



Experts

Precision
in Every Die





ABOUT EXPERTS



**MISSION, VISION,
VALUES, & INTEGRITY**



QUALITY WITH EXPERTS



DIES



**THE JOURNEY FROM
DIE DESIGN TO
QUALITY CONTROL**



**MANUFACTURING
PROCESS**

ABOUT EXPERTS



At Experts, we are obsessed with precision and the clarity it brings to die manufacturing.

Since its inception in 2017, Experts for Metal Industries has risen to the forefront of the extrusion die sector catering to a broad spectrum of global industries.

These tools do more than meet specifications they redefine what our partners can achieve.

What truly distinguishes us is our dedication to client success. We dive deep into the nuances of extrusion, ensuring every die we produce is a bespoke solution, honed through rigorous planning, innovative design, and flawless execution.

Our ethos is built on the pillars of precision engineering, a steadfast commitment to quality, and a zeal for breaking new ground.

At our cutting-edge facility in Egypt, we blend sophisticated technology with deep industry expertise, empowering us to forge dies that set new standards for excellence.

Our path has been one of relentless pursuit of knowledge, flexibility, and expansion, always aligned with the dynamic pace of industry advancements and customer needs.

As we look to the future, our commitment to research and development remains unwavering, ensuring we remain at the cutting edge of technology and industry trends. With Experts for Metal Industries, you're not just choosing a supplier; you're selecting a partner committed to excellence, ready to shape the future of extrusions together, one precision-engineered die at a time.





**MISSION, VISION,
VALUES**

OUR MISSION

GUIDED BY INTEGRITY AND EXPERTISE, WE ASPIRE TO SET THE BENCHMARK IN EXTRUSION DIE CRAFTSMANSHIP. EVERY DIE WE PRODUCE SYMBOLIZES INNOVATION, SHAPING INDUSTRY STANDARDS AND EMPOWERING OUR PARTNERS WITH QUALITY, SUSTAINABILITY, AND UNPARALLELED PERFORMANCE.

OUR VISION

SHAPING THE FUTURE OF ALUMINUM INDUSTRIES WITH PEERLESS DIE CRAFTSMANSHIP, OUR MISSION IS TO FOSTER INNOVATION, SUSTAINABILITY, AND PRECISION ACROSS ALL EXTRUSIONS, ESTABLISHING THE INTERNATIONAL GOLD STANDARD FOR DIE DESIGN AND MANUFACTURING.

OUR VALUES

COMMITTED TO EXCELLENCE, WE DELIVER TOP-TIER INTERIOR DESIGN SERVICES ON TIME AND WITHIN BUDGET. WE UPHOLD THE HIGHEST ETHICAL STANDARDS IN ALL INTERACTIONS, WITH A DETAIL-ORIENTED TEAM THAT THRIVES IN A SUPPORTIVE, POLITIC-FREE, AND NEGOTIATION-FRIENDLY ENVIRONMENT. WE OFFER COMPETITIVE PRICING WITHOUT COMPROMISING QUALITY.



OUR INTEGRITY

Rooted in honesty and transparency, our integrity is the foundation of everything we do. From crafting dies to engaging with our community, we pledge unwavering fidelity to ethical principles, ensuring trust and reliability in every endeavor.

QUALITY WITH EXPERTS :

Quality With Experts

Experts has increased the monthly production average of dies from an initial 50-100 pieces to a consistent 300 pieces.

Our priority at Experts is to uphold the promised quality and meet product deadlines. We ensure die delivery is within 3 to 7 days.

Die Optimization

Data from die simulations indicate that the die exists uniformly at each point. This is achieved by balancing the material flow surface until the aluminum reaches the friction surface and calculating the appropriate coefficient for the aluminum at this surface.

High Quality Steel

After the die design is completed in a digital environment, the cuts are made based on the diameter, thickness and type of steel used in the tools intended for cutting those metals, making it ready for processing.

Upon arrival, the imported steel undergoes quality control, including microstructure inspection and internal mechanical testing.

Die Simulation

Die simulations, designed in 3D, will be performed using software the Experts analysis team utilizes.

This allows potential errors in the profile production process to be identified in advance. This application increases the likelihood of achieving successful results.



THE JOURNEY FROM DIE DESIGN TO QUALITY CONTROL

THE JOURNEY FROM DIE DESIGN TO QUALITY CONTROL

Aluminum Extrusion Manufacturing

In the extruded aluminum manufacturing process, die production is an essential part of ensuring high quality in extruded sections. This detailed presentation provides an in-depth look at the complex steps in the die manufacturing process.

Design and Engineering

The process begins with integrated design and engineering, where engineers prepare precise designs that specify the required size, shape and dimensions of the product, to ensure that the required specifications are met with complete accuracy.

Die Design

When you send us the profile design, our die designers design an extrusion die made of hardened steel, specifically manufactured to produce the desired shape or profile accurately and efficiently.

Die Manufacturing

Skilled craftsmen, toolmakers and machinists then take charge of precisely operating the die, forming the detailed cavity or opening that defines the flow path.

Die Maintenance

Regular maintenance is crucial once the die is operational, involving cleaning, polishing, and repairing any wear to maintain product quality.

Extrusion Process

The core of the operation is the extrusion process, where heated aluminum billets are pressed through the die, taking on the precise shape designed by the die.

Quality Control



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Die Inspection

Before entering production, each die is rigorously inspected to ensure it meets design specifications and adheres to stringent quality standards. Any flaws are corrected immediately.

Heat Treatment

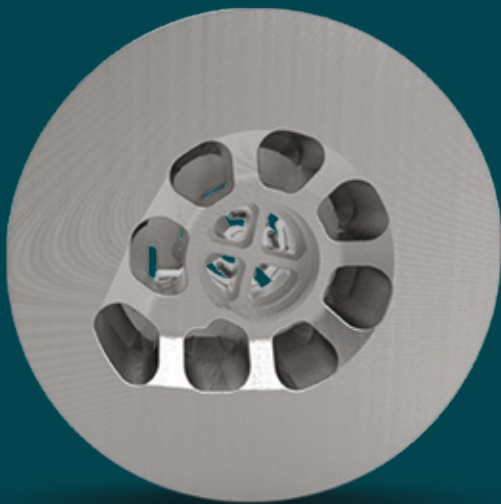
Some dies are further strengthened through heat treatment, increasing their hardness and durability, thereby enhancing performance & extending their lifespan.



