific technical requirements for handling parts up to 2.4 m in diameter while maintaining transportability in their location, the machine features impressive X, Y and Z axes travel capabilities of 2.2 by 1.9 m (+300 mm) by 1.5 m with a swing diameter capacity of Ø2.5m. Powered by a 74 kW Kessler V400 V2 4000 rpm spindle, this twin-pallet workhorse is changing the face of production at Barth.

"We wanted to increase our part diameter whilst being considerate to parts still being transportable in our area. We also needed to complete parts in a maximum of two steps," explains Wolfram. The machine's MULTIPROCESS capability was crucial to the strategy: "We're using both C-axis turning and the flexible B-axis milling head. This allows us to access parts in a horizontal and vertical plane, which reduces setups." "In particular," he adds, "being able to complete complex parts in one setup means we avoid reclamping and reduce tolerance loss – a key advantage for the high-precision parts we produce."

Transformational Impact

The automatic pallet changer system on the THC 22 has significantly improved productivity. Wolfram emphasises: "Productivity has been increased a lot. For some parts, we doubled productivity quite quickly. For some of our longer-running parts, they will just run through the night shift unmanned, and our early shift will change the parts. This gives us 24-hour production."

The IBARMIA machines have enabled Barth to achieve remarkable precision on large components that would have previously been impossible. "We reach 30 microns of flatness on a 1.6 m diameter part. IBARMIA has helped us achieve this with the precision of their machines; we also had Heidenhain write some very complex programmes to attain this level of precision and process stability," Wolfram explains.

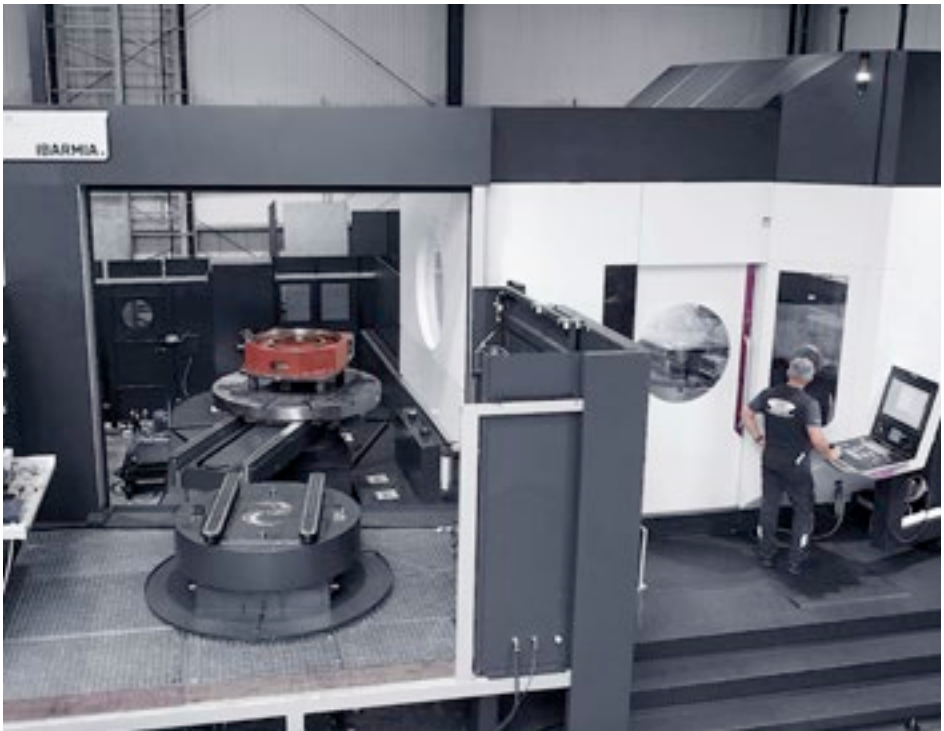
This precision is crucial for the renewables sector. "The 500 rpm C-axis turning and high-torque capabilities for large diameter work enhance our quality and ensure sealing surfaces will be good."

Partnership Excellence and Future Growth

Beyond the technical capabilities, Barth values IBARMIA as a strategic partner. "The technical support has been crucial to achieving our production and precision targets. IBARMIA has always supported us throughout and even brought Heidenhain into the equation to write some very complex programmes." Wolfram also acknowledges Nagel's role: "We've known each other for decades. They understand how we think and what we need. Their support and responsiveness during all phases – from evaluation to commissioning – made these investments smoother and faster."

Barth's success with IBARMIA technology is driving further investment. The company has now ordered a THC 16 machine with a pallet changer for serial production: "It will be used for serial production. So, we can then have at least two parts running 24/7." To support their advanced machining capabilities, Barth has also invested in a 3 by 2 by 1.5m CMM and REVO-5 head.

Looking ahead, Barth aims to increase their energy technology revenue share to 40% and strengthen their focus on decarbonisation



processes. As Wolfram concludes: "We have learned how to deliver best practice manufacturing following our years of working in the automotive sector. Now, we will transfer this knowledge into the next practice, parts and projects that we are doing with the help and support of IBARMIA. "And with Nagel," he adds, "we have a commercial and service partner who helps us keep that vision technically and pragmatically grounded."



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IBARMIA MACHINING SOLUTIONS

THE LATEST TECHNOLOGY FOR YOU
OUR MACHINE PROGRAMS

P SERIES A NEW MACHINE PROGRAM BORN TO PUSH THE LIMITS

IBARMIA, following its commitment to its customers' competitiveness, is launching its new series of portal structure machines for 5-axis machining of big diameter parts. Focused on high productivity by integrating multitasking technology and automation systems, P SERIES is a natural evolution of the successful T SERIES to respond to market demands.

The Program has been conceived to go beyond the X-Y plane completing by this way the IBARMIA's range of solutions for the advanced machining of big complex parts. The P SERIES concept even allows the part to be machined completely without the need to use the C axis, simplifying programming and optimizing the machining process. In summary, the introduction of the P SERIES combines all the advantages of the T SERIES, simplifies programming and increases swing capacity, thus offering the customers a complete range of solution for their large part machining needs.

Furthermore, P SERIES is a range created from the beginning to meet the automation needs of companies, offering a portal-type architecture that provides significant advantages to respond to this approach.

Its design allows for greater freedom in machining parts, facilitating the implementation of automation systems and the creation of flexible and efficient manufacturing cells. In addition, the robustness and stability of the portal-type structure ensure consistent and accurate performance even in unattended production environments.

Therefore, the P SERIES not only offers advanced solutions for machining highly specific parts, but also positions itself as an ideal option for driving automation and

efficiency in the industrial manufacturing of the future. Its ability to adapt to the demands of automated manufacturing cells makes it a valuable tool for companies that look for ways to increase their productivity and competitiveness in an ever-evolving industrial environment.

The new P SERIES range has been designed to offer a wide variety of options to meet specific customer needs. The P SERIES will therefore be available in three different sizes: P26, P30 and P36. Each of these sizes offers a unique set of features and capabilities, allowing customers to select the machine that best suits their large part machining requirements. From smaller-scale applications to high-production projects, the P SERIES offers a versatile and efficient solution for a wide range of applications across various industrial sectors.

Why P SERIES?

BORN TO BULLSEYE

This model gives the user direct, unobstructed access to the core of the part:

BORN TO FIT YOUR HEIGHT

This model is designed with vertical flexibility in mind, adapting its height to give:

BORN TO GO BEYOND

The P SERIES features a true portal architecture – a design that allows parts to pass completely underneath the structure.

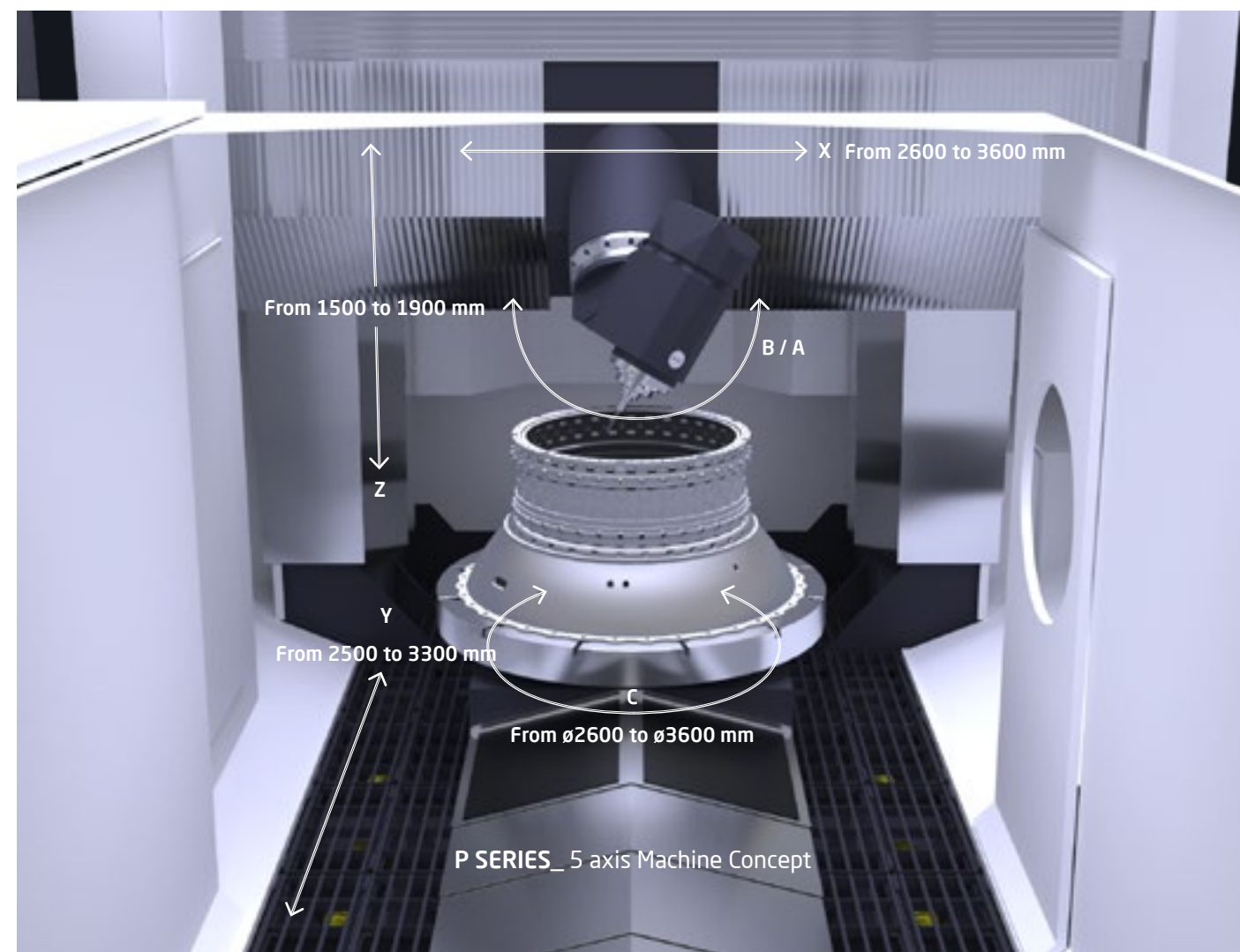
THE DEFINITE SOLUTION FOR HIGH PRODUCTIVITY MACHINING OF BIG COMPLEX PARTS IN A SINGLE SET UP

Key points:

- Parts up to $\varnothing 3600 \times 2150$ mm and 25 tn.
- High rigidity due to the portal architecture with moving crossbeam.
- High dynamics.
- Complete table overmilling capability due to the portal architecture.
- Full 5 side machining capability.
- 5 axis simultaneous machining.
- 2 head configurations:
- HC_ B-axis head: it maintains the same tool center point across the full range (-15°/+195°).
- HR_ A axis head: fork type spindle head ideal for negative angles (-45°/+135°).



MACHINE PROGRAM
WORLD PREMIERE



IBARMIA MACHINING SOLUTIONS



MACHINE PROGRAM

- Mill-turn table with high torque motor.
- Milling, turning, grinding, hobbing and gear skiving capability.
- High temperature stability standard with positioning accuracy down to $\leq 10 \mu\text{m}$.
- High long-term accuracy due to cooled components and spindle growth control.
- Tool storage solutions to cover a wide range of tool numbers, diameters and lengths.
- Palletising solutions customized to customer requirements. P SERIES offers simple modular solutions of 2 and 4 positions Projects requiring a larger number of pallets can be configured with linear storage with capacity for future growth, either for station units and/or machining units.

Of course, the P SERIES range takes full advantage of IBARMIA's digital solutions platform, facilitating machine use and maximizing its capabilities through sensorisation and connectivity. In short, this is a very interesting machining solution for different sectors and applications:

Aerospace and Aviation Sector: For the machining of aircraft structural components, engine parts and dies for the manufacture of these elements.

Die & Mould Manufacturing: In the creation of large moulds for the automotive and household appliance industries, such as dies for body parts.

Mechanical and Machine Engineering: In the production of heavy machinery components such as compressor housings, bevel gears, and machine bases.

Energy Industry: For the manufacture of parts in the wind, nuclear, and turbine sectors.

And many other parts that require a high-performance solution. Please do not hesitate to ask us about the best machine for your needs.

P SERIES MACHINE CONFIGURATION

01 B / A-axis milling heads_ Torque motor continuous tilting headstocks:

HC_ B-axis head
Maintain the same tool center point across the full range: -15°/+195°.

