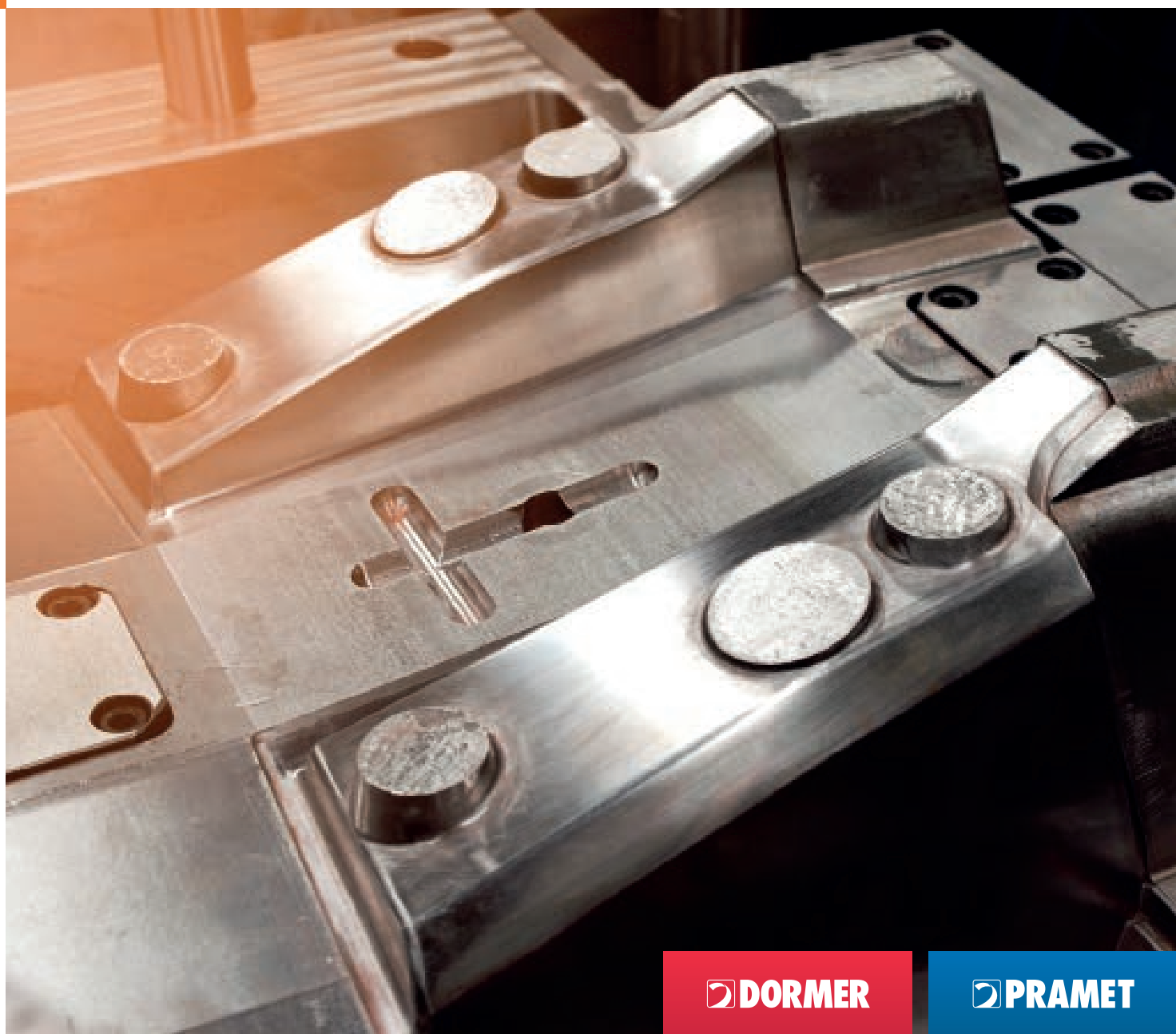


DORMER PRAMET

DIE & MOLD

Product Highlights

2021



 DORMER

 PRAMET

3 INTRODUCTION

4 DIE AND MOLD MATERIALS

25 MAINTENANCE AND REPAIRS

26 CUSTOM MADE TOOLS

27 TECHNICAL TRAINING & SUPPORT

INTRODUCTION

Dormer Pramet is a global supplier of tooling to the Die and Mold industry. Our assortment sets the highest standards including process security, which is expected by die and mold makers.

Our assortment focuses on indexable and round tools, which are widely used in die and mold applications.

Within our indexable range we offer a wide choice of high-feed cutters, as well as tools for face, shoulder and importantly copy milling. Indexable drilling and boring products are also on offer.

For round tools we cover hole-making, milling and fine profiling, tapping and reaming.

With our portfolio of tools you can apply all types of operations from roughing, semi-finishing to fine finishing. Our tools are designed to cover a variety of material groups, including steels, pre-hardened and hardened steels, stainless steels, cast irons and non-ferrous alloys.

In addition, we manufacture made to order custom tools for various application needs, while offering technical advice, CAD/CAM support locally and complete customer service.

Please contact your local Dormer Pramet sales office for further information and advice regarding our Die and Mold assortment or visit www.dormerpramet.com.



Steel is the most common material for mold and die makers. However, there are many types of steels used and the cutting tools selected need to be suitable for these variations. The main properties of steels are strength, wear and corrosion resistance, hardness, machinability, polishability and dimensional stability. We can split steels into two main groups:

- Soft annealed, up to 280 HB
- Pre-hardened, up to 45 HRC

HIGH-FEED MILLING

Our family of tools for high-feed machining is suitable for various milling operations. The range includes diameters from 16.0 – 175.0 mm (.625" – 6.0") for cutting depths up to 2.0 mm (0.78"). Cutters such as SBN10, SSN11, SPD09, SZD07/09/12 and SAD, can be supported with inserts such as BNGX and SNGX.