DIES

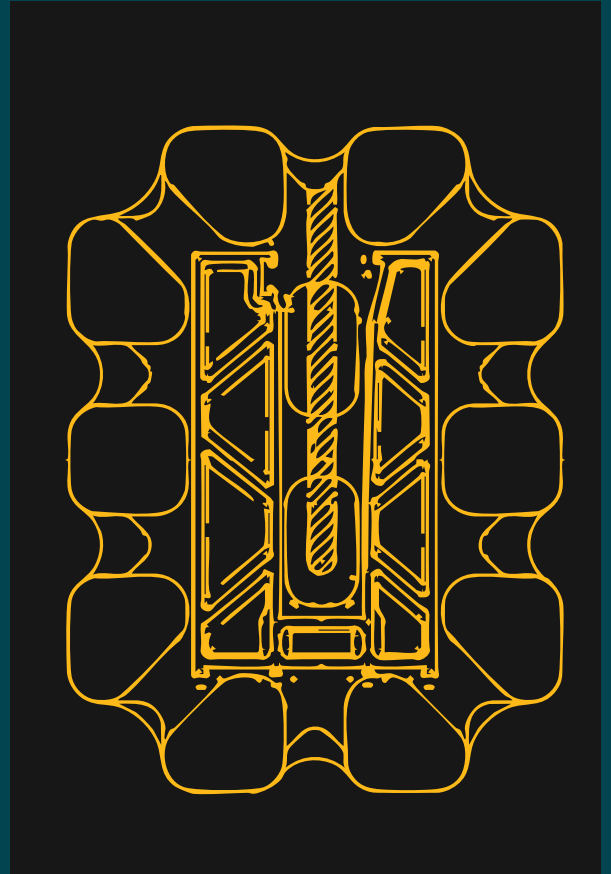
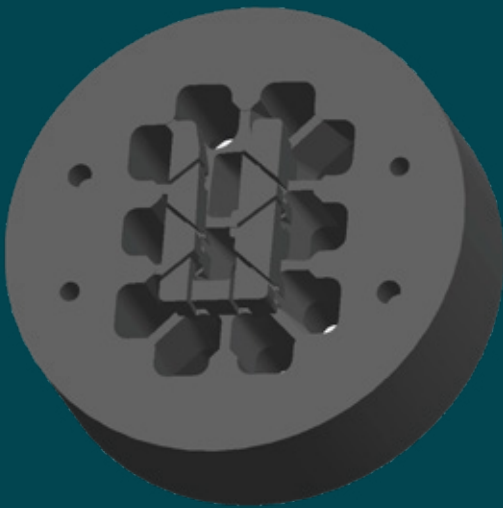


Zero Die Corrections



Where the mechanism is simple, and we work on improving the design of the mold until it reaches perfection. It is used for complex section designs

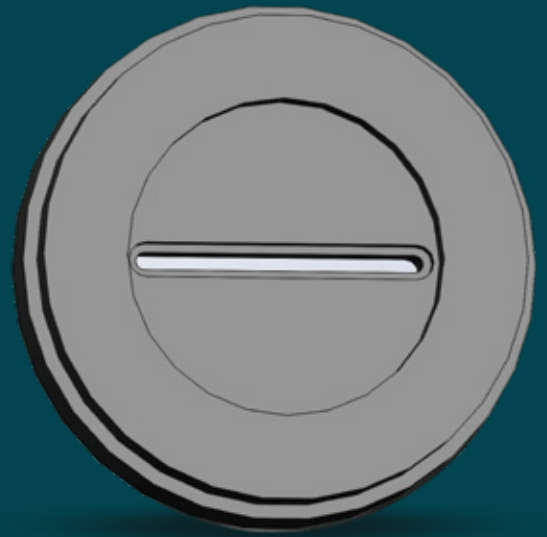
Under The Bridge



With 8 years of experience in finite element analysis, our engineering office can precisely redesign aluminum extrusion dies to achieve optimal weld positions. Recommended: This technique is essential when designing rail sections and automotive parts that require specific weld positions due to design constraints. Products: Rail sections, automotive body sections.

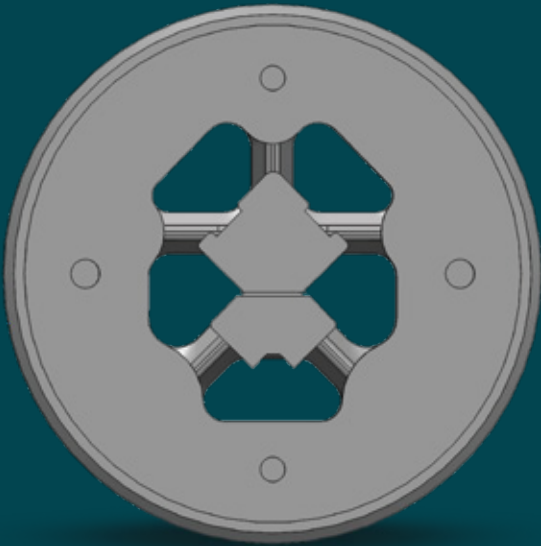


Torpedo

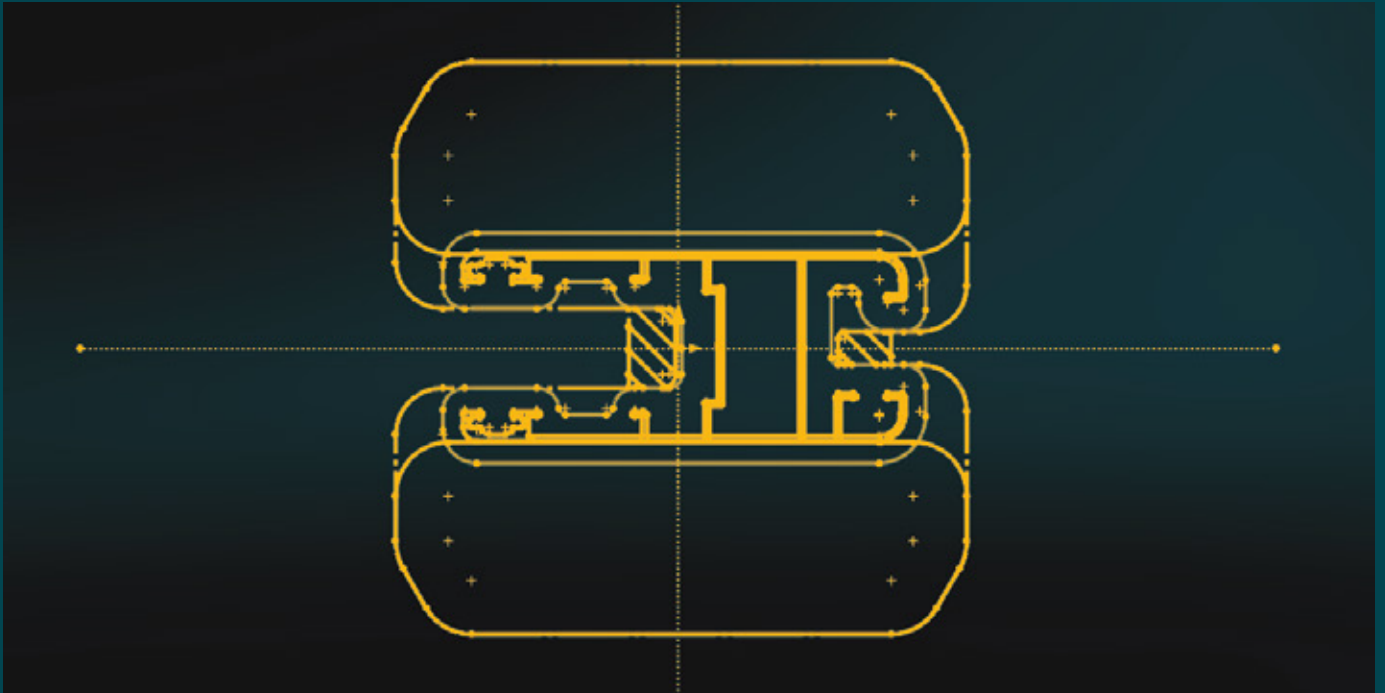


Torpedo technology is particularly used in the processing of connecting rods to provide an ideal microstructure. Recommended: For 6000 series aluminum alloy profiles subjected to sharp bends. Products: Connecting rods.v

Strait jacket



This die is designed for critical sectors where there is a bridge inside the vacuum case which is always unbalanced.