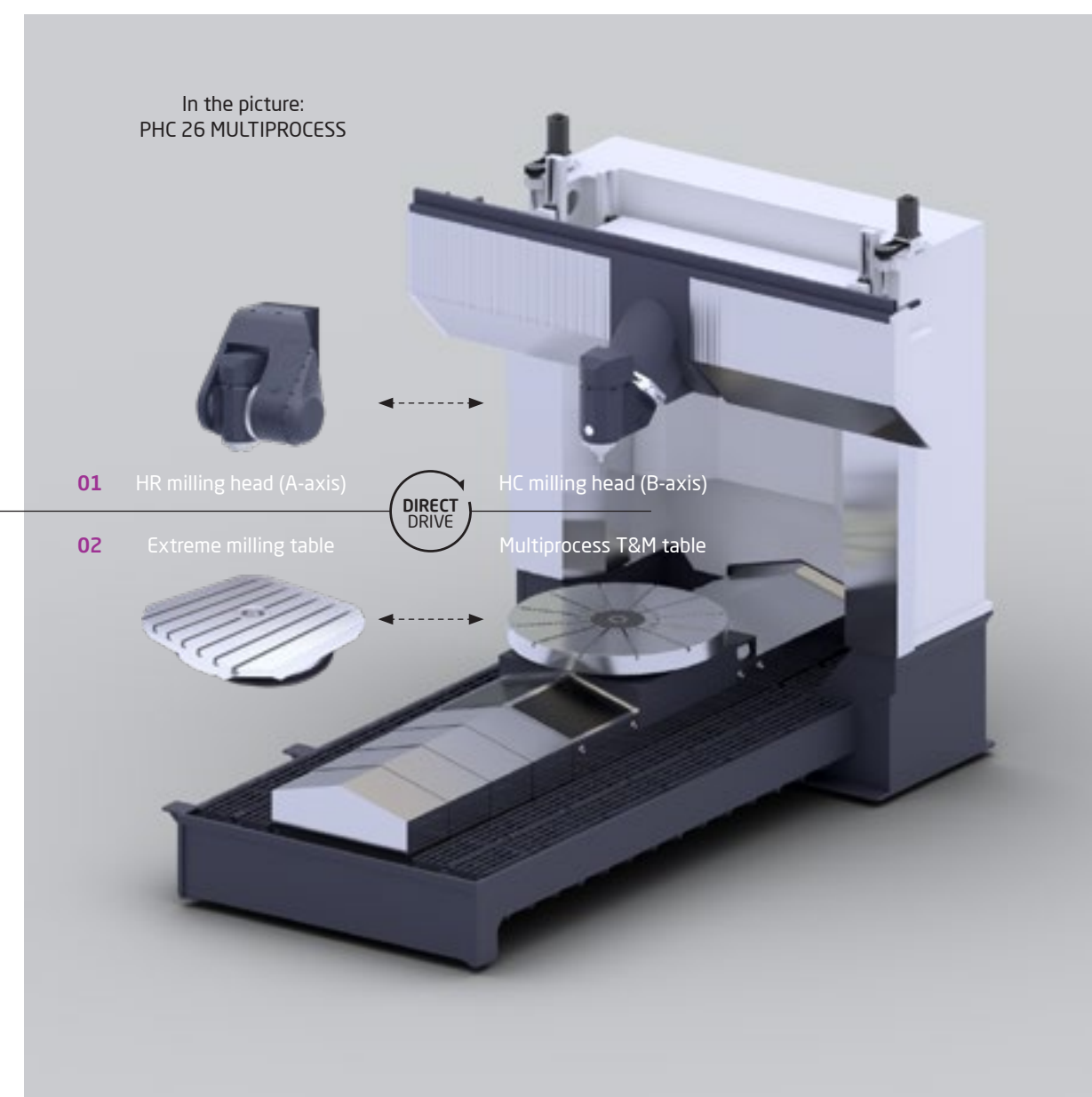
HR_ A-axis head
Fork type spindle head ideal for negative angles: -45°/+135°



02 Multiprocess / Extreme_ Working rotary tables:

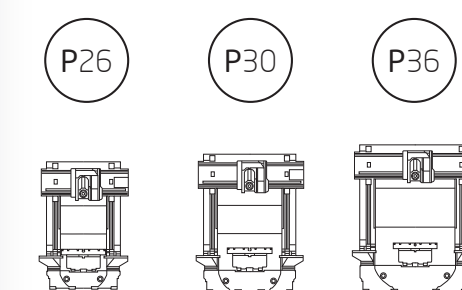
Multiprocess_
Turning & Milling rotary tables.
Up to 300 rpm / 16.000 kg in turning operations.

Extreme_
Positioning milling rotary tables.
Up to 25.000 kg.



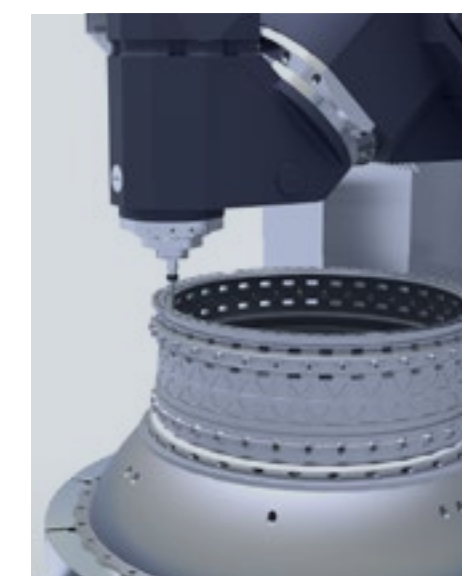
ONE ARCHITECTURE. THREE MODELS AVAILABLE THREE BOLD ADVANTAGES FOR ONE MISSION: MAKE IT EASIER.

THREE MODELS AVAILABLE



For parts up to

$\varnothing 2600$ mm	$\varnothing 3000$ mm	$\varnothing 3600$ mm
h 1750 mm	h 1950 mm	h 2150 mm

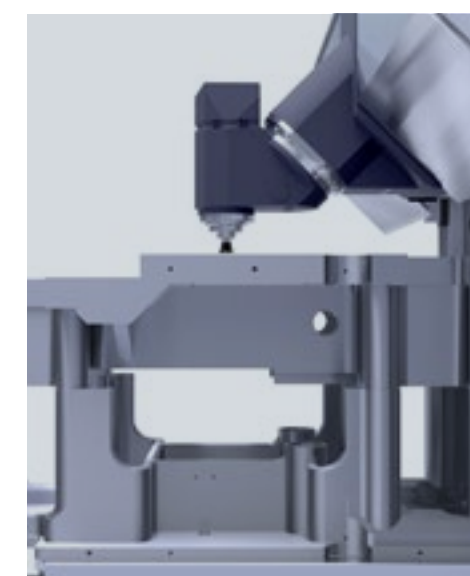


ADVANTAGE_1

A MACHINE BORN TO BULLSEYE

This model gives you direct, unobstructed access to the core of your part:

- No detours.
- No structural interference.
- Just perfect geometry.

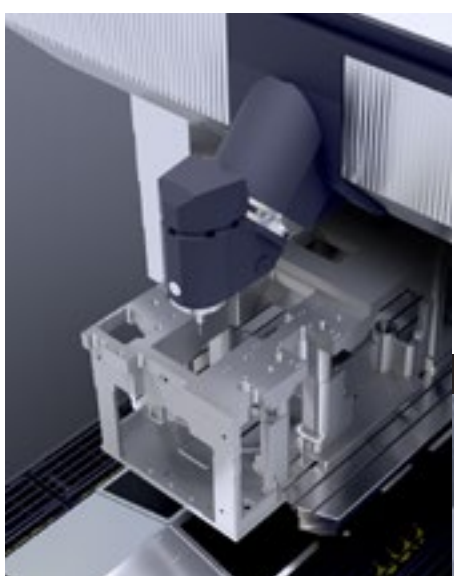


ADVANTAGE_2

A MACHINE BORN TO FIT YOUR HEIGHT

This model is designed with vertical flexibility in mind, adapting its height to give you:

- Maximum accessibility.
- Ergonomic operation.
- No wasted space.



ADVANTAGE_3

A MACHINE BORN TO GO BEYOND

A true portal design that allows parts to pass completely underneath the structure.

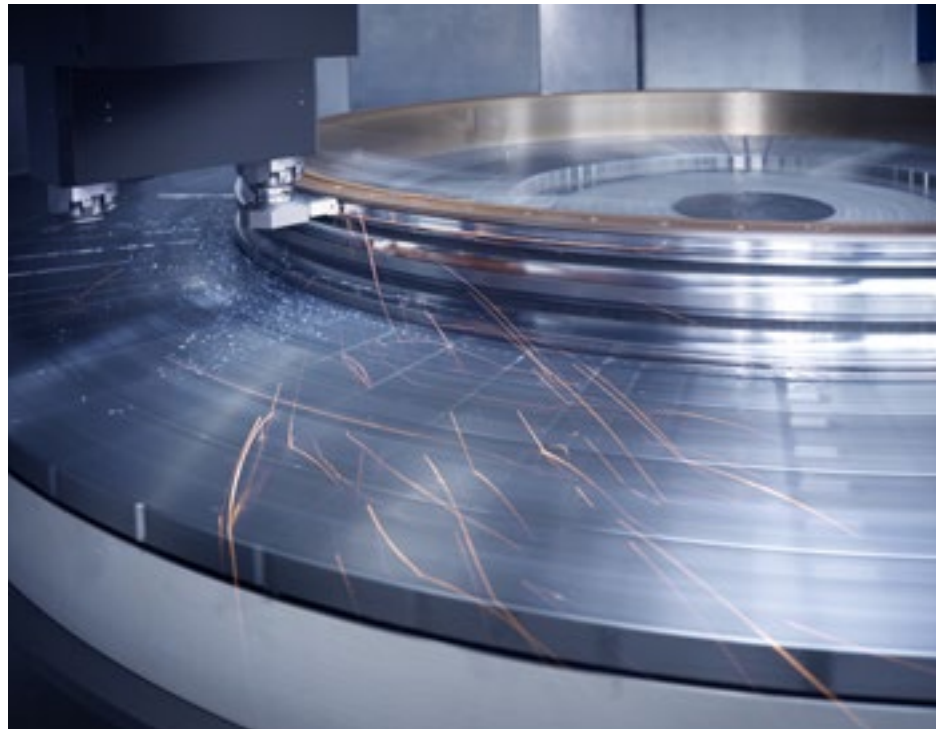
- Full overhead access.
- Seamless tool approach.
- No limits on geometry or reach.

IBARMIA MACHINING SOLUTIONS

THE LATEST TECHNOLOGY FOR YOU
OUR MACHINE PROGRAMS

CLD MULTIPROCESS_ THE WINNING HORSE FOR THE ONE MILLION€ RACE

Currently, the wind sector's main demand is focused on the construction of OFFSHORE wind farms. The construction of these offshore wind farms, however, has been faced with several technical issues, principally that of having a better guaranteed wind flow and the potential to construct increasingly large wind turbines which allow more kinematic energy to be converted into electrical energy per rotor turn.



A part from that, the main manufacturers also focus on the design of increasingly large wind turbines. Although the majority of them are in the prototype approval phase, some have already started to install a new generation of wind turbines of up to 15 MW, with 250 m rotor diameter and 120 m blade length. Each manufacturer launches their model with performance features that aim to outperform its competitors.

The manufacture of large wind turbines is directly linked to the need to manufacture large components, such as the flanges and bearings. C SERIES is IBARMIA's main proposal as a complete solution for the machining of flanges (for the construction of wind towers) and bearings (for controlling the rotation of the blades, nacelle and rotor), with technical solutions for carrying out the operations of turning, drilling, threading, boring, milling, hard turning and/or grinding of these types of parts.

Today, this machine family is dimensioned for the machining of flanges of up to 8 m in diameter and bearings of up to 6.5 m in diameter.

But the real need of the market, given this new demand for mega wind turbines, is evolving to require flanges of up to 11 m in diameter.

The machining of flanges of up to 11 m in diameter is quite a challenge, both in design and in performance, in terms of the machinery necessary for completing the machining phase. Within the machining phase, there are two main operations: turning and drilling. Don't forget that at these dimensions the gross weight of a flange can reach up to 40-50 Tn and, to achieve the final product, roughly 85% of the material must be removed. Of this 85% of the material, approximately 90% is removed during the turning operation and 10% during the drilling operation.

IBARMIA MACHINING SOLUTIONS



MACHINE PROGRAM

Flange turning

The main requirements in the turning phase are: the handling of the gross weight of the flange as well as the swarf removal. To manage the weight, the lathe must have a turning head that combines the capacity to support heavy weights and at the same time be capable of rotating at the necessary speed to apply the ideal cutting conditions. As regards management of the swarf, the volume to remove is considerable, as many tonnes are involved which must be cleanly and constantly extracted to prevent long machine stoppages for cleaning.

Flange drilling

The main requirement is the maximum drilling capacity and the availability of angle heads. For flanges of up to 11 m in diameter, drilling operations of up to 120 mm diameter are required for fixing holes (between 150 and 200 operations per flange). Nowadays, the larger diameter flanges require M90 fixing bolts for which holes of at least 100 mm diameter must be made. As regards the maximum metrics to implement on the flange, an M55 maximum is established. The new aspect is the need, in addition to the usual vertical operations (principally for the fixing and manipulation of the flange), for horizontal operations (earth connections, fixing of stairways, etc.) for which the machine must be equipped with angle heads, unusual up until now in the world of the flange.

A MACHINE
CONFIGURED TO
ACCOMMODATE
ALL THE
PROCESSES
REQUIRED IN
THE COMPLETE
MACHINING OF
LARGE CIRCULAR
PIECES



CLD MULTIPROCESS

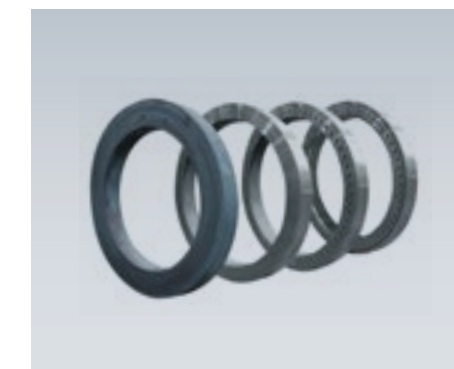
With these new flange and bearing dimensions, we are faced with a new scenario in the design of future production plants. For occupational and plant space reasons, everything points to a change of trend and a reassessment of production in the sector: moving from the usual drill/ratio of 1:3 to a multifunction machine in which all the processes can be completed in the smallest number of clampings possible. A reduction in the number of clampings has a direct impact on quality, deadlines and production costs.

Faced with this new virtual market opportunity, IBARMIA is placing its own bet with the CLD MULTIFUNCTION model, a winning horse. A machine developed in collaboration with the principal world leaders in the sector. A flexible technical solution capable of adapting to production needs according to work peaks. A solution capable of combining, in a single work center, the solutions for practically all the required machining processes (turning, drilling, thread cutting, boring, milling, hard turning and grinding) all customisable on demand, thus reducing the number of machines and clampings necessary in the manufacture of flanges and bearings:

Rough turning - Horizontal drilling/thread cutting and boring - Finish turning - Vertical drilling/thread cutting and boring - Milling - Straight head grinding - Fork head grinding - Hard turning.



Live Spindles integrated inside the RAMs are a key element, both as the direct solution to vertical milling, drilling, threading or boring operations and transmission element to drilling and grinding interchangeable heads.



The finishing operations in this type of pieces are critical and reducing the number of set-ups avoiding errors is vital. This new range of multifunction centers, integrating live spindles into the RAMs and interchangeable head system has been designed to respond to **real market needs**.