SEE TOOL
IN ACTION



INDEXABLE MILLING

Our range includes 45°, 90° inserts and round inserts with specific geometries and grades to achieve maximum performance in steel milling. These are available as modular, shell mills and parallel shank cutters.

FACE MILLING

Solutions for economical machining with 12 cutting edges and maximal performance for productivity. Product lines include: SHN06C/09C and SPN13.



SHOULDER MILLING

Shoulder milling range for high performance, with large cutting depth and economical six cutting edges. Product lines include: SAD, SLN12/16 and STN10/16.



SEE TOOL
IN ACTION



COPY MILLING – ROUND INSERT

The SRC and SRD range of round inserts are based on various radii size and cutting depths. Available options include 05/07/10/12/16/20.



BORING

Roughing and finishing boring heads and sets, modular extenders and all type of arbors, covering diameter range 8.0 – 500.0 mm. Carbide, cermet, ceramic and CBN inserts available.

REAMING

The B4 series of carbide machine reamers offer extremely unequal spacing for precision reaming. Straight and spiral flute options, with centesimal division and in various sizes (0.98 – 30.0 mm).



SEE TOOL
IN ACTION



DRILLING

R12x line of carbide stub and spotting drills.
R7131 carbide pre-tapping drill (M4 – M12).

Force X – versatile solid carbide drills. Available as solid and coolant-feed in 3xD, 5xD and 8xD 3.0 – 20.0 mm (1/8" – 3/8").



SEE TOOL
IN ACTION



Hydra – interchangeable solid carbide head drills for high performance drilling of steels. Available with coolant-feed across the full range and a choice of HSS bodies to support drilling from 1.5xD to 12xD.



SEE TOOL
IN ACTION



U-drills for indexable hole-making, covering diameters 15.0 – 58.0 mm (.591" – 2.283") and in lengths 2xD to 5xD.



COPY MILLING/FINISHING

The SCN05C/SWN04C assortment is available in a wide diameter range (12.0 – 32.0 mm), with wiper edge inserts for fine finishing milling. Offers high number of cutting edges.



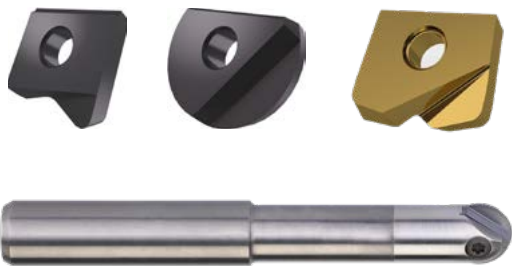
SEE TOOL
IN ACTION



COPY MILLING/PROFILING

Our assortment achieves high-levels of productivity and quality, for roughing up to finishing operations. Diameter range 8.0 – 50.0 mm. Steel or carbide bodies can hold toroidal, high-feed or ball nose shaped inserts.

Product lines include: K2-PPH, K2-SRC/SLC, K3-CXP and L2-SZP.



GENERAL MILLING – ROUGHING TO FINISHING

The S7 range of solid cutters is for high-performance milling of mold steels. Various styles and lengths are available with either TiSiN and AlCrN/AlTiN coating. The S791 barrel end mill reduces machine time in semi-finishing and finishing operations.



SEE TOOL
IN ACTION



TROCHOIDAL/DYNAMIC MILLING

Our dedicated five-flute end mills (S77xHB) are for trochoidal slotting and dynamic milling. This includes options with and without a chip-divider, and either solid or through coolant.



SEE TOOL
IN ACTION



SEE TOOL
IN ACTION



TAPPING

Various types of taps available, including spiral point, spiral flute, straight flute and forming for M, MF, UNC, UNF and G thread forms.

YELLOW SHARK TAPS

E29x/412 high performance HSS-E-PM taps for structural, plain carbon and low alloy steels.



RED SHARK TAPS

E25x/E26x HSS-E-PM performance tapping of alloyed steels.



MORE OPTIONS:

- EP/EX range of HSS-E-PM taps M2 – M64 (UNC/UNF 4 – 1")
- E28/E29 line of HSS-E forming taps
- T2 assortment of carbide and forming taps
- J2 series of carbide thread end mills



SEE TOOL
IN ACTION



The variations in hardness of the steel being machined is crucial for the different types of end-product. Hardened steel can range from 45 HRC up to 63 HRC or more. Application examples are stamping and extrusion dies and punches, forging dies, master hobs, forming and stamping dies, die-casting dies and plastic molds.

HIGH-FEED CUTTERS

Wide family of cutters for high-feed machining across various milling operations. Available in diameter 16.0 – 140.0 mm (.625" – 5.0") for cutting depths up to 2.0 mm (.078").

Product lines include: SBN10, SSN11, SPD09 and SZD07/09/12.



INDEXABLE MILLING

Designed geometries and grades for hardened steel machining is available for 45°. Range available from 25.0 – 315.0 mm (1.0" – 12.0").

FACE MILLING

Solutions for economical machining with 12 cutting edges and maximal performance for productivity. Product lines include: SHN06C/09C.



COPY MILLING – FINISHING

SCN05C/SWN04C indexable cutters (12.0 – 32.0 mm) with dedicated grade for milling hardened steels and fine finishing surfaces.



SEE TOOL
IN ACTION



COPY MILLING/PROFILING

This assortment supports high productivity and quality requirements, for roughing up to finishing operations. Diameter range 8.0 – 32.0 mm. Steel and carbide bodies can hold toroidal, high-feed or ball nose shaped inserts. Product lines include: K2-PPH and K2-SRC/SLC.



TAPPING

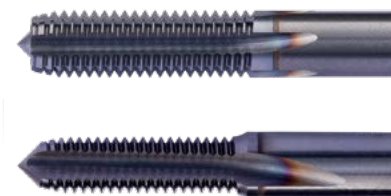
Spiral point and straight flute carbide taps for materials up to 50 HRC.