Single Bridge



The single leg design, known as "monorazza" in Italian, is the most common in architectural section formwork.

These formworks improve surface quality and reduce penetration force and exit temperature. Products: Patio wall sections, window frames and rectangular boxes in all shapes.

Shrinking Ring

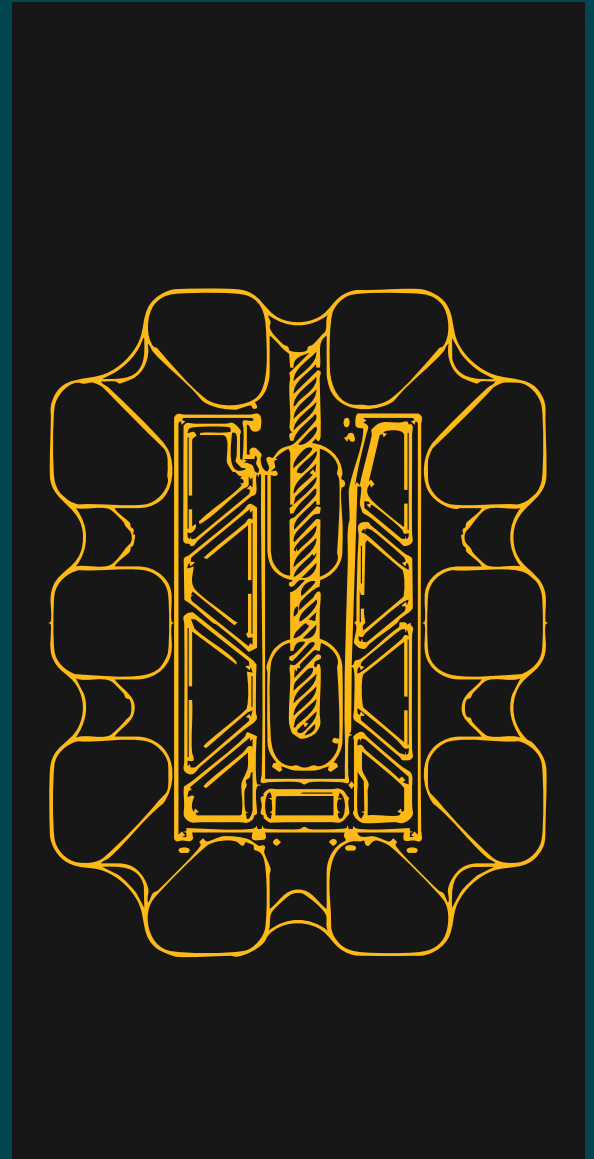


This die is used when the die cover under load is subjected to extreme stress that can exceed the plastic limit.

Using the principle of thermal shrinkage, we place a ring on the cover section with the aim of reducing its deflection under load and, consequently, the maximum stress.

Thanks to the shrinkage ring technology, the covers are more stable, and their operating life can be doubled.

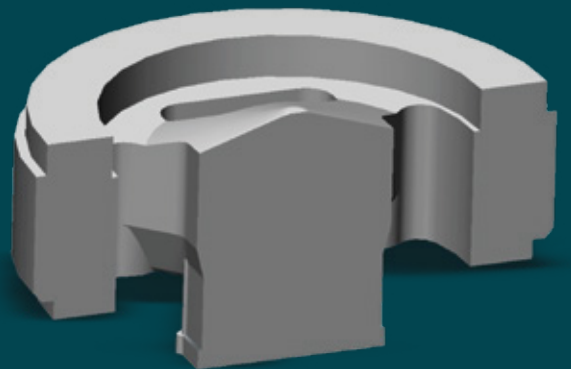
Finally, by using the shrinkage ring, it is possible to reduce the required die diameter and/or give a full guarantee to a die that normally cracks under load. Products: Railway Sections



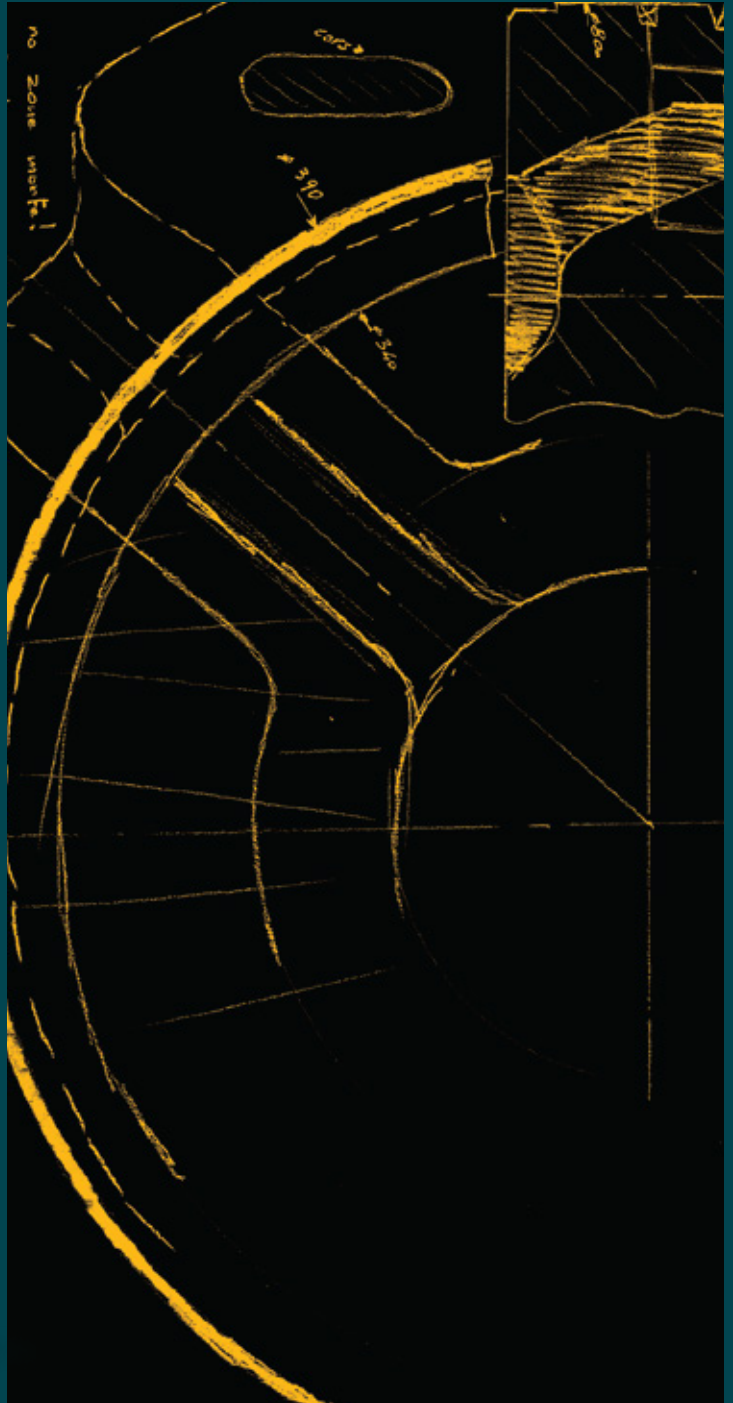
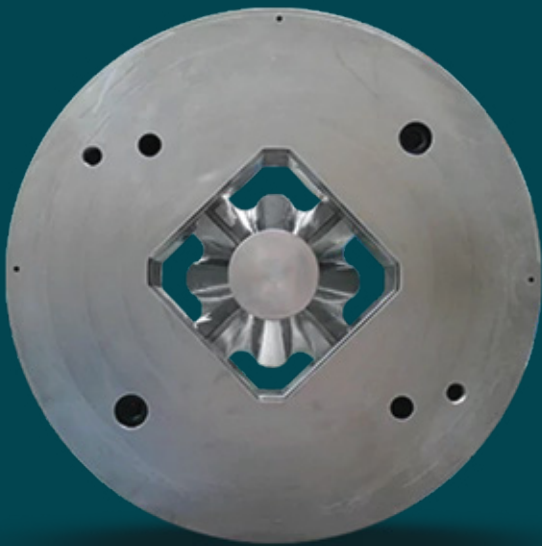


