SECO NEWS SUMMARY 2017-1

THE TOOLS YOU RELY ON TO IMPROVE

SECO

CONSTANT INVESTMENT IN CONSTANT IMPROVEMENT

WELCOME TO SECO NEWS SUMMARY 2017-1

Every year, Seco invests 10% of our revenues in R&D to create and refine the tools you need to excel. Our global network of engineers, technical experts and sales people work together to identify the challenges you face today and the needs you'll have tomorrow. Then, they develop the products you need to overcome them. Products like those represented in this brochure.

Here you'll discover end mills with new corner radii designed to help aerospace manufacturers reduce part weight. We've expanded our range of solutions for challenging, sticky materials, such as titanium and heat-resistant superalloys. For those machining cast iron, we've applied Duratomic® technology to expand the versatility of your operations. And those are just the beginning. Each featured tool in Seco News Summary 2017-1 meets a specific need and will help you stay on the road of constant improvement.

COMPETENCE-DRIVEN SOLUTIONS

- MILLING
- STATIONARY
- HOLEMAKING
- TOOLING SYSTEMS

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SOAR ABOVE THE COMPETITION

NEW END MILL CORNER RADII FOR AEROSPACE APPLICATIONS

In response to the ongoing evolution of aerospace component design, Seco has introduced a new RE size 6 corner radius for a variety of standard end mills commonly used by manufacturers producing parts for this segment. The new radius strengthens part walls when compared to sharp-cornered pockets, allowing for thinner walls and floors that result in weight reductions. The RE=6 radius is available for Jabro®-HPM JHP 770 and 780 and Jabro-Solid² JS522 and JS554.

MAXIMUM METAL REMOVAL

UNSURPASSED PRODUCTIVITY

EXCELLENT TOOL LIFE

HIGHLY EFFECTIVE CHIP EVACUATION

HIGH PROCESS STABILITY

EXCELLENT SURFACE QUALITY

Incorporating differential flute spacing to avoid vibrations, JHP770 and JHP780 are optimised for titanium and heat resistant superalloys, respectively. JS522 uses chamfers and special edge preparations to ensure smoother part finishes in one pass. JS554 features a smaller neck diameter to maximise clearance. With the RE=6 corner radius, each of these solid end mills offers strong performance in ISO S12 titanium, as well as S11 and S13.

RANGE OVERVIEW:

- Available on 25 products across four end mill product families
- Available on tool diameters up to 25 mm
- Standard, Weldon and Safelock shanks

HELPFUL HINT

Incorporation of corner radii into your machining enables designs that reduce part weight while maintaining strength.

MILLING

KEY BENEFITS

- Maintain structural integrity while decreasing part thickness
- Maximize productivity and surface quality in ISO 12, as well as S11 and S13 materials

ADDITIONAL DETAILS

- Check out our update catalogue/machining navigator update 2017-1 pages 29-44 for more information.

COOL, COATED AND COLLECTED

JABRO® JCO710 WITH SIRON-A COATING AND INTERNAL COOLANT

To meet the growing demands of aerospace manufacturers, Seco's Jabro JCO710 for titanium and stainless steels is now available with internal coolant channels and a proven SIRON-A coating. Combined, these new features further increase the capabilities of this HSS-Co solid end mill by boosting tool life, allowing for faster cutting data, increasing surface quality and maximising process reliability.

HIGH PROCESS SECURITY

UNMATCHED PERFORMANCE

EXTREME TOUGHNESS

INCREASED TOOL LIFE

MILLING

Available in 4-flute and 6-flute versions, the tools are perfect for roughing and semi finishing applications in the aerospace industry and excel in full slotting operations and when side milling high shoulders. With the new addition of internal coolant, the tool is an excellent choice for machining deep pockets, small cavities and other enclosed spaces.

RANGE OVERVIEW:

- HSS-Co grade with SIRON-A coating
- Internal coolant channels
- 4-flute for full slotting operations
- 6-flute for side milling high shoulders
- Diameters from 10 mm to 50 mm
- Cutting depths from 16 mm to 50 mm

HELPFUL HINT

Internal coolant channels help increase performance when machining features where chip evacuation is challenging

KEY BENEFITS

- Internal coolant extends tool life
- SIRON-A coating increases heat resistance
- High versatility for a wide range of uses
- Extremely reliable performance
- Increased metal removal
- Increased surface integrity and quality

ADDITIONAL DETAILS

- Check out our update catalogue/machining navigator update 2017-1 pages 45-49 for more information.

