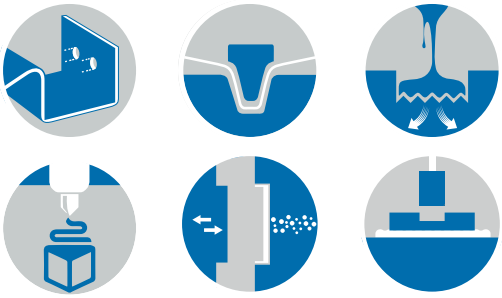
innovative. individual. Unique



PLASTIC ENCLOSURES



apra plast



NO MATTER WHAT THE CHALLENGE: WE HAVE THE SOLUTION

The apra group delivers your customised packaging

What our customers appreciate about us: The particularly comprehensive service, the individual advice, the good price-performance ratio, high-quality technical equipment and, of course, the expertise and experience of our employees. In addition to precise, high-tech production processes, qualified, creative engineering plays a decisive role. On this basis, we can offer you exceptional solutions that correspond exactly to your ideas and objectives and are realised by us with precision.

MARKET SEGMENTS AND APPLICATIONS

Highly developed electronics need customised packaging. apra-plast designs and produces individual, unmistakable housings with optimum functionality: from prototypes and small series to series production of several thousand units. Technically sophisticated, visually appealing and with an excellent price-performance ratio - even without tooling costs.

We rely on the precision and efficiency of our proven technologies to manufacture your customised products: Milling/bending technology, thermoforming technology, vacuum casting technology as well as 3D printing technology and injection moulding technology.

apra-plast is a company of the apra group and co-operates with its sister company apra-norm in the production of combination housings made of metal and plastic.

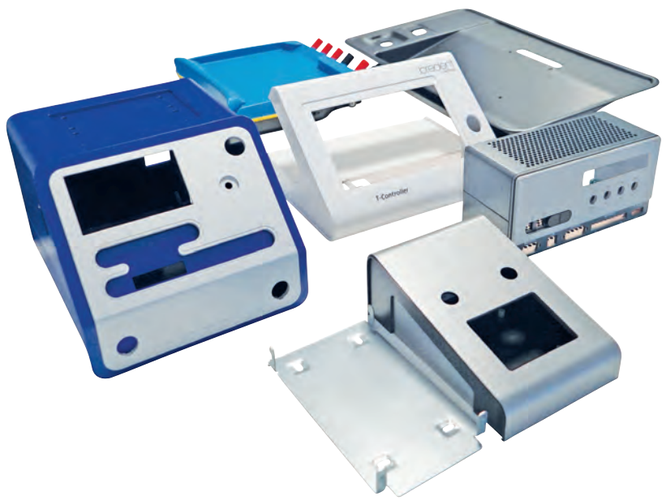
apra-plast IN THE INDUSTRY OVERVIEW	
Medical technology	Measurement and control technology
Railway technology	Telecommunications
Mechanical and plant engineering	Computer technology
Space technology	Military technology
Aircraft	Beauty and wellness equipment
Automotive industry	Model making
Automation engineering	Machine and building controls
and many more	

SMART ENCLOSURE SOLUTIONS
MADE OF PLASTIC

Manufacturing enclosures with round or square edges, with large or small radii - that is apra-plast's core expertise. Be it panelling for dental laboratory milling machines, display housings, airline ticket readers, test devices, EEG devices or measuring devices of all kinds.

apra-plast sees itself as a solution provider for housings, panelling and parts of all kinds. Depending on the requirements, thermoforming or vacuum casting are used in addition to milling/bending technology.

3D printing with our systems of different sizes and technologies also plays an important role. This is where functional components, struts, prototypes, devices, samples and master models for vacuum moulding are created. Plastics are not only processed by apra-plast but also by apra-norm. The latter manufactures housings, handles, hinges, brackets and customer-specific components using injection moulding.



Three independent companies in Germany and sales companies in France and Poland belong to the apra-group today. They all make enclosures: apra-plast from plastic, apra-gerätebau from metal and apra-norm from metal and plastic.

Each company benefits from the components and production technologies of the others. For example, apra-plast uses injection-molded handles, hinges, etc. or metal base plates from apra-norm, and vice versa, apra-norm uses vacuum casting, 3D printing or cladding elements from apra-plast.