Pantheon

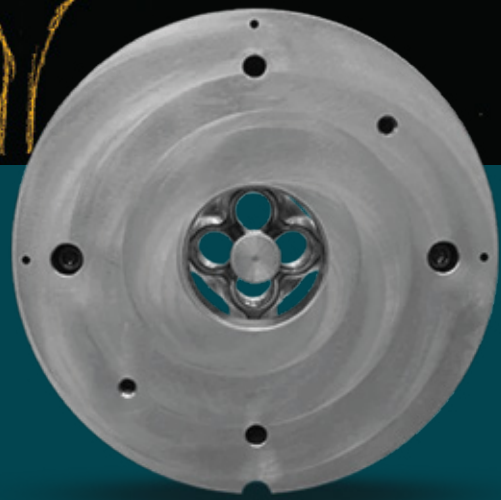
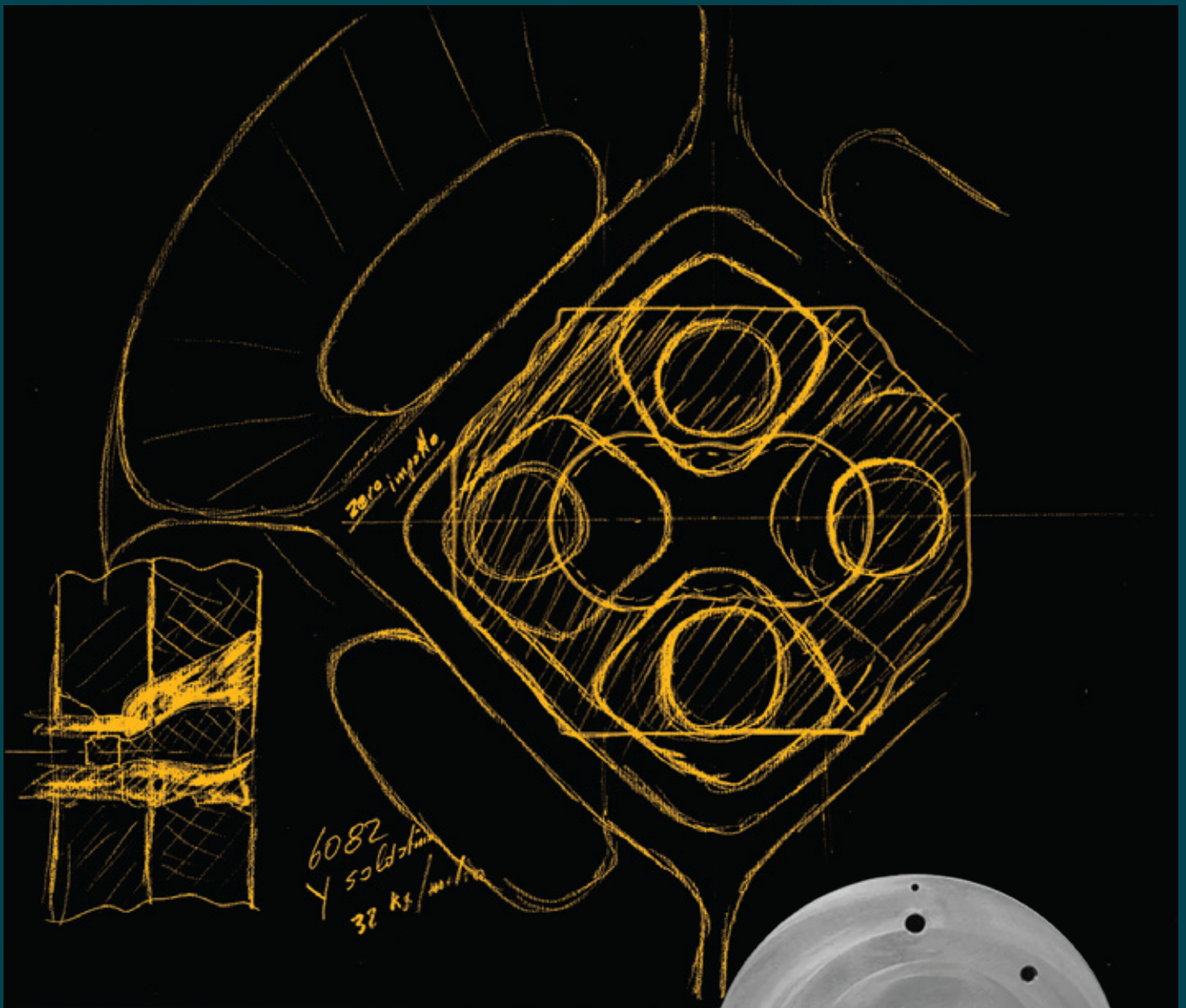
This design is made to absorb stresses on the mandrel, making this technology ideal for extruding 7000 series aluminum alloys. Products: Masts, Fenders, and Telescopic Cranes.



No Dead Zones



Experts design die ports, pockets and weld chambers to minimize hard-to-reach dead metal areas. This solution is ideal for applications such as curtain wall profiles and structural sections that require the elimination of front-end defects. Recommended: For AA6082, AA6005, AA6063 and magnesium alloys. Products: Curtain steel walls and structural sections.