LONG LIVE SMOOTH CUTTING GEOMETRIES

NEW T4-12 LOEX12 – M09 CUTTING GEOMETRY FOR STICKY MATERIALS

The new LOEX12 – M09 insert geometry for the T4-12 tangential milling cutter family offers superior performance when machining sticky materials such as stainless steel, titanium and other heat-resistant superalloys. The new geometry increases tool life and brings the high metal removal rates of T4-12 to these material groups.

Featuring an optimised clearance angle to ensure consistent cutting forces across the entire cutting radii, the LOEX12 – M09 achieves excellent surface finish in addition to the gains in tool life and productivity. The new geometry provides benefits across a broad range of materials, offering exceptional value in sticky materials common to the aerospace, power generation and general machining segments.

SMOOTH CUTTING

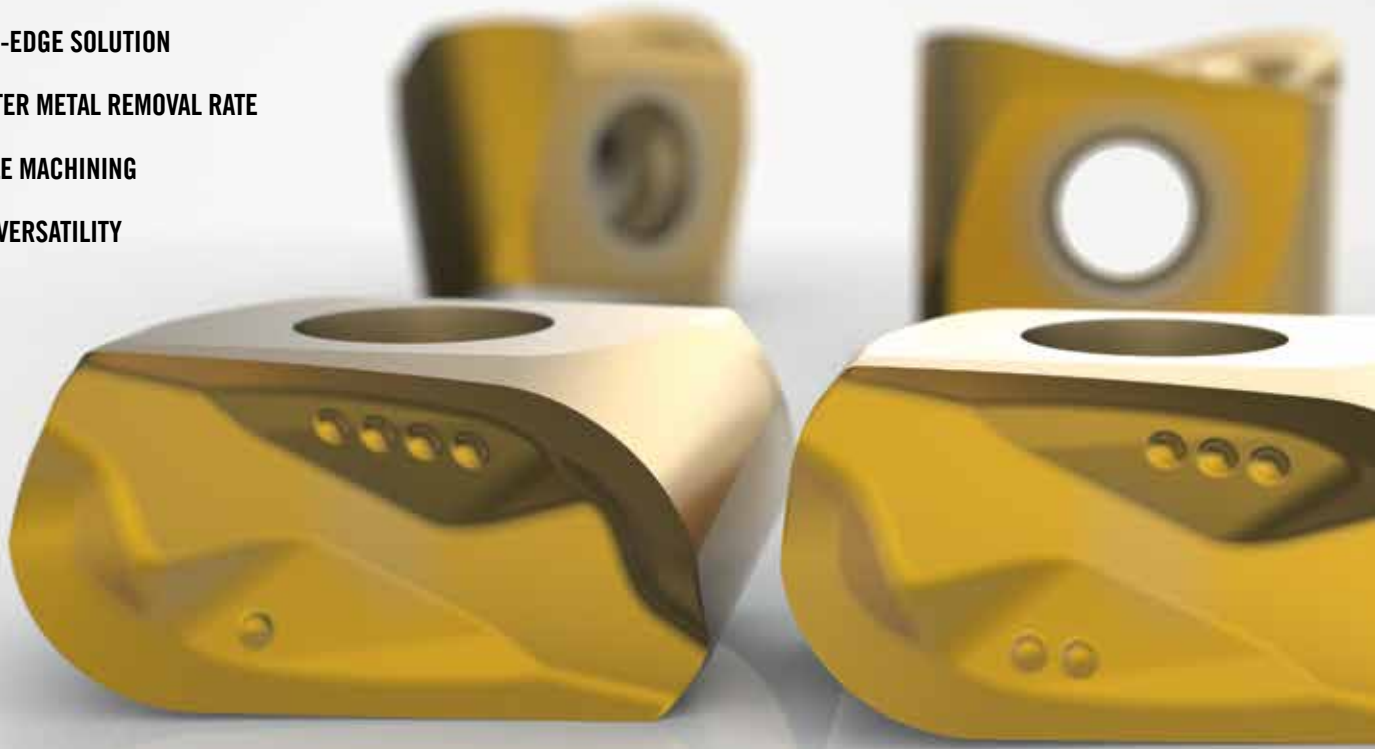
INCREASED TOOL LIFE

MULTI-EDGE SOLUTION

GREATER METAL REMOVAL RATE

STABLE MACHINING

HIGH VERSATILITY



MILLING

KEY BENEFITS
- Low cutting forces
- Tool life increases of up to 50%
- Increased productivity
- Smoother cutting
- Process reliability

ADDITIONAL DETAILS
- Check out our update catalogue/machining navigator update 2017-1 page 19 for more information.