THE RIGHT ENCLOSURE
FOR YOUR IDEAS

1

The counselling

Consistent customer-orientation right from the start: You explain your problem to us using sketches, technical drawings, CAD data, design drafts, models or components. We advise you in detail about possible variants in combination with your product as well as process options for production, with suitable materials and suitable design forms.

2

The design

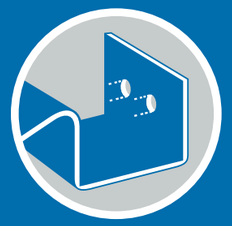
Customised, ergonomic, functional: our designers create the enclosure that is optimised for your product in all functions according to your specifications. We put all our expertise into thoroughly thought-out solutions and utilise the latest CAD/CAM technology for maximum perfection.

3

The production

This is where we score with precision: in order to achieve maximum dimensional accuracy in the production of your enclosure, we use state-of-the-art NC and CNC machines and, in tricky cases, rely on the careful manual labour of our highly qualified and trained staff. Continuous quality controls during the manufacturing process are a matter of course for us. The end result is the perfect shell for your electronics.

MILLING/BENDING TECHNOLOGY





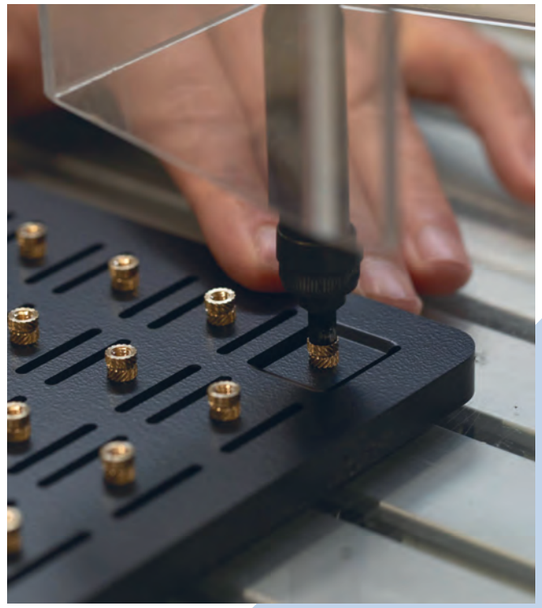
Milling/bending technology enables the economical realisation of individual designs.

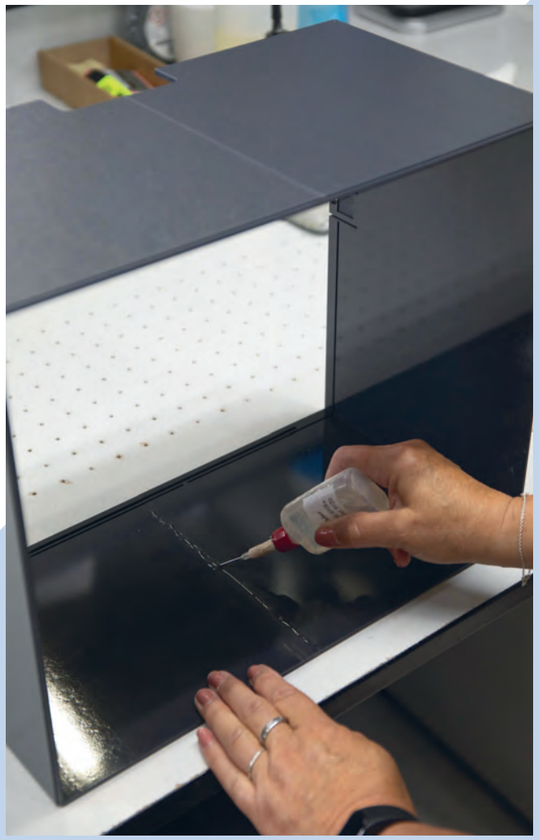
With the help of this precise and high-performance process, we can produce even small quantities flexibly, quickly and without additional tool costs. We provide you with an extensive range of materials, colours and accessories for the realisation of enclosures using milling/bending technology. All materials can be supplied with EMC conductive paint. Special colours or finishes can of course be realised according to customer requirements.