BLACK SHARK TAPS

E33x high performance HSS-E-PM taps (M3 – M12)



T2 line of straight flute carbide taps (M3 – M12)



DRILLING

Force X – solid carbide drill for drilling materials up to 50HRC. Available as solid and coolant-feed in 3xD, 5xD and 8xD 3.0 – 20.0 mm (1/8" – 3/8").



MILLING, ROUGHING TO FINISHING

Our S5 and S2 for hardened steels, feature a corner radius or sharp corner end mills, finishing end mills, ball nose and high-feed end mills. All provide stable performance and either a TiSiN or AlCrN coating.



Corrosion resistance and high polishability are key characteristics for mold makers when using stainless steels. Martensitic stainless steels are often used for producing plastic molds for cavities with complex surfaces and shapes. Another example where stainless steel can be used is when a more cosmetically pleasing end-product is required.

INDEXABLE MILLING

Our range includes 43°, 90° and round inserts, with specific geometries and grades to achieve maximal performance in stainless steel milling. Available as modular cutters, shell mills and parallel shank.

FACE MILLING

This assortment provides solutions for economical machining with eight cutting edges, achieving maximal performance and productivity. Product lines include: SOE06Z/09Z.



SEE TOOL
IN ACTION



SHOULDER MILLING

Shoulder milling range for high performance, with large cutting depth and economical six cutting edges. Product lines include: SAD, SLN12 and STN10/16.



COPY MILLING – ROUND INSERT

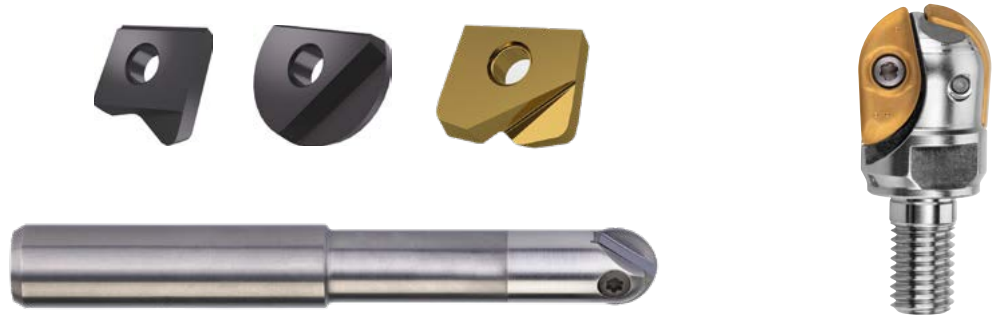
Dedicated round insert cutters for high performance with indexable seats. Based on radii size and a range of inserts (05/07/10/12/16/20).

Product lines include: SRC and SRD.



COPY MILLING/PROFILING

This assortment supports high productivity and quality requirements, for roughing up to finishing operations. Diameter range 8.0 – 50.0 mm. Steel or carbide body can hold toroidal, high-feed or ball nose shaped inserts. Product lines include: K2-PPH and L2-SZP.



HIGH-FEED MILLING

Our wide family for high-feed machining covers various milling operations. Available from diameter 16.0 – 175.0 mm (.625" – 6.0") for cutting depths up to 2.0 mm (.078").

Product lines include: SBN10, SSN11, SPD09 and SAD with several high-feed inserts.



TROCHOIDAL/DYNAMIC MILLING

Dedicated five-flute end mills (S77xHB) for trochoidal slotting and dynamic milling strategies. Standard range with and without a chip-divider, and either solid or through coolant.



SEE TOOL
IN ACTION



DRILLING

Force M – coolant-feed solid carbide drills with unique flute construction. Available in 3xD, 5xD and 8xD 3.00 – 16.00 mm (1/8" – 3/8").



SEE TOOL
IN ACTION



Hydra – interchangeable solid carbide head drills for high performance drilling of stainless steels. Available with coolant-feed across the full range and a choice of HSS bodies to support drilling from 1.5xD to 12xD.



SEE TOOL
IN ACTION



U-drills for indexable hole-making, covering diameters 15.0 – 58.0 mm (.591" – 2.283") and in lengths 2xD to 5xD.



GENERAL MILLING – ROUGHING TO FINISHING

Specifically designed for effective stainless steel and super alloys milling. Our S2 line of end mills offers various styles and lengths. TiSiN and AlTiN coating for stable performance and thermal resistance.



TAPPING

Various types of taps available, including spiral point, spiral flute, straight flute and forming for M, MF, UNC, UNF and G thread forms.

BLUE SHARK TAPS

E23/E24/E414 high performance HSS-E-PM taps (M3 – M30)

SEE TOOL
IN ACTION



• MORE OPTIONS:

- E28/E29 line of HSS-E forming taps
- T2 carbide forming tap
- J2 series of carbide thread end mills



Cast iron mold frames and plates are structurally and economically a more suitable alternative when machining forged steel blocks. Grey cast iron is especially considered as a die and mold material for production of big parts, plates, spacers, bushings and other components when wear process is not expected. Moreover, cast iron can also be used for dies, punches, jigs and pads for molds.

INDEXABLE MILLING

Designed geometries and grades for cast iron machining are available for 45° and 90° inserts. Dedicated geometry and PVD/CVD grades. Offering the highest cutting removal and economy, with up to 12 cutting edges. Range available from 10.0 – 200.0 mm (1/2" – 8").

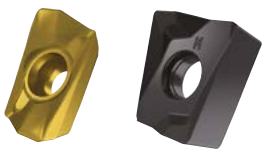
FACE MILLING

Providing solutions for economical machining with 12 cutting edges and maximal performance for productivity. Product lines include: SHN06C/09C, SPN13 and CHN09.



SHOULDER MILLING

Shoulder milling range for high performance, with large cutting depth and economical four cutting edges. Product lines include: SAD and SLN12.