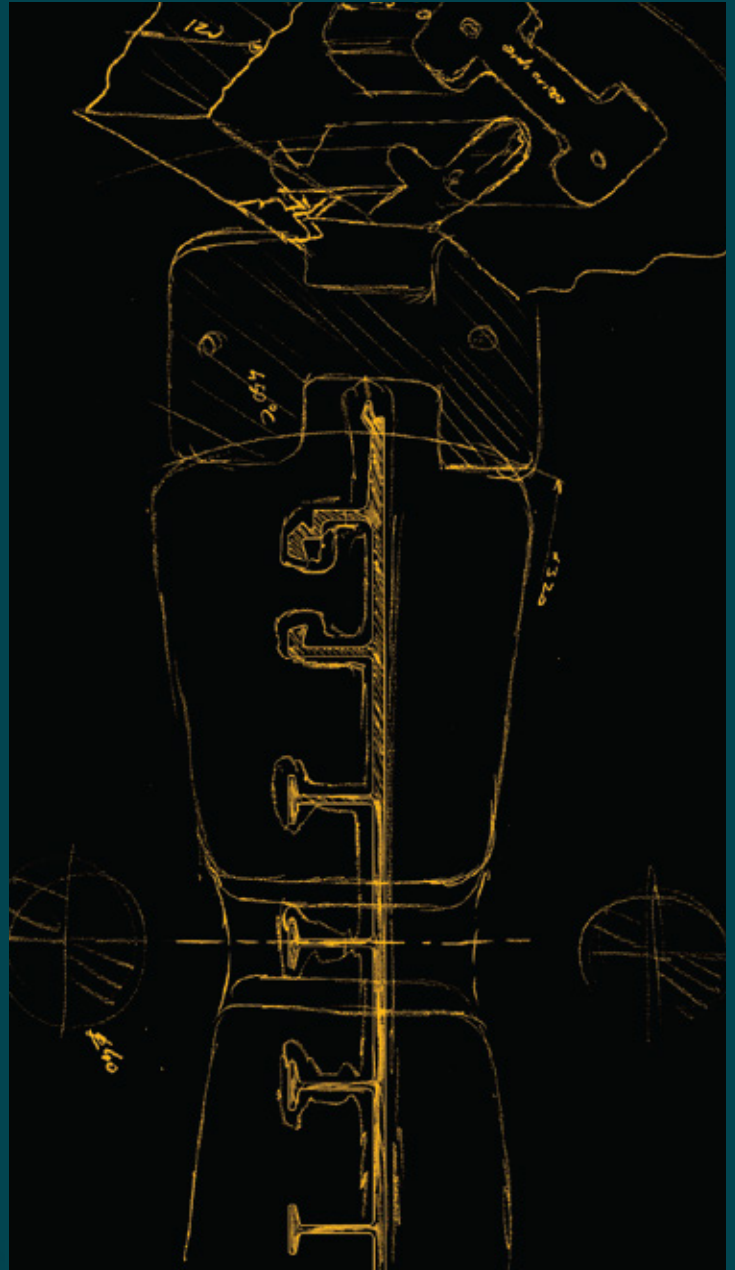
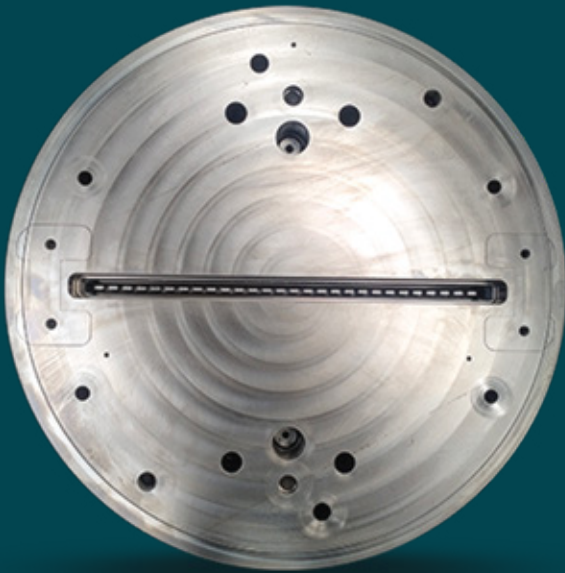


Fantino

This type of design is done on sections with holes in the mandrel bridges in order to feed as best as possible from the bottom.

Fantino gives the best performance when applied to thick sections and low extrusion ratios. Recommended: For AA6082 and AA6005. Products: Gear Pumps and Cylinder

Dog Bone



The die covers in these molds are subjected to maximum stress typically on small, weak radii, resulting in tensile stresses due to tool deflection.

Using Dog Bone technology, we apply a compressive force that reduces stress in the required areas, increasing die life. Recommended: For all 6000 series alloys. Products: Windowsills, wide solid sections, sidewalls.



Corona

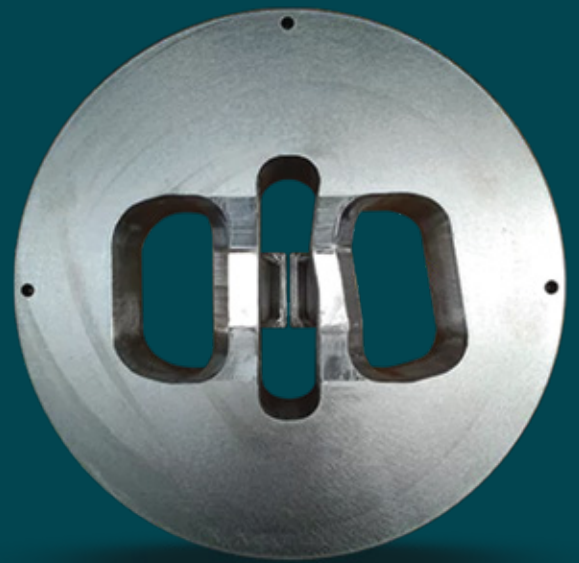
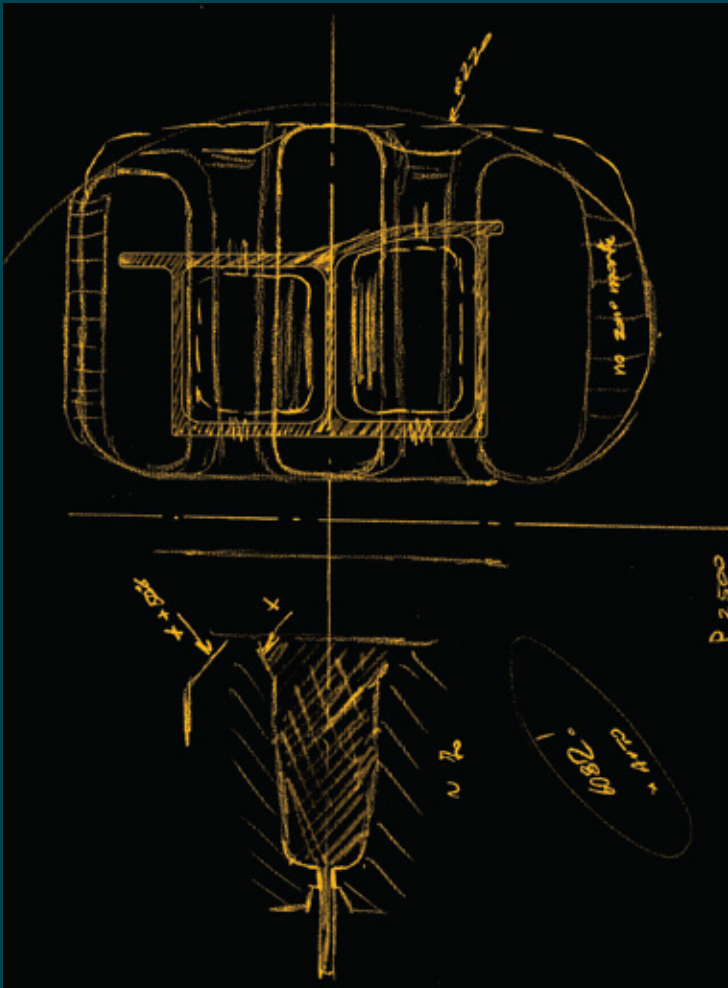


Improved weld integrity and reduced exit temperature are the two main benefits.

Corona technology provides increased productivity, especially when working with AA6082 alloys which are prone to tearing.

Recommended: For AA6082 and AA6005 alloys. Products: Rollers, Wheel Spacers.

