SECO NEWS SUMMARY 2014-2

PRODUCTIVE TOOLS & COMPREHENSIVE EXPERTISE

SECO

SOLUTIONS & SUPPORT

By choosing Seco, you get more than just a comprehensive portfolio of advanced metal-cutting solutions and expert services. You get a partnership based on trust, respect and communication and a team that is always ready to help you gain the competitive advantage.

OVERCOME YOUR CHALLENGES

With a presence in more than 50 countries and 5,000 dedicated employees, Seco develops advanced cutting tools, processes and services that deliver maximum productivity and profitability.

As a globally networked company, we have partnerships around the world that enable us to monitor trends, identify challenges and create solutions that tackle the most demanding metalworking applications across all manufacturing industry segments.

Our broad selection of milling, turning, holemaking and toolholding solutions encompasses more than 30,000 standard products and custom items for special applications. This brochure highlights the latest introductions to our portfolio, with tools that will empower you to improve every aspect of your production.

VERSATILITY IN ALL MATERIALS
JABRO®-SOLID²

Seco's new generation of Jabro-Solid² solid endmills represents over 400 universal products that apply to all commonly machined materials, from steel to titanium alloys. These highly versatile products offer an estimated 30% increase in tool life and 20% higher speeds and are designed to be applied in a wider range of applications compared to the previous generation. These productivity gains stem from optimised geometries and special edge preparations along with a new NXT coating technology.

YOUR SECO BENEFIT:
- Reduced tool inventory and cost-effective machining of a variety of materials with one tool series
- Features like improved cutting edge micro geometry and defined edge preparation contribute to a significant increase in tool life
- Three times more chip, heat and wear resistance over previous tool versions
- Consistent high performance, even on less stable machines
- Full scope of geometries, types and sizes that excel in nearly all metal materials

NEW! COATING TECHNOLOGY
Seco designed its new NXT coating specifically for solid endmills. While the coating's titanium aluminium nitrite (TiAlN) composition is an industry standard, the way Seco applies the coating represents a significant advance in technology. The coating application process generates a single layer via three special steps that control and optimise the growth of the coating at the atomic level. The resulting properties offer increased resistance to chipping, heat and wear when cutting various materials, while also making tool life even more predictable.

RANGE OVERVIEW:
- Full range of easy-to-use and highly versatile endmills
- Endmill diameters from 1 mm to 25 mm and 3/64" to 1"
- Available in DIN total lengths

PRODUCT OVERVIEW:

JABRO®-SOLID² 510 SERIES

Featuring a completely reengineered design, these square endmills incorporate a 46° helix angle with improved cutting edge micro geometry and chip flow for a freer cutting action. Offering an excellent price / performance ratio, the series comes in 2, 3 and 4 flute versions and a broad range of lengths.

JABRO®-SOLID² 520 SERIES

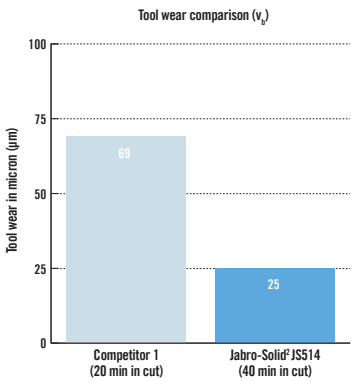
These multi-flute endmills feature special edge preparations. Chamfers preserve cutting edge integrity for smoother part surfaces, while the new coating adds durability and higher speed and feed performance capability.

JABRO®-SOLID² 530 SERIES

These ballnose endmills, available in 2, 3 and 4 flutes, feature a new coating that optimises chip formation for smooth cutting and increased resistance to chipping, heat and excessive wear.

CASE STUDY CUTTING DATA:

JS514 ø10 mm vs competitor 1
Material:
304 1.4301 R_m 600 N/mm²
(SMG M2)
Cutting data:
(high a_e roughing)
v_c = 100 m/min (3937"/min)
RPM = 3183 rev/min
f_z = 0.04 mm/tooth (.002"/tooth)
v_f = 508 mm/min (20"/min)
a_p = 10 mm (.394")
a_e = 3 mm (.118")



HIGHLY PRODUCTIVE ROUGHING

JABRO®-HPM JHP951

Previously available with 3, 4 or 5 flutes, the Jabro-HPM JHP951 high-performance solid endmill for roughing applications now comes in a 4 flute design to achieve high-performance metal removal rates in unstable machining conditions.

NEW! 4 FLUTE ROUGHING TOOL

With the 4 flute option added to the JHP951 tool for diameters 16 mm, 20 mm and 25 mm, manufacturers with less powerful machines or semi-stable workpiece clamping conditions can benefit from the endmill's productive roughing capabilities, including full slotting operations, in steel, cast iron and other commonly machined workpiece materials. The 4 flute design, when compared to the JHP951's 5 flute version, exerts less cutting forces and frees up space for chip evacuation, thus widening the tool's capabilities in terms of reliable deep pocketing and slotting up to 1.5 x D in all machining environments.

YOUR SECO BENEFIT:

- High material removal capability, especially with low-power machines
- Roughing and finishing with the same tool
- Suitable for a wide range of cutting conditions and environments
- Excellent performance in steel and cast iron materials
- 4 flute design for aggressive machining, even in semi-stable workpiece clamping conditions
- Ample chip evacuation for deeper pocket cutting

PRODUCT OVERVIEW:

- A high-performance solid endmill that easily tackles roughing applications in soft carbon steels, high alloy or high hardness steels and cast irons
- Thanks to its curved helix, optimised number of flutes, uneven flute spacing and special flute cavity design, the JHP951 has a 30% higher metal removal rate as compared with the previous JHP950

RANGE OVERVIEW:

- Available in a full range of 3, 4 and 5 flute tools ø6 mm to ø25 mm

PRECISION AND RELIABILITY IN IMPLANT MACHINING

JABRO®-MINI JM905 & JM920

A 4 flute option joins the Jabro-Mini JM905 and JM920 tools, which are part of the JM9 series of Mini solid endmills. This expansion reflects the increased demands for small tools within the medical and dental industries.

NEW! 4 FLUTE, SMALL DIAMETER TOOLS

JM905 and JM920 tools now come in high-productivity 4 flute versions that boost machining feed rates. Seco designed the tools specifically for smaller-sized, high-rpm machine tools, such as compact and tabletop versions often found in medical and dental labs. These small-diameter tools effectively withstand the constantly changing chip loads of these industry applications.

PRODUCT OVERVIEW:

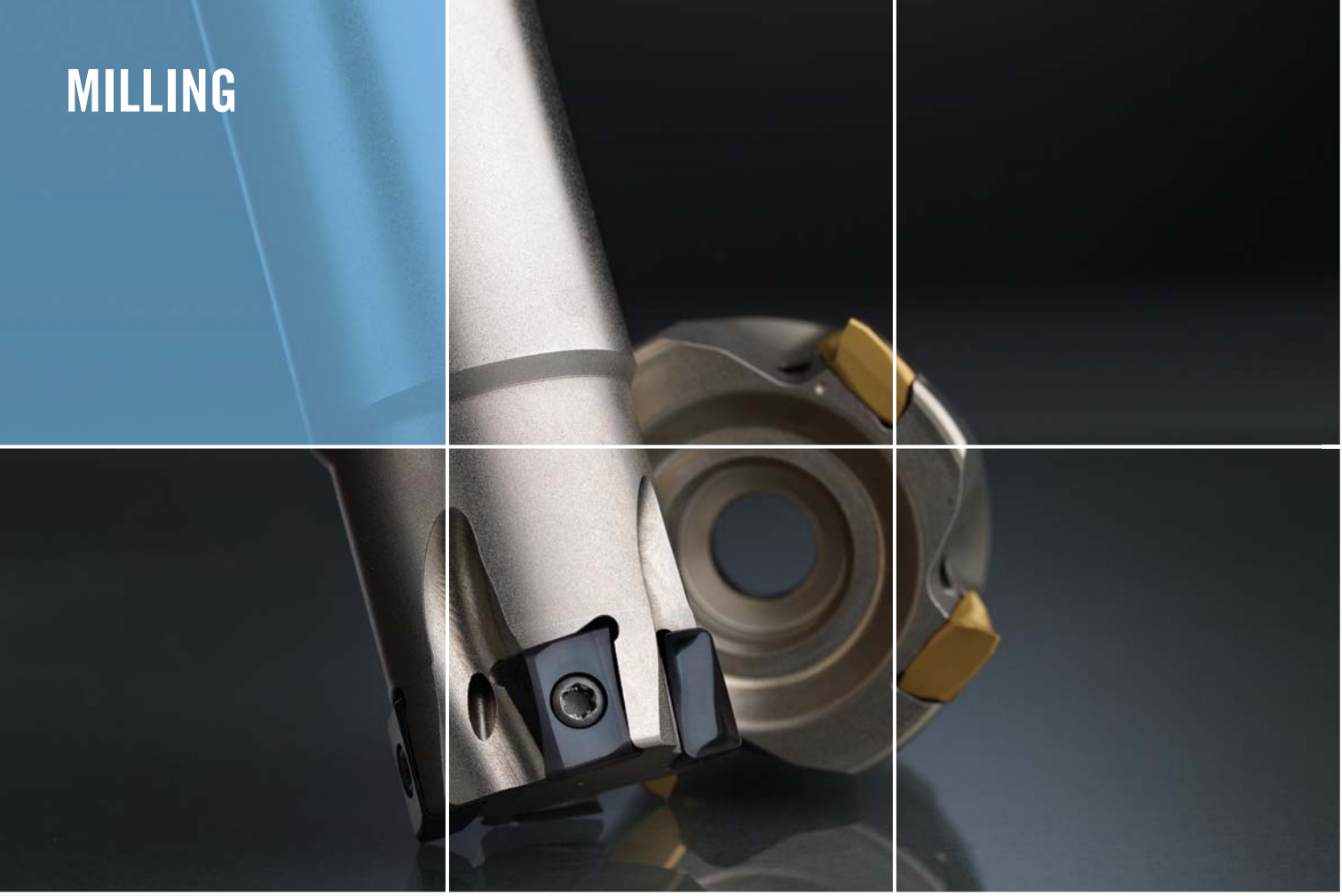
- Once specialty tooling, these endmills are now standard and address the increasing demand for tools to machine medical and dental materials, including cobalt chromium, titanium and others common to the industry segment