DEEP SHOULDER/DISC MILLS

Product lines include:

- S90SN/CN thin disc mills and adjustable slot width
- J(T)-SAD11/16E weldon, morse and ISO50
- J(T)-SLSN cutters with changeable face module, eight cutting edges





COPY MILLING

Dedicated round insert cutters for high performance with indexable seats. Based on radii size and a range of inserts (05/07/10/12/16/20).

Product lines include: SRC and SRD.

COPY MILLING – FINISHING

SCN05C/SWN04C indexable cutters (12.0 – 32.0 mm) for fine finishing surfaces, with the economic benefit of multiple edges.



COPY MILLING – PROFILING

This assortment supports high productivity and quality requirements, for roughing up to finishing operations. Diameter range 8.0 – 50.0 mm. Steel and carbide body for toroid, with a high-feed ball shaped insert.

Product lines include: K2-PPH, K2-SRC/SLC and L2-SZP.



PROFILE CUTTERS

Standard range for T-slotting, chamfering, countersinking and rear face milling.

Product lines include: F-SCC, SSD09, N-SSO09 and 2616/36.

HIGH-FEED CUTTERS

Wide family of cutters for high-feed machining across various milling operations. Available in diameter 16.0 – 140.0 mm (.625" – 5.0") for cutting depths up to 2.0 mm (.078"). Product lines include: SBN10, SSN11, SPD09 and SZD07/09/12.



SEE TOOL
IN ACTION



TAPPING

Various types of taps available, including spiral point, spiral flute, straight flute and forming for M, MF, UNC, UNF and G thread forms.

WHITE SHARK TAPS

E2 high performance HSS-E-PM taps (M3-M30)



MORE OPTIONS:

- T2 line of carbide taps
- J2 series of carbide thread end mills



REAMING

The B4 series of carbide machine reamers offer extremely unequal spacing for precision reaming. Straight and spiral flute options, with centesimal division and in various sizes (0.98 – 30.00 mm).



BORING

Roughing and finishing boring heads and sets, modular extenders and all type of arbors, covering diameter range 8.0 – 500.0 mm. Carbide, cermet, ceramic and CBN inserts available.



GENERAL MILLING – ROUGHING TO FINISHING

Various styles of end mills for cast iron machining. This includes our S7 high performance line, S8 universal range offering various lengths and number of flutes, plus S501/S511 ball nose end mills.



SEE TOOL
IN ACTION



DRILLING

Force X – versatile solid carbide drills. Available as solid and coolant-feed in 3xD, 5xD and 8xD 3.0 – 20.0 mm (1/8" – 3/8").



SEE TOOL
IN ACTION



Hydra – interchangeable solid carbide head drills for high performance drilling in cast iron. Available with coolant-feed across the full range and a choice of HSS bodies to support drilling from 1.5xD to 12xD.



U-drills for indexable hole-making, covering diameters 15.0 – 58.0 mm (.591" – 2.283") and in lengths 2xD to 5xD.



Aluminium alloys are a very common material in molds production. Aluminium materials need specific tools due to their different chemical and mechanical properties. We offer a specific range of products for aluminium machining which needs higher cutting speeds. This range will reduce machine time and improve productivity. Typical use of aluminium alloys includes prototype production of molds.

INDEXABLE MILLING

An excellent solution for aluminium machining is our 45° and 90° inserts, which are designed with a sharp geometry and a choice of grades. Providing the highest milling performance and economy, with up to eight cutting edges. Range available from 10.0 – 200.0 mm (1/2" – 8").

FACE MILLING

This assortment provides solutions for economical machining with eight cutting edges, achieving maximal performance and productivity. Product lines include: SOE06Z/09Z.



SHOULDER MILLING

Shoulder milling range for high performance, with large cutting depth and economical six cutting edges. Product lines include: SAD, SLN12/16 and STN10/16.



SEE TOOL
IN ACTION



COPY MILLING

Milling cutters for profile and copy milling operations with positive geometry. Solutions with round and VCGT 22 inserts with maximal cutting depth of 12.0 mm. Product lines includes: SRD and SVC22E.

