



TOOLSHOP

MAP.crb cold runner systems and moulds



Everything from a single source

MAPLAN Toolshop

Due to our extensive in-house manufacturing, MAPLAN creates independence in production and thus control over all manufacturing processes. We guarantee our customers the highest quality, adherence to delivery dates, and reliability.

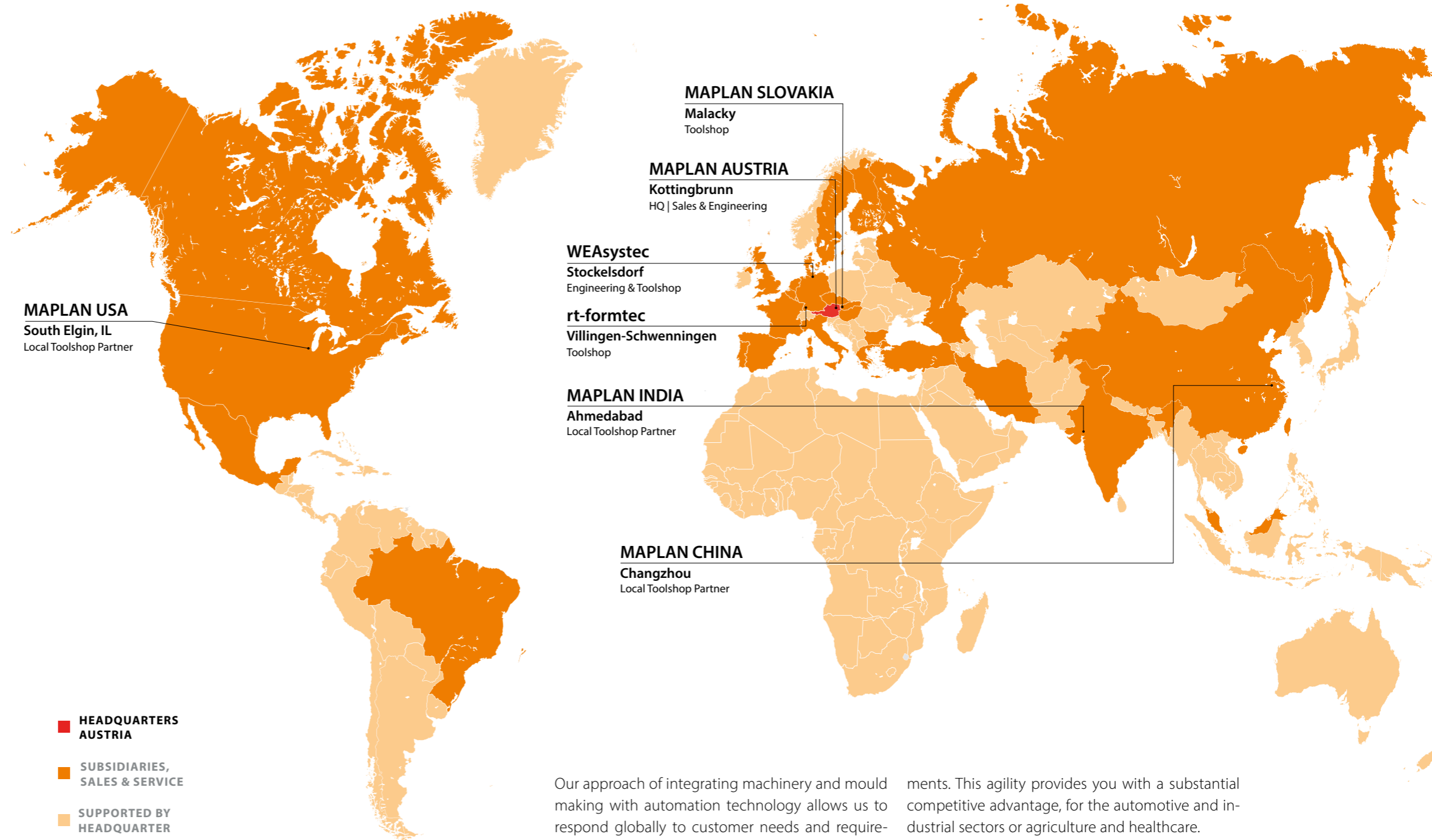
Our manufacturing sites

At our facility in Malacky, Slovakia, you'll find 3,500 square meters of production space dedicated to in-house manufacturing that meets every need. In addition to our machine park, a skilled team is available to optimize cold runners, machines, and moulds before delivery.