RANGE OVERVIEW:
- Corner radii from 0.8 mm (.03") to 6.3 mm (.25")
- Four cutting edges in 0.8 mm (.03") to 4.00 mm (.157") radii
- Two cutting edges in 5.0 mm (.197") and 6.3 mm (.25") radii
- Maximum depth of cut: 12 mm (.5")
- 8 grades for a wide range of materials, including stainless steel and high temperature alloys

HELPFUL HINT
Achieving a smoother cutting action not only improves surface finish, tool life and productivity, but also reduces the wear and tear on your machine spindle.

TWICE AS NICE

CUTTER WITH DOUBLE-SIDED ROUND INSERTS PROVIDES ECONOMY AND HIGH PERFORMANCE

Incorporating double-sided round inserts with 16 cutting edges each, the new R217/220.28 cutter provides high productivity while maintaining economical performance. The tool performs face milling, slotting and contouring in ISO M and ISO S materials, as well as some difficult-to-machine ISO P materials, such as martensitic stainless steel. A complement to our existing R217/220.29 range, the R217/R220.28 excels in Z-leveling applications and is ideal for exotic materials used in the aerospace and power generation segment.

With a completely new cutter body design, the R217/220.28 features safe and user-friendly indexing that saves time and provides trouble-free operation. Double negative positioning in the pocket seats allows the design to incorporate an extra insert per diameter when compared to the R217/R220.29, providing further productivity gains.

ECONOMIC

HIGH PRODUCTIVITY

LOW TOOLING COSTS

EASY INDEXING

RANGE OVERVIEW:

- Diameters ranging from 32 mm to 80 mm
- PVD & CVD grades
- Insert size 12
- 2 geometries
- Normal- and close-pitch versions

HELPFUL HINT

Choose the close-pitch cutter when using a high powered machine and the normal-pitch version when using a machine with limited power capability.

MILLING

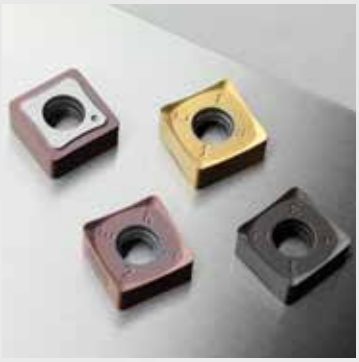
KEY BENEFITS

- Double-sided inserts increase economy
- Safe and user-friendly indexing system
- Additional insert per diameter increases productivity

ADDITIONAL DETAILS

- Check out our update catalogue/machining navigator update 2017-1 pages 13-18 for more information.

COME FACE-TO-FACE WITH BETTER ECONOMY



NEW 220.88 FACE MILLING CUTTER

Our new R220.88 cutter meets today's needs for an economical near 90-degree face milling solution via eight cutting edges per insert. Incorporating an 88-degree lead angle provides the ability to machine close to sidewalls, fixture clamps or other obstacles in the machining process. This feature also allows for high DOC capabilities with a smaller I.C. insert to enhance the cutter's economy.

The R220.88 with SNMU inserts is available in two different insert sizes, 12mm and 16mm. The cutter is available in a right-hand version as standard, with the flexibility of an insert that can be used in left-handed versions in a special cutter body. This allows integration into systems with dual spindles performing simultaneous cutting.

ECONOMICAL

REDUCED CUTTING FORCES

ENVIRONMENTALLY FRIENDLY

LONGER TOOL LIFE

Designed for roughing and semi-finishing applications, the R220.88 is ideal for machining cast iron and steels in the general machining and automotive segments. The cutter body is made of Idun material, which offers strong performance and is environmentally friendly due to the elimination of the nickel coating process. An integrated wiper flat ensures a good surface finish in semi-finishing operations. The positive M10 geometry addresses various demands in the machining process for both size 12 and size 16. The MD13 geometry offers heavy edge protection for size 12, while the MD16 provides the same benefit for size 16.

RANGE OVERVIEW:

- Diameters from 50 mm to 160 mm (2" to 6") as standard
- Max DoC: 9 mm (0.354") for size 12 and 13 mm (0.512") for size 16
- Insert geometries: M10, MD13, MD16
- Insert grades: MK1500, MK2050, MP1500, MP2500, MS2500 and F40M
- Neutral insert that can be used in right-handed or left-handed cutters. Left-handed cutters available only as special.