RAM TYPES



RAM 1
With fixed turning turret



RAM 2
With live spindle

Sizes: 320x320 and 400x400 mm
Travels: 600-1500 mm

INTERCHANGEABLE HEADS



Turning heads
Various configurations available



Angular head
RAM with live spindle is required

Live spindles combined with interchangeable heads
Turning, Milling, Drilling, Threading, Boring and Grinding operations in only one set up.



Straight grinding head
RAM with live spindle is required

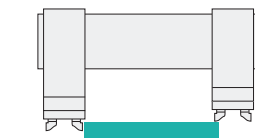


Fork grinding head
Working range +/-95°

Turning (1)

The flange is transferred from the forge to the machining center, where the turning heads will machine the ring size.

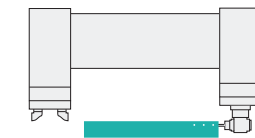
1



Horizontal drilling / Tapping

Using the angular head, the horizontal Plug & Grease Holes are drilled or tapped, both with in-out or out-in operations.

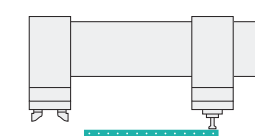
2



Vertical Drilling / Tapping

Using the RAM with live spindle, the Fixing & Lifting Holes are drilled and tapped.

3



Turning (2)

The turning heads are used to machine the Ball Bearing Races.

4



Grinding or Hard Turning

The Straight grinding Head will then grind the Ball Bearings Races.

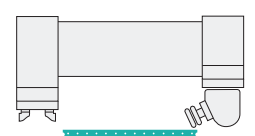
5



Grinding or Hard Turning

The Fork grinding Head is used to grind the Roller Bearings Race (process can be substituted with the hard turning process).

6



IBARMIA MACHINING SOLUTIONS

THE LATEST TECHNOLOGY FOR YOU OUR MACHINE PROGRAMS

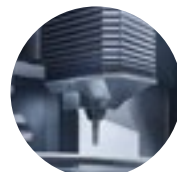
CPD DRILLING SOLUTIONS

In 2005, IBARMIA developed a machine that revolutionised the market and became the supplier of the main flange and bearing manufacturers at a global level. The new generation of drilling centers can be equipped with different tooling and magazine options. The two head configuration (for drilling/thread cutting and milling operations) is available in 3 versions: V CLASSIC, V EXTREME and H EXTREME.

- V CLASSIC, vertical head with main transmission by means of belt-pulley.
- V EXTREME, vertical head with main transmission by means of a powerful electro-spindle of 500 Nm and 7000 rpm.
- H EXTREME, is the main innovation introduced in CPD drilling centres. The successful tilting head used in the Z SERIES is applied to the CPD model as an smart solution for covering the demand of horizontal operations (external-internal / internal-external) principally for the bearing manufacturers, at the same time as ensuring the execution of the traditional vertical operations. The tilting head helps to reduce the machining cycle times as well as the number of clampings. A reduction in the number of clampings has an impact on the quality of the workpieces and machining times.



The portal machine architecture allows for the installation of either one or two spindle heads. Vertical operations can be performed using the V CLASSIC (Belt & Pulley transmission) or V EXTREME (electro-spindle transmission) heads, while horizontal operations utilize the H EXTREME head (see right).



V Classic
Vertical head
with belt & pulley
transmission



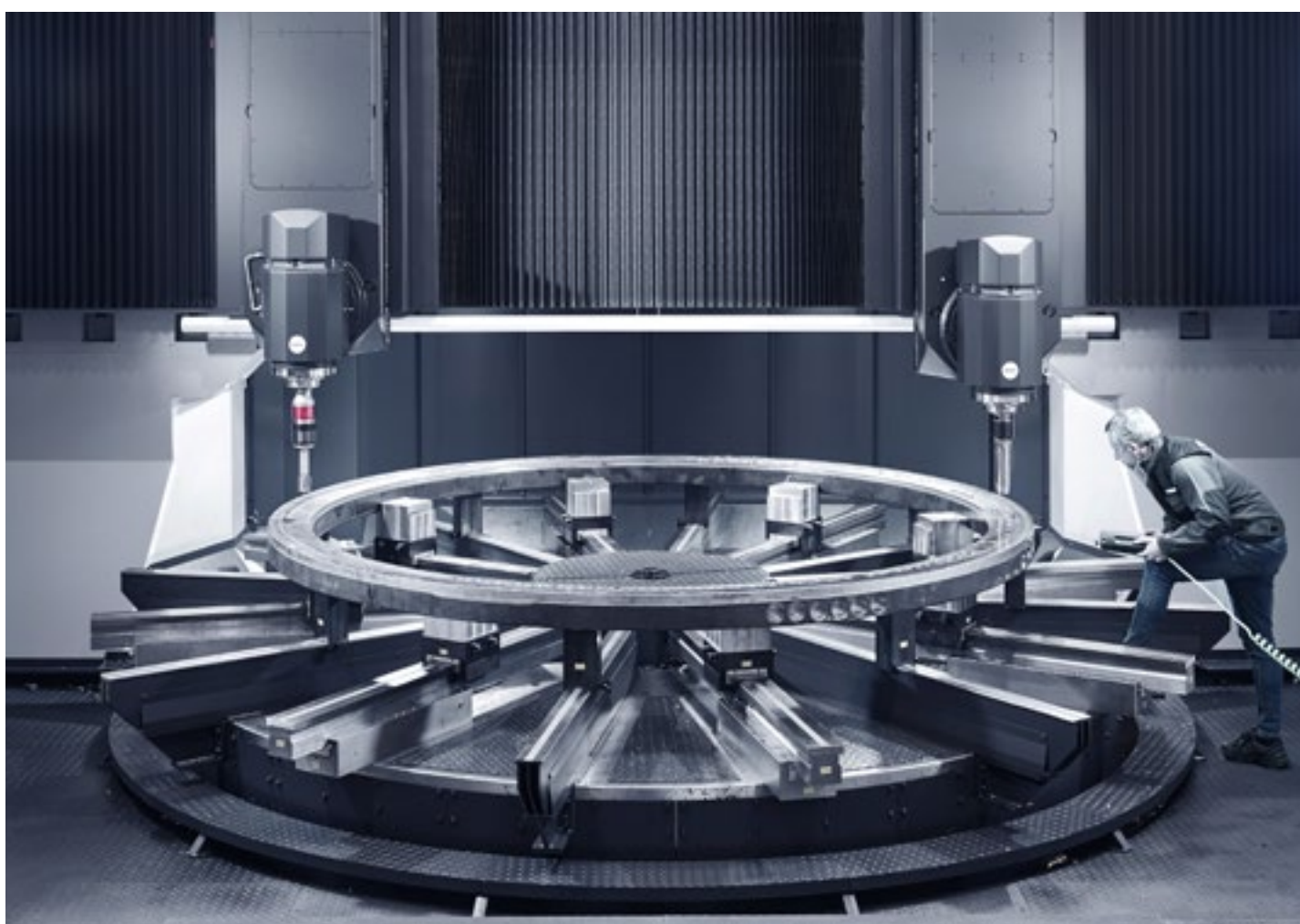
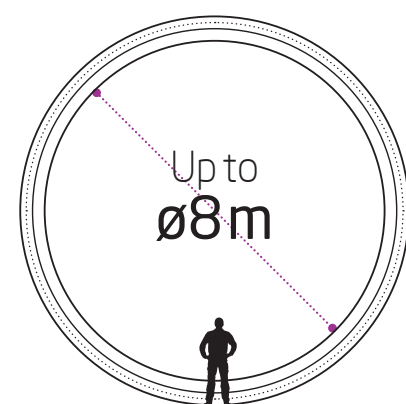
V Extreme
Vertical head
with electrospindle
transmission



H Extreme
B-axis continuous tilting head
with electrospindle
transmission



MACHINES
IN PORTAL
ARCHITECTURE
TO COVER ANY
RANGE OF
WORK FROM
THE CENTER
OF THE TABLE
TO A MAXIMUM
DIAMETER:



Ramp up from start to finish

Efficiency and speed in metalworking are crucial. Digital solutions optimize the entire process chain, from programming to production, minimizing the time between order and finished product.

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BLUM
focus on productivity

Z SERIES
MOVING COLUMN
MACHINING
CENTERS



For the largest variety of sizes and shapes, pendulum work and swing up to ø2000 mm, unlimited flexibility makes this platform a must have for any machine shop.

MACHINE CONFIGURATION ROUTE

01 CONSTRUCTION SIZES



M Body size

For SK 40 & SK 50 type electrospindles
X axis: 1500 / 3000 / 4000 / 5000 / 6000 / 7000 / 8000 / 9000 / 10.000 / 11.000 / 12.000 mm
Y-Z axes: up to 1100 - 900 mm



L Body size

For SK 40 & SK 50 type electrospindles
X axis: 1500 / 3000 / 4000 / 5000 / 6000 / 7000 / 8000 / 9000 / 10.000 / 11.000 / 12.000 mm
Y-Z axes: up to 1100 - 1300 mm

02 HEADSTOCKS

S Headstock

Continuous tilting head with torque motor and direct measuring on the rotary axis. High dynamic and powerful electrospindles available.



S Headstock

B-axis headstock
Continuous tilting head
Range: +/-120°



V Headstock

Vertical headstock
High dynamics spindle
up to 20.000 rpm

03 MACHINE PERFORMANCE LEVEL



ZS MULTIPROCESS
Multitasking 5 axis
machining centers



ZS EXTREME
Up to 5 axis
machining centers



ZV EXTREME
3 axis machining
centers

Combine the B-axis tilting head with turning capacity rotary tables (ZS MULTIPROCESS), or with the wide range of rotary tables available for machining up to 5 axis (ZS EXTREME). Machine up to 4 axis by using a vertical head combined with horizontal rotary tables (ZV EXTREME).

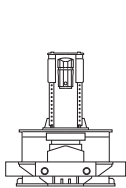
T SERIES
5 AXIS UNIVERSAL
MACHINING
CENTERS



Universal machining centers for 5 axis machining of big diameter parts focused on high productivity by integrating multitasking technology and automation systems.

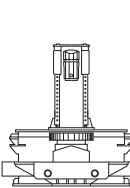
MACHINE CONFIGURATION ROUTE

01 CONSTRUCTION SIZES (max swing / piece max height)



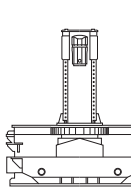
ø 1250 mm
h 1600 mm

T12



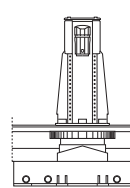
ø 1600 mm
h 1700 mm

T16



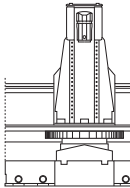
ø 2200 mm
h 1750 mm

T22



ø 3000 mm
h 1950 mm

T30

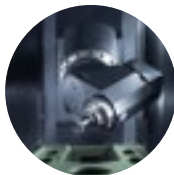


ø 3600 mm
h 2150 mm

T36

02 HEADSTOCKS

Powerful tilting heads with torque motor and direct measuring systems on the rotary axis. Up to 84 kW-452 Nm-12.000 rpm.



THC Headstock

B-axis headstock
Continuous tilting head
Range: -15°/+195°



THR Headstock

A-axis headstock
Continuous tilting head
Range: -45°/+135°

03 MACHINE PERFORMANCE LEVEL



T MULTIPROCESS
Multitasking 5 axis universal
machining centers



T EXTREME
5 axis universal
machining centers

B or A-axis continuous tilting heads available in combination with high load capacity turning plates or rotary tables (T MULTIPROCESS or T EXTREME) for 5 axis machining of big diameter complex parts.

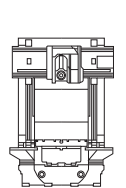
P SERIES
5 AXIS UNIVERSAL
PORTAL MACHINING
CENTERS



Portal structure machining centers for 5 axis machining of big diameter parts, focused on high productivity by integrating multitasking technology and automation systems.

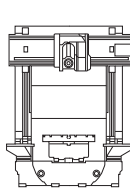
MACHINE CONFIGURATION ROUTE

01 CONSTRUCTION SIZES (max swing / piece max height)



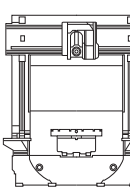
ø 2600 mm
h 1750 mm

P26



ø 3000 mm
h 1950 mm

P30

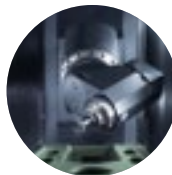


ø 3600 mm
h 2150 mm

P36

02 HEADSTOCKS

Powerful tilting heads with torque motor and direct measuring systems on the rotary axis. Up to 84 kW-452 Nm-12.000 rpm.



PHC Headstock

B-axis headstock
Continuous tilting head
Range: -15°/+195°



PHR Headstock

A-axis headstock
Continuous tilting head
Range: -45°/+135°

03 MACHINE PERFORMANCE LEVEL



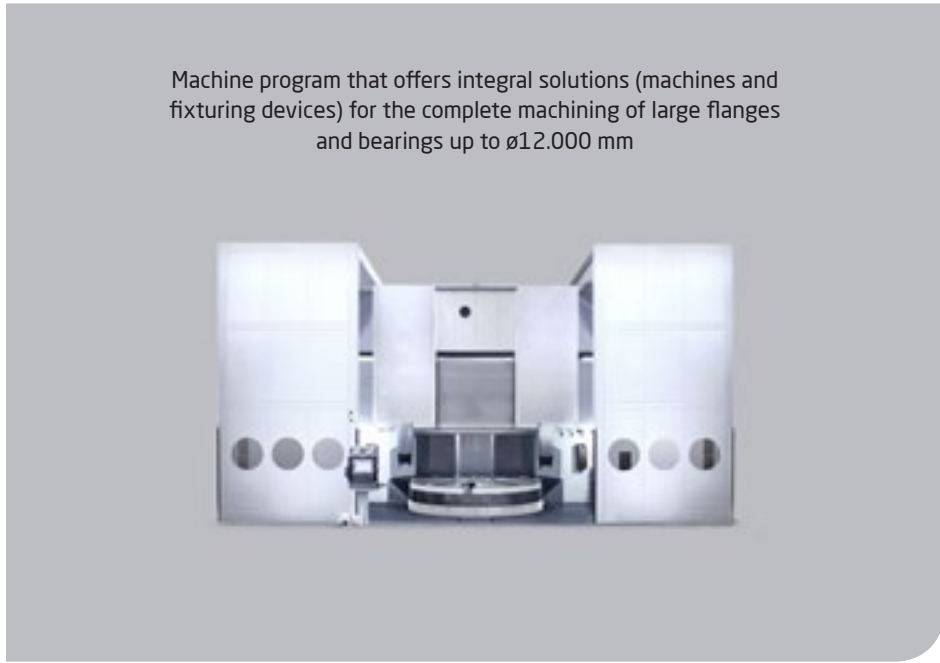
P MULTIPROCESS
Multitasking 5 axis universal
machining centers



P EXTREME
5 axis universal
machining centers

B or A-axis continuous tilting heads available in combination with high load capacity turning plates or rotary tables (P MULTIPROCESS or P EXTREME) for 5 axis machining of big diameter complex parts.