With rt-formtec in southern Germany, we have capacity to produce high-quality moulds and cold runners, with sizes up to 2,500 x 2,000 mm. This manufacturing location is equipped with a comprehensive array of machinery, including milling and grinding machines, for the production of tools and cold runners.

Additional expertise

By integrating WEAsystec and rt-formtec into our group, MAPLAN has significantly expanded its expertise in mould making and automation technology. Additionally, manufacturing capacities have been substantially increased beyond the Malacky facility in Slovakia. Through these consolidations over recent years, MAPLAN now positions itself as an even stronger partner for complete solutions in machines, moulds, cold runners, and automation technology.



Our services on a global scale

MAPLAN Worldwide

MAPLAN's expansion provides you with the advantage of global supply of cold runners and moulds.

Our approach of integrating machinery and mould making with automation technology allows us to respond globally to customer needs and requirements. This agility provides you with a substantial competitive advantage, for the automotive and industrial sectors or agriculture and healthcare.

Increase your productivity

MAP.crb cold runner systems

MAPLAN leverages intelligent technologies to maximize performance, productivity, and profitability in elastomer processing. Rising raw material prices, high disposal costs, and constant cost pressure compel companies to continuously enhance their performance and produce in an environmentally friendly manner. We offer various cold runner systems that guarantee exceptionally high efficiency in the production of rubber and elastomer articles. When cold runner systems are properly applied, producers experience numerous advantages compared to hot runner distributors:

Increased productivity

- ⓪ Shorter cycle times due to faster injection time
- ⓪ Elimination of sprues leads to reduced manual post-processing
- ⓪ Ideally suited for automated injection moulding processes and the use of robotic technology
- ⓪ More output with the same tool size due to a higher number of cavities

Improved part quality

- ⓪ A more stable process enhances part quality
- ⓪ Improved physical properties with lower moulding stress
- ⓪ Uniform cavity filling through simple balancing of cold runner nozzles

Simplified production process

- ⓪ Facilitates balancing injection into a large number of cavities
- ⓪ Avoid scorching of fast-curing compounds during mould filling
- ⓪ Higher process reliability
- ⓪ Injection pressure loss in channels is avoided => can be utilized for cavity filling
- ⓪ No retraction of the nozzle required (it remains in contact with the cold surface of the CRB)

Economical advantages

- ⓪ Cost savings through significantly less waste
- ⓪ Less elastomer needs to be purchased, mixed, and stored
- ⓪ Cold runner systems can be used across different tools
- ⓪ Quick return on investment, especially with high-priced compounds
- ⓪ Reduced electricity consumption

Up to
80%
less rubber
waste

Product overview

A MAP.crb for all applications

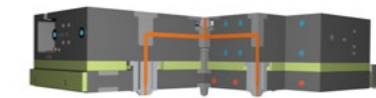
MAPLAN offers various cold runner systems for a variety of applications. Each system features unique characteristics and is tailored specifically for your production processes. The MAPLAN project team is happy to advise you.

SLIM



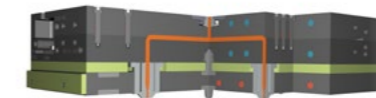
- Slim design saves daylight distance
- Easy & quick installation
- Very few wearing parts
- No cold runner heating plate required

SOLID



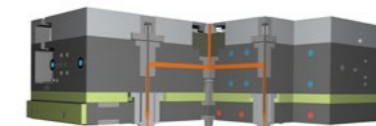
- Optimal heating contact area with mould
- Suitable for high-pressure applications
- Low-maintenance, robust solution
- Optionally available as **solid+** with manual nozzle flow adjustment