RANGE OVERVIEW:

- Available in diameters from 0.1 mm to 2.0 mm, and in longer overhang lengths based on the typical dimensions up to 16 x D

YOUR SECO BENEFIT:

- Higher feed rate capabilities
- Maximum strength and stability to withstand varying chip loads and tough materials
- Longer overhang lengths ideal for dental and medical parts



YOUR SECO BENEFIT:

- Innovative highly stable cutter design for high levels of reliability and productivity
- 4 edged inserts with significant cost advantages for slotting and contouring applications
- Tangential concept that provides the strength needed to increase depths of cut with small diameters
- Positive rake angles with a variable lead angle of the cutting edge for smooth cutting

STABILITY AND VALUE IN SQUARE SHOULDER MILLING

SQUARE T4-08

Through its popular Turbo 10 and Square 6 product lines that offer 2 and 6 cutting edges, respectively, Seco offers an extremely broad selection of square shoulder milling solutions. Now, with its new Square T4-08, the company is taking its diverse milling portfolio to the next level with a tool that features tangentially mounted inserts, each having 4 cutting edges.

NEW! TANGENTIAL CUTTER DESIGN

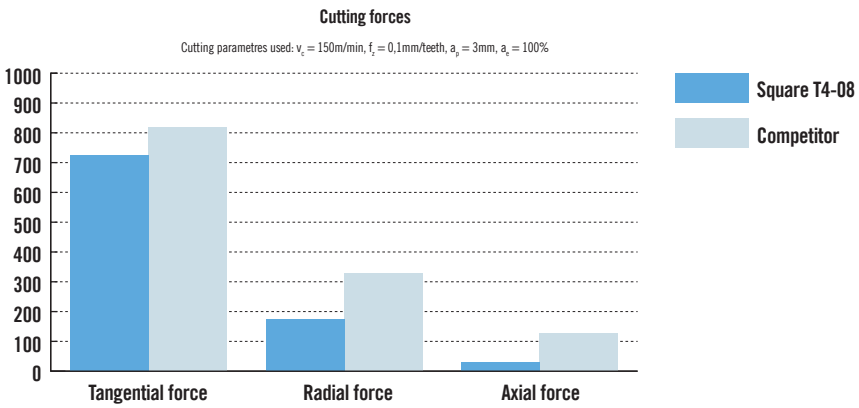
Made for roughing and semi-finishing operations, the Square T4-08 brings smooth cutting action, good surface finish and minimal chatter to slotting and contouring applications. The tangential mounting of the tool's inserts increases the surface area of contact between the inserts and cutter body, resulting in increased rigidity and machining stability. Additionally, such a mounting design directs the cutting forces to the thickest part of the inserts, providing highly robust milling performance and increased metal removal rates with small diameters.

PRODUCT OVERVIEW:

- Performs roughing and semi-finishing shoulder milling operations
- Handles most general machining requirements, including slotting, contouring and plunging
- Excels in most cast iron and steel applications
- Features tangentially mounted precision ground indexable inserts with 4 cutting edges
- Inserts can be set to a true 90° cutting angle to create clean 90° walls
- Profile of each insert matches closely with cutter body pockets

RANGE OVERVIEW:

- M08 and MD08 insert geometries
- MP1500, MP2500, MP3000, MM4500, MK1500, MK2050, T350M and F40M grades
- Cutting diameters range from 16 mm to 63 mm (.625" to 2.5"), with a maximum cutting depth of 8 mm (.314")
- A variety of corner radii (0.4 mm/0.8 mm/1.2 mm/1.6 mm)
- Cylindrical, Weldon, Arbor and Combimaster™ mounting types



SQUARE T4-08 FIELD TEST RESULTS:

- Tool life was up to 50% longer when compared to the competition
- Metal removal rates were over 20% higher than the competition
- Total cutting forces were 13% lower than the competition

FLEXIBLE AND COST-EFFECTIVE MODERN ENDMILL DESIGN

MINIMASTER® PLUS

The highly productive Minimaster Plus replaceable tip milling system makes tool-length remeasurement obsolete. The system offers a large selection of inserts and shanks for a multitude of tough milling applications.

NEW! THROUGH-TOOL COOLANT HIGH-FEED HEADS

Seco developed the Minimaster Plus with speed, precision and complete versatility in mind. To make the system even more adaptable, the company has added internal coolant capability to all three of its diameter sizes of the new high-feed milling heads.

PRODUCT OVERVIEW:

- Provides an excellent solution for the aerospace, automotive, energy, medical and mouldmaking industries
- Machines steel, stainless steel, cast iron, aluminium and other challenging materials
- Incorporates a high-precision interface between the replaceable carbide insert and steel shank
- Enables insert replacement without having to remove the tool from the machine spindle or requiring additional tool length measurement

RANGE OVERVIEW:

- 10 mm, 12 mm and 16 mm insert diameters
- E and M insert geometries with two grade options
- 3 to 8 flute insert range in square shoulder
- 3 flute insert range in ballnose types
- Corner radii ranging from 0.4 mm to 3.1 mm
- Shank available in 24 versions, with lengths from 55 mm to 250 mm

YOUR SECO BENEFIT:

- Interface precision for stability and a run-out of approx. 10 microns
- Elimination of regrinding and reduced costs through exchangeable inserts
- Increased tool life and better chip evacuation due to through-tool coolant
- Application versatility through diverse insert and shank selection
- High surface finish and closer tolerances via high accuracy and reduced vibrations

STRONG PERFORMANCE IN DISC MILLING

335.19 DISC MILLING CUTTER

Seco's approach to disc milling is to offer the widest range of inserts and cutter bodies in the industry to address all types of applications, from small batch to mass production. Most recently, the company redesigned its inch range of 335.19 disc milling cutters to include all the latest modern features.

NEW! CUTTER FEATURES

Designed for all disc milling applications, including slotting, sawing, circular interpolation and back facing, the revamped 335.19 inch range features a hardened steel 44 HRc cutter body for high precision, long body life and resistance against deflection. The cutter's new reinforced pocket seat design allows for higher cutting data, increased stability and less deformation, while the optimised chip space on the cutter body ensures proper chip evacuation and reliable processes.

PRODUCT OVERVIEW:

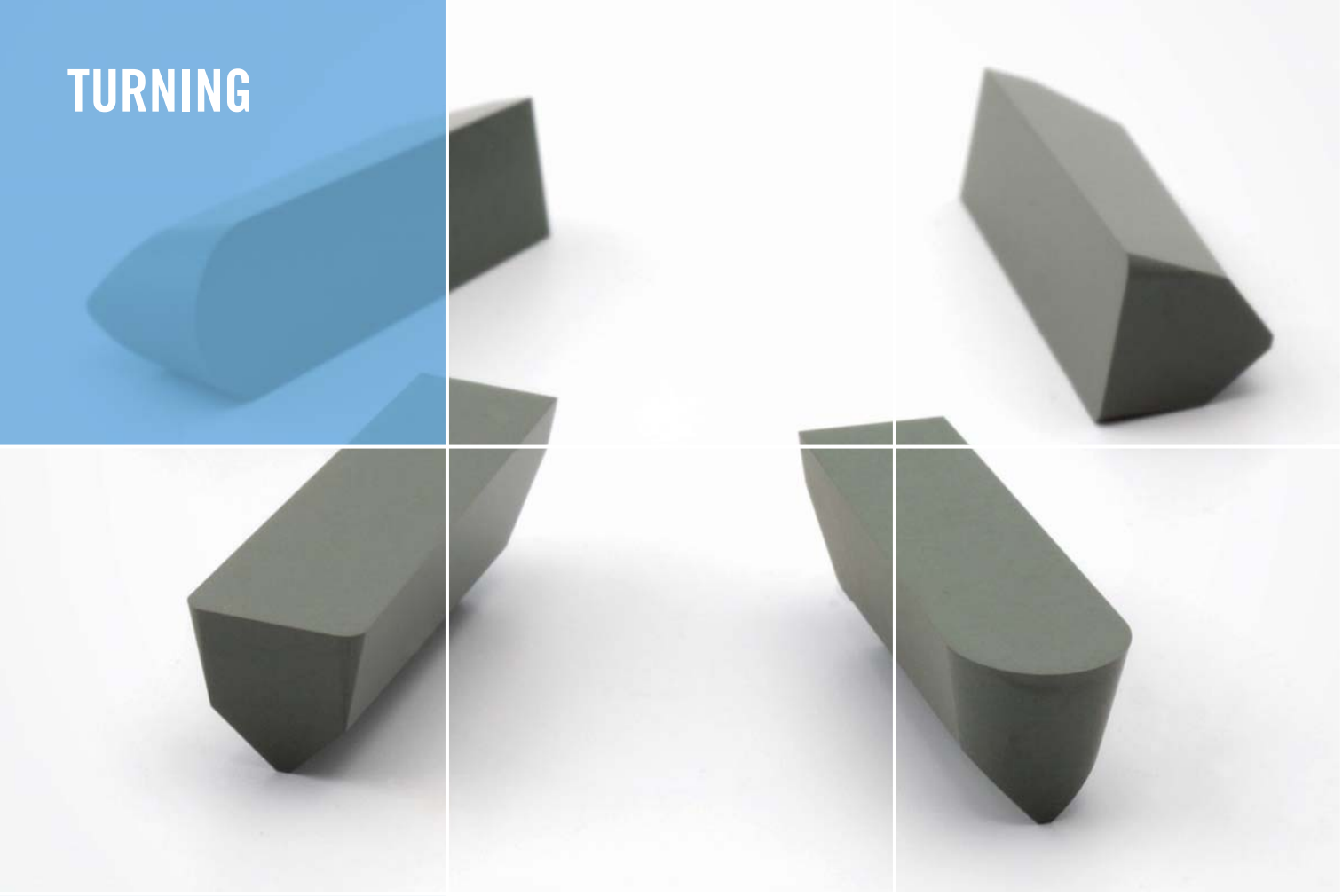
- Hardened steel 44 HRc cutter body and reinforced pocket seat ensure precise slot width, stable operation and higher metal removal
- Optimised chip space on cutter body prevents jams to ensure a reliable machining process
- Supported by comprehensive SNHQ insert range providing: 4 cutting edges inserts, a full range of corner radii, an integrated wiper flat for fine surface finsish, and the ability to generate a slot with a flat bottom

RANGE OVERVIEW:

- Diameters from 2" to 10"
- 3 connection types – replaceable end, shell end and disc type
- Full range of corner radii from .008" to .24"
- Width of cut from 5/32" to 1/2" with 6 insert sizes
- Full range of insert geometries and grades to address all applications

YOUR SECO BENEFIT:

- 4 cutting edges for lower tooling costs
- Elimination of secondary finishing operations
- Standard stocked common radii to eliminate need for large, costly inventory
- Optimised cutting edge geometry and cutter body design for reliable performance with high metal removal
- Longer cutter life due to hardened cutter body



YOUR SECO BENEFIT:

- Fast cutting speeds for increased productivity
- Excellent chemical wear and abrasion resistance for longer tool life
- High honed edge quality for superior surface finish
- Whisker reinforcement for long, consistent tool life
- Solid inserts with multiple cutting edges lessen the cost per edge

SPEED AND STRENGTH IN HRSA GROOVING

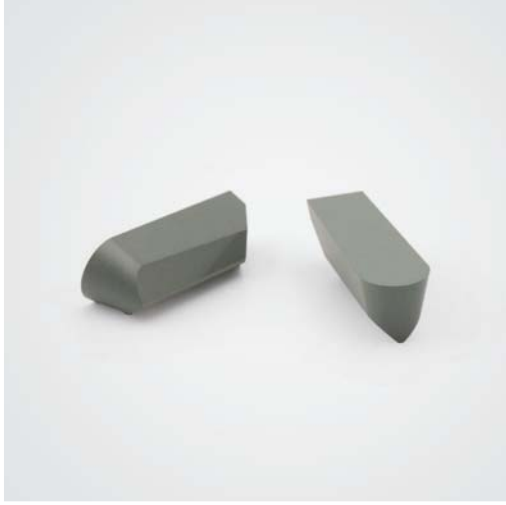
SECOMAX™ CW100

Seco has long provided high-performance carbide and PCBN cutting tool solutions to industries, such as aerospace and power generation, that machine precision parts from heat-resistant super alloys (HRSA). With the addition of ceramic inserts to its Secomax series, including the most recent whisker-reinforced CW100 grade, the company further enhances its range of products that optimise wear resistance and toughness in the machining of challenging materials.

NEW! WHISKER-REINFORCED CERAMIC GRADE

Made for grooving operations in nickel-based HRSA, the CW100 is an aluminium oxide-based insert grade with silicon carbide whiskers (Al_2O_3-SiC_w). When dispersed into a matrix of fine-grained aluminium oxide, these extremely strong whiskers act as reinforcement, adding tensile strength and improving the fracture toughness of the brittle matrix.

An Al_2O_3-SiC_w composition, typically made up of 25% to 50% whiskers, is the toughest, most thermal shock resistant of all the aluminium oxide-based ceramic materials for inserts. As a result, the CW100 offers superior wear, fracture and notch resistance as well as high hardness at elevated temperatures when machining challenging materials at extremely high speeds.



PRODUCT OVERVIEW:

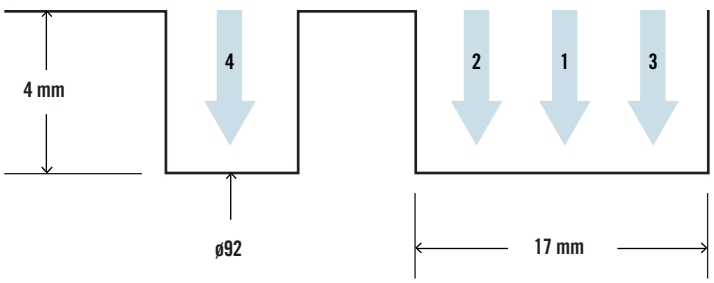
- Performs high-speed grooving operations in Inconel 718, MAR 247, Waspaloy and other challenging HRSAs
- Component focus includes casings, shafts, discs and rings for aerospace and power generation
- Works in wet or dry applications, but concentration-level flood coolant is recommended

RANGE OVERVIEW:

- 4 insert geometries with widths of 3.175 mm, 6.35 mm and 7.925 mm
- Recommended cutting window of 150 – 300 speed [m/min] and 0.05 – 0.25 feed [mm/rev]
- Extends and enhances the Secomax ceramics lineup, which also includes the CS100 sialon-type grade for ISO turning inserts

CASE STUDY CUTTING DATA:

Material: Inconel 718 ~ 40 HRC (solution treated and aged)
Insert: LPGN190608-0635E, CW100
Cutting data:
v_c = 270 m/min (10630"/min)
f_z = 0.06 mm/rev (10% of insert width) (.002"/rev)
a_p = 4 mm (.157")
a_p (width of cut) = 6.35 mm (.25") (1 and 4) – 5.32 mm (.209") (2 and 3)
Application used coolant



YOUR SECO BENEFIT:

- Broad range of cutting edge widths and application coverage
- Rigid design allows high cutting speeds and feed rates for an overall boost in productivity
- 1 toolholder for all insert types, resulting in less inventory
- 4 usable edges, with the 4th edge being usable even with 3 substantial edge breakages

MAXIMUM STABILITY IN SMALL PARTS MACHINING

X4

Seco is expanding its short-reach grooving and parting-off X4 system by introducing smaller shanks into the product family. The system features multi-edge, tangential inserts and a highly stable clamp design to achieve high accuracy, repeatability, productivity and surface quality.

NEW! SMALLER SHANKS

Seco designed the X4 system for the precise grooving and parting-off of small and medium-sized complex parts. The company is increasing the amount of applications that the system can accommodate by adding smaller shanks to the product family. The new 1212 and 1616 shanks as well as inch sizes 1/2" and 5/8" with a compact toolholder head design bring the reliability and value of the X4 system to small sliding head machines, where there is a need for small holders with narrow cutting-edge widths.

PRODUCT OVERVIEW:

- Strong, dependable multi-edged tool system optimises grooving and parting-off operations
- Ideal performance in a wide variety of common workpiece materials
- Application area is primarily for small components and slim bars and tubes, but also applies to narrow grooves that exist on larger parts
- Indexable tangential inserts have four cutting edges with three dimensional chipbreakers
- Upper clamp rigidly holds the inserts, and it is possible to fasten and release clamping screw from top and bottom

RANGE OVERVIEW:

- Grooving widths a_p = 0.5 mm to 3 mm (.02" to .12")
- Grooving depths a_r max = 6.5 mm (.25")
- All available widths and types share the same body dimensions
- Insert profiles in neutral, right-hand and left-hand versions
- MC, FG and full-radius R geometries
- Available in the reliable CP500 and CP600 insert grades
- Various shank sizes, including Seco-Capto™, C4, C5 and C6

OPTIMISATION OF GROOVING APPLICATIONS

MDT

Designed to accommodate narrow cutting edge widths in grooving and parting-off operations, Seco's MDT (Multi-Directional Turning) system has traditionally consisted of 1 and 2 sided inserts, as well as mono and modular tool holders for radial internal, external and axial machining. This range is continuously growing.