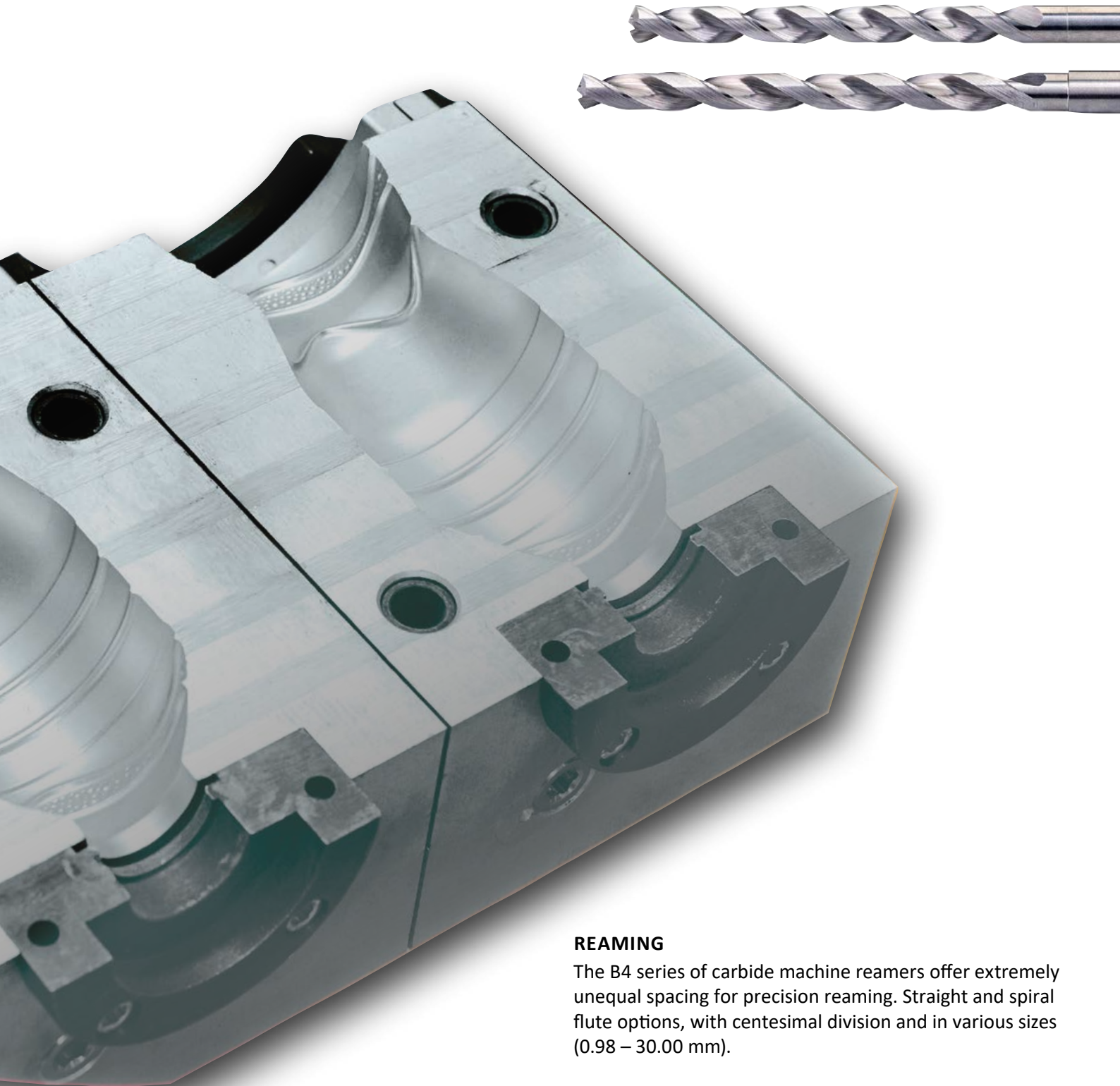


SEE TOOL
IN ACTION



DRILLING

Force N – specifically designed carbide drills with through coolant. Available as 5×D, 8×D and 12×D, in a range of 3.0 – 16.0 mm (1/8" – 5/8").



REAMING

The B4 series of carbide machine reamers offer extremely unequal spacing for precision reaming. Straight and spiral flute options, with centesimal division and in various sizes (0.98 – 30.00 mm).



GENERAL MILLING – ROUGHING TO FINISHING

Our S6 carbide end mills offer a range of types for slotting, contouring and copy milling. This includes a three-flute cutter with NRA profile chip-divider on the cutting edge. Range of diameters from 1.0 – 20.0 mm and radii size 0.3 – 4.0 mm.



COPY MILLING

The S6 ball-nosed end mill offers a diameter range of 1.0 – 20.0 mm. Also, our S791 specific barrel shaped end mill provides efficient five-axis machining as 3F/4F, from 6.0 – 16.0 mm.

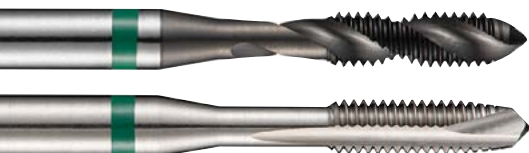


TAPPING

Various types of taps available, including spiral point, spiral flute, straight flute and forming for M, MF, UNC, UNF and G thread forms.

GREEN SHARK TAPS

E47x series of high performance HSS-E-PM taps for aluminium tapping.



MORE OPTIONS:

- EP/EX range of HSS-E-PM taps (M2 – M64)
- T2 assortment of carbide and forming taps
- J2 series of carbide thread end mills





Electro-erosion operations require precise electrodes, where the main profile is difficult to mill. EDM electrodes are made from unalloyed copper, copper alloys and graphite. Bronze form die components, for example, are used in the food industry.

TAPPING

Various types of taps available, including spiral point, spiral flute, straight flute and forming for M, MF, UNC, UNF and G thread forms.

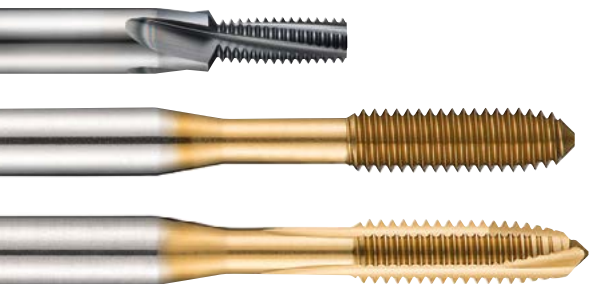
GREEN SHARK TAPS

E47x series of high performance HSS-E-PM taps for copper alloys tapping.



MORE OPTIONS:

- EP range of HSS-E-PM taps (M2 – M30)
- J2 series of carbide thread end mills



MILLING

Our S6 carbide end mills offer a range of types for slotting, contouring and copy milling. This includes a three-flute cutter with NRA profile chip-divider on the cutting edge. Range of diameters from 1.0 – 20.0 mm and radii size 0.3 – 4.0 mm.



DRILLING

Options include our R12x series of carbide stub and spotting drills.

Force X – versatile solid carbide drills. Available as solid and coolant-feed in 3xD, 5xD and 8xD 3.0 – 20.0 mm (1/8" – 5/8").

SEE TOOL
IN ACTION



REAMING

The B4 series of carbide machine reamers offer extremely unequal spacing for precision reaming. Straight and spiral flute options, with centesimal division and in various sizes (0.98 – 30.00 mm).



An important material for electrical discharge machining (EDM) is graphite for electrodes production. Graphite molds are also common in powder metallurgy sintering and pressing processes.