SPLIT



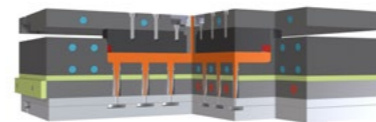
- Good for multi-colored materials
- Easy compound change
- Access to rubber channels for quick cleaning
- Optimal heating performance
- Good for non-symmetrical nozzle layouts

PINPOINT



- Based on MAP.crb solid
- Hydraulic needle shut-off nozzles
- For the highest injection pressures
- Optionally available as **pinpoint+** with mechanical nozzle stroke adjustment

ITM



- High number of nozzles possible
- Flexible with nozzle positions
- Suitable for small & precise parts
- Material savings & waste reduction

VALVE GATE



- External CRB needle valve control
- Flexible use on different machines
- Applicable on machines from other manufacturers
- Control via time, volume, or pressure sensors

Solid, Split & Pinpoint Standard Features



Three zones

Every MAP:crb (except MAP:crb slim) includes its own heating plate. Optimal temperature distribution is achieved through a three-zone control of the heating zones. Temperature ranges can be individually adjusted.



MAP.easylock

This quick-release system for the cold runner heating plate allows for easy and fast disconnection of the cold runner block from the heating plate. This prevents material from vulcanizing during production stops.



Always properly heated

Optionally, all MAPLAN cold runner heating plates can be equipped with isobars for optimized temperature distribution (+/- 1.5°C). Isobars work by using gas-filled tube bodies placed between the heating rods, which distribute the temperature more evenly across the heating plates. Utilizing isobars can enhance part quality and reduce vulcanization time.



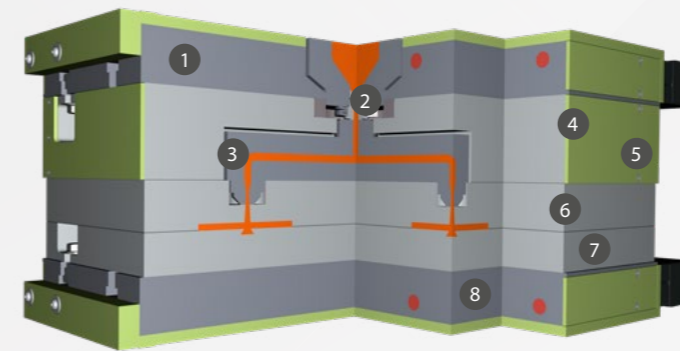
MAP:crb slim

CRB

Small size, big impact

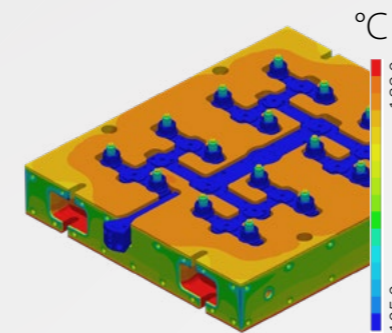
Super slim design, easy installation

The MAP:crb slim stands out with its simple and user-friendly design. This special concept reduces the overall height of the cold runner block. This slim layout saves daylight clearance for larger tools or automation components, making it suitable for any machine. The MAP:crb slim does not have its own heating system but utilizes the machine's heating plate. Therefore, the MAP:crb slim is also suitable for **easy retrofitting on all existing machines.**



SLIM

1. Machine heating plate
2. Temperature-controlled injection chamber with machine nozzle
3. Temperature-controlled distribution system
4. Cold runner block base plate (heated by machine heating plate)
5. Insulation strip on the outside
6. Upper mould half
7. Lower mould half
8. Machine heating plate



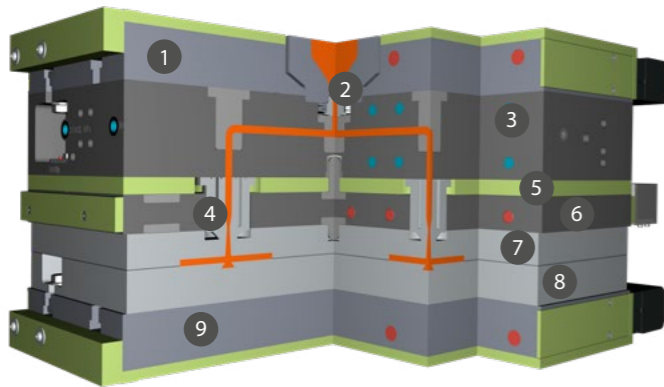
Maximum flexibility

- ⊖ No increase in daylight required.
- ⊖ **No additional equipment needed for controlling the cold runner on the machine.**
- ⊖ High flexibility in terms of the number and position of nozzles.
- ⊖ Independent of the power supply voltage in the respective country.
- ⊖ Only one temperature control device required for the distribution system.