ADDITIONS TO JETSTREAM TOOLING®

Jetstream Tooling for the MDT product line allows manufacturers to benefit from higher process reliability and productivity when grooving and parting-off. It is applicable for all materials, in particular for materials that are poor conductors of heat, including titanium and superalloys.

Jetstream Tooling is a quick, easy-to-install direct high-pressure coolant delivery system that quickly removes heat from the cutting zone to improve tool life, part quality and productivity.

Coolant is channeled through holders to coolant outlets in very close proximity to the cutting zone. Jetstream Tooling is now also available for insert width 2 mm on shank size 1212 and 1616, as well as 1/2" and 5/8".

YOUR SECO BENEFIT:

- Increased cutting data and improved surface finish
- Longer tool life, with a corresponding reduction in tool changing times
- Smaller insert width for less waste

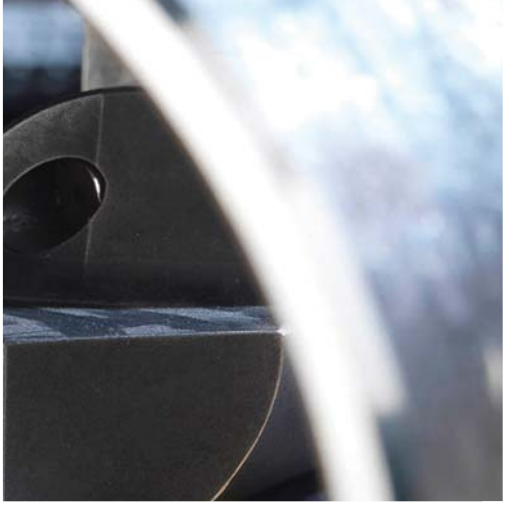
PRODUCT OVERVIEW:

- Machines demanding workpieces with different diameters, profiles and deep grooves
- Achieves grooving and parting-off, longitudinal and axial turning as well as profiling and thread turning
- Provides high repeatability and positioning accuracy of ± 0.03 mm
- A serration at the bottom of the insert, similar to a spline profile, ensures proper clamping and seating of the insert in the pocket
- Jetstream Tooling provides extremely safe chip breaking and chip transport

RANGE OVERVIEW:

- Wide range of indexable insert geometries, including FT, MT, MG, GG, MC, MP and RP for grooving and parting-off operations
- Variety of insert grades, including 883, 890, CP200, CP500, CP600, TGK1500, TGP25, CBN010 and CBN170
- Mono and modular toolholder designs for radial machining (a_r max = 12.5 x a_p), axial machining (initial plunge diameter between D_c = 17 mm and 500 mm, a_r max = 6 x a_p), internal machining (D_{min} = 16 mm, a_r max = 3.5 x a_p)
- Jetstream Tooling compatibility with oil and other coolant materials

THREADING



COMPLETE THREAD MACHINING IN A SINGLE PASS
THREAD CHASER

Seco offers a broad range of high-performance threading solutions for both standard and specific applications. The newly introduced Thread Chaser inserts provide the speed, reliability and accuracy needed to meet the demanding requirements of the oil and gas industry, as well as any other segment generating special threads such as API and common licensed types.

YOUR SECO BENEFIT:
- Fast, reliable 1 or 2 pass threading
- Consistent, high-precision thread profiles
- Simultaneous external push threading and / or internal push / pull threading
- Longer, more predictable tool life and lower costs via evenly wearing replaceable inserts

NEW! PITCH-PERFECT, SINGLE-PASS THREAD CHASING

Highly versatile, the new Thread Chaser tool features inserts for both push and pull threading of I.D. features. As opposed to single-tooth inserts, Thread Chaser inserts include multi-tooth patterns for fast 1 or 2 pass threading.

The multi-tooth inserts have precise thread patterns that quickly and reliably generate high-accuracy, consistently perfect thread pitches for industry-specific parts and pipe materials in a wide range of hardnesses.

Thread Chaser inserts feature a special substrate and increase productivity by generating the thread teeth, facing and taper at the same pitch as the thread type. Furthermore, through-coolant holes and chip formers direct high-pressure (up to 210 bar) coolant precisely to the cutting edges to optimise chip formation for efficient chip evacuation and extended insert life.

PRODUCT OVERVIEW:

- Perform external push threading and internal push or pull threading operations
- Multi-tooth inserts create perfect thread pitches in extruded and welded pipe materials
- Insert design distributes cutting forces evenly along the entire tool
- Standard design is prepared for high-pressure coolant applications
- In Seco chaser sets, all inserts align with one another perfectly for machines running multiple inserts simultaneously

RANGE OVERVIEW:

- Available in push or pull and push / pull sets
- API thread-style pitches, as well as all common licensed types such as TenarisHydril and Vallourec
- 1, 2 or 3 insert sets to accommodate various thread machine types

SIMPLICITY AND RELIABILITY IN THREAD MILLING

THREADMASTER™ TM2

Every solution within the Threadmaster milling family, including the latest general-purpose Threadmaster TM2, quickly and reliably performs precision threading operations.

NEW! GENERAL-PURPOSE THREAD MILL

The Threadmaster TM2 general-purpose thread mill covers an expansive range of applications. It productively generates high-tolerance, full thread profiles and allows those less experienced with thread milling operations to confidently generate perfect threaded holes as part of complete workpiece processing.

Available in 3 thread pitches, the Threadmaster TM2 covers a wide range of hole sizes for cost-effective threading in common materials such as steel, stainless steels, cast iron and more. Furthermore, the geometry reduces cutting forces and allows for higher feed speed and increased production rate. Threadmaster TM2 is offered with 2 x D and 3 x D options.

YOUR SECO BENEFIT:

- 1 tool that applies to multiple materials and a wide range of hole sizes
- Design adds inherent strength and process reliability to the thread milling process
- Less cutting forces, higher speeds and feeds and better thread surface finishes with a more cost-effective tool

PRODUCT OVERVIEW:

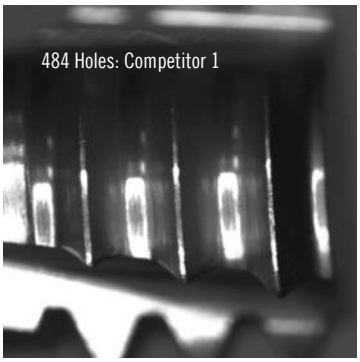
- Tool design spreads threading strain equally from top to bottom for even tool wear
- Small range of tools covers wide range of hole sizes
- Seco's Threading Wizard software helps generate fast, effortless thread milling programs
- Thread mills run in standard holders and require no special spindle specifications
- Use with Seco EPB shrinkfit holders and EPB 5672 high-precision collet chuck for low run-out
- Use Seco Feedmax Universal to premachine holes for maximum productivity

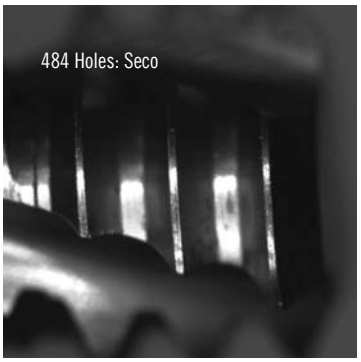
RANGE OVERVIEW:

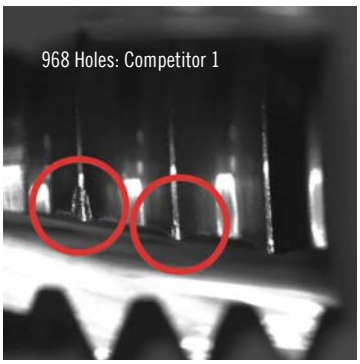
- Thread types ranging from ISO M4X1.75 to M16X2.0, UNC and UNF
- 2 x D lengths in thread sizes of M4 to M16, and 3 x D lengths in thread sizes of M4 to M8
- Hole diameters for 2 x D lengths from UNC 1/4" to 1/2" (20 to 13 pitch) and for 3 x D lengths from 1/4" to 5/16" (20 to 18 pitch)
- UNF hole diameters #10 to 1/2" (32 to 20 pitch) for 2 x D thread mills, and #10 to 5/16" (32 to 24 pitch) for 3 x D thread mills
- Right-hand and left-hand thread versions

TEST RESULTS:

The following test results demonstrate tool life:

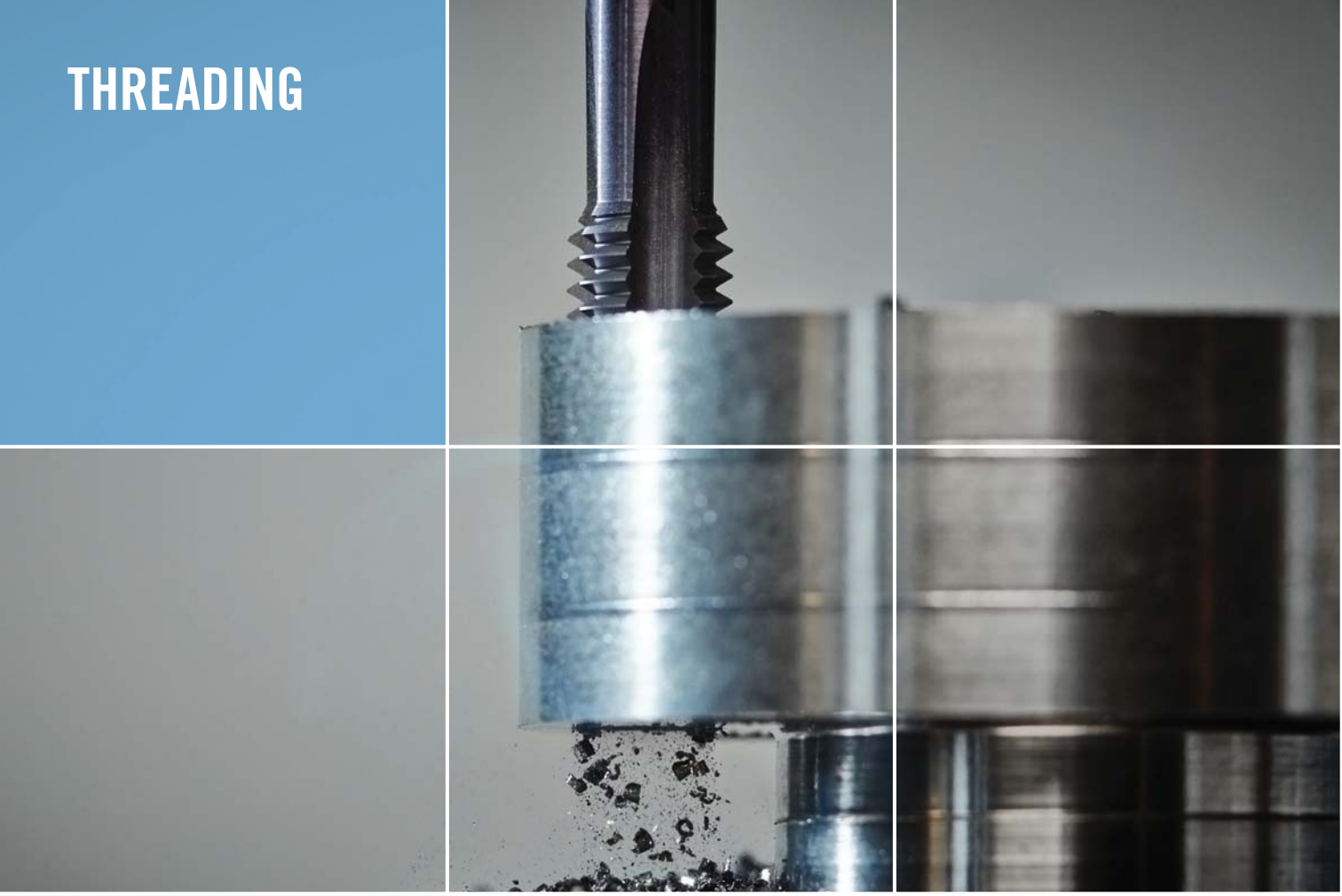






968 Holes: Competitor 2
Complete tool failure prior to 968 holes

THREADING



YOUR SECO BENEFIT:

- Universal tap design to reduce tooling inventory and lower costs
- Cost-effective advanced tooling technologies
- Better thread surfaces due to special edge treatment
- Advanced coatings for faster tapping, less tool chipping and longer life of the tap
- Special geometries and edge treatments to optimise chip formation for efficient evacuation

FLEXIBLE VALUE IN TAP THREADING

THREADMASTER™ TAP

Seco is now a single-source supplier for all cost-effective, high-output thread tooling, with the introduction of the Threadmaster Tap, which marks the company's first tap product offering. Seco's threading solutions offer versatile solutions for both general and specific applications.

NEW! THREADMASTER TAPS

Designed to be universal in application, the new high-speed steel Threadmaster Tap effectively threads holes in a wide range of workpiece types and materials. The tool features an advanced coating technology that enables it to achieve higher cutting data and output in steel up to 350 HB, stainless steels and cast irons when compared to the uncoated solutions typically found in this product area. It also comes in 4 different types of taps so that it can produce blind and through holes, as well as accommodate the most common thread sizes and tolerances found in job shop and contract manufacturing environments.

PRODUCT OVERVIEW:

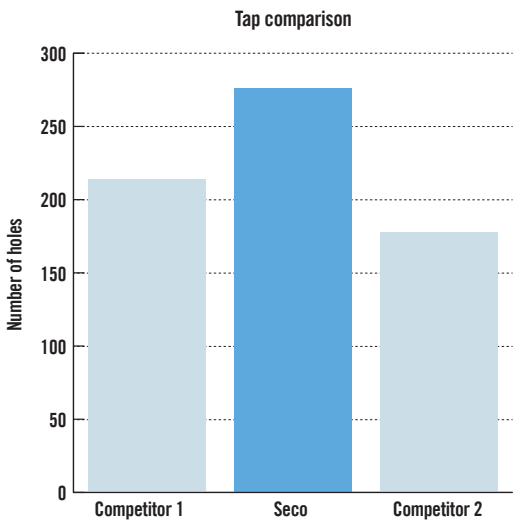
- Features spiral helixes for blind holes and spiral points for through holes
- Straight flutes accommodate for short chipping materials such as cast iron and brass
- Forming taps press threads into hole surfaces without producing chips in ductile materials
- Accommodates the most common thread sizes
- Advanced coating expands application versatility
- Use with Seco Feedmax Universal for versatile combination of drilling and tapping
- Use with the new Seco EPB 5867 synchronised tapping chuck to ensure high-quality threads

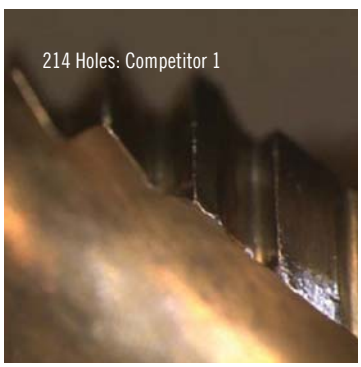
RANGE OVERVIEW:

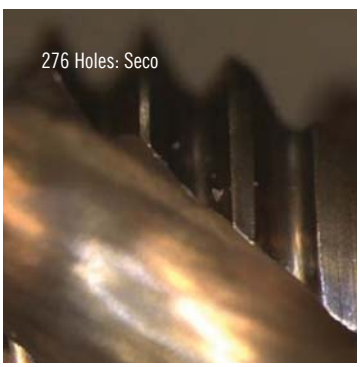
- MTH with spiral helix in M2 to M36, MF4 x 0.5 to MF30 x 2.0, UNC 4-40 to UNC 5/8-11, UNF 8-36 to UNF 5/8-18, G 1/8-28 to G1 1/2-11, NPT 1/16-27 to NPT1-11 and NPTF 1/16-27 to NPTF 3/4-14
- MTH with spiral point in M2 to M30, MF4 x 0.5 to MF30 x 2.0, UNC 4-40 to UNC 5/8-11, UNF 8-36 to UNF 5/8-18, G 1/8-28 to G 5/8-14
- MTS with straight flute in M3 to M24
- MF form taps in 3 different types: M5 to M12 with internal coolant, M3 to M24 with lubrication grooves, M3 to M12 and MF5 x 0.5 to MF16 x 1.5 whitout lubrication grooves

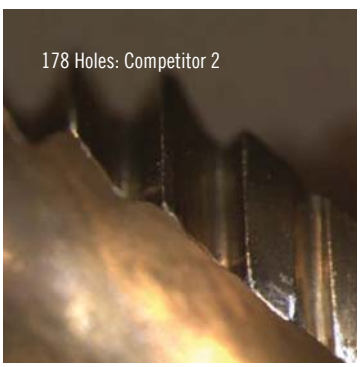
TEST RESULTS:

In tests with 42 CrMo 4 high-strength alloyed steel and 316L stainless steel, the coated Threadmaster Tap outperformed competitor taps.









OPTIMUM PERFORMANCE AND VALUE IN DRILLING

SECO FEEDMAX™ UNIVERSAL

Seco Feedmax solid carbide drills feature advanced coating technology and optimised geometries for specialised applications that focus on hole quality, high-volume production and achieving the lowest cost per hole. The new Universal line rounds out the Seco Feedmax family by bringing versatility and reduced stockholding costs to low and medium batch production.

YOUR SECO BENEFIT:

- Rigid multi-purpose geometry for predictable tool life
- Application security and high-capacity ultilisation
- Versatility and reduced cost of holding stock

NEW! MULTI-PURPOSE GEOMETRY

Seco Feedmax Universal offers performance and value for holemaking applications across all industry segments. The line features a multi-purpose, 4 facet point geometry that provides excellent centering capability, maintains an IT8 / 9 hole tolerance and is easy to regrind. These drills also feature a polished AlCrN coating that offers high-abrasion resistance, toughness and good chip evacuation.

PRODUCT OVERVIEW:

- Drills steel, stainless steel, cast iron and more
- Incorporates a multi-purpose, 4 facet point geometry
- Optimised through a polished AlCrN coating
- Can be used in conjunction with Threadmaster Tap
- Can be used in pre-bore operations with Precimaster Plus

RANGE OVERVIEW:

- Diameters ranging from 3 mm to 20 mm, in increments of 0.1 mm
- 5 x D, coolant-through, R1 shank
- 3 x D, coolant-through, R1 shank
- 3 x D, non-coolant, R1 shank
- Compatible with EPB shrinkfit holders, EPB hydraulic chucks and EPB high-precision collet chucks

HIGH-PERFORMANCE OUTPUT IN TAPPING

EPB® 5867

Seco completes its range of high-quality tooling systems with the new EPB 5867 tapping chucks for synchronised tapping.