C SERIES
MACHINING
SOLUTIONS FOR
LARGE RINGS



Machine program that offers integral solutions (machines and fixturing devices) for the complete machining of large flanges and bearings up to ø12.000 mm

CONFIGURATION ROUTE BY MACHINE TIPOLOGIES

01 TURNING CENTERS



Turning centers in portal structure
for covering any range of work from the center of the table to maximum diameter ø12.000 mm

01 DRILLING CENTERS



Drilling centers in portal structure
for covering any range of work from the center of the table to maximum diameter ø8000 mm

02 HEADSTOCKS



RAM

With live spindle
for drilling, tapping
milling operations



RAM

Fixed turning turrets
in various
configurations



V Classic / Extreme

Vertical heads
Belt & Pulley
or electrospindle



H Extreme

B-axis headstock
equipped with
electrospindle

03 MACHINE PERFORMANCE LEVEL



CLD MULTIPROCESS
Multitasking vertical
turning centers

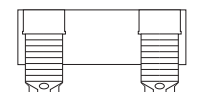


CLD EXTREME
Vertical turning
centers

Performance level
depending on heads
combination



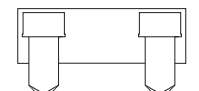
CPD VH Classic



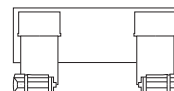
CPD VV Classic



CPD VH Extreme



CPD VV Extreme



CPD HH Extreme

Multitasking machines by integrating live spindles into the RAMs (CLD MULTIPROCESS) or vertical lathes that can be equipped with interchangeable turning turrets (CLD EXTREME).

IBARMIA MANUFACTURING SOLUTIONS

P/3

IBARMIA SOLUTIONS
AND TECHNOLOGICAL DEVELOPMENTS

AUTO
MATION
SYSTEMS

DIGI-
TECH
SOLUTIONS

ADVANCED MANUFACTURING SOLUTIONS

We work to ensure that our customers obtain the best solutions for their real day-to-day needs, which involves offering a complete range of developments adapted to the requirements of the most demanding manufacturing industry in the 20th century.



IBARMIA MANUFACTURING SOLUTIONS

IBARMIA SOLUTIONS
AND TECHNOLOGICAL DEVELOPMENTS

AUTOMATION PORTFOLIO_ IN IBARMIA MACHINE PROGRAMS

Manufacturing more, doing it better and investing less time in the processes is summarized as an improvement in production efficiency, an essential requirement to meet today's market challenges, where industrial automation is a key factor.

Events such as digitalization and Industry 4.0 are phenomena that were already on the way of course, before we decided to narrow them down and specifically label them. Whether the current situation has been imposed out of necessity or necessity has resulted from the current situation, the truth is we are being peppered with concepts derived from commercial and or political interests (which amount to the same thing), whose meeting with day-to-day reality is more diffuse than it may first appear.

On the road towards these new paradigms, it turns out that some were already on the way, some wanted to set off but did not find the way to do it, and lastly, those whose need were rather relative. In summary, a complete amalgam of realities.

Objectively, however, all around is compressed and tense; we are growing in number... and needs whose satisfaction requires extreme competitiveness and imposes, in turn, a pace on all the processes never known before. Thus, although the map of industrial realities is widely varied, it is undeniable that the fact of having to do more, better and in less time, is something that needs to be addressed by the whole industry sector.

Taking this to our sector, we all understand that automation is a key driver and one of the fundamental pillars of Industry 4.0, the variety of which can be translated into every possible aid or assistance to the operator, the very extreme of which fully independent operation of the machine and production without the operator. Be that as it may, and as four arms are better than two, automation is a key element of Advanced Industry aligned with the reality of the current market.

IBARMIA has a range of perfectly balanced products designed to respond to the various needs of the markets at which this aforementioned amalgam of realities is aimed. Let's have a look at the various integrated support processes in IBARMIA's

THE FLEXIBLE MANUFACTURING IS A KEY ELEMENT IN THOSE INDUSTRIES ALIGNED WITH THE CURRENT MARKET

Z SERIES, T SERIES and P SERIES programs that, as the range itself, vary depending on the industrial reality at which they are targeted.

The automation processes that we can distinguish in our machinery range are the following:

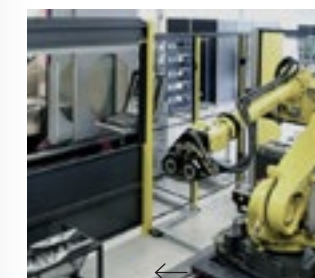
- 1_ Workpiece management:** workpiece loading and unloading.
- 2_ Pallet management:** systems for storage and automatic change of working tables.
- 3_ Management of special tools and heads:** storage and automatic change of special tool and heads.

In view of the processes and as regards the degrees of automation, we can talk about two assistance levels. On a first level, that of shared ergonomics, operator and machine assisting each other. On the second level, production cells that operate completely autonomously, whether a single automated machine or an autonomous system made up of several automatically assisted machines.

Going back to the subject of diversity, we can summarize that the range of IBARMIA's automation solutions is as varied as the requirements of the customers, which is no small thing.

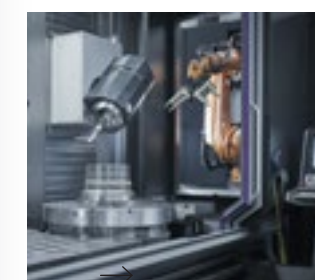
IBARMIA MANUFACTURING SOLUTIONS

Z SERIES MOVING COLUMN MACHINING CENTERS



FRONTAL ROBOTIC LOADING WORKPIECE MANAGEMENT

Designed for working in unattended and dedicated machine/s. This configuration can supply multiple machines with one or more robots on a linear rack.



LATERAL ROBOTIC LOADING WORKPIECE MANAGEMENT

Designed for when the parts about to be loaded are palletized. These parts are loaded and unloaded on the integrated rotary table of the machine or a machine provided with integrated zero points to place the parts on. It is used with the "Shared ergonomics" concept.



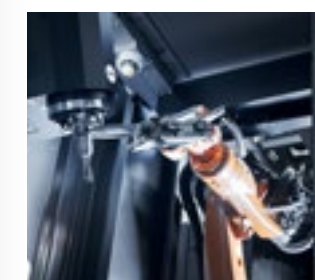
VERTICAL ROBOTIC LOADING WORKPIECE MANAGEMENT

Designed for when the parts are loaded from the upper part of the machine using a crane. It is used with the "shared ergonomics" concept. Operator and automation work together.



PICK UPS FOR SPECIAL HEADS OR TOOLS SPECIAL HEADS & TOOLS MANAGEMENT

The pick up system consists of the head of the machine itself, performing the tool and head change. Elements as special tools or heads are managed by magazines integrated in the machine.



ROBOT OPERATED MACHINES SPECIAL HEADS & TOOLS MANAGEMENT

Large tool magazines managed by arm robots, which are ideal to combine tool changes with special tools and head changes.

T SERIES 5 AXIS UNIVERSAL MACHINING CENTERS



ROTOPALLET FOR T12 & T16 PALLET MANAGEMENT

A rotary double fork device on the frontside of the machine makes a quick change of two pallets. It allows the machining of the part on the working area while the operator prepares another piece on a palletized table on the loading/unloading zone.



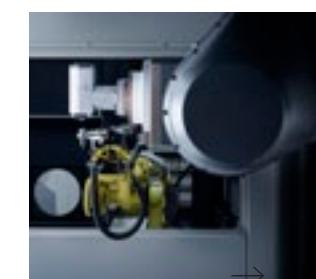
PALLET POOL FOR T12 & T16 PALLET MANAGEMENT

This pallet change and management system is external to the machine (purchase peripheral). It completely integrates with the machine via a communication interface and the pallets can be introduced in the machining zone using a direct transfer or interleaving the rotopallet system.



PALLET POOL FOR T22-T30-T36 PALLET MANAGEMENT

A pallet change and management system in which a static transfer manages up to 4 pallets. In case there were to be 4 or more pallets the transfer would change to integrate a linear rack.



ROBOT OPERATED MACHINES SPECIAL HEADS & TOOLS MANAGEMENT

A robot responsible for the tool management and head change is integrated in these machine at the right side of the working area. A system designed for combine tool changes with special tools and head changes.

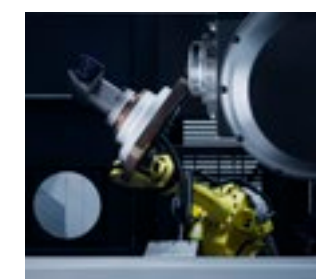


P SERIES 5 AXIS UNIVERSAL PORTAL MACHINING CENTERS



PALLET POOL FOR P26-P30-P36 PALLET MANAGEMENT

A pallet change and management system in which a static transfer manages up to 4 pallets. In case there were to be 4 or more pallets the transfer would change to integrate a linear rack.



ROBOT OPERATED MACHINES SPECIAL HEADS & TOOLS MANAGEMENT

A robot responsible for the tool management and head change is integrated in these machine at the right side of the working area. A system designed for combine tool changes with special tools and head changes.



IBARMIA MANUFACTURING SOLUTIONS

IBARMIA SOLUTIONS
AND TECHNOLOGICAL DEVELOPMENTS

MIC_ INTELLIGENT AUTOMATION PLATFORM FOR IBARMIA'S PALLET POOL

In today's industrial machining environments, achieving true unattended automation, especially in the manufacturing of large components, is no small challenge. With parts weighing over 8000 kg and a growing demand for flexible series and customization, factories must strike a delicate balance between precision, productivity, and adaptability.



Facing this complexity, IBARMIA takes a significant step forward with its strategy of offering integrated, intelligent, and flexible industrial solutions by incorporating the MIC (Manufacturing Intelligence Core) platform, developed by SMARTPM, into some of its machining centers.

This integration marks a significant advancement in automating machines for large-part production, allowing models such as the T22/30/36 series with palletizing systems (Pallet Pool) to move beyond simply executing CNC programs. These machines can now be part of an autonomous production system, orchestrated by intelligent decision-making in real time.

What is MIC?

MIC is a software platform designed to control, manage, and optimize all industrial processes within a production cell. From real-time machine data capture to planning, monitoring, and advanced analytics, MIC acts as the brain that coordinates all assets and resources involved in manufacturing. Thanks to its artificial intelligence and machine learning capabilities, MIC allows production cells to become more flexible, autonomous, and efficient.

For IBARMIA, who specializes in large and high precision machining centers, having a platform such as MIC means being able to offer more complete, integrated solutions adapted to the needs of today's market. Intelligent automation not only boosts productivity, but also reduces errors, increases traceability, and enables unattended operation, all critical aspects for industries like aerospace, energy, or automotive.

Among its most important functionalities are the dynamic planning of production processes, advanced work management based on the status of the resources (tools, materials, tooling), quality control integrated with production actions and, especially important for the operator: the availability of intuitive and contextualized web interfaces that allow direct interaction with the system, visualizing KPIs, editing parameters or ratifying decisions.

Benefits of integrating MIC into IBARMIA machines

1_ Intelligent Management of Hybrid Workflows

Unlike more standardized environments, machining large parts often calls for manual interventions at key points in the process. With MIC, IBARMIA can offer cells that seamlessly combine automated tasks with manual operations. This hybrid capability is essential when managing tool changes, intermediate inspections, or precision adjustments, ensuring maximum productivity without sacrificing the operator's expert control.

2_ In-Process Inspection with Automatic Decision-Making

MIC brings inspection data, whether it is automatic or manual, directly into the production logic, enabling immediate actions like rerouting parts for rework, validation, or rejection. This closes the quality loop within the production flow itself, improving traceability and reducing scrap without the need for external systems or offline analysis.

3_ Orchestration of the Automatic Pallet Pool System

One of IBARMIA's key assets is its Pallet Pool system, which allows for efficient, automated part exchange without direct intervention. MIC brings added value to the system through the autonomous and contextualized management of pallet movements, optimizing the flow between loading, storage and machining areas.

For example, in setups like the THC 22 Multiprocess with Pallet Pool installed at FEHER. This system integrates a precision rotary loading/unloading station and three fixed stations, MIC coordinates which pallet to load, when, and in what order based on the production plan, resource availability, and machine status. This drastically reduces downtime and ensures a logical, efficient process sequence, even during unattended operation.

4_ Increased OEE and Reduced Downtime
By constantly monitoring all assets – machines, tooling, materials – MIC can detect issues or bottlenecks before they impact the

IBARMIA MANUFACTURING SOLUTIONS

production. Its ability to automatically reschedule tasks, reassign resources, or alert operators in advance helps maximize cell performance, increase Overall Equipment Effectiveness (OEE), and minimize unplanned stops.