HELPFUL HINT

In roughing and semi-finishing applications, near 90-degree face mills increase your depth of cut possibilities.

MILLING

KEY BENEFITS

- Eight cutting edges per insert for economical face milling solution
- Integrated wiper flat for improved surface finish
- Optimised geometry and grade for steel and cast iron
- Environmentally friendly Idun cutter body with no nickel coating process

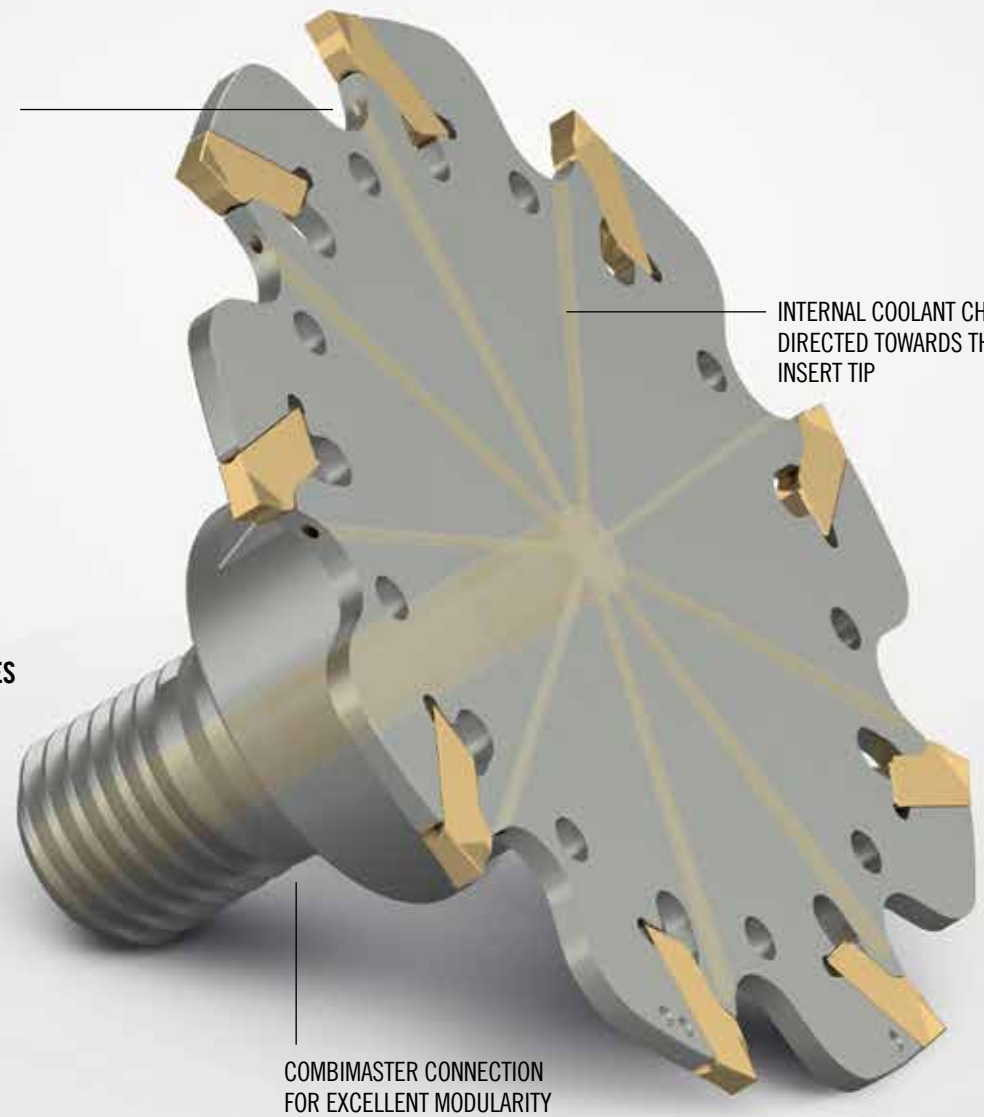
ADDITIONAL DETAILS

- Check out our update catalogue/machining navigator update 2017-1 pages 2-5 for more information.

COOL SLIM SLOTTING

SMALL-DIAMETER DISC MILLING CUTTER WITH NEW INTERNAL COOLING

Specific for slim slotting and cutoff operations, the new close-pitch 335.10 disc milling cutters are now available from 40-mm diameters and with special internal cooling capability. The cutters significantly increase the applicability and scope of Seco's disc milling product range, and the new sizes are well-suited for any type of machine — even those that are lighter duty and/or less powerful.