NEW! MICRO-COMPENSATION CAPABILITY

The EPB 5867 tapping chuck features newly developed micro-compensating capability for synchronised tapping. The highly effective compensating system prevents tap breakage and ensures perfect high-quality threads, especially in blind hole tapping applications. As compared with conventional non-compensated tapping chucks, the EPB 5867 significantly increases hole-tapping output and extends tool life by absorbing the axial stress that would otherwise transfer to the tap itself.

PRODUCT OVERVIEW:

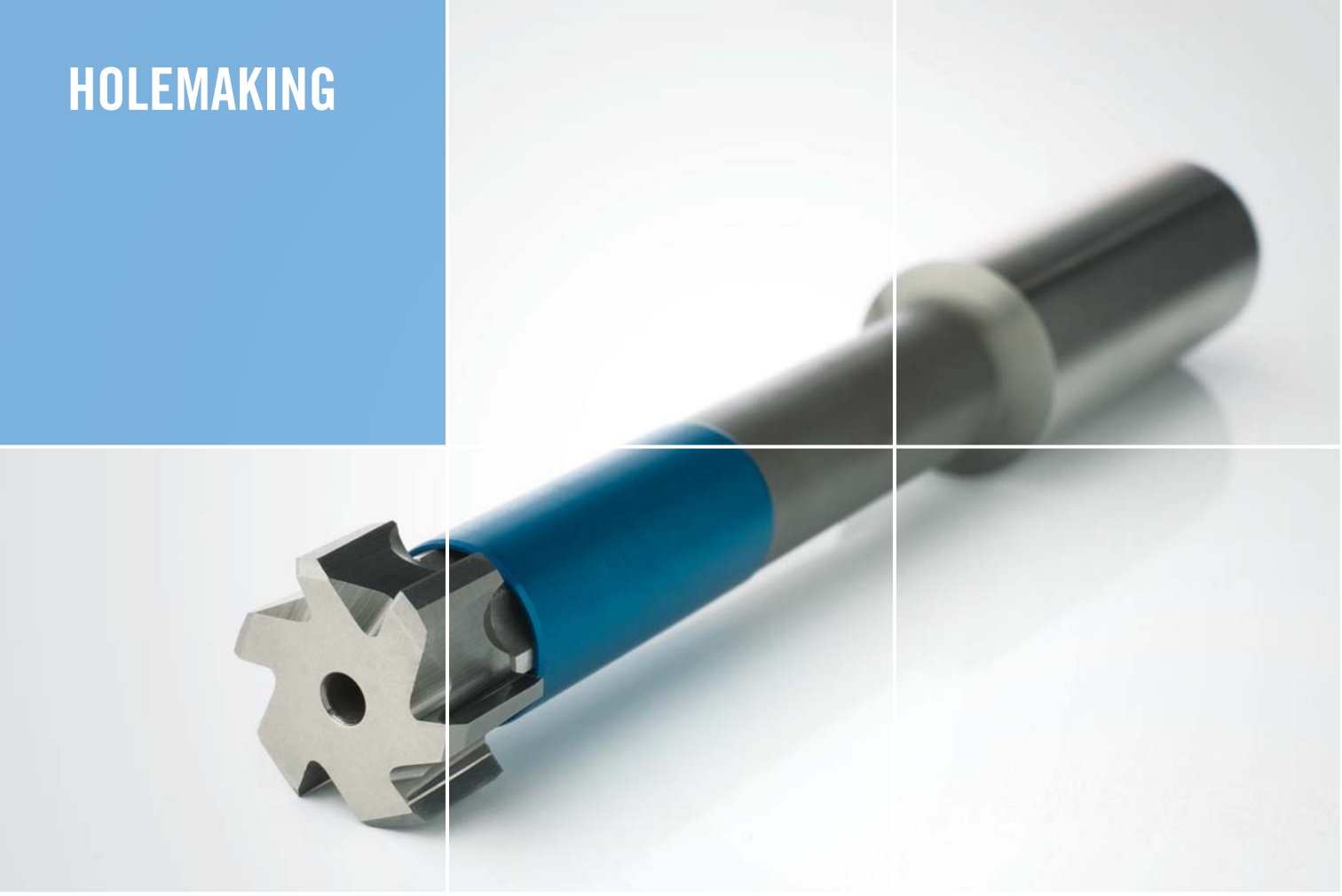
- Built-in axial micro flexure of ± 0.5 mm compensates for micro deviations between the spindle rotation and feed rate and the tap pitch to eliminate tap stress and breakage
- Tap life 2 to 3 times higher than with rigid tapping chucks
- Performance is non-material dependent, maximising application versatility
- Tap fitting based on 'ER tapping collets' with square drive
- Collet clamping nuts can hold sealing rings to force coolant flow through taps with coolant channels

RANGE OVERVIEW:

- Spindle interfaces of HSK-A, DIN-AD, BT-AD, Seco-Capto, Weldon-Whistle Notch and Cylindrical
- For tap sizes M2 to M30, using ER11, ER20, ER25 and ER40 tapping collets with square drive

YOUR SECO BENEFIT:

- Results in longer tap life and prevents tap breakage
- Faster tapping and increased productivity
- Improved thread quality



YOUR SECO BENEFIT:

- Modular and cost-effective reaming
- Versatility and process stability
- Fast, easy tool set-ups
- Precise and repeatable head / shank connection
- Up to 30% longer tool life and higher feed rates
- Performance gains from advanced geometries and coatings
- Reduced tooling inventory

ACCURACY AND ADAPTABILITY IN REAMING

PRECIMASTER™ PLUS

Seco's new generation Precimaster Plus modular, indexable-head reaming system provides accuracy and part processing versatility. Through a selection of various reamer shanks and heads, users can accommodate a variety of hole sizes and workpiece materials with fewer required tools. Additionally, new system design enhancements boost reaming speed, precision and repeatability for overall better production. With the system, industries such as aerospace and automotive gain extreme process stability and dependability paired with the lowest cost per part.

NEW! GENERATION MODULAR REAMER SYSTEM

Precimaster Plus now uses solid-carbide disposable heads up to diameter 32 mm, coated and uncoated, in various diameters that mount to a standard range of shanks. As opposed to traditional brazed-tip technology, solid-carbide heads allow for an increased number of cutting teeth on the same head diameters for faster feed rate capability. Solid carbide also extends tool life, delivers increased stability for tougher materials and makes for a more cost-effective system.

A new Precimaster Plus patented high-precision connection ensures reamer head exchanges are fast and easy with repositioning repeatability and runout of under 3 microns. The new connection handles much higher levels of transmissible driving torque due to its special three-vertical-drive-pin design. Internal axial clamping forces draw heads up and into system shanks, creating a strong and secure interface. Users gain the confidence and dependability to run any reamer head with any shank and for any material.

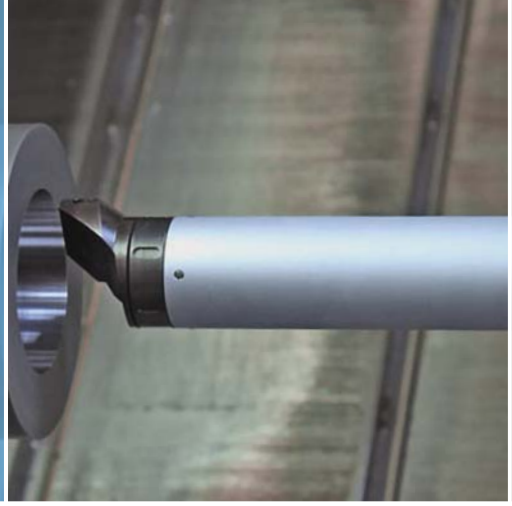
For chip control and management, Precimaster Plus reamer shanks can apply different types of flushing for both blind and through holes. Tool body coolant outlets in the front force chips up along head flutes and out of blind holes, while standard through-tool coolant blasts chips forward and away from the tool for efficient through-hole reaming.

PRODUCT OVERVIEW:

- New connection provides head exchange repeatability and runout within 3 microns
- Solid carbide heads offer stability and 20% to 30% tool life increase
- More cutting teeth per head diameter enable 30% faster feed rates
- Surface finishes of Ra .4 to Ra .8 can be achieved at same feed per teeth per revolution as heads with fewer flutes
- Hole size tolerances held to between 15 microns and 25 microns (.0006" and .001")
- Same tool shanks and heads used for both through and blind hole coolant requirements
- Various lead geometries and grades ensure optimised performance for all workpiece materials

RANGE OVERVIEW:

- Reaming head diameters from 10 mm to 60 mm
- 4 standard shank sizes to hold entire reaming head range
- Shank length options of short (restricted clearance situations), medium (common hole depths) and long (up to 10 x D)
- 3 lead geometries – EB45 45° x 0.5 mm (universal), EB25 25° x 0.7 mm (aggressive feed) and EB845 double lead angle 45°/8° x 0.75 mm (fine finish)
- 5 reamer head grades – 2 coated carbide, 1 coated cermet, 1 uncoated carbide and 1 uncoated cermet



DAMPING AND FLEXIBILITY IN STATIC AND ROTATING BORING

STEADYLINE™ TURNING AND BORING BARS WITH GL CONNECTION

Machining with long overhangs tools is becoming increasingly common in the manufacturing industry. Vibration, however, is an inherent characteristic of long tool overhang. Steadyline damped tooling effectively reduces unwanted vibrations by featuring a “dynamic passive system” inside its holder body where a damping mass counter vibrates against the first flex vibration.