5_ Human-Machine Collaboration Enabled by Advanced HMIs

MIC offers a user-friendly, configurable web interface designed to guide operators through complex or exceptional tasks. Through this HMI, operators can:

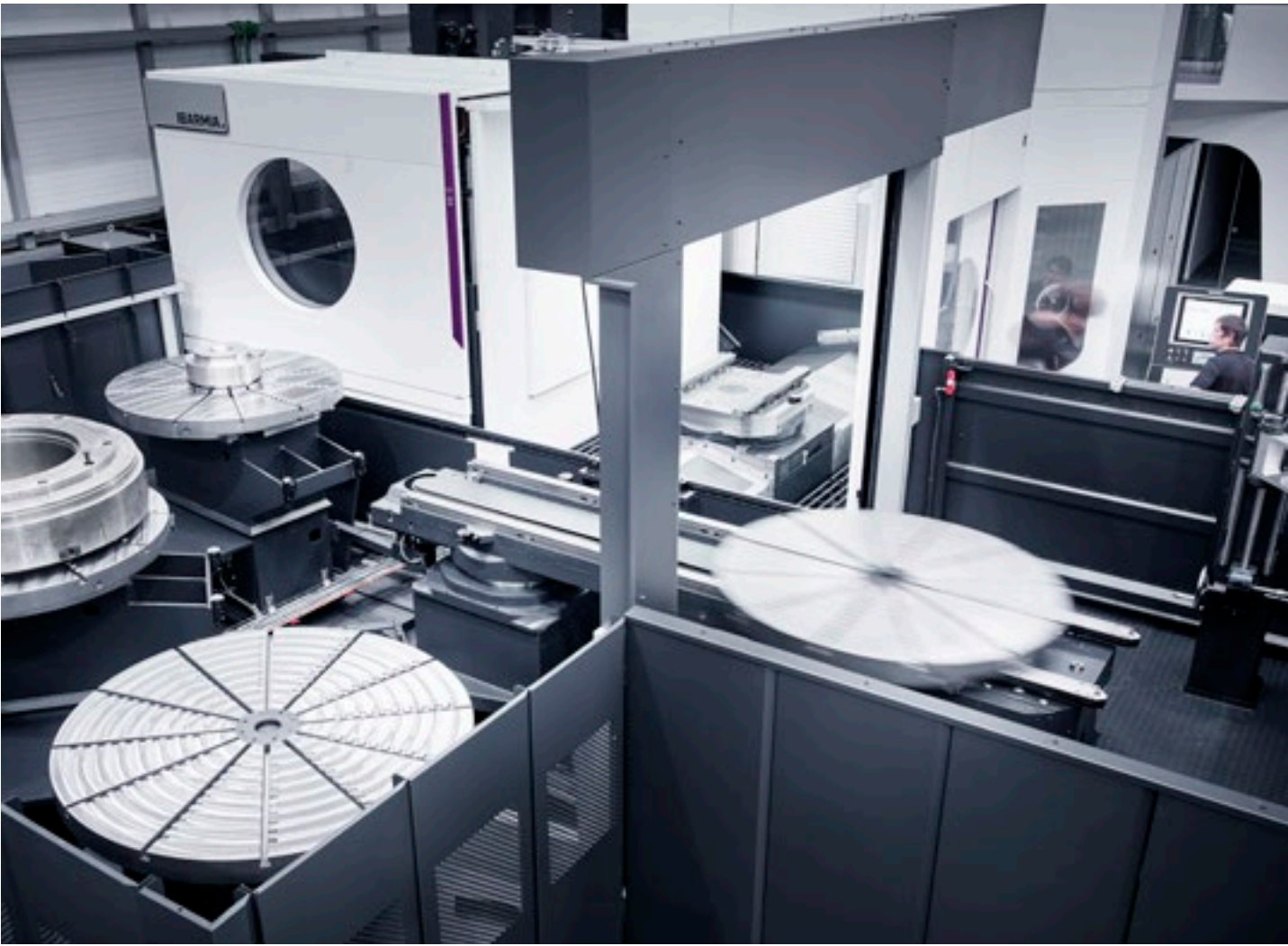
- Monitor real-time production status.
- Manage orders, resources, and materials.
- Enter manual data when needed (measurements, issues, observations).
- Track part and batch traceability.

This direct interaction transforms the operator's role, empowering them as process managers rather than mere executors.

An actual example can be seen in the case of the THC 22 Multiprocess with APC (pallet Pool) at IBARMIA's Swiss customer FEHER, which is a precision machining company. There, MIC enabled full integration of the manufacturing process. From real-time sensor data collection to automated production planning and rescheduling.

Among the implemented functionalities are the following:

- Dashboards with real-time production KPIs.
- Optimized planning considering multiple objectives: Just-in-Time (JIT), defect reduction, energy consumption, etc.



IN THE ADVANCED AUTONOMOUS MANUFACTURING; HYBRID IS THE WAY; HUMAN IN THE LOOP



- Web interface accessible from anywhere on the shop floor.
- Proactive resource and tooling management, including wear and replenishment alerts.

Thanks to MIC, the plant achieved a significant improvement in operational efficiency, a reduction in human error, and an increase in production capacity—all without needing to increase headcount or shifts.

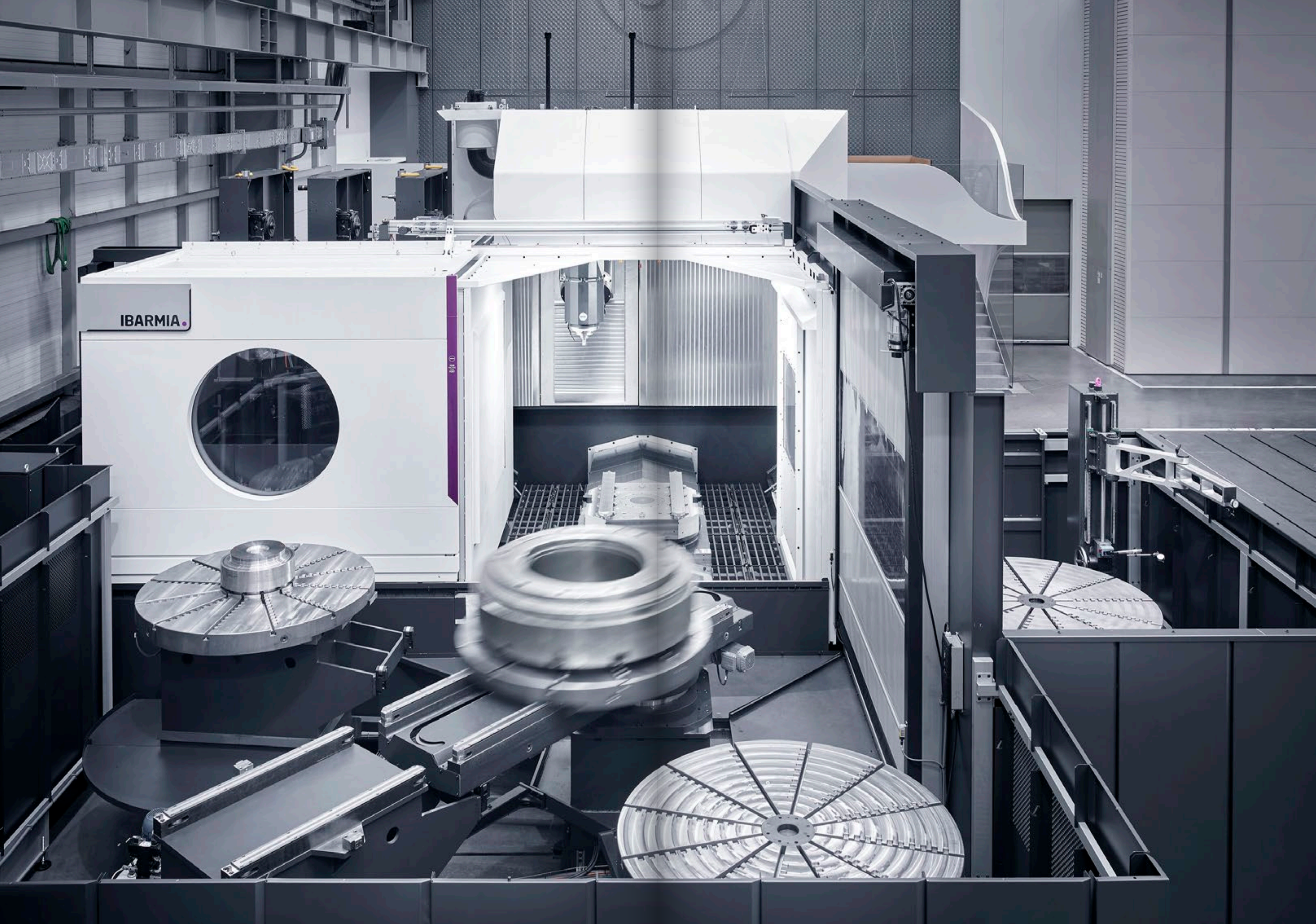
A Partnership Between Machine and Intelligence

The combination of IBARMIA's mechanical toughness and MIC's digital intelligence represents a strategic evolution towards the factory of the future. This integration allows IBARMIA to offer not only state-of-the-art machine tools, but also complete automation solutions that are flexible and adapted to the real needs of its customers.

MIC does not replace the operator, but empowers them with contextualized information and control, allowing every action to be aligned with production and quality objectives. In parallel, its ability to run unattended and autonomously maximizes the machines' investment return and facilitates access to more sustainable, intelligent and resilient production models.

In short, MIC is more than just software: it is the intelligence core that enables IBARMIA to lead the digital transformation in large-part manufacturing. And projects like FEHER are tangible proof that this vision is already turning into real and measurable results.





IBARMIA.

SUCCESS CASE / ANDRITZ

IBARMIA SOLUTIONS
AND TECHNOLOGICAL DEVELOPMENTS

ANDRITZ_ BIG STEP UP IN MACHINING PRECISION



ANDRITZ Knife Systems, a product group of the globally renowned ANDRITZ Group with 30,000 employees worldwide, faced a critical manufacturing challenge at its manufacturing facility in Sweden. As a leading technology supplier providing knife systems and machine parts to forest industry, the manufacturing unit needed to replace three ageing machines that were limiting their ability to produce the precision components required for their world-class products.



Magnus Flemström, Production Technician at Andritz with 25 years of experience explains:

"We had three very old machines, or at least three very old machines that needed a replacement, and we needed to make a technical step forward with the new machine investment. We needed to produce all of the parts made across three machines on one single machine to reduce our set-ups and improve productivity. To do this, we needed one 5-axis simultaneous machine. The challenge was finding a solution that could handle their diverse range of parts – from large cylindrical components to complex square geometries – all made from tool steel hardened up to 46HRC, while maintaining the compact footprint essential for their facility layout.

Eric Molin, Site and Operations Manager at Andritz, emphasizes the company's exacting standards:

"We strive for excellence and efficiency in everything we do; we need to work with suppliers we can rely on. They must understand our needs, and quality and accuracy are aspects that are of utmost importance to us".

The Perfect Match

After a thorough evaluation with their trusted partner, Stenbergs—a leading regional machine tool dealer with over a century of experience—Andritz selected the IBARMIA THC 16 Extreme 5-axis universal machining center. The decision proved to be exactly what the company needed.

"When we got into details, we found out that the IBARMIA THC 16 Extreme machine was more or less the perfect solution for us, because we have the large axis strokes in the machine that we needed, and the machine's footprint was not too big," notes Flemström. The machine's impressive specifications – including a maximum swing diameter of 1600 mm, part height capability of 1700mm,

and load capacity of 6000 kg – provided the flexibility Andritz required.

The THC 16 Extreme showcases IBARMIA's advanced 5-axis simultaneous machining capabilities, integrating powerful rotary tables with tilting heads that provide exceptional precision. With its B-axis head maintaining the same tool center point across the entire -15° to +195° range, the machine allows for complex geometries to be machined in a single setup. The high-performance electrosindle delivers up to 84 kW of power and spindle speeds up to 12,000 rpm, while the advanced thermo-symmetrical design guarantees consistent accuracy even during prolonged operations.

Crucially, Andritz customised their installation with an extended column and an integrated FASTEMS automation system, which enables unmanned 24-hour operation—a critical capability for meeting their production demands.

Transformational Performance Gains

The results have exceeded expectations across every metric that matters to Andritz's operations. "It's so much faster, and the lead time and the cycle times are also significantly improved," reports Flemström. This is because the machine is much faster in itself. We also have set up time savings. This has been dramatically lowered with the combination of simultaneous 5-axis machining on all sides to reduce set-ups and our new fixturing system."

The transformation has been comprehensive. Cycle times have been dramatically reduced through the machine's superior speed and 12,000 rpm spindle capability, while setup time savings have been significantly enhanced with the new fixturing system, making operations considerably more user-friendly, faster, and safer for operators. Part quality has reached new heights, with tolerances

SUCCESS CASE / ANDRITZ

"WE ARE NOW PRODUCING OUR PARTS TO TOLERANCES OF JUST A FEW MICRONS, WHICH COULDN'T PREVIOUSLY BE DONE WITH MULTIPLE SET-UPS,"

Magnus Flemström - Production technician

years, which was a contributing factor in our project delivery."

The thorough collaborative approach yielded significant results. "We had very good communication early in the project and were very thorough with everything. So we went through everything very closely together with IBARMIA and Stenbergs, so the commissioning of the machine went smoothly," confirms Flemström.

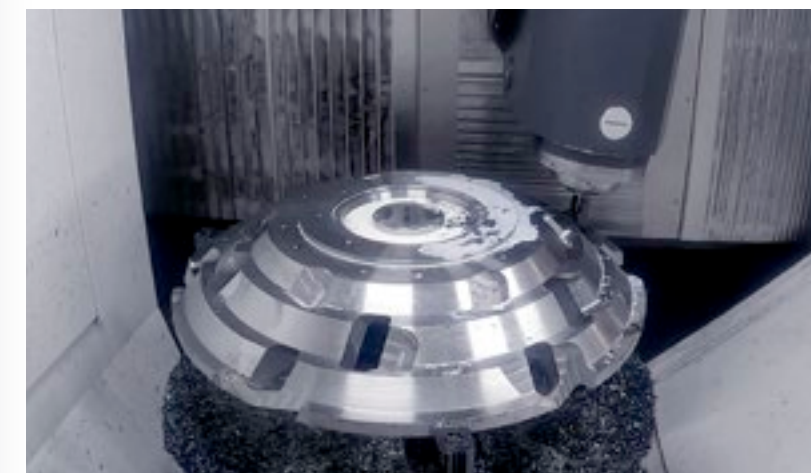
Part of this communication with Stenbergs and IBARMIA resulted in the machine being specified to the exact demands of Andritz, as Strömmer adds: "The IBARMIA THC16 Extreme machine supplied to Andritz has been customised to their requirements. For example, the machine has an extended column to accommodate the variation in component sizes, plus the FASTEMS pallet loading system to enable machining to run unmanned 24/7."

Eric Molin's assessment underscores the strategic value of the investment: "We found IBARMIA through a local machine tool agent, Stenbergs, and they exceeded our expectations. We gained considerable confidence in working with them."

This investment positions Andritz to maintain its leadership in providing environmentally excellent solutions to the global pulp and paper industry. As a company committed to 'engineering the change' and driving the green transition by assisting industries in enhancing efficiency, reducing waste, and minimising emissions, Andritz's advanced manufacturing capabilities directly support its mission of creating 'growth that matters – for the business, the people and our planet'.

The precision and efficiency gains from the IBARMIA THC 16 Extreme enable Andritz to continue delivering the world-renowned technologies that ensure their chemical pulp mills operate with environmental excellence, while upholding the healthy and safe practices that are crucial for both people and the environment.

With their new manufacturing capabilities, Andritz is well positioned to meet the increasing global demand for sustainable forest industry, supported by the precision, reliability, and efficiency that only advanced 5-axis machining can provide.