INDEXABLE TOOLS

Preferred tools for this material include a sharp geometry and cutting edge in the below PVD grades and PCD tips:

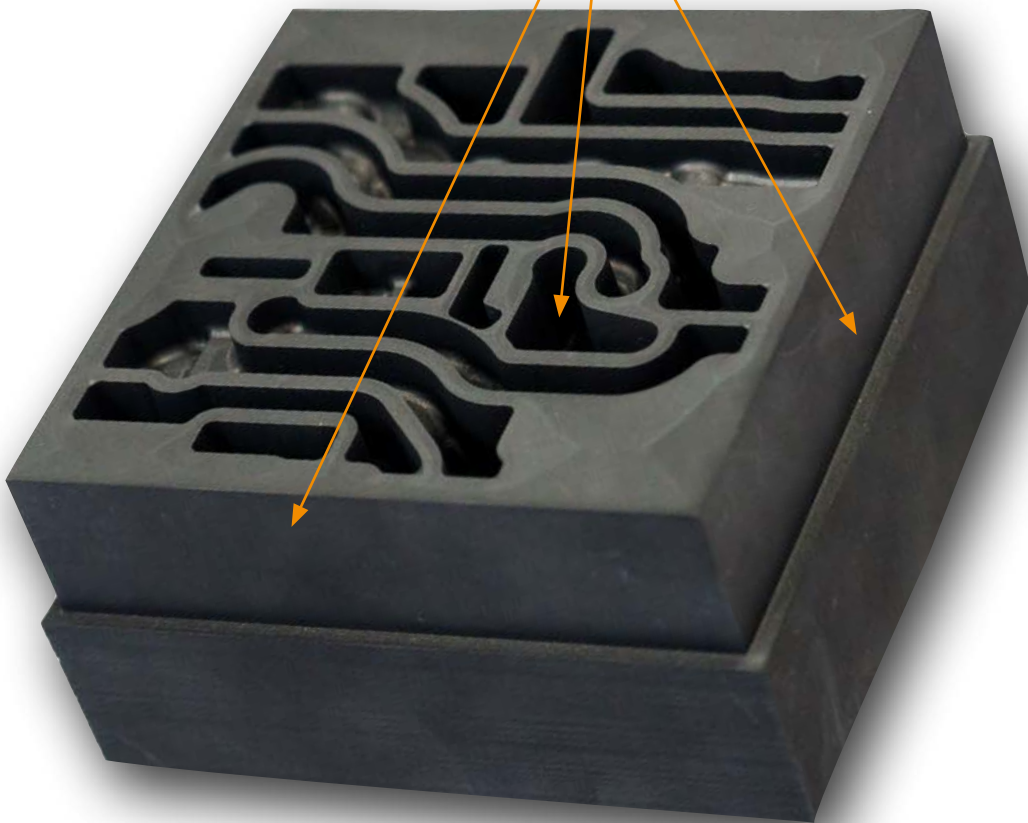
- Turning T6310/T8315/PD1
- Milling M8310/8215/M4310



MILLING

Our S612 carbide end mill has a specifically designed geometry and diamond coating for graphite milling.

Available as a four-flute cutter in a range of 1.0 – 12.0 mm.



TAPPING

The T2x line of carbide taps for blind and through holes has a TiCN and Super B coating, making them suitable for graphite tapping. Metric range includes M3 – M16.



This section refers to the cutting tools needed for the cleaning and repairs to keep molds or dies in the best working order. Maintenance is performed routinely over the life of the mold, as a preventative measure and when any problems arise.

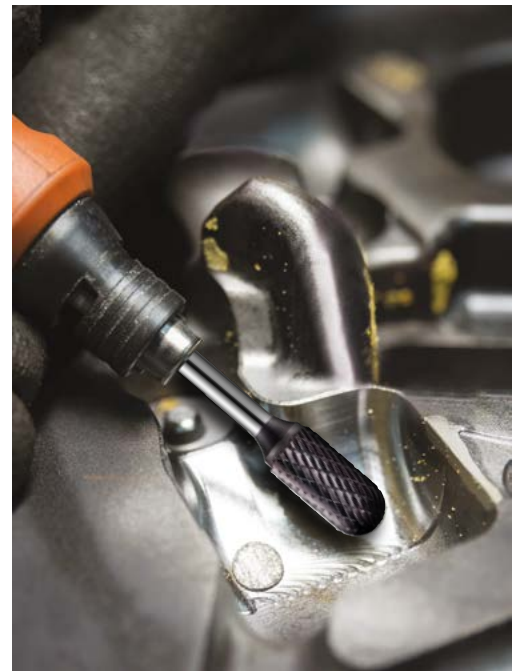
General mold tool repairs include dimensional corrections or deformations, removing material from parting planes, cleaning scraping marks and polishing to achieve the required level of mirror finish. Major repairs could involve welding, laser beam or 3D metal printing, which will also require machining operations to return the mold back to its original form. We offer a large range of tools to suit most deburring operations.

DEBURRING/WELD REMOVAL

Carbide rotary burrs are available in various size, shapes and cut styles based on your mold material. Specific ball nose geometry and TiAlN coating allows stable performance.



SEE TOOL
IN ACTION



BROKEN BOLT/SCREW REMOVAL

Our P100/101 range of burrs are specifically designed to prepare the surface of broken bolts to improve drill location and prevent damaging the threaded hole and component. Metric and inch sizes are available.