Caterpillar



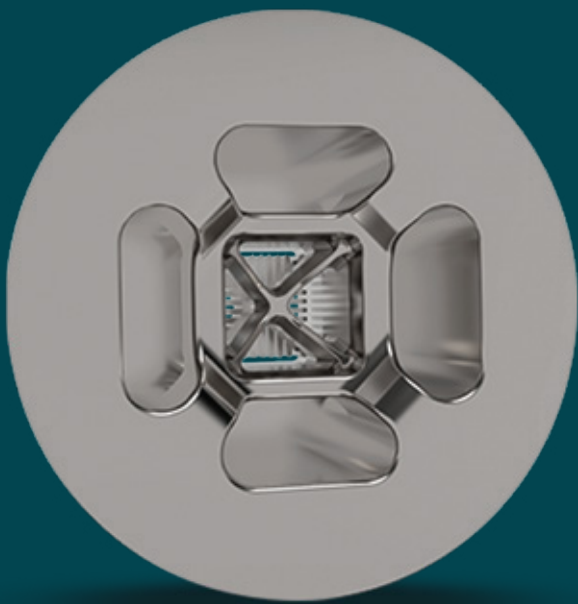
These dies are designed to reduce stresses on the section as it exits, which contributes to reducing the temperature on it, thus improving its microstructure and making it more superior.

Butterfly Die



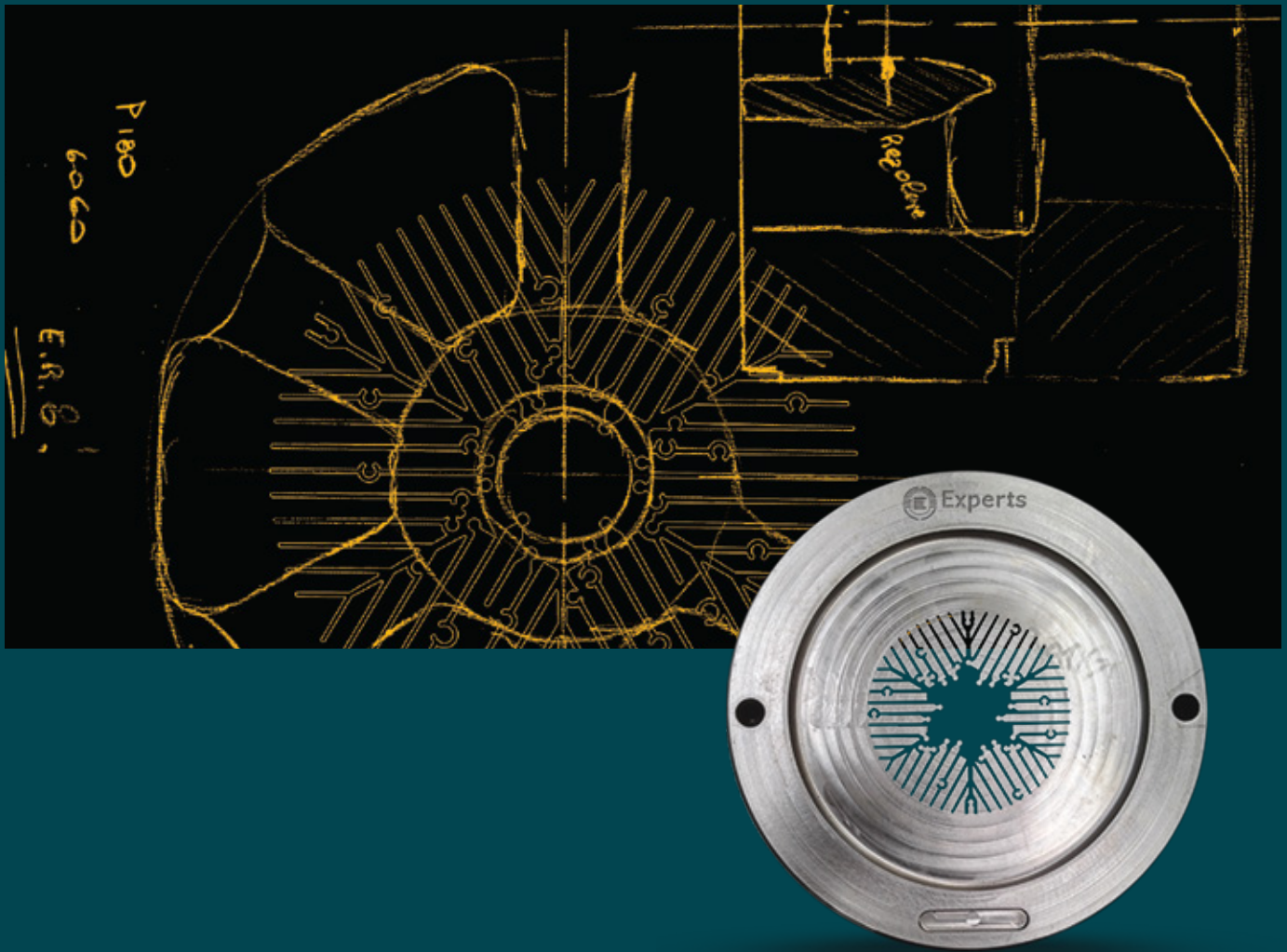
When: Today, Butterfly Die is considered one of the best products made by Experts. Recommended: Suitable for all aluminum alloys available in the market. Products: Sidewalls and sunshades.

Big Eye



Bolt Channels: Holes designed for inserting bolts, often with precise or narrow shapes.

Rectangular Box: Inserted surfaces that require precise machining. Recommended: Big Eye technology is highly recommended for any type of aluminum alloy, which is typically used in industries requiring lightweight, strong, and corrosion-resistant materials.



Heat Sink

This type of die is made to produce the heat sink section.

A heat sink is passive and transfers heat generated by an electronic or mechanical device to a liquid medium, often air or a liquid coolant, where it is dissipated away from the device, allowing temperature regulation.