Following the launch of its Steadyline milling holders, such as the shell mill and Combimaster™, Seco now offers turning and boring bars within the series to bring excellent results to a wide variety of operations, including roughing and finishing in both static and rotational boring applications as well as static threading and grooving. The product range includes bars for 6 x D, 8 x D and 10 x D.

As with Steadyline milling holders, the turning and boring bars deliver higher metal-removal rates, generate smoother chatter-free workpiece surfaces and increase tool life, while reducing stress on machine tools.

YOUR SECO BENEFIT:

- Enables machining where it's impossible to machine with conventional tools
- Vibration damping for increased metal removal rate and smoother surface finish
- Plug and play tools
- Same bar for both static and rotating operations
- Fast, easy and precise tool head changes through GL connection's single-nut clamping

NEW! PATENTED GL CONNECTION

Steadyline turning and boring bars utilise a new GL connection to perform both rotating and static operations with the same bar. The polylobe taper-face interface of the patented connection features two 180° positions to orient the cutting edges either face up or face down for effective chip control.

With the extremely precise GL connection, users can quickly, easily and accurately exchange both turning heads and boring heads on the Steadyline bars. Once the bar is set, users can mount and remount the tool heads without having to reset the system.

The connection's extremely strong and fast locking capability is made possible by a single inbuilt clamping ring that draws in the tool head for a secure, stable taper-face contact. While common traditional systems use several fastening screws and devices for exchanging tool heads, Seco's Steadyline turning / boring bars require only the use of a spanner wrench to loosen and tighten the tool heads.

PRODUCT OVERVIEW:

- Steadyline bars let turning / boring tools perform static and rotating operations
- GL heads mount and remount without having to reset the system
- Only a spanner wrench is required to exchange GL heads
- Steadyline bars offer coolant-through capability
- Steadyline bars are corrosion resistant

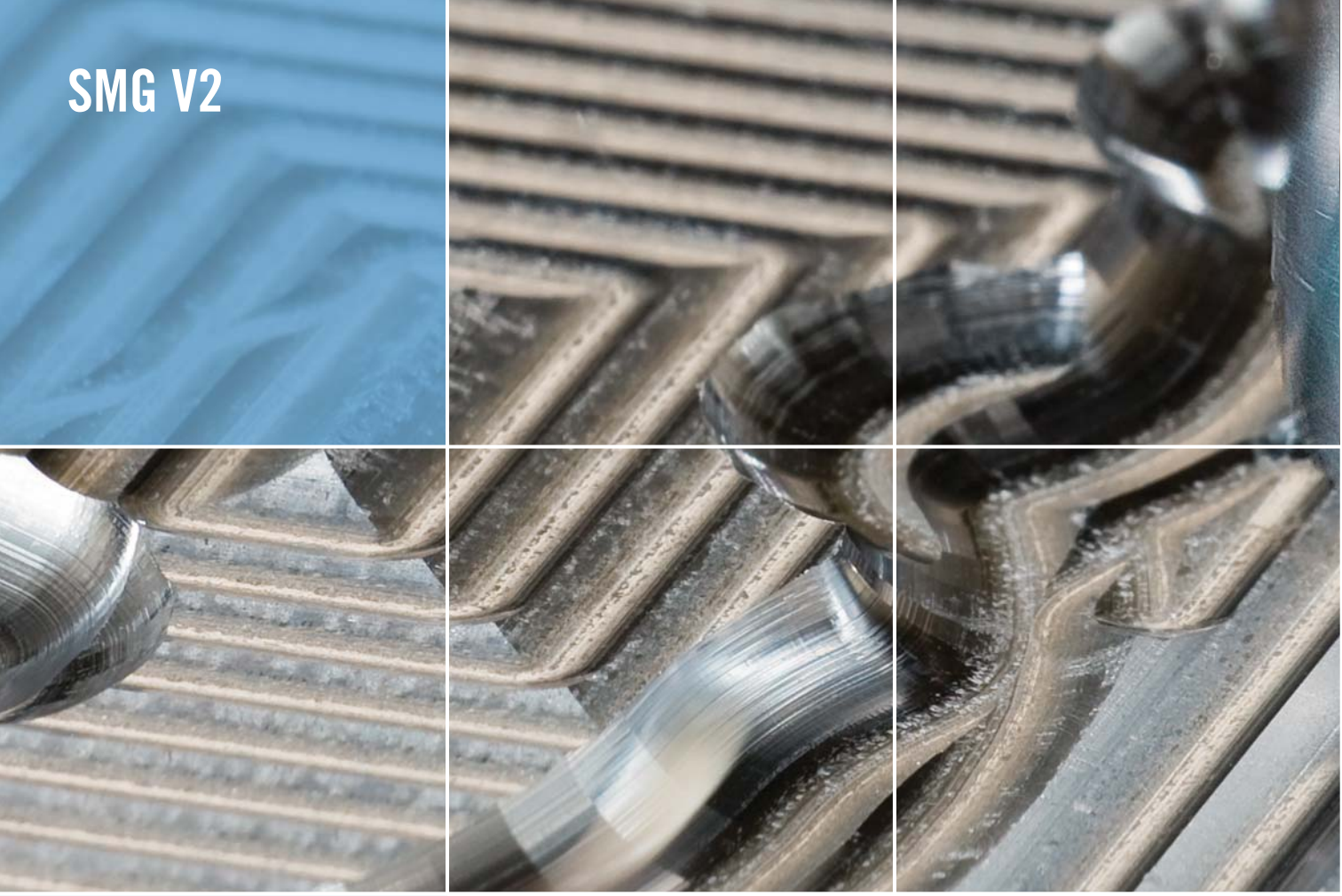
RANGE OVERVIEW:
GL TURNING AND BORING BARS

- Workpiece side: GL couplings GL32, GL40 and GL50
- Machine side: Seco-Capto C4, C5 and C6;
  metric cylindrical ø32 mm, ø40 mm and ø50 mm; imperial cylindrical ø1 1/4", ø1 1/2" and ø2"
- Bar length: 6 x D, 8 x D and 10 x D

GL TOOL HEADS

- Turning heads for inserts (CN, DN, WN, CC, DC, TC, TN and RN) and heads for Snap-Tap® threading
- Boring heads for fine boring EPB 620 and rough boring EPB 610

SMG V2



YOUR SECO BENEFIT:

- Gain more accurate and precise metal cutting data
- Select the right tools and their proper cutting parameters per workpiece material for optimised machining operations
- Work with logical and readable classification charts in common formats used across all Seco cutting tools
- Easily access a wide range of workpiece materials listings supporting today's new advanced cutting tools
- Quickly classify individual workpiece materials into their appropriate groups to easily obtain cutting data

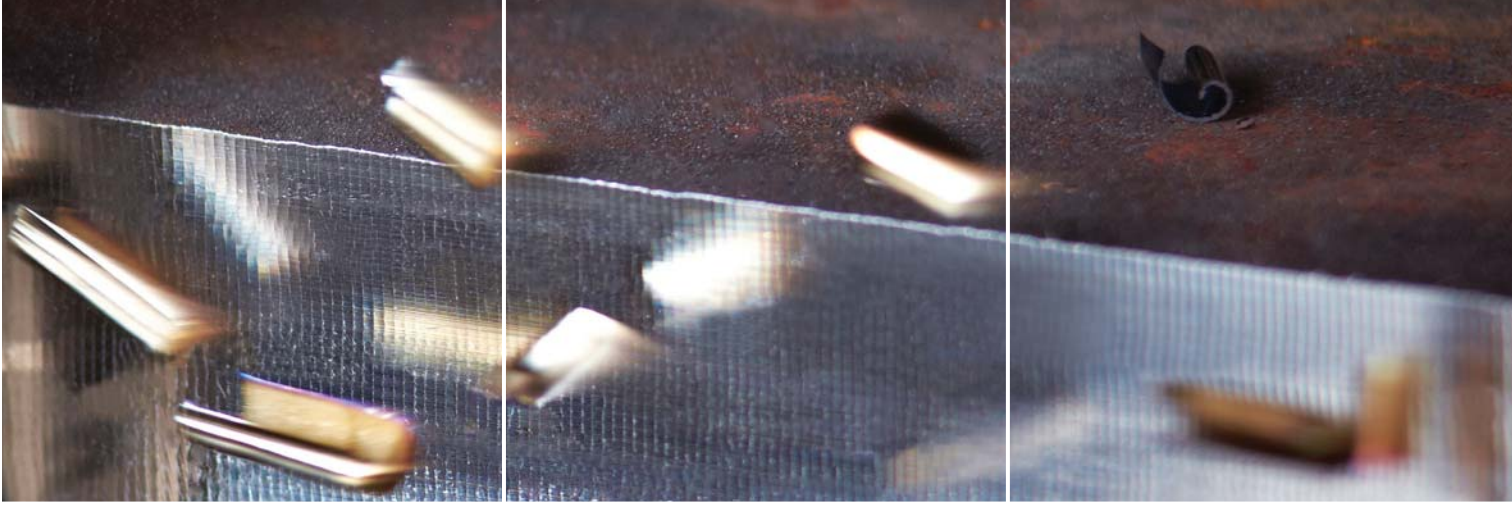
COMPREHENSIVE AND CONCISE CUTTING DATA

SMG V2

NEW!