- For small and medium quantities
- Bending radii in various sizes possible
- No tooling costs
- Many standard materials on stock
- Combined product solution made of sheet metal and plastic









THERMOFORMING TECHNOLOGY



Thermoforming or deep-drawing thermoplastic semi-finished products adds another dimension to the possibilities of plastics processing by another dimension. As a result, plastic products can be produced with free-form surfaces of almost any design. Visible joints and edges are eliminated and requirements such as the tightness of individual plastic components are guaranteed. The customised products range from classic thermoformed parts such as tubs, containers, bonnets, trays, covers, cladding parts and decorative trims to individual design elements, housing components and technical parts with threaded inserts, threaded inserts, threaded inserts, threaded inserts and threaded inserts. technical components with threaded inserts, spacer domes or other technical elements. Ask us about our extensive possibilities.

THERMOFORMING TECHNOLOGY

- customised, individual
- appealing look
- No minimum material quantity
- fexible tool production
- Low tooling costs
- Combined product solution made of sheet metal and plastic

Plastic enclosures – apra plast 01 | 2024





VACUUM CASTING TECHNOLOGY



- A variety of colours, including transparent versions
- Materials with special requirements: temperature-resistant, chemical compatibility, ...
- different shore hardnesses – from rubber-like to hard
- Easy insertion of additional holes and threads
- for plastics prototypes, pre-series and small series
- No tooling cost, fast realisation
- Combination of various materials possible
- Combined product solutions made of sheet metal and plastic



Vacuum casting technology is an economical process for the production of prototypes and small series.

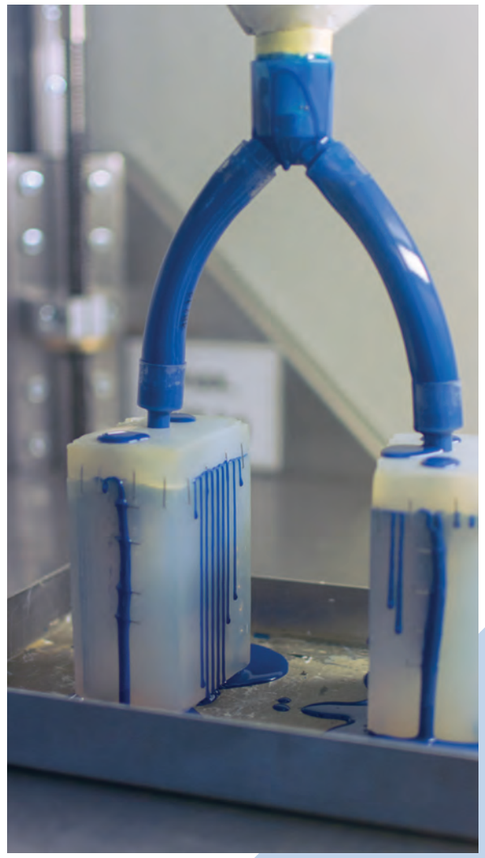
We realise even minimum batch sizes as well as pilot and small series in the desired design and „just in time". Our special vacuum moulding technology is suitable for the production of plastic parts with special requirements and for the overmoulding of components. Different materials, which can be combined with each other, provide additional design flexibility.

We develop for you according to your ideas
3D design proposals or 3D constructions and produce a customised master model. For this purpose, we use our modern 3D printing processes.

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3D PRINTING TECHNOLOGY



- Fast realisation
- Economic series manufacturing
- individual prototypes
- a high degree of stability
- a variety of materials
- Customised modifications
- Combined product solutions made of sheet metal and plastic

3D PRINTING TECHNOLOGY

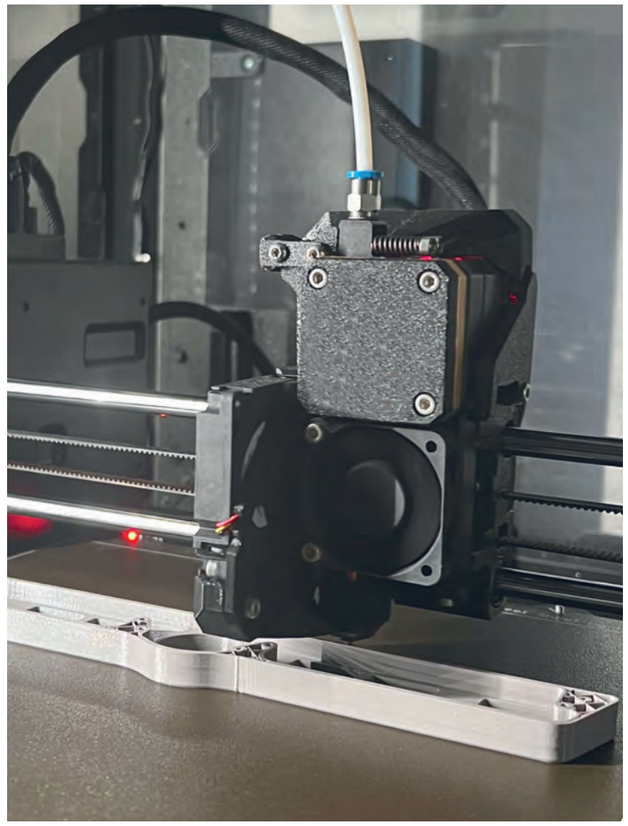


From the idea and selection of the ideal process to production and after-sales service.