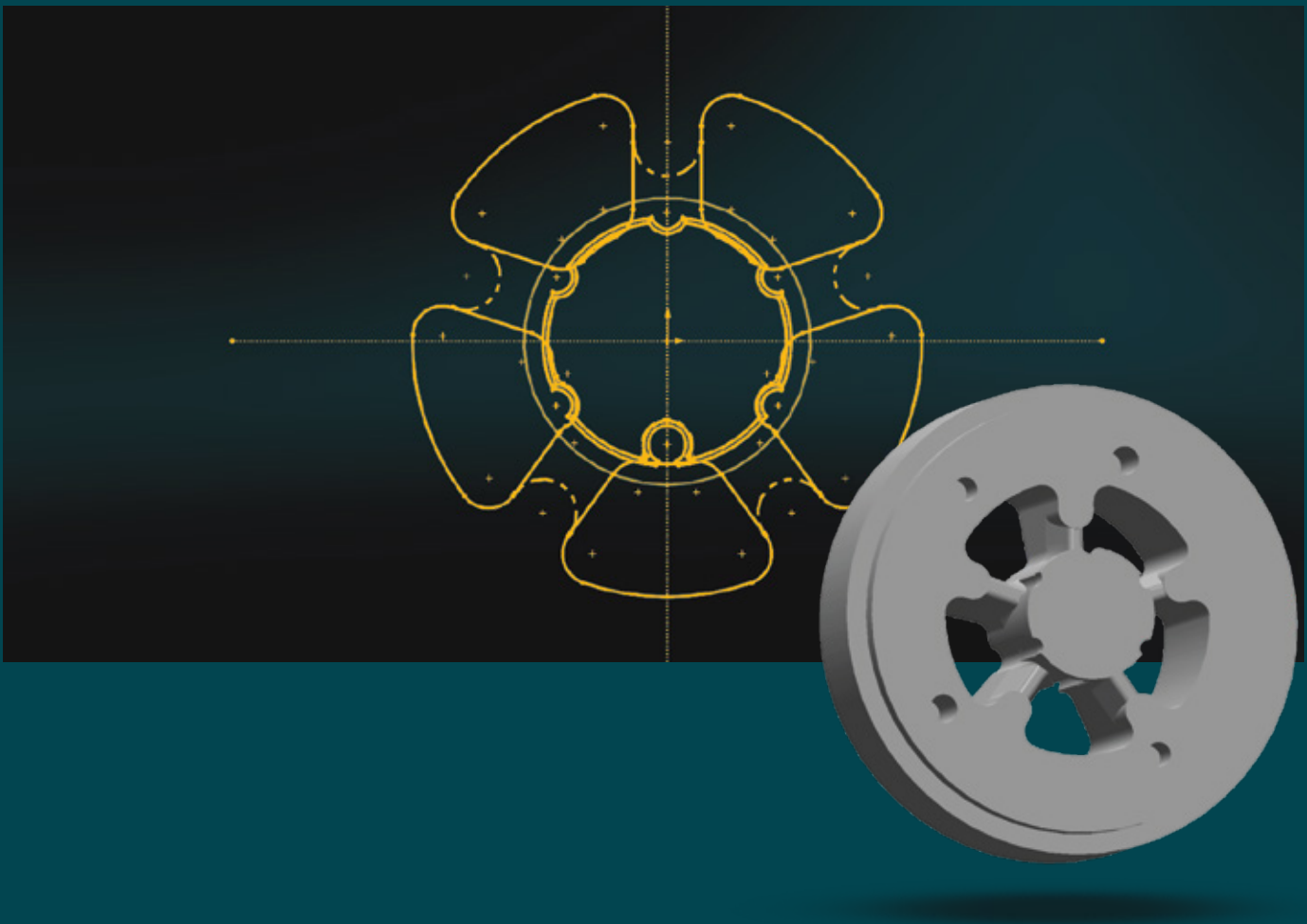
Multi Cavity



These guidelines are for determining when to use multi-cavity dies to achieve optimal roughness and roundness, especially when working with 6000 series aluminum alloys.

These alloys are commonly used in the manufacture of products such as pneumatic cylinders and round tubes, where high levels of precision and smoothness are required in manufacturing.

Inverse Pyramid



When: Inverse Pyramid technology can be applied to pipes and single core hollow profiles made of 6000 and 7000 aluminum alloys. Recommended: for AA6082 and AA6005.
Products: pipes



 Experts

MANUFACTURING PROCESS

1

DESIGN OFFICE



Our in-house design office combines innovation and engineering expertise to create bespoke solutions that are tailored to our clients' unique requirements.

Using the latest design software, our team transforms ideas into detailed, production-ready designs, ensuring that each component meets the highest standards.

2

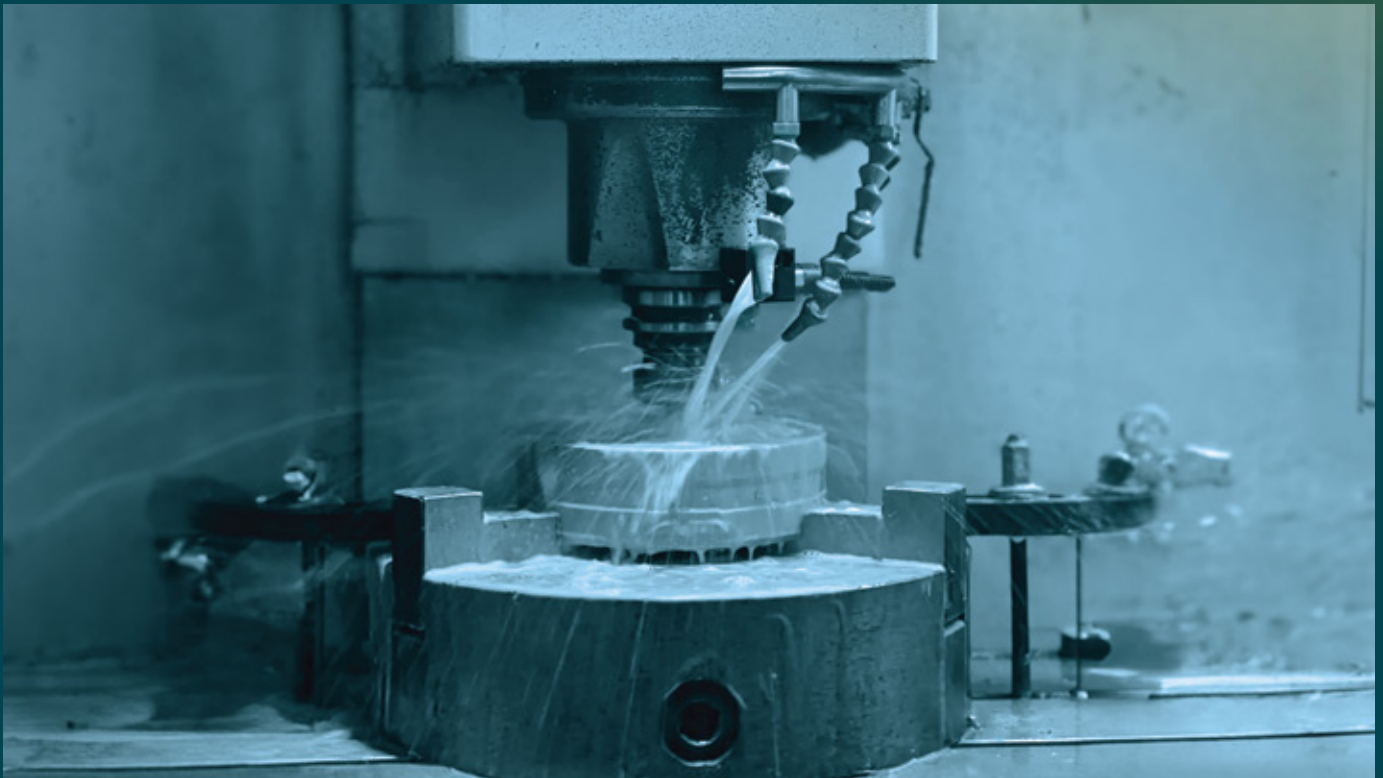
We source the finest quality materials, selected for strength, reliability and performance. By partnering with trusted suppliers, we provide our clients with confidence in the quality and longevity of the molds we produce.