APPLICATION FLEXIBILITY

RELIABILITY

STABILITY

HIGH PRODUCTIVITY

SUPERIOR SURFACE FINISHES

The 335.10's internal coolant channels direct coolant right to the cut zone for optimised chip formation and evacuation, while the cutter's unique insert pocket seat design makes room for more inserts per diameter to significantly improve process stability and boost productivity. The cutters work with Seco's Combimaster tooling system, and that system's connection ensures high strength and allows for increased depths of cut, while ensuring an optimal tool overhang for better stability.

RANGE OVERVIEW:

- Diameters from 40 mm to 100 mm
- Widths-of-cut from 2.25 mm to 3.1 mm
- Dedicated for slim slotting and cutting off
- Full range of insert geometries and grades for all applications

HELPFUL HINT

Choose this new cutter with internal coolant when working with sticky materials to optimise chip formation and evacuation.

MILLING

KEY BENEFITS

- Special internal coolant channels
- Efficient chip evacuation
- Wider range of smaller diameters
- High-productivity close-pitch design

ADDITIONAL DETAILS

- Check out our update catalogue/machining navigator update 2017-1 pages 6-9 for more information.

A GRADE YOU CAN TRUST

NEW TP3501 MAXIMISES VERSATILITY & SECURITY

Our standard setting family of Duratomic-technology-based TP grades has been expanded to include TP3501, a grade designed to provide optimal versatility and application security. The grade is an ideal first choice for steel turning applications featuring heavy interruptions, less stable machines, small internal features or weak set-ups due to part size or shape. This versatile grade is also well-suited for stainless steel machining.

HIGH RELIABILITY

REDUCED WASTE

LOWER TOOLING COSTS

MORE STABILITY

WEAR RESISTANT

TP3501 results from Seco's EDGE INTELLIGENCE concept — an integration of our extensive high-performance insert experience and knowledge to make every cutting edge count. The grade features Chrome Used-Edge Detection, which allows a user to instantly identify when an edge has been used, thus reducing potential waste.

RANGE OVERVIEW:

- Range includes nearly 400 inserts
- Wide variety of available geometries
- Includes the well-established M6 chip breaker

HELPFUL HINT

When choosing between TP2501 and TP3501, if higher productivity is the main goal, select TP2501. If reliability is the priority, select TP3501.

STATIONARY

KEY BENEFITS

- High reliability for unstable conditions
- Handles lower speeds and heavy interruptions
- Chrome Used-Edge Detection minimizes waste

ADDITIONAL DETAILS

- Check out our update catalogue/machining navigator update 2017-1 pages 52-84 for more information.

GOODBYE ANALOGUE, HELLO DIGITAL

EPB 890 DIGITAL BORING HEADS

With our new EPB 890 digital boring heads, we've made fine boring easier and more precise than ever before. As the only digital boring heads on the market that display the absolute diameter settings as well as the relative diameter adjustment, these heads guarantee accurate cuts by providing diameter readings and settings within 1 µm.

The EPB 890's Universal Digital Display Controller (UDDC) plugs directly into the head and is self-holding, freeing up the user's hands to make adjustments. The large display panel always shows readouts horizontally, making it easy to read data from any position. A patented automatic balancing feature further enhances performance and user-friendliness by automatically adjusting a counterweight in the same axis as the setting piston for the insert holder. This ensures that the EPB 890 is perfectly balanced every time its diameter is adjusted.

EXTREME VERSATILITY

HIGH PRECISION

PROCESS RELIABILITY

LOW TOOLING COSTS

TROUBLE-FREE OPERATION

RANGE OVERVIEW:

- Four head sizes with Graflex machine-side connections
- Bore diameters from 39 mm to 115 mm / 1.53" to 4.52"
- Digital display shows absolute and relative measurements in metric or inch
- The universal digital display controller can be used for any number of boring heads

HELPFUL HINT

Fine boring is one of the final operations on costly components, and eliminating the risk of errors at this stage can result in significant cost savings.

HOLEMAKING

KEY BENEFITS

- Setting precision at 1 µm
- Easy-to-read digital display
- High user-friendliness for simple operation
- Readings displayed in absolute and relative modes
- No presetter needed

ADDITIONAL DETAILS

- Check out our update catalogue/machining navigator update 2017-1 pages 87-93 for more information.