Thermally perfectly designed

A low-maintenance, solid solution for many applications

The MAP.crb solid is a drilled cold runner suitable for applications **requiring the highest injection pressures**. Its symmetrical cold runner distributor design ensures the maximum balance of material flow, consistently avoiding sharp edges in the channels. In addition to the optimal tempered cold runner block, the injection nozzles are separately cooled up to the tip. The MAP.easylck system allows the MAP.crb solid to be easily disconnected from the heating plate during production stops.



SOLID

1. Machine heating plate (inactive)
2. Tempered injection chamber with machine nozzle
3. Tempered distributor block with drilled channel
4. Tempered cold runner nozzles
5. Insulating plate
6. Cold runner heating plate
7. Upper mould half
8. Lower mould half
9. Machine heating plate

MAP.crb solid Highlights

- ① **Short heating-up time** during production start or after mould change
- ① **Optimal temperature distribution** even with a large number of nozzles
- ① Cold runner heating plate can be disconnected at the end of production: **faster cooling / no cured compound**
- ① Suitable for **highest injection pressures**
- ① Maximum pressure stability up to 3500 bar
- ① For cleaning, **cured compound can be purged out with injection pressure**
- ① **Optimal flow performance** / rounded and surface-polished channels
- ① Manual **nozzle adjustment** with **MAP.crb solid+**

Simply adjust manually

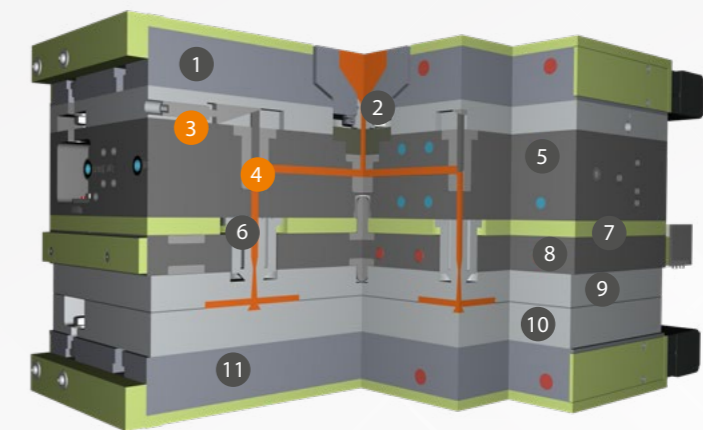
MAP.crb solid⁺ sets new standards in flexibility.

The MAP.crb solid⁺ is based on the design of the MAP.crb solid. The MAP.crb solid⁺ offers an additional feature that allows for the regulation of material flow directly in the rubber channel. The adjustment can be done from the side of the cold runner block, making it possible even when the block is installed.



SOLID⁺

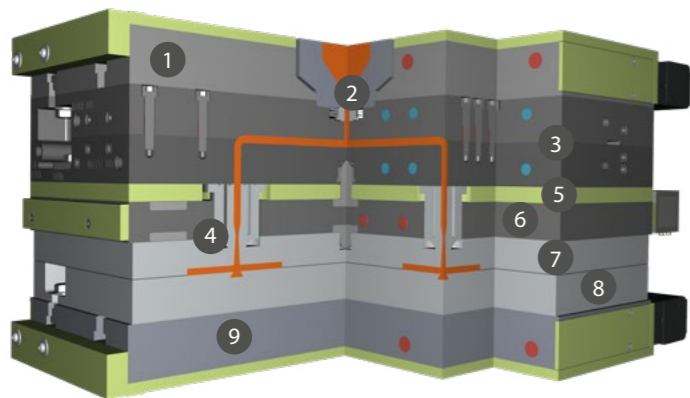
1. Machine heating plate (inactive)
2. Tempered injection chamber with machine nozzle
3. **Adjustment plate**
4. **Pin for mechanical flow adjustment**
5. Tempered distribution block with drilled channel
6. Tempered cold runner nozzles
7. Insulating plate
8. Cold runner heating plate
9. Upper mould half
10. Lower mould half
11. Machine heating plate