IBARMIA MANUFACTURING SOLUTIONS

IBARMIA SOLUTIONS
AND TECHNOLOGICAL DEVELOPMENTS

AUTOMATION OF THE ZMS4_15.08 EXTREME IBARMIA'S COMMITMENT TO MACHINING EFFICIENCY

The ZMS4_15.08 EXTREME is a moving column 5 axis machining center designed to deliver flexible, high-precision solutions across various industrial sectors such as aerospace, automotive, and energy.

ZMS4_15.08 EXTREME

5 axis moving column
machining center



NEW GENERATION
MACHINING CENTERS

This machine combines robustness, high dynamics, and thermal precision with a compact footprint that facilitates integration into workshops with limited space. Its 12.000 rpm, 30 kW spindle, paired with FANUC or HEIDENHAIN CNC systems, enables the machining of complex parts with diverse geometries, from short runs to large productions, and a wide range of materials. Beyond its technical features, the ZMS4_15.08 EXTREME stands out for its suitability for automation, allowing machining companies to maximize productivity, flexibility, and quality.

Suitability of the ZMS4_15.08 EXTREME for Automation

Robust Design and Optimal Accessibility

One of the main reasons the ZMS4_15.08 EXTREME is an ideal candidate for automation is its construction and design. The moving column platform guarantees consistent machining conditions along the entire Y-axis travel, thanks to its "Zero Gravity Design," ensuring rigidity and precision throughout the workspace. This structural stability is complemented by an ergonomic design with excellent accessibility to the working area—essential for integrating automated loading and unloading system.

The monoblock bed design, combined with preloaded linear guideways with dual-row roller recirculation pads, allows rapid movements (up to 40 m/min), enabling short cycle times that, when paired with automation, boost production efficiency.

Capacity for Heavy and Complex Parts

The fixed table made of oven-stabilized pearlitic cast iron GG25 with T-slots, along with the high-capacity B axis (+/-120°) featuring direct measurement and high dynamics, enables precise 5-axis machining of heavy and complex geometries. This capability is crucial for automation since the system can handle parts weighing up to 300 kg in automated configurations, integrating loading and machining into continuous, synchronized processes.

Flexibility for Different Sizes and Configurations

The machine is prepared to work with parts of varying sizes and shapes, thanks to the combinations of axes, rotary tables, and dividers, with diameters up to ø800 mm and travels of X 1500 mm, Y 800 mm, and Z 800 mm. This versatility facilitates automation as the system can adapt to handle multiple part references without lengthy stops or complex manual adjustments.

IBARMIA's Commitment: Package Automation System for 300 kg

IBARMIA takes a decisive step by offering not only the machine but also a complete automation solution for the ZMS4_15.08 EXTREME. The proposal includes an automated loading/unloading system with a capacity of up to 300 kg, positioned on the left side of the machine for easy access and handling.

Benefits of Automating with IBARMIA's Solution

- **Significant Increase in Autonomy:** Automation allows the machine to operate autonomously, multiplying continuous operation capacity by 4 to 6 times, including nighttime and weekend shifts without direct human intervention.
- **Improved Productivity and Quality:** Automating part loading/unloading reduces idle times between cycles, minimizes human errors, and synchronizes machining with complementary processes like measurement or post-processing.
- **Operational Flexibility:** IBARMIA's solution contemplates various pallet configurations and loading/unloading stations, adapting to different parts and customer needs.

Automation System Features

- **Maximum Load Capacity:** Up to 300 kg (part + tooling + pallet), ideal for bulky or heavy parts.
- **Number of Pallets:** Configurations of 4, 6, or 8 pallets, depending on production requirements.
- **Pallet Dimensions:** Multiple options between 320x320 mm and 500x500 mm.
- **Loading/Unloading Stations:** From standard static stations to manual or automatic rotary stations, offering different automation levels based on investment and requirements.
- **Maximum Part Height and Diameter:** Supports parts up to 400 mm in height and a maximum diameter of ø650 mm.

Flexible Pallet Configurations

8 PALLETS
Pallet size: 320x320 mm
Max. part size: ø450 mm diameter / 400 mm height.

6 PALLETS
Pallet size: 400x400 mm
Max. part size: ø550 mm diameter / 400 mm height.

6 PALLETS
Pallet size: 500x500 mm
Max. part size: ø580 mm diameter / 400 mm height.

4 PALLETS
Pallet size: 500x500 mm
Max. part size: ø650 mm diameter / 400 mm height.

Key Advantages of Automation for Workshops with ZMS4_15.08 EXTREME

Maximized Profitability

Automating the machine transforms the investment into an asset that operates virtually without interruption, optimizing capital use and reducing direct labor costs. Reduced idle time and improved management of tools and processes contribute to faster return on investment.

Improvements in Quality and Repeatability

Automation minimizes human error risk during loading/unloading and part position-

IBARMIA MANUFACTURING SOLUTIONS



MACHINE PROGRAM
STAR EDITION

ZMS4_15.08 EXTREME_ A MACHINE CONCEPT SUITABLE FOR INTEGRATION INTO STATE- OF-THE-ART AUTOMATED SYSTEMS

ing, ensuring higher process consistency and more uniform final quality. Integration with inline measurement and control systems allows real-time machining parameter adjustments to avoid deviations.

Flexibility and Adaptability

The ability to configure multiple pallets and loading stations according to production needs allows the workshop to quickly respond to changes in part types or batch sizes—a critical factor in markets with high variability and tight delivery demands.

Safety and Ergonomics

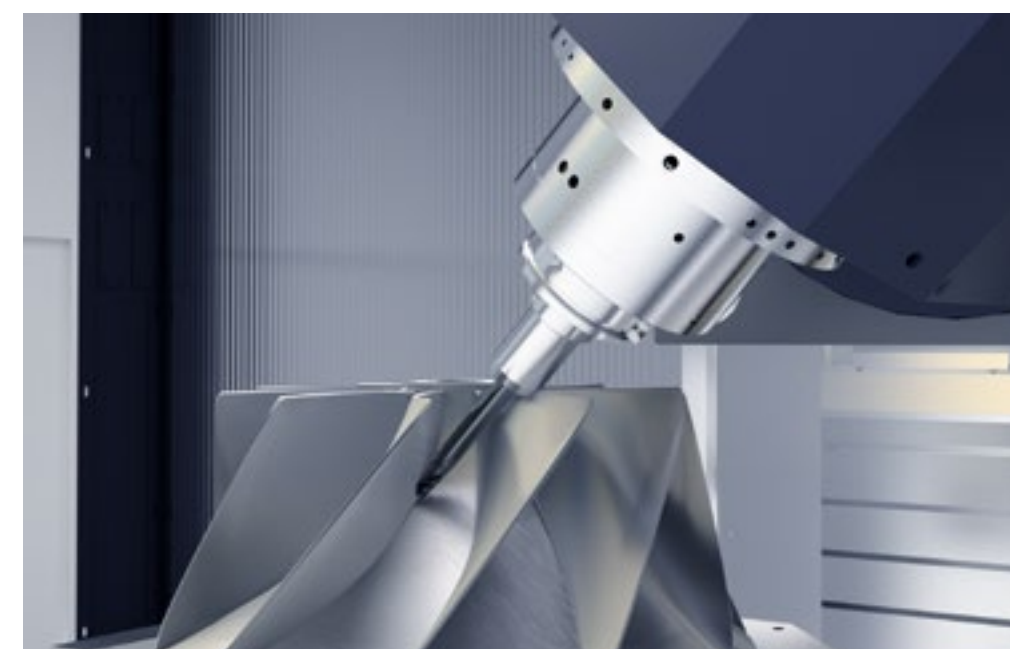
Automated loading reduces manual handling of heavy parts, decreasing workplace accident risks. Additionally, the machine's ergonomic design and crane access facilitate the safe integration of robotic or automated systems.

Automation as the Natural Next Step for ZMS4_15.08 EXTREME

The ZMS4_15.08 EXTREME represents a high-performance, precise, and flexible machine tool, ideal for meeting today's manufacturing industry challenges. Its robust design, capacity to handle heavy and complex parts, and advanced digitalization make it highly suitable for integration into state-of-the-art automated systems.

IBARMIA is committed to complementing this platform with automation solutions that enhance productivity, quality, and operational autonomy, enabling customers to compete in increasingly demanding markets. Packaging the ZMS4_15.08 EXTREME with an automation system capable of handling parts up to 300 kg not only improves efficiency but also transforms how machining production is conceived—advancing towards smarter, more flexible, and more profitable factories.

Automating the ZMS4_15.08 EXTREME is undoubtedly a strategic decision that opens doors to new production opportunities and maximizes the technological potential of this prestigious IBARMIA machine.

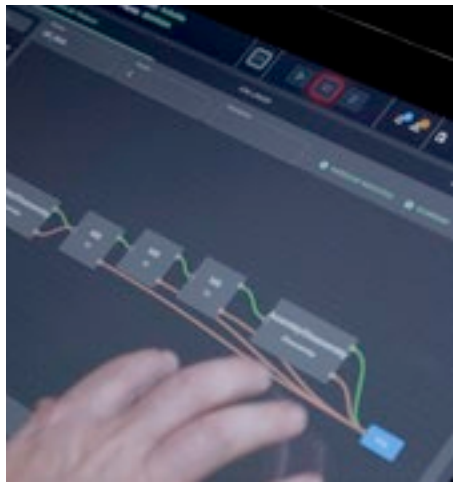


IBARMIA MANUFACTURING SOLUTIONS

IBARMIA SOLUTIONS
AND TECHNOLOGICAL DEVELOPMENTS

DIGITALIZATION THAT WORKS_ RESPONDING TO WHAT MATTERS FROM MACHINE TO MES

IBARMIA is focused on the digitalization built from real customer needs and tested in real production environments.



"Digitalization is everywhere—but is it actually helping on the shop floor?"
As the conversation shifts from hype to real implementation, manufacturers are looking for more than high-level promises. They need practical solutions that improve daily operations, integrate smoothly with existing systems, and support the people using them. That's the kind of digitalization IBARMIA is focused on—built from real customer needs and tested in real production environments.

From Hype to Necessity: Digitalization as a Core Requirement
The goal of doing more—and doing it better—with machines and production systems has remained constant. What's changed is how digitalization is now seen: not as a trend, but as a fundamental requirement in modern manufacturing. Across the globe, more customers are demanding enhanced machine functionality, seamless integration into digital production environments, and robust cybersecurity from the outset.

More advanced use cases now involve real-time data analytics driving machine logic, enabling dynamic decision-making on the shop floor. Remote access and diagnostic capabilities are no longer optional—they're essential for fast, reliable support, especially in high-mix or unattended production environments. Crucially, all of this must be delivered within a cybersecurity framework that aligns with corporate IT standards and evolving regulations.

Yet beyond these technical demands lies something just as critical: the human element. Even the most detailed specification documents can't fully capture the operational context, priorities, or pain points. That's why deep, early conversations are essential. By listening carefully and interpreting not just the requirements—but the intent behind them—we can shape solutions that not only meet specs, but deliver lasting value in real-world production settings.

IBARMIA in action: solutions that work on the shop floor
One standout application that reflects the core digitalization trends in the machine tool industry—multilevel integration, advanced HMIs, and customer-driven customization—is IBARMIA's Datamatrix solution for tool management. Developed in close collaboration with end users, this system addresses the growing need for more efficient, reliable, and traceable tool management on the shop floor. It allows automatic bidirectional communication between the machine tool's Heidenhain control and the customer's centralized tool database, leveraging DataMatrix codes laser-etched onto each tool holder.

At the hardware level, the system integrates a wireless industrial code reader directly into the tool magazine, along with an embedded HMI application and secondary mirror screen within the magazine for operator guidance. These components enable real-time synchronization: when a tool is loaded its code is scanned and tool parameters are retrieved from or written back to the central database. When it's unloaded, updated tool parameters are written back as well. This closed-loop data exchange is based on standard server architecture, allowing direct updates to both the machine's internal tool table and the central database, including tool wear and life-cycle status.

From a usability standpoint, the HMI guides the operator step by step—displaying tool attributes, verifying code readability, and confirming correct magazine pocket assignments. This human-in-the-loop validation enhances reliability without compromising speed. By streamlining tool data flow across systems and ensuring consistent information from database to spindle, the Datamatrix application embodies the industry's shift toward smarter, integrated, and more autonomous production environments. It exemplifies how tailored, ground-level

innovation can deliver on the promise of doing more—and doing it better—with today's machine tools.

What's next: more digitalization and close partnership
The digitalization journey is far from over—in fact, it's gaining momentum. We're seeing continued expansion in both upstream and downstream integration, including custom developments built on standard communication interfaces. Real-time edge analytics are driving the next generation of autonomous machines, capable of smarter, faster decision-making right at the source. At the same time, HMIs are evolving into intelligent hubs that support contextual guidance, proactive notifications, and transparent production reporting—reinforcing human-in-the-loop automation.

As digital capabilities grow, so do cybersecurity demands. Ensuring robust, compliant, and scalable protections remains a non-negotiable. But technology alone isn't enough. Success will increasingly hinge on strong partnerships—built on technical excellence and deep customer engagement. By working closely from the earliest stages, aligning on goals, and sharing operational insights, we can continue to do more—and do it better—with IBARMIA machines and customer production systems.

Let's talk about how digitalization can improve your operations today. Whether it's smarter tool management, seamless system integration, or guided HMIs for your team, IBARMIA is ready to deliver.



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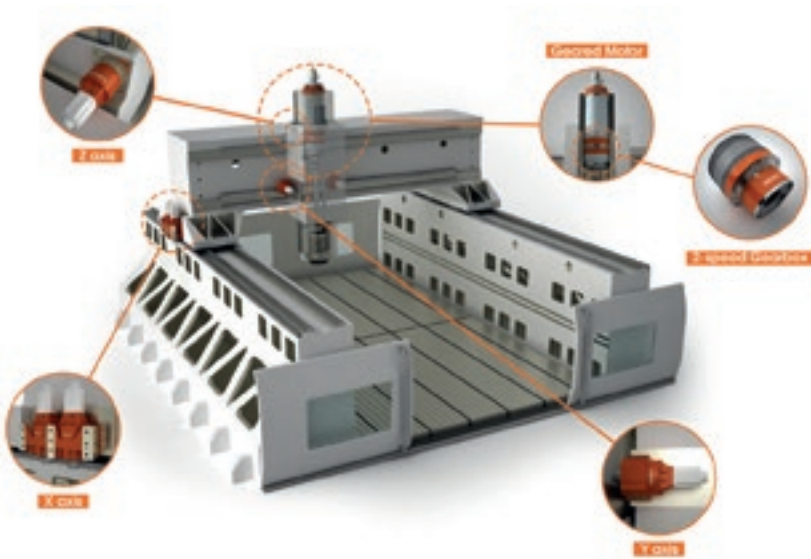
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SUCCESS CASE / PICANOL

IBARMIA SOLUTIONS
AND TECHNOLOGICAL DEVELOPMENTS

PICANOL_
IBARMIA IS A
PERFECT FIT
FOR TEXTILE
MACHINE
MANUFACTURER

When Henk Ryckeghem, Project Coordinator at Picanol, first met Franky Grammens at a trade fair twelve years ago, their conversation about Z-type moving column machines sparked a lasting and successful partnership. Today, this collaboration has evolved into a strategic alliance involving the purchase of ten IBARMIA machines, culminating in the recent addition of the revolutionary ZV 40/L9400 EXTREME TWIN. This machine epitomises the future of automated, digitally connected manufacturing.