SEE TOOL
IN ACTION

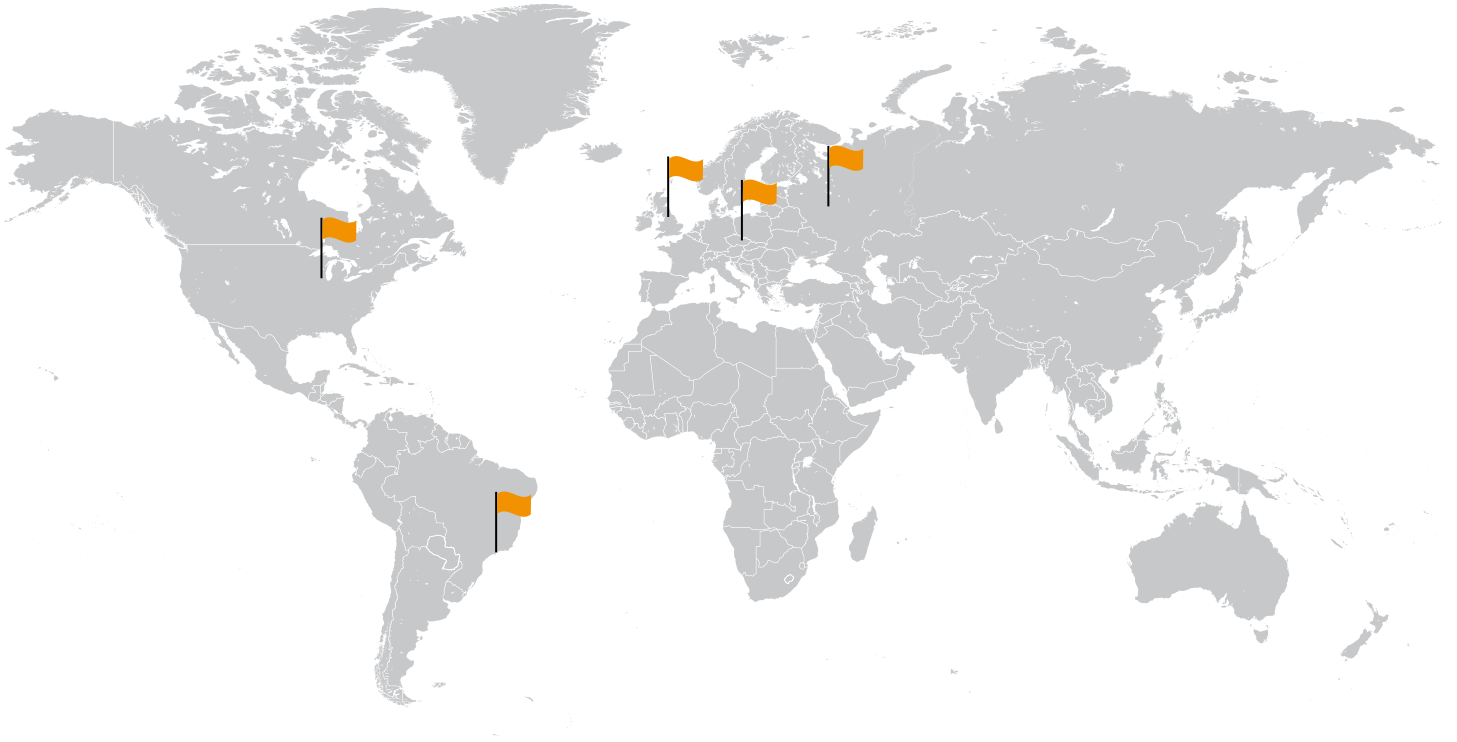


Where standard tools cannot meet the customer requirements, our custom made service of special tools is ready to deliver according to your needs. The benefit of custom made tools is a reduction in machining time and making the whole process more effective. Both indexable and solid round tools can be developed to meet requirements.

Our special tools are designed, developed and produced at our dedicated production units, with recommended coating and grade choice. It includes custom made production of bodies, arbors and inserts, along with end mills, drills, step drills, taps, reamers and countersinks in HSS, HSS-E, HSS-E-PM and carbide materials.