Easy cleaning

Divided design,
twofold advantage

The key feature of the MAP.crb split is its two plate design. The main block consists of an upper and lower plate, bolted together. The elastomer channels are milled into these two plates. This split design allows direct access to the elastomer channels for complete cleaning, which is especially necessary during color changes. The MAP.crb split cold runner system is equipped with a heating plate with 3-zone control and the MAP.easylock quick-release system.



| SPLIT |

1. Machine heating plate (inactive)
2. Tempered injection chamber with machine nozzle
3. Two-part distributor block
4. Tempered cold runner nozzles
5. Insulating plate
6. Cold runner heating plate
7. Upper mould half
8. Lower mould half
9. Machine heating plate



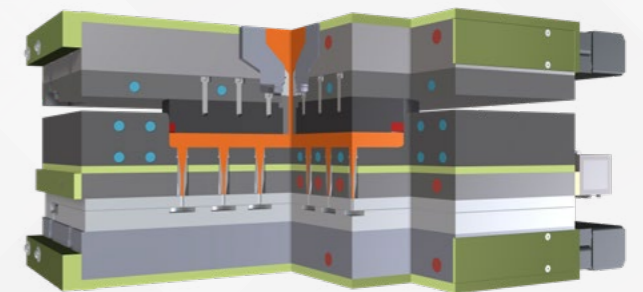
MAP.crb split Highlights

- ① **Split block – direct access** to elastomer channels
- ① **Excellent heating performance** thanks to dedicated heating plate
- ① **Individual nozzle arrangements**
Ideal for non-symmetrical nozzle layouts
- ① **Short heating time at production start** or after mould change
- ① **Ideal for frequent cleaning of distribution channels**

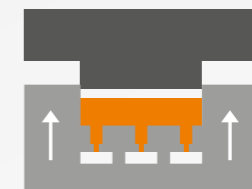
Precision and efficiency

Accurate and resource-efficient
production of small parts

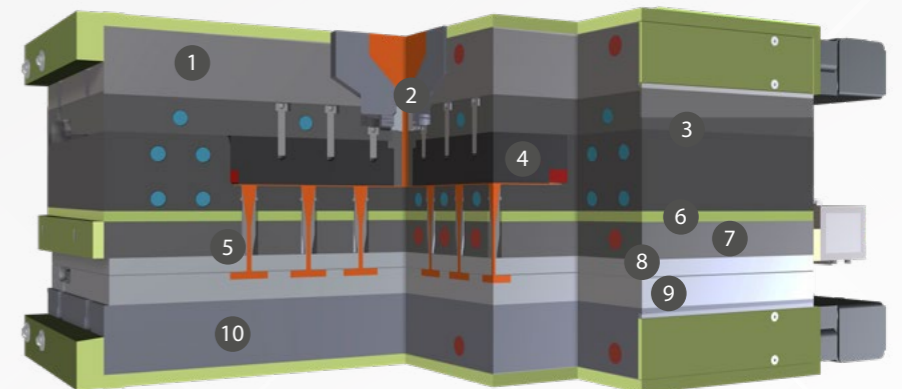
The innovation of ITM-C – Injection Transfer Mould-Cold pot – enables the production of small precision parts with the highest efficiency and quality. The special design ensures uniform material flow into the mould, even with a high number of closely spaced nozzles. Waste is minimized through the tempered design. Thanks to the MAP.easylock system, the heating plate of the MAP.crb ITM can be quickly and easily decoupled. A high number of cavities combined with small tolerances is complemented by the advantage of material savings.