GET FIT AND TRIM

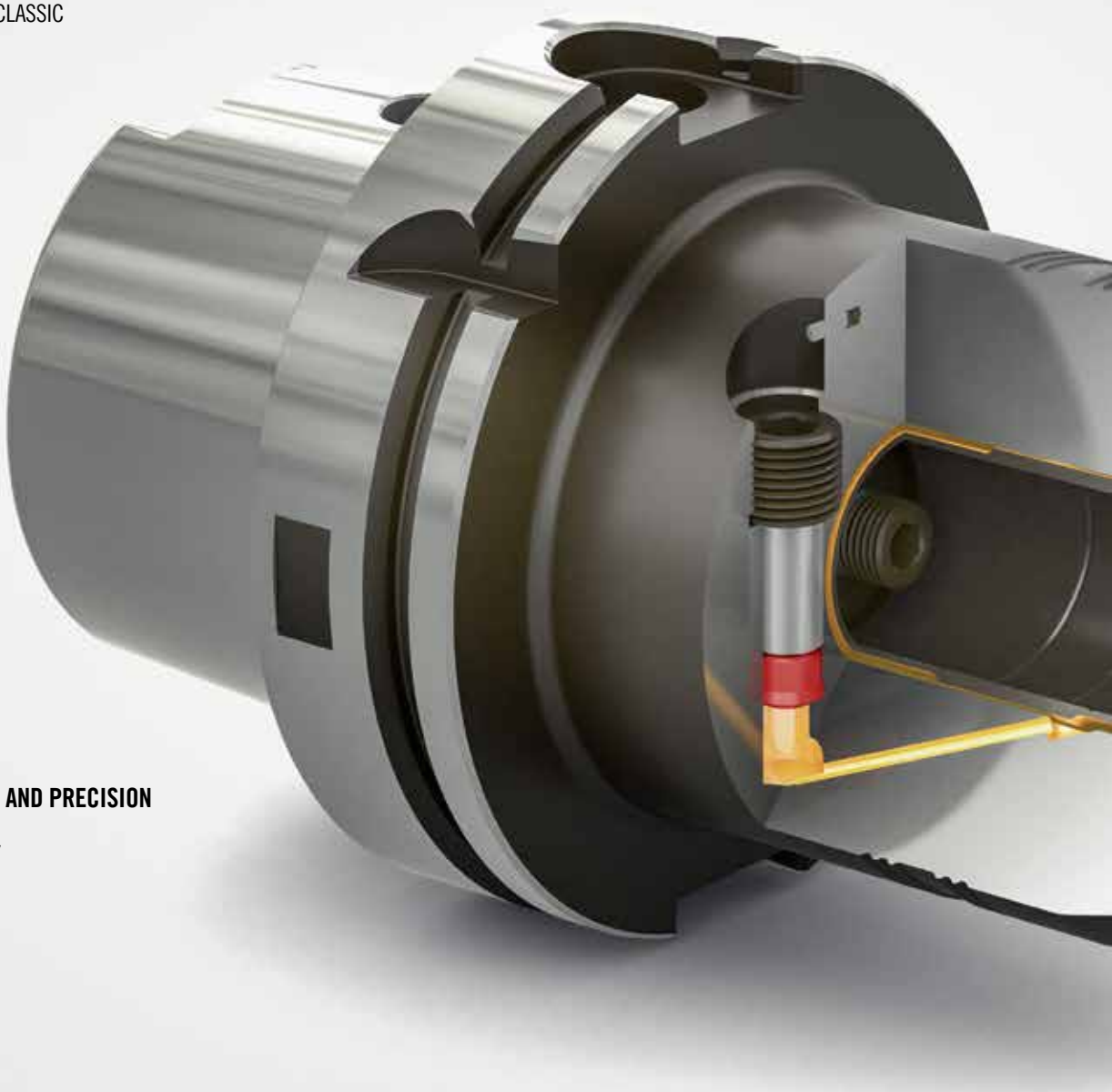
EPB 5835
STRONG

EPB 5834
CLASSIC

ADDITIONAL DIAMETERS FOR EPB 5835

With the introduction of 16-mm and 25-mm EPB 5835 hydraulic chucks, Seco rounds out this line of proven, reliable toolholders. The new diameters provide the perfect fit for every application, eliminating the need for a reduction sleeve, improving access to the workpiece and increasing precision.

While conventional chucks can only tolerate the low radial forces of finishing operations, high-performance, robust EPB 5835 hydraulic chucks perform both roughing and finishing operations with minimal runout. EPB 5835's short, strong design provides high rigidity and the holders' high transmittable torque make them an excellent choice for high-volume machining.