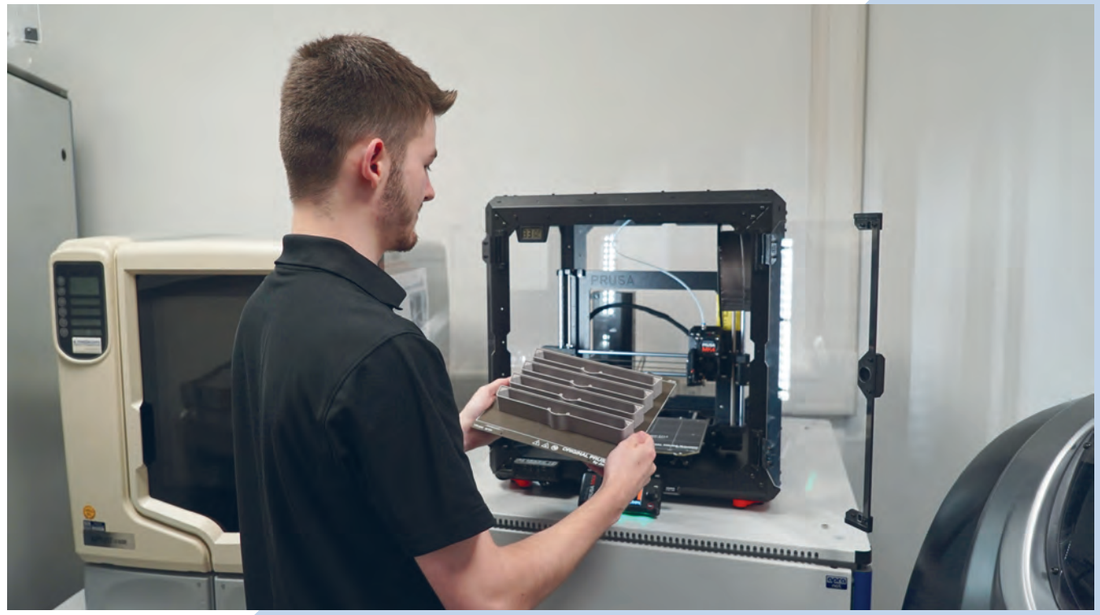
Regardless of what phase of product development you are currently at, we will support you at all times in the realisation of your project based on your ideas. Using the wide spectrum of additive manufacturing, we not only produce functional prototypes in the shortest possible time, but also offer the option of economical and precise serial production.

Adapted to the dimensions of the object and the requirements for the material and surface properties, our experts select the appropriate printing process and the suitable system for production.

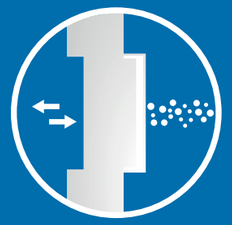
The 3D printing is based on IGES or STEP data.







INJECTION MOULDING TECHNOLOGY



- Optimised economic efficiency
- Highest surface quality
- High quantities
- Reduction of tool costs when using master moulds
- Customised adaptations
- Combined product solutions made from sheet metal and plastic



Professional injection moulding ensures optimum cost-effectiveness and the highest surface quality for higher quantities. Based on decades of experience, our designers use CAD/CAM to create customised tool designs according to your specifications.

The injection moulding tools are manufactured in our in-house tool shop - in various designs as aluminium or steel tools, depending on the desired quantity.

If we can use our in-house tool systems or master moulds for your enclosure, this results in a reduction in tool costs. We produce plastic parts from 0.5 - 720 g injection weight in a wide variety of materials and colours on injection moulding machines, some of which are fully automated.

INJECTION MOULDING TECHNOLOGY

METAL TECHNOLOGY





Whether standard, modified standard or a complete customised solution according to customer requirements – apra-norm has specialised in metal enclosure and housing systems for over 54 years.