MATERIALS



3

CNC MILING



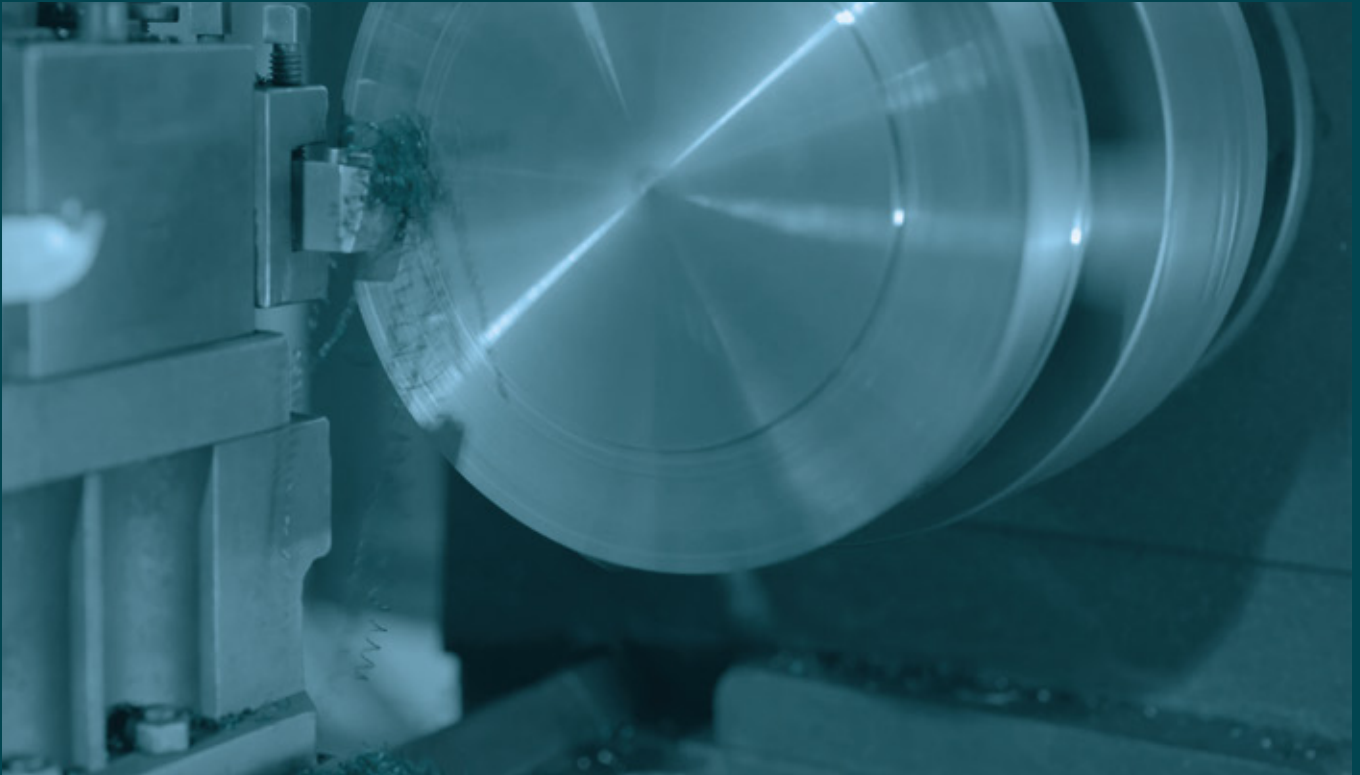
CNC milling machines form the backbone of the mold industry, enabling high levels of precision and intricate detailing in composite parts.

Thanks to modern technology and advanced programming, we are able to produce components with the highest levels of accuracy and consistency, ensuring quality and reliability in every piece we manufacture.

4

Our lathes provide superior precision in the shaping and manufacturing of parts. By rotating the part at high speed, we achieve consistent dimensions and smooth finishes, making them suitable for designs that require high levels of precision and durability.

LATHES



5 WIRE MACHINES



Our wire machines are based on advanced wire cutting technology, providing the ability to form the most complex parts.

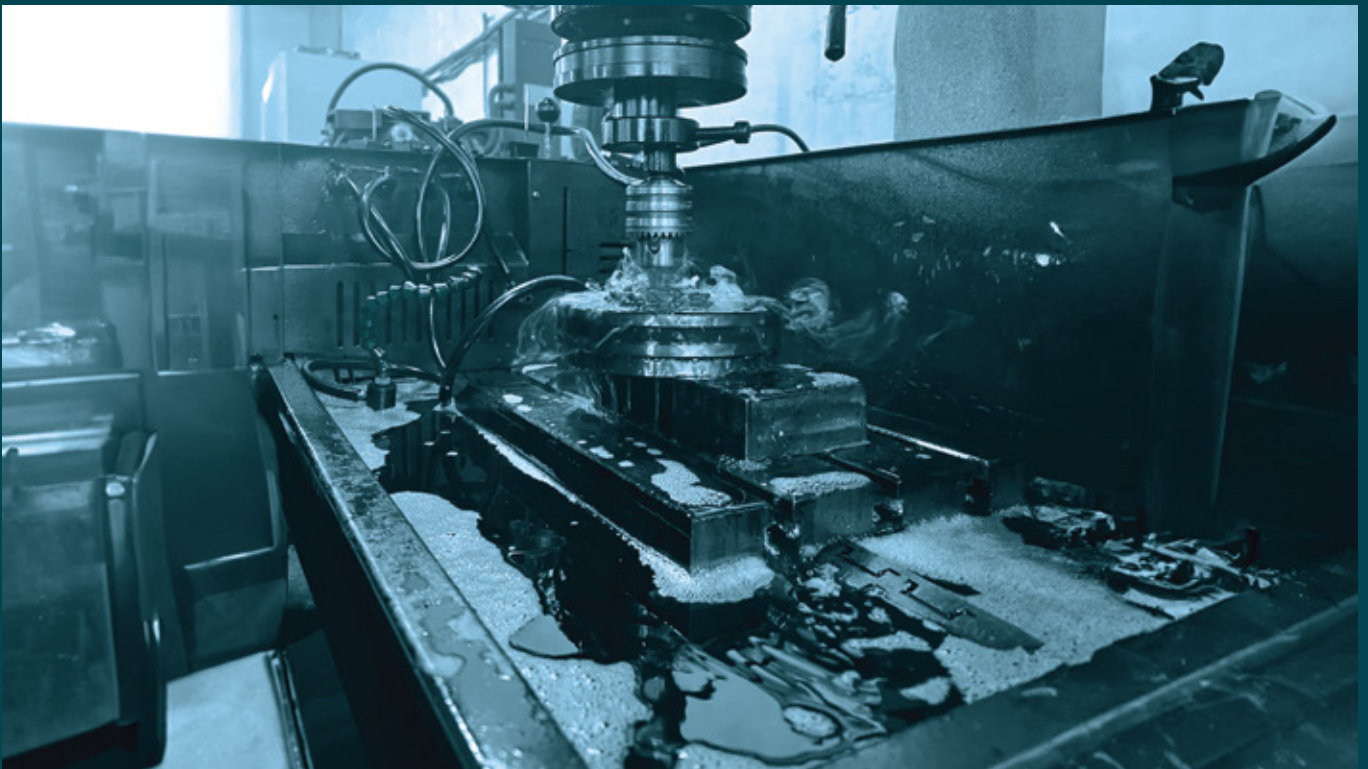
This non-contact process reduces the risk of distortion and provides high-precision cutting, to meet the exacting requirements of our customers.

6

Using spark erosion machine technology, we deliver precise details and smooth finishes on difficult-to-manufacture materials.

This technology is ideal for manufacturing complex shapes, enabling us to achieve high levels of precision in mold making.

SPARK MACHINES



7 HEAT TREATMENT



Our heat treatment capabilities add strength and durability to our metal components, enhancing their performance under extreme conditions.

Through precise control processes, we improve the properties of the materials, ensuring strength and corrosion resistance.

8

Our finishing services include polishing, painting and detailing, ensuring that each mold is perfectly prepared for use. This final stage enhances the appearance and strength of the product, to provide a finish that matches customer requirements and adds value to their operations.

FINISHING





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