MINIMAL RUNOUT

ROBUST DESIGN

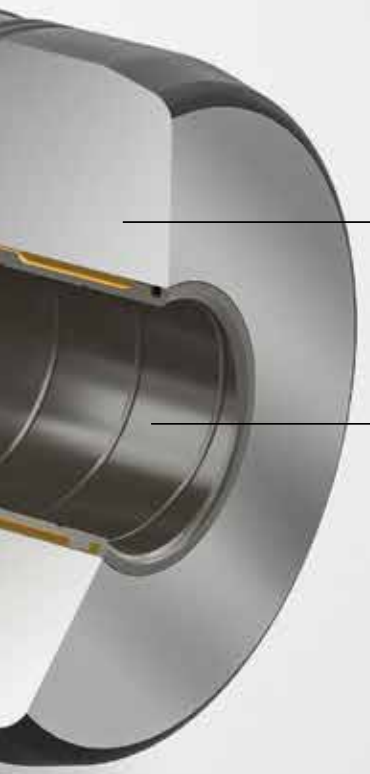
HIGH PERFORMANCE AND PRECISION

PROVEN RELIABILITY

HIGH PRODUCTIVITY

RANGE OVERVIEW:
- Available in 12, 16, 20, 25 and 32 mm diameters
- Compatible with HSK-A63, HSK-A 100, BT TF40 and TF50, DIN TF40 and TF50, and Seco-Capto™ C6 and C8

HELPFUL HINT
Today's robust hydraulic chuck designs are well-suited for rough milling operations.



TOOLING SYSTEMS

KEY BENEFITS
- Increased strength and rigidity
- High transmittable torque
- Maximum tool performance and productivity
- Runout of 4 µm maximum at 3x ø

ADDITIONAL DETAILS
- Check out our update catalogue/machining navigator update 2017-1 pages 100-106 for more information.

PLUG AND PLAY

STEADYLINE® VIBRATION DAMPING SOLUTIONS FOR LARGER DIAMETERS

Our Steadyline® vibration damping tooling system now includes 60-mm and 80-mm diameter turning/boring bars. They are a reliable, plug-and-play solution to increase productivity for large and deep bores at depths beyond those of standard bars. These larger sizes — also available in inch diameters of 2.5" and 3" — are ideal for use in oil and gas applications as well as general machining of components requiring tool overhangs of up to 600 mm with 60-diameter bars or 800 mm with 80-diameter bars.

These larger Steadyline turning/boring bars feature a BA connection for both static turning and rotating boring operations. With BA to GL adaptors, the system readily accepts Seco's existing GL50 turning heads.