Since 1936, Picanol has been a global leader with a rich heritage in textile machinery manufacturing. Spanning nearly ninety years, the company has produced machines for everything from everyday denim to advanced technical textiles. With over 400,000 weaving machines supplied to more than 100 countries, it operates a 1300-employee production facility near Ypres, Belgium, and another in China. "We build high-quality machines. Therefore, we also need high-quality production machines to produce the parts that can meet the quality targets we have for these parts," explains Henk Ryckeghem, Picanol's Manufacturing Project Coordinator.

As the machine tool dealer for IBARMIA in Belgium, Franky Grammens, the Commercial Director from Germond, says: "Our relationship has strengthened like a good marriage, we will never get divorced, because we have a relationship that is honest, true, and we are open with each other."

The partnership's foundation was built with strategic early installations that boosted Picanol's confidence in IBARMIA technology. The journey began when Picanol invested in its first IBARMIA installation, the ZVH 55/L7000 EXTREME, in 2014. Grammens recalls their first discussion: "I met Henk at a trade fair, and he said that Picanol were searching for a Z-type moving column machine. He placed his trust in us and gave us our first order, and that was the start of our relationship."

This initial investment demonstrated IBARMIA's expertise in handling large, complex components with the precision required for textile machinery production. The ZVH series' distinctive ±105° tilting head design with rotation capability proved particularly valuable for machining the complex geometries that are commonplace in weaving machine components. Building on this success, Picanol expanded its IBARMIA fleet between 2017 and 2018

with multiple installations, including the ZVH 55/L9000 EXTREME and two ZVH 55/L5000 EXTREME machines. These installations incorporated increasingly sophisticated features, including integrated tool identification systems, high-pressure cooling capabilities, and automatic door systems. The extended X-axis travel up to 9m, enabling Picanol to machine longer components in a single setup, reducing handling time and improving dimensional accuracy.

Advancing Through Partnership
As the textile machine tool manufacturer continued its growth trajectory, its demand for high-end machine tools persisted with the installation of two ZV 45/L6000 EXTREME machines in 2019, marking Picanol's transition to Ibarmia's advanced ZV series. For Ryckeghem, each investment represented a strategic advancement in manufacturing capability. The ZV machines incorporated moving table technology and specialised fixturing systems that improved setup flexibility and decreased cycle times. The integration of digital features, including teleservice capabilities and advanced Siemens 840D controls, positioned Picanol at the forefront of Industry 4.0 practices.

With IBARMIA established as a trusted and valued partner, 2024 saw the introduction of both a ZVH 55/L6000 EXTREME and a ZVH 55/L5000 EXTREME to the Picanol machine park, incorporating the latest advances in thermal management, collision avoidance, and digital connectivity. These machines feature improved thermal stability systems that sustain dimensional accuracy during extended production runs.

The culmination of this technological journey has reached its latest and most challenging destination with the introduction of ZV 40/L9400 EXTREME TWIN, representing Picanol's most ambitious manufacturing challenge yet. This colossal machine was

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01

IT WAS IN 2014 WHEN PICANOL STARTED ITS TECHNOLOGICAL JOURNEY WITH IBARMIA AND NOWADAYS ITS FLEET REACHES TEN MOVING COLUMN UNITS

01_ ZV 55/L5000 EXTREME, center, equipped with a B axis continuous tilting head and a set of 6 sliding tables on guideways.
02_ ZVH 55/L9000 EXTREME machining center, equipped with a B axis continuous tilting head and a set of 6 sliding tables. This working area configuration makes possible to move the position of a wide range of fixturing devices adapting the working area for the manufacture of a wide range of shapes and lengths.

02



SUCCESS CASE / PICANOL

developed in close collaboration between IBARMIA, Picanol and Germond to produce weaving frame profiles with a challenging 70-second cycle time per component target. This 'lightning fast' cycle time was entirely designed into the installation.

"For the production of our weaving frames, we are searching for a machine that can do it in less than 70 seconds per profile," Ryckeghem explains. "Therefore, we were searching for a moving column machine that could be adapted for us to achieve these cycle times."

The challenge was formidable, as existing manufacturing methods could not approach such aggressive cycle times on large parts while maintaining the required precision levels. "We went to IBARMIA, and we collaborated to design a machine for supporting two parts simultaneously. So, we had a pendulum station on the left side and a pendulum station on the right side. In each station, we have a trunnion. On each trunnion, we can clamp eight parts," Ryckeghem describes the innovative approach.



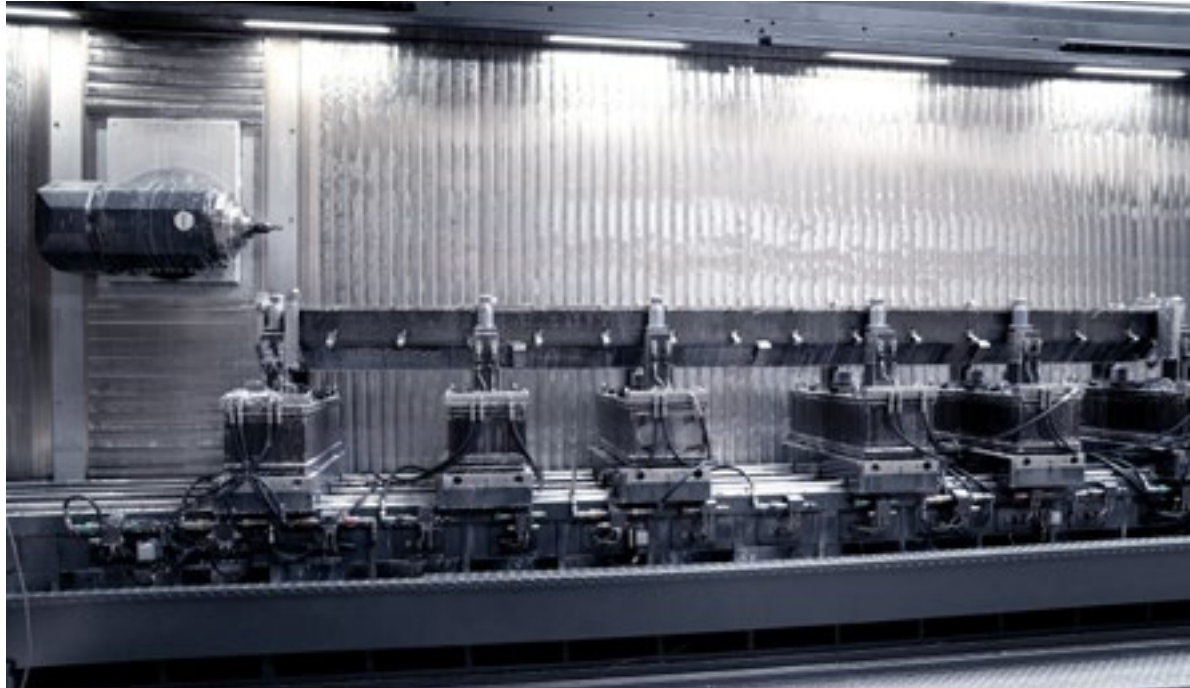
01



02



03



- 01_ ZV 45/L5000 EXTREME, 4-axis machining center combining a vertical head with A axis trunnion fixture for long profiles manufacturing.
- 02_ ZVH 55/L5000 EXTREME machining center, equipped with a B-axis continuous tilting head and a set of 6 sliding tables making possible to move the position of a wide range of fixturing devices to adapt to the different part lengths in the machining of large structural parts in different lengths.
- 03_ ZVH 55/L9000 EXTREME, a 5-axis and 9 meters longitudinal travel model integrating a sliding tables on guideways system for machining complex structural parts in different lengths.

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IBARMIA SOLUTIONS AND TECHNOLOGICAL DEVELOPMENTS

A DECADE LATE, THE EVOLUTION FROM PICANOL'S FIRST IBARMIA INSTALLATION TO TEN MACHINES REPRESENTS A DEFINITE STRATEGIC TRANSFORMATION

Innovation Through Collaboration

The machine's revolutionary design centres around twin independent machining spindles. As one spindle head wouldn't achieve the 70-second timeframe, the solution was two heads, each equipped with a 20.000 rpm 60 kW Kessler electrospindle. This dual-spindle configuration proved essential, as Ryckeghem candidly explains: "We couldn't achieve the target times with one spindle, so we had to add an extra spindle on this machine."

Rather than accepting compromise, the team persevered to find solutions that met Picanol's demanding requirements. The twin-head arrangement enables simultaneous machining operations, effectively doubling productivity while maintaining stringent precision levels on large parts. The pendulum system features dedicated stations on both sides, with each incorporating a specially designed trunnion for clamping eight parts simultaneously, enabling continuous, prolonged production runs.

Performance Breakthrough

Achieving the ambitious 70-second cycle time required fundamental enhancements to the machine's dynamic performance. "To achieve this target time, we had to make the machine faster. To do this, IBARMIA improved the acceleration and deceleration speeds of the machine, putting additional high-end components into the machine to achieve this," Ryckeghem explains.

The results exceeded expectations: "With the two spindles and the enhanced kinematics with improved acceleration and deceleration, this machine is now very fast. It's one of the fastest machines that we have on site, but it had to be fast to attain our 70-second per part target production time." The exceptional 7.9 m X-axis travel for each spindle head provides unmatched flexibility for machining long components. Added to this, the 2.79 m pendulum operation zone ensures optimal workflow efficiency.

Advanced Automation and Digital Integration

The ZV 40/L9400 EXTREME TWIN incorporates sophisticated automation features, positioning Picanol at the forefront of autonomous manufacturing. Grammens details the machine's sophisticated features: "The machine is packed with special features, and the trunnion is a great example of a feature specially made for this application. We also have flushing on the trunnion to ensure chip evacuation. In the machine, we have MQL (Minimum Quantity Lubrication) delivery. The two independent 20.000rpm spindles are another special addition, as are the machine doors. As standard, machine doors typically open horizontally, but the machine doors on this machine open and close vertically to speed up and accommodate the robot loading, which removes the need for manual handling. It also reduces cycle times and enhances operator safety."

Perhaps most notably, the machine includes the Siemens multi-channel SINUMERIK ONE CNC control with activated OPC-UA protocol. "The controller has OPC-UA (Open Platform Communications Unified Architecture) built in. This platform-independent, service-oriented architecture enables secure and reliable communication for industrial automation and related applications. We also have collision avoidance built into this system," Grammens explains. This connectivity allows for seamless real-time data exchange and comprehensive monitoring, supporting Picanol's move towards fully automated, digitally connected manufacturing.

Strategic Partnership

The progression from Picanol's first IBARMIA installation to ten machines represents a strategic transformation. Cycle times have been dramatically reduced through superior machine dynamics, while part quality has reached new levels of precision with tolerances achieved to just a few microns. The integration of automation and digital connectivity has enabled consistent 24-hour production capabilities, maximising capital utilisation while reducing labour dependency.

A Blueprint for Manufacturing Excellence

"The combined know-how of our team to work with the experts and IBARMIA and Germond was initially a relationship based on trust to deliver the first machine successfully. That trust has proven a solid foundation for 12 years and will continue to do so, into the future," Ryckeghem reflects.

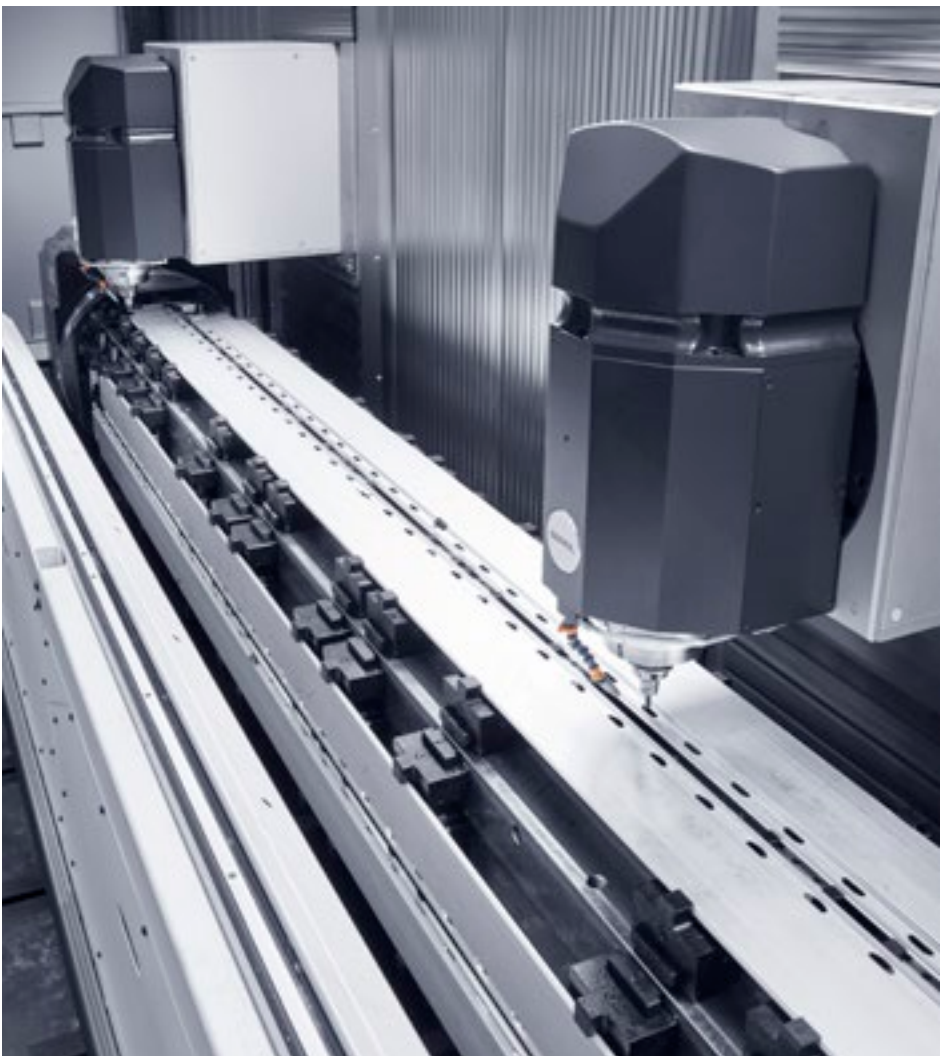
The twelve-year journey from a chance encounter at a trade fair to one of the most advanced manufacturing facilities in the textile machine industry shows that outstanding results depend on outstanding relationships. Through Ryckeghem's leadership and vision, Picanol has developed an efficient, precise and streamlined manufacturing facility with the support of IBARMIA and Germond.