In addition to data centres and network technology, 19-inch and electronic enclosures, the in-house design department develops solutions for individual requirements in mechanical and plant engineering or in the electrical and electronics industry. The products are manufactured in excellent quality using state-of-the-art machinery on a production area of over 17,000 m².

The service portfolio includes, among other things customised surface finishing, prewiring and electrical testing.

- 19" technology for enclosure and rack systems
- Prototypes - small series
- high volumes
- Customised modifications
- Pre-wiring and electrical testing
- High economic efficiency
- Combined product solutions made of sheet metal and plastic

METAL TECHNOLOGY

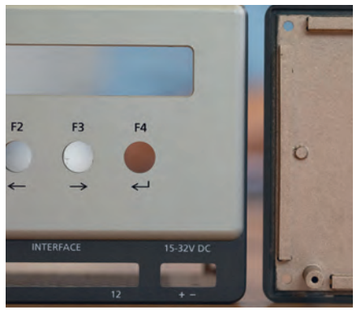
CUSTOMISED SURFACES
ENHANCE YOUR PRODUCT

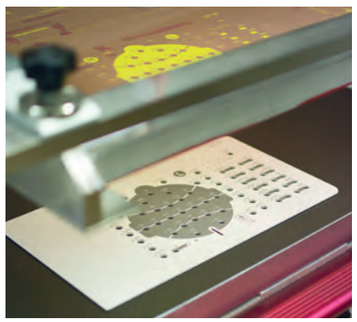
A visually appealing surface that fulfils the highest demands in terms of ergonomics and provides effective protection against external influences is the ultimate for valuable electronics. Finishes from apra-plast give your product an individual style with optimum functionality. We can implement these using processes such as screen and digital printing, engraving, EMC conductive coating or painting in the colour of your choice.

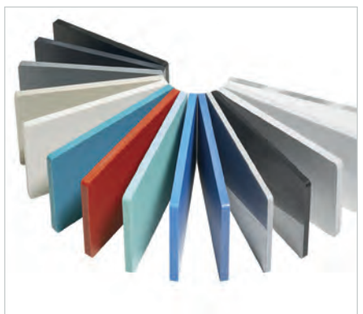


Our finishing processes

- Screen printing
- digital printing
- Engraving
- Painting with EMV conductive paint
- Painting in the colour of your choice









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From the initial consultation and design draft through to perfect production, installation and on-time delivery, we support our customers with creativity, expertise and great enthusiasm.”



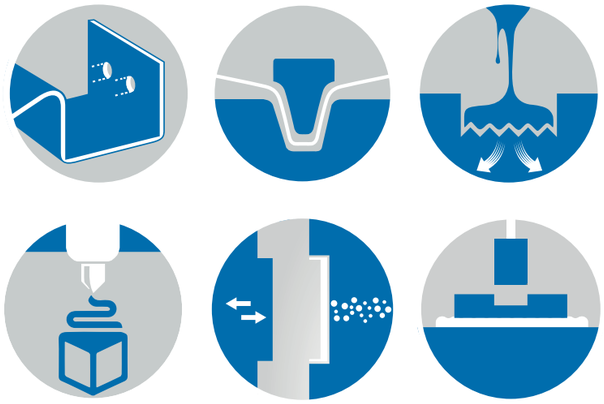


TECHNICAL
POSSIBILITIES

All our products include fastening options - including solid threaded inserts, screw bosses, strips, bolts, pockets, holes, openings and much more - for service-friendly installation. In addition to proven welding and bonding processes, innovative processes such as ultrasonic welding are also used.

Depending on your requirements, we can also integrate components such as hinges, latches, handles, housing feet, etc. into your product.

If required, we can also assemble additional parts made of other materials such as metal, glass or other built-in parts provided by the customer.



TECHNOLOGIES
AT A GLANCE

We design and manufacture our enclosures exclusively according to the individual needs and ideas of our customers. With extensive in-house know-how, design and technical expertise and innovative technologies, we can realise demanding and unusual requests.

From our extensive range of materials, colours and combinable manufacturing processes, we work with you to create a functional and distinctive design:

“The perfect shell for your electronics“.

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MILLING/BENDING TECHNOLOGY

THERMOFORMING TECHNOLOGY

VACUUM CASTING TECHNOLOGY

3D PRINTING TECHNOLOGY

INJECTION MOULDING TECHNOLOGY

METAL TECHNOLOGY

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