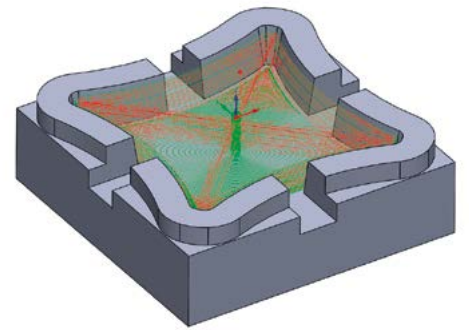


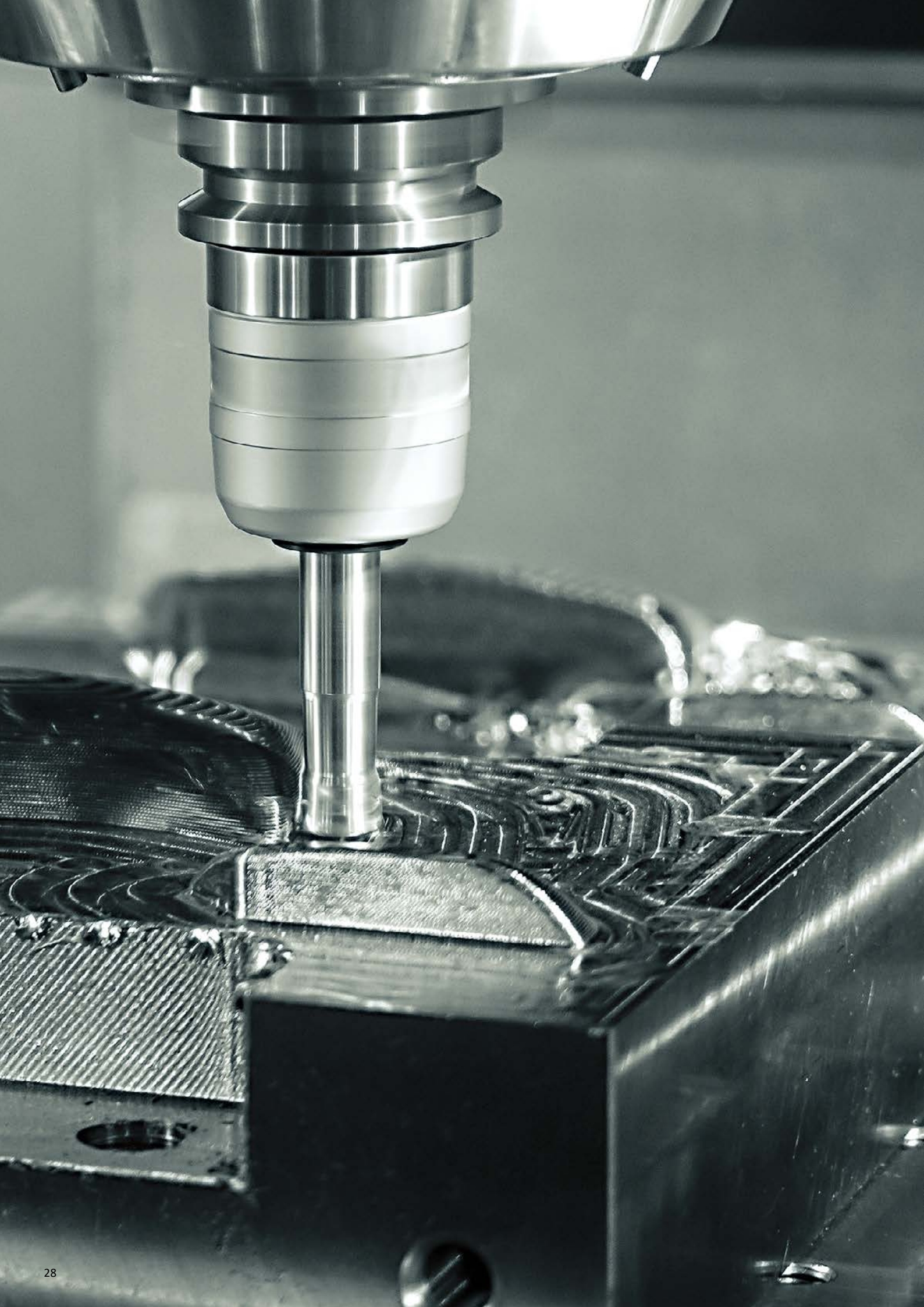
Dormer Pramet has five dedicated training centers located in USA, Brazil, UK, Czech Republic and Russia. Our global training centers specialize in three areas: Product development, testing and education. These centers offer the highest line of skills and machining capabilities to provide a variety of suitable technical trainings.



TECHNICAL SUPPORT AND TOOL SOLUTION

- Available on site with our local technicians and experts to help solve problems quickly.
- Optimization of our tools to get the best performance and reach the highest productivity.
- CAD/CAM assistance to provide cost-effective machining.
- Machining solution for each type of material used within the die and mold industry.





SIMPLY RELIABLE

As a professional you can judge the quality of work by just looking at the chip. Our chip is a clean and uncomplicated shape that in itself tells a story. It is a clear and consistent signal and that's why we use it as a symbol for being **Simply Reliable**.

DORMER PRAMET

Austria

T: +31 10 2080 240
info.at@dormerpramet.com

Belgium & Luxembourg

T: +32 3 440 59 01
info.be@dormerpramet.com

Brazil

T: +55 11 5660 3000
info.br@dormerpramet.com

Canada

T: (888) 336 7637
En Français: (888) 368 8457
cs.canada@dormerpramet.com

China

T: +86 21 2416 0508
info.cn@dormerpramet.com

Croatia

T: +385 98 407 489
info.hr@dormerpramet.com

Czech Republic

T: +420 583 381 111
info.cz@dormerpramet.com

Denmark

T: 808 82106
info.se@dormerpramet.com

Finland

T: 0205 44 7003
info.fi@dormerpramet.com

France

T: +33 (0)2 47 62 57 01
info.fr@dormerpramet.com

Germany

T: +49 9131 933 08 70
info.de@dormerpramet.com

Hungary

T: +36-96 / 522-846
info.hu@dormerpramet.com

India

T: +91 11 4601 5686
info.in@dormerpramet.com

Italy

T: +39 02 30 70 54 44
info.it@dormerpramet.com

Kazakhstan

T: +7 771 305 11 45
info.kz@dormerpramet.com

Mexico

T: +52 (555) 7293981
cs.mexico@dormerpramet.com

Netherlands

T: +31 10 2080 240
info.nl@dormerpramet.com

Norway

T: 800 10 113
info.se@dormerpramet.com

Poland

T: +48 32 78-15-890
info.pl@dormerpramet.com

Portugal

T: +351 21 424 54 21
info.pt@dormerpramet.com

Romania

T: +4(0)730 015 885
info.ro@dormerpramet.com

Russia

T: +7 (495) 775 10 28
info.ru@dormerpramet.com

Slovakia

T: +421 (41) 764 54 60
info.sk@dormerpramet.com

Slovenia

T: +385 98 407 489
info.si@dormerpramet.com

Spain

T: +34 935717722
info.es@dormerpramet.com

Sweden

responsible for Iceland
T: +46 35 16 52 96
info.se@dormerpramet.com

Switzerland

T: +31 10 2080 240
info.ch@dormerpramet.com

Turkey

T: +90 533 212 45 47
info.tr@dormerpramet.com

Ukraine

T: +38 067 566 38 80
T: +38 067 566 81 51
info.ua@dormerpramet.com

United Kingdom

responsible for Ireland
T: 0870 850 4466
info.uk@dormerpramet.com

United States of America

T: (800) 877-3745
cs@dormerpramet.com

Other countries

South America

T: +55 11 5660 3000
info.br@dormerpramet.com

Adria

T: +420 583 381 527
info.rcee@dormerpramet.com

Rest of the World

Dormer Pramet International UK
T: +44 1246 571338
info.int@dormerpramet.com

Dormer Pramet International CZ
T: +420 583 381 520
info.int.cz@dormerpramet.com

DP-BRO-D&M-2021-EN

FOLLOW US...



www.dormerpramet.com



youtube.com/dormerpramet



facebook.com/dormerprametsocial



linkedin.com/company/dormerpramet



instagram.com/dormerprametsocial



twitter.com/dormerpramet