The ZV 40/L9400 EXTREME TWIN is the heart of a new manufacturing cell; an advanced installation aimed at significantly increasing PICANOL's productivity.



SUCCESS CASE / PICANOL



IBARMIA SERVICE

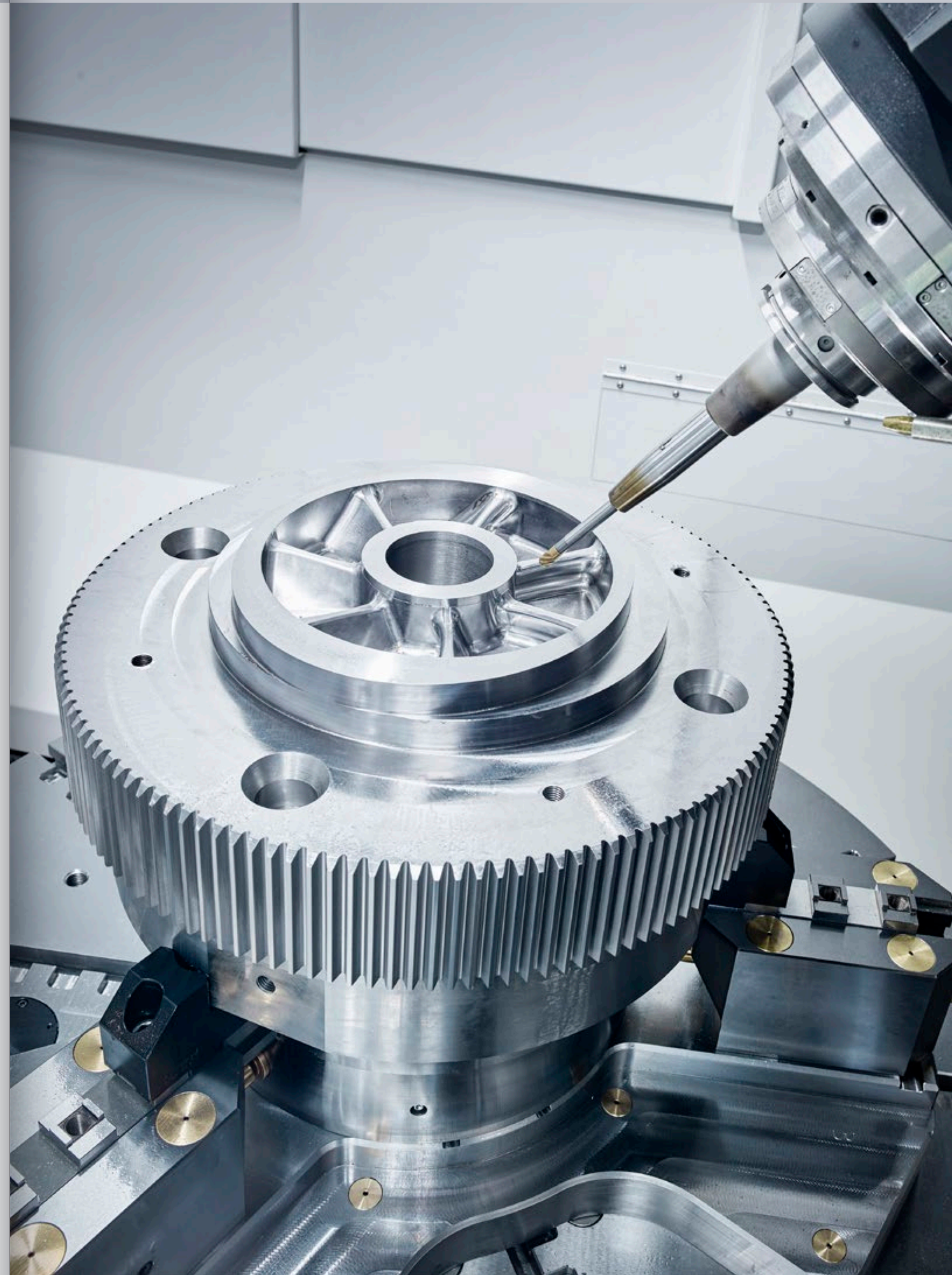
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ENSURING MAXIMUM PERFORMANCE

Our aim is to accompany our customers over the entire life-cycle of the machine, ensuring maximum performance and productivity. The aim is not only to resolve incidents and minimise downtimes, but to give support to our customers so they can get maximum performance from their IBARMIA machine.



IBARMIA SERVICE

IBARMIA FOR YOU
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INTRODUCING IBARMIA ACADEMY_ ELEVATING YOUR OPERATIONS

At IBARMIA, we are excited to launch IBARMIA ACADEMY, a significant step forward in our commitment to providing comprehensive technical assistance and specialized training for machine tool users.



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A Comprehensive Solution for Evolving Industry Needs

Technological advancements are reshaping manufacturing, requiring companies to equip their operators and technicians with the skills necessary to fully leverage state-of-the-art machine tools. IBARMIA ACADEMY bridges the skills gap by offering advanced training and expert technical support, empowering users to optimize machine performance and enhance productivity.

Why Now? Meeting the Evolving Needs of Machine Tool Users

Our decision to launch this integrated service is driven by invaluable customer feedback and a deep understanding of industry challenges. As machine tool technology becomes more advanced, staying ahead requires tailored support and specialized training to maximize productivity and minimize downtime.

Key Industry Demands

We've identified a growing need for:

- **Proactive Post-Sale Support** - Reliable assistance beyond installation to ensure long-term equipment performance.
- **Ongoing Skill Development** - Continuous training to help teams fully leverage modern machine tools.
- **Advanced Technical Guidance** - Expert troubleshooting and optimization strategies to adapt to technological advancements.

Our new service addresses these needs by offering comprehensive solutions, from routine maintenance inquiries to in-depth technical training, ensuring smooth and efficient operations.

The Growing Need for Training in a Changing Industry

Manufacturing is undergoing rapid transformation. As machine tools become more sophisticated, traditional skillsets may no longer be sufficient. Many companies struggle with:

- **Skill Gaps** - Experienced operators may not be familiar with the latest technological developments, while new employees often lack hands-on experience.
- **Underutilized Equipment** - Businesses invest in advanced machinery but fail to unlock its full potential due to inadequate training.
- **Downtime & Inefficiencies** - Poor operational knowledge leads to costly errors, delays, and unnecessary maintenance.

A structured training program helps companies address these challenges, enabling optimized operations and workforce development.

Why Launch Now?

- 1_ Technological Advancements** - Innovations are reshaping machine tool capabilities, requiring specialized training to maximize their benefits.
 - 2_ Industry Demand for Skilled Labor** - The shortage of trained professionals necessitates a strategic initiative to create a pipeline of qualified operators.
 - 3_ Recovery & Growth** - Post-disruption, businesses are prioritizing efficiency and productivity, making employee training essential for long-term success.
 - 4_ Compliance & Safety** - Evolving regulations mandate proper handling practices; structured training ensures adherence to safety protocols, reducing risks.
- This initiative strengthens operational excellence while securing the future of manufacturing.

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IBARMIA SERVICE

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Our service covers a wide range of essential areas, including:

- **Operator and Maintenance Training** - Improving skill levels and efficiency.
- **Technical Assistance & Performance Optimization** - Ensuring machines operate at peak performance.

In an increasingly complex industrial landscape, mastering machine tool technology is more critical than ever. With our Technical Assistance and Specialized Training Service, we provide the expert guidance, resources, and training necessary to help businesses thrive.

What We Offer

We provide flexible and scalable training solutions tailored to different support needs, helping you enhance operational efficiency and maximize machine performance.

Training Options

Our expert-led programs accommodate various learning preferences:

- **Online Training** - Interactive courses with digital resources.
- **On-Site Training** - Hands-on sessions at your facility, customized to your machines and processes.
- **In-House Training** - Practical learning experiences at IBARMIA's facilities.
- **Customized Training** - Tailored programs designed for specific machines or operational needs. Training tailored to your unique machinery and workflows.

Key Training Topics

Our customizable CNC training programs are designed to enhance skill development,

ensuring operators and technicians fully leverage advanced machine tools. Whether working with 3-axis or 5-axis machining centers, we provide expertise in industry-leading control systems, including different software versions for Siemens, Heidenhain, and Fanuc.

Training Focus Areas

Our expert-led courses cover:

- **Machine Operation & Programming** - Master both fundamental and advanced machining techniques.
- **Preventive & Corrective Maintenance** - Implement best practices for optimal machine longevity and reliability.
- **Software Utilization & Optimization** - Maximize CNC capabilities for first-class manufacturing results.
- **Production Support** - Enhance efficiency and workflow during live operations.
- **Advanced Machining Strategies** - Strengthen technical proficiency for complex manufacturing processes.

Available Courses

Our structured programs include:

- **CNC Machine Operation** - Basics & Advanced
- **Preventive Maintenance Strategies**
- **Software Utilization**
- **Production Support & Troubleshooting**

For businesses with specific training requirements, we offer fully customizable courses tailored to operational needs, ensuring maximum relevance and effectiveness.

IBARMIA training equips every participant with the knowledge, tools, and hands-on expertise necessary to optimize machine

performance, enhance precision, and drive operational success.

Our Unique Value Proposition

We differentiate ourselves through unmatched expertise, tailored learning experiences, and long-term support, ensuring your success in machine tool operations.

Who Can Benefit from Our Training Services?

Our comprehensive training and assistance are designed for professionals seeking to maximize operational efficiency and machine performance:

Target Audience

- **Machine Operators & Programmers** - Enhance operational proficiency, troubleshooting skills, and process optimization.
- **Maintenance Technicians** - Deepen knowledge of machine mechanics, electronics, and preventive care.

Key Benefits for Companies and Operators

Investing in operator training is a strategic decision that drives both productivity and profitability:

- **Full Utilization of Equipment** - Ensure optimal performance and longevity of machine tools.
- **Process Optimization** - Streamline program sequences for improved efficiency.
- **Enhanced Technical Expertise** - Strengthen employees' knowledge and skill sets.
- **Higher Workforce Motivation** - Empower employees with confidence and expertise.
- **Tailored Training Solutions** - Custom programs designed to meet specific operational needs.



Why Machine Tool Training Is Essential

In today's highly technological and demanding industrial environment, training is not just an option—it's a necessity. Well-qualified operators contribute to:

- **Safety & Efficiency** - Reducing workplace risks and optimizing performance.
- **Product Quality & Competitiveness** - Ensuring high production standards and market differentiation.
- **Cost Reduction** - Minimizing errors, downtime, and unnecessary repairs.

The Growing Importance of Skilled Machine Operators

Advancements in manufacturing technology, materials, and processes have transformed the industry. Modern machine tools demand precise handling and expertise, making well-trained operators more crucial than ever. Their knowledge ensures:

- **Maximum utilization of advanced technologies.**
- **Consistent high-quality production.**
- **Greater profitability for manufacturing companies.**

Long-Term Business Advantages

A structured training program drives measurable improvements:

- **Enhanced Productivity** - Reduced errors and increased efficiency.
- **Cost Savings** - Fewer breakdowns and lower maintenance expenses.
- **Competitive Edge** - Stronger industry positioning with highly skilled personnel.
- **Standardized Best Practices** - Consistency in operations and production quality.

Investing in operator training is not a cost, but a strategic investment in long-term success. Well-trained personnel are an essential asset in today's manufacturing sector, ensuring precision, efficiency, and business growth.

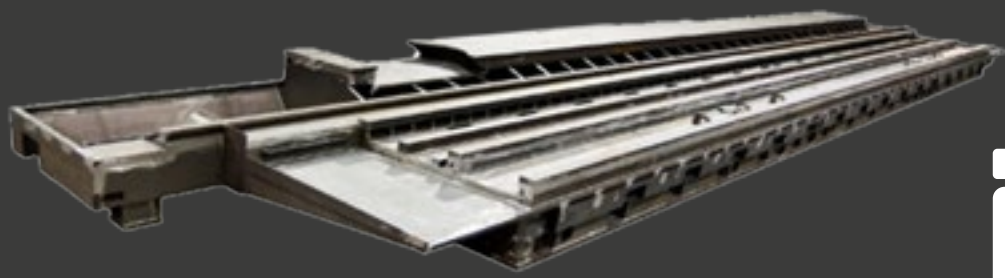
CONCLUSION: Investing in Long-Term Success

IBARMIA ACADEMY represents a powerful commitment to technical excellence and operational efficiency in the machine tool industry. By bridging the skills gap and offering advanced training and expert support, we empower professionals to fully leverage cutting-edge technology. Investing in knowledge and continuous improvement ensures not just individual growth but long-term success for businesses in an evolving manufacturing landscape.



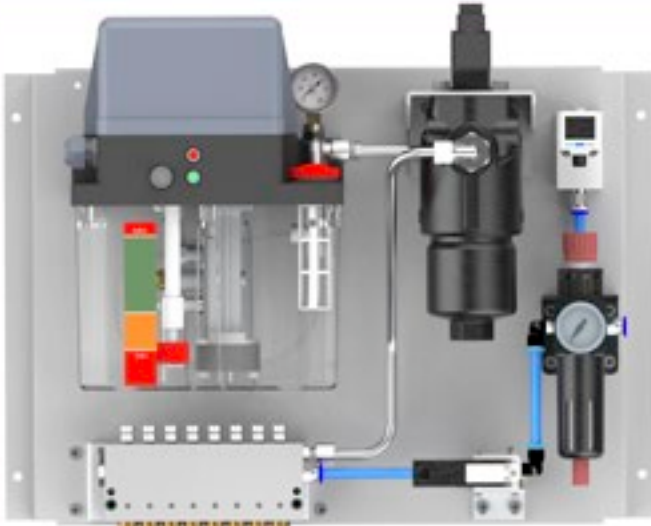
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