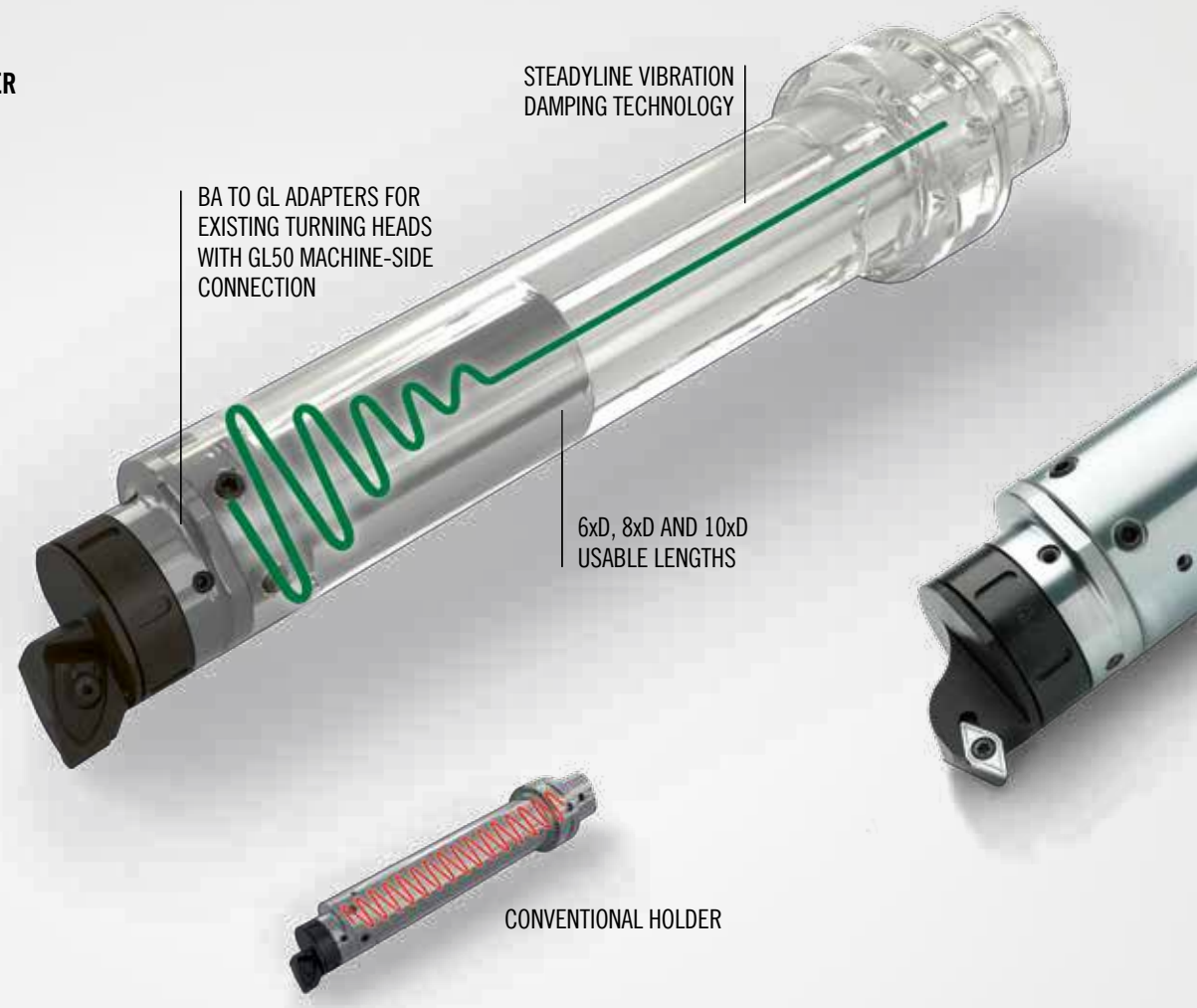
PRODUCTIVITY BOOSTER

REDUCED VIBRATION

PROCESS RELIABILITY

EXTREME VERSATILITY

WIDE RANGE



RANGE OVERVIEW:

- Metric Diameters: 60 mm and 80 mm
- Inch Diameters: 2.5" and 3"
- Lengths: 6xD, 8xD and 10xD
- Machine-side connections:
  Cylindrical shanks ø60 and ø80mm/2.5" and 3.0"
  Seco-Capto™ C6 and C8
  HSK-T/A100

HELPFUL HINT

The BA connection positions turning heads at 0°/180° for left- and right-hand GL50 heads.

TOOLING SYSTEMS

KEY BENEFITS

- Stability for difficult operations
- Boosts productivity in large, deep bores
- Easy and fast to switch from one head to another
- Performs turning and boring operations
- Vibration damper absorbs vibrations before they spread through the bar

ADDITIONAL DETAILS

- Check out our update catalogue/machining navigator update 2017-1 pages 94-99 for more information.

A WINNING COMBINATION

TWIN HEAD HOLDERS

Performing OD and ID machining via one toolholder minimises time spent on tool changes and saves space on your tooling turret. Seco's innovative Twin Head toolholders combine OD bevelling and facing with ID boring in a single process. These products represent our commitment to offering comprehensive tooling solutions for oil & gas, while also benefiting manfacturers working across all industry segments in applications that involve ID/OD work.

The Twin Head toolholders offer strong and rigid performance with a broad range of insert grades to tackle a wide variety of materials. A flush coolant valve can be opened to flush chips from a bore prior to threading, and the system delivers single coolant to the CNMG and double coolant to the SNMG inserts. The new Twin Head system performs well across many different applications, offering high levels of versatility and flexibility.

UNPRECEDENTED EFFICIENCY

ROBUST TOOLHOLDING

OPTIMISED CHIP EVACUATION

APPLICATION VERSATILITY

COST-EFFECTIVE SOLUTION

RANGE OVERVIEW:

- Six options available
- Seco-Capto™ C6 and C8 connections
- Three insert size ranges
- Right- and left-hand versions for easy changes between push and pull threading
- Optional extensions for deep hole applications

HELPFUL HINT

Get the best of both worlds with a standard product that fits your specialized applications.

TOOLING SYSTEMS

KEY BENEFITS

- Standard tooling solution for machining API couplings
- High strength and rigidity
- Maximised flexibility and versatility
- Improved productivity

ADDITIONAL DETAILS

- Check out our update catalogue/machining navigator update 2017-1 pages 54-55 for more information.

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