| Dosed



| Injected



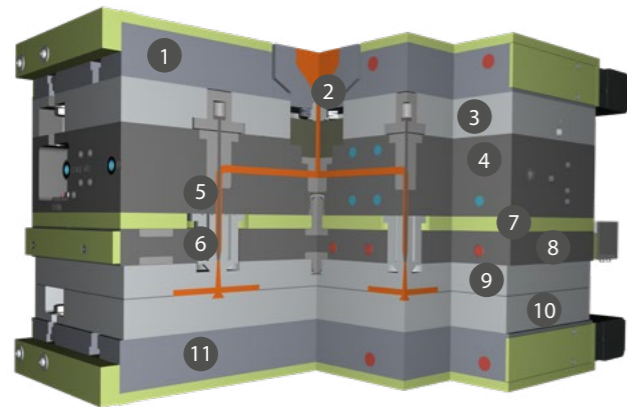
| ITM |

1. Machine heating plate (inactive)
2. Tempered injection chamber with machine nozzle
3. Tempered ITM block
4. Transfer piston
5. ITM nozzle
6. Insulating plate
7. ITM heating plate
8. Upper mould half
9. Lower mould half
10. Machine heating plate

For the highest accuracy

Direct injection on the part?

The MAP.crb pinpoint, a solid cold runner block with drilled elastomer channels, enables the lowest material consumption for gating the parts. The cold runner nozzles are equipped with hydraulic shut-off needles controlled by hydraulic cylinders, located in a control plate above the distribution block. The hydraulic can be configured for single or multiple circuits as needed, allowing for sequential or simultaneous nozzle actuation.



PINPOINT

1. Machine heating plate (inactive)
2. Tempered injection chamber with machine nozzle
3. Control plate
4. Tempered base block
5. Shut-off needle
6. Tempered cold runner nozzles
7. Insulating plate
8. Cold runner heating plate
9. Upper mould half
10. Lower mould half
11. Machine heating plate

For
direct
injection
onto the part

MAP.crb pinpoint Highlights

- ① **Optimal temperature distribution** even with a higher number of nozzles
- ① **MAP.easylock:** Quick unlocking of the cold runner heating plate
- ① **Enables the lowest material consumption for gating the parts**
- ① Excellent temperature regulation of nozzle bodies
- ① **Individually configurable** nozzle control (sequential or simultaneous actuation) Suitable for the highest injection **pressures up to 3500 bar**
- ① **Direct injection onto the part**

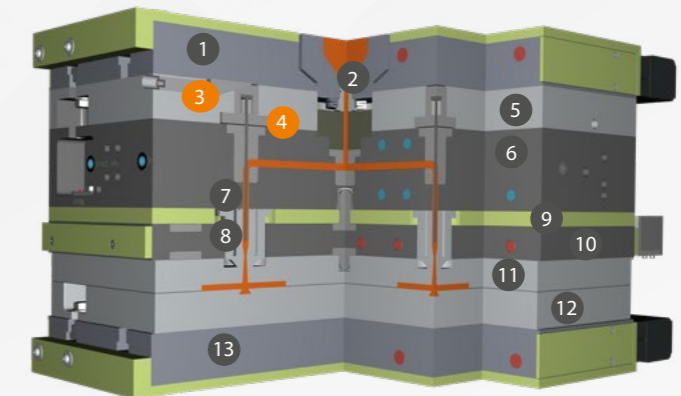
For even greater precision

MAP.crb pinpoint⁺ sets new standards in precision.

The **MAP.crb pinpoint⁺** is based on the design of the MAP.crb pinpoint. The "+" offers users additional flexibility in terms of adjustability. In this version, the needles of the cold runner nozzles can be manually adjusted from the outside of the block for the opening stroke, in addition to the hydraulic nozzle shut-off.