Seco has significantly expanded and simplified its SMG classification system for workpiece materials and their corresponding cutting data. Now known simply as SMG v2, the system originally derived its name from an abbreviation for Seco Materials Group. The updated system now supports advanced cutting tool materials as well as the latest ones used for today's workpieces, thus providing a quick, easy and valuable reference guide.

The SMG v2 presents its extensive materials coverage in a clear and logical structure, making the search for specific cutting data effortless. As a new and special data tool, the SMG v2 will prove the basis for successful optimisation of metalcutting operations and gains in productivity.



SMG V2 OVERVIEW

- Created with the knowledge and expertise needed to understand complicated interactions between the cutting tool and workpiece in machining operations
- Simplified, understandable cutting data chart format runs common across all Seco product catalogues
- Precise workpiece material categorisation based on types, capabilities and characteristics rather than relative levels of machinability
- New data display format makes charts applicable to all tool types and includes cutting tool recommendations
- Information contained in SMG v2 is applied consistently across all Seco support materials

RANGE OF MATERIALS INCLUDED

- Expanded coverage encompasses advanced tool materials such as PCBN, PCD and ceramics
- Wider range of workpiece material classifications for steels, cast irons, non-ferrous, super alloys, titaniums and other hard / difficult materials, as well as plastics, composites and graphite
- Color-coordinated groups indicate ISO classification and fine-tuned SMG subsections
- Comprehensive cross-reference list indicates where a material may appear in different SMG groups due to how the material has been processed – e.g. annealed, quenched and tempered for through hardening, etc.
- Each SMG category includes details on a reference material that the user can refer to in order to determine whether the cutting data should be adapted for their specific application

SMG V2

ISO-STANDARD MATERIALS

STEELS, FERRITIC AND MARTENSITIC STAINLESS STEELS

SMG	Description	Reference
P1	Free-cutting steels	11 SMn30 R_m = 385 N/mm²
P2	Low-alloy ferritic steels, C < 0.25%wt Low-alloy weldable general structural steels	S235JRG2 R_m = 420 N/mm²
P3	Ferritic & ferritic / pearlitic steels, C < 0.25%wt Weldable general structural steels Case-hardening steels	16 MnCr 5 R_m = 550 N/mm²
P4	Low-alloy general structural steels, 0.25% < C < 0.67%wt Low-alloy Quench & Temper steels	C 45E R_m = 660 N/mm²
P5	Structural steels, 0.25% < C < 0.67%wt Quench & Temper steels	42 CrMo 4 R_m = 700 N/mm²
P6	Low-alloy through-hardening steels, C > 0.67%wt Low-alloy spring and bearing steels	C 100S R_m = 600 N/mm²
P7	Through-hardening steels, C > 0.67%wt Spring and bearing steels	100 Cr 6 R_m = 650 N/mm²
P8	Tool steels High Speed Steels (HSS)	X 40 CrMoV 5 1 R_m = 700 N/mm²
P11	Ferritic & martensitic stainless steels	X 20 Cr 13 R_m = 675 N/mm²

AUSTENITIC AND DUPLEX STAINLESS STEELS

SMG	Description	Reference
M1	Free-cutting austenitic stainless steels	X 10 CrNiS 18 9
M2	Low-alloy austenitic stainless steels	X 5 CrNi 18 9
M3	Medium-alloy austenitic stainless steels	X 2 CrNiMo 18 14 3
M4	High-alloy austenitic and duplex stainless steels	X 2 CrNiMoN 22 5 3
M5	Difficult high-alloy austenitic and duplex stainless steels	X 2 CrNiMoN 25 7 4

CAST IRONS

SMG	Description	Reference
K1	Grey cast irons (GCI)	EN-GJL-250
K2	Compacted graphite irons (CGI)	EN-GJV-400
K3	Malleable cast irons (MCI)	EN-GJMB-550-4
K4	Nodular cast irons (SGI)	EN-GJS-500-7
K5	Austempered ductile irons (ADI)	EN-GJS-1000-5
K6	Austenitic lamellar cast irons	EN-GJLA-XNiCuCr15-6-2
K7	Austenitic nodular cast irons	EN-GJSA-XNiMn23-4

NON-FERROUS METALS

SMG	Description	Reference
N1	Aluminium alloys, Si < 9%	AW-7075
N2	Aluminium alloys, 9% < Si < 16%	AC-44200 Si = 12%
N3	Aluminium alloys, Si >16%	AlSi17Cu5
N11	Copper alloys	CW614N

SUPERALLOYS AND TITANIUM

SMG	Description	Reference
S1	Iron-based superalloys	Discalloy
S2	Cobalt-based superalloys	Stellite 21
S3	Nickel-based superalloys	Inconel 718
S11	Titanium, low alloyed, (α)	Ti
S12	Titanium, medium alloyed, (α+β)	TiAl6V4
S13	Titanium, high alloyed (near β and β)	Ti10V2Fe3Al

HARD MATERIALS

SMG	Description	Reference
H3	Case-hardened steels	16 MnCr 5 60 HRC
H5	Quenched & Tempered steels	42 CrMo 4 50 HRC
H7	Quenched & Tempered steels Bearing steels	100 Cr 6 60 HRC
H8	Tool steels High Speed Steels	X 40 CrMoV 5 1 50 HRC
H11	Martensitic stainless steels	X 20 Cr 13 45 HRC
H12	Precipitation-hardened stainless steels	X 5 CrNiCuNb 16 4 35 HRC
H21	Manganese steels	X 120 Mn 12 50 HRC
H31	White cast irons	EN-GJN-HV600(XCr11) 55 HRC

NON-ISO-STANDARD MATERIALS

OTHER DIFFICULT MATERIALS

SMG	Description	Reference
PM1	Low-alloy PM materials	F-0008 Fe-0.7C
PM2	Medium-alloy PM materials	FLC-4608 Fe2Cu1.8Ni0.5Mo0.2Mn0.8C
PM3	High-alloy PM materials	
HF1	Hardfacing alloys, welded or plasma-deposited iron-based alloys	
HF2	Hardfacing alloys, welded or plasma-deposited cobalt- and nickel-based alloys	
CC1	Sintered tungsten carbide	G50

PLASTICS AND COMPOSITES

SMG	Description	Reference
TS1	Thermosetting polymers	Urea formaldehyde (UF)
TS2	Thermosetting carbon-fibre composites	T300 T700 T800 HTA-S IMA - Epoxy (M21)...
TS3	Thermosetting glass-fibre composites	Epoxy - HX..(42..)/Eglass (7781...)...
TS4	Thermosetting aramide-fibre composites	Kevlar 49
TP1	Thermoplastic polymers	Polycarbonate (PC)
TP2	Thermoplastic carbon-fibre composites	PPS/PEEK - T300...
TP3	Thermoplastic glass-fibre composites	PPS/PEEK - E glass or A glass...
TP4	Thermoplastic aramide-fibre composites	

GRAPHITE

SMG	Description	Reference
GR1	Graphite	R 8500

ISO-P AND ISO-H MATERIALS

SMG	Description	Properties	Reference
P2	Low-alloy ferritic steels, C < 0.25%wt Low-alloy weldable general structural steels	$320 < R_m < 600$	S235JRG2 $R_m = 420$ N/mm²
P3	Ferritic & ferritic / pearlitic steels, C < 0.25%wt Weldable general structural steels Case-hardening steels	$430 < R_m < 610$	16 MnCr 5 $R_m = 550$ N/mm²
P4	Low-alloy general structural steels, 0.25% < C < 0.67%wt Low-alloy Quench & Temper steels	$520 < R_m < 1200$	C 45E $R_m = 660$ N/mm²
P5	Structural steels, 0.25% < C < 0.67%wt Quench & Temper steels	$550 < R_m < 1200$	42 CrMo 4 $R_m = 700$ N/mm²
P6	Low-alloy through-hardening steels, C > 0.67%wt Low-alloy spring and bearing steels	$520 < R_m < 1200$	C 100S $R_m = 600$ N/mm²
P7	Through-hardening steels, C > 0.67%wt Spring and bearing steels	$600 < R_m < 1200$	100 Cr 6 $R_m = 650$ N/mm²
P8	Tool steels High Speed Steels (HSS)	$600 < R_m < 1200$	X 40 CrMoV 5 1 $R_m = 700$ N/mm²
P11	Ferritic & martensitic stainless steels	$415 < R_m < 1200$	X 20 Cr 13 $R_m = 675$ N/mm²

SMG	Description	Properties	Reference
H3	Case-hardened steels	58 < HRC < 62	16 MnCr 5 60 HRC
H5	Quenched & Tempered steels	38 < HRC < 56	42 CrMo 4 50 HRC
H7	Quenched & Tempered steels Bearing steels	56 < HRC < 64	100 Cr 6 60 HRC
H8	Tool steels High Speed Steels	38 < HRC < 64	X 40 CrMoV 5 1 50 HRC
H11	Martensitic stainless steels	38 < HRC < 50	X 20 Cr 13 45 HRC

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