PINPOINT⁺

1. Machine heating plate (inactive)
2. Tempered injection chamber with machine nozzle
3. **Adjustment plate**
4. **Pin for mechanical nozzle stroke adjustment**
5. Control plate
6. Tempered base block
7. Shut-off needle
8. Tempered cold runner nozzles
9. Insulating plate
10. Cold runner heating plate
11. Upper mould half
12. Lower mould half
13. Machine heating plate



MAP.valvegata

Mobile needle valve control



The MAP.valvegata ensures precise control of valve-gated cold runner systems, optimizing injection moulding processes by adjusting needle movements based on time, volume, or pressure. This external control device is fully integrated into the control systems of MAPLAN machines but also sets new standards for flexibility through its multi-use capability on machines from other manufacturers. MAP.valvegata not only reduces investment costs but also enhances production efficiency and quality.

Moulds

Tailor-made

Advanced tools for all applications

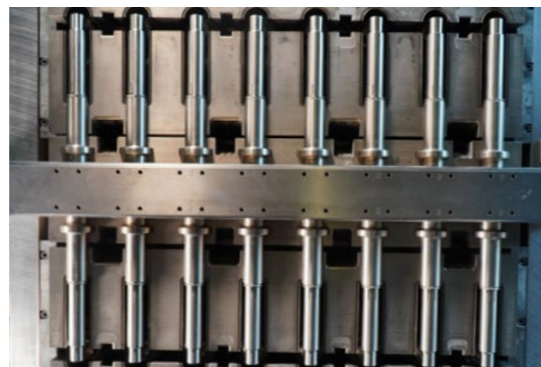
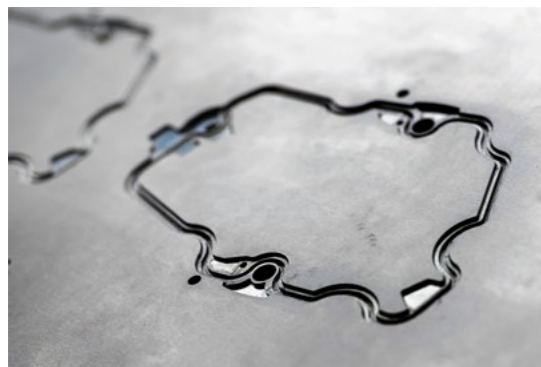
At MAPLAN, we view tool manufacturing as a crucial element in being a complete provider. Our extensive expertise, along with the know-how from our subsidiaries WEAsystec and rt-formtec, enables us to develop and produce injection moulds with precise execution and thoughtful design for technical elastomer products. We manufacture moulds for a wide range of applications, like medium voltage technology, industrial, agriculture, oil & gas and healthcare. Our specialties include anti-vibration and sealing systems in the automo-

tive sector, as well as components for the energy and electrical industries.

Production takes place at our facilities in Germany and Slovakia, with additional support from our tooling partners in the USA, China, and India. With our extensive machinery and collaboration with partners who have access to advanced simulation software, we achieve maximum manufacturing depth and precise layout of injection systems. Our moulds, optimally aligned with production processes, are an integral part of our 360-degree solutions.

Perfectly tailored to the highest quality

Our high manufacturing depth allows us to control production processes, enabling us to respond quickly to customer requirements, consistently ensure product quality, and reduce development times. This results in custom solutions with improved quality and faster availability for our customers. Additionally, our direct control over production allows us to manage costs efficiently, offer competitive prices, and minimize environmental impact. This is complemented by our experienced process engineers who support you during initial sampling on your machine or in our technical center.



Technical center

Experience innovation live

High-Tech on the big stage

Technical know-how in application is a central element that we offer you in our new, expanded technical center. We provide you with access to a wide range of machine-

ry and highly qualified engineers who support the production ready development of processes and products.



SERVICES:

In our new technical center we offer the following services:



MAP.crb cold runner

We offer various cold runner systems that significantly increase the production efficiency of rubber and elastomer articles. Our MAP.crb cold runners are available for comprehensive tests.



Compound trials

We are happy to test your rubber compound for you and check its processability. We use the resulting information to configure an ideal MAPLAN machine for you.



Tool testing

Test your tool on a MAPLAN machine and experience the strong performance.



Machine presentation

Let us show you the individual machines and technologies in full operation by our experts. Convince yourself of the ergonomics and the user-friendly MAP.commander C6 machine control system.



Personal consultation

Our technical experts and technicians take their time to advise you.

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