



Melin Tool Company

MELIN PRODUCT PORTFOLIO

- » Ultra High Performance
- » High Performance
- » Micro
- » General Purpose

www.melintool.com

2021

HIGH PERFORMANCE ALUMINUM ALLOYS

3 Flute • 39° for roughing & finishing

Series: MAL3



- both walls and floor
- Polished flute face optimizes chip evacuation and avoids chip nesting
- h6 Tolerance on DIA & SHK

3 Flute • 39° roughing & finishing - Chipbreaker

SERIES: MAL3CB



- Designed for aggressive machining
- Unique geometry reduces cutting pressures and vibration at high feed rates
- Chipbreaker added for reduced tool pressure, also aids in chip evacuation
- Highly polished OD and flute face prevents chip build-up





3 Flute • 39° for roughing & finishing

SERIES: MAL3-RN





- End geometry designed for aggressive ramping
- Polish grinds produce superior surface finishes on both walls and floor
- Reduced Neck designed for deep pocketing and long reach applications
- Polished flute face optimizes chip evacuation and avoids chip nesting
- h6 Tolerance on DIA & SHK

3 Flute • 39° for roughing & finishing

SERIES: MAL3CB-RN



- End geometry designed for aggressive ramping
- Polish grinds produce superior surface finishes on both
- Reduced Neck designed for deep pocketing and long reach applications
- Polished flute face optimizes chip evacuation and avoids chip nesting
- h6 Tolerance shank for use in shrink fit holders





3 Flute • 39° rougher for high velocity **MACHINING**

Series: MAL3R

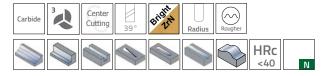




- For roughing operations
- Unique geometry reduces cutting pressures and vibration at high feed rates
- Highly polished OD and flute face prevents chip build-up
- Knuckles shorten chip length aiding in chip evacuation, reduces tool pressure

3 Flute • 39° rougher for high velocity **MACHINING**

Series: MAL3R-RN



- For roughing operations
- Unique geometry reduces cutting pressures and vibration at high feed rates
- Highly polished OD and flute face prevents chip build-up
- Knuckles shorten chip length aiding in chip evacuation, reduces tool pressure



HIGH PERFORMANCE ALUMINUM ALLOYS

2 Flute • 30° for high velocity machining

Series: HVMG2



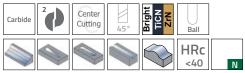


- > Designed for aggressive machining
- Unique geometry reduces cutting pressures and vibration at high feed rates
- Highly polished OD and flute face prevents chip build-up
- No Neck options available, to allow you to order any size you need
- Available in Metric

2 Flute • 45° BALL NOSE END MILL

Series: AXMG45-__-B





- For universal operations on Aluminum and Cast Aluminum Alloys
- Edge prep provides superior edge strength and faster chip flow
- Polished primary produces superior surface finishes on walls and floors
- > Polished flute face and edge prep optimizes chip evacuation and avoids chip nesting
- > H6 Tolerance shank for use in shrink fit holders

2 Flute • 35° for light duty CNC machines

Series: ALMG





- > For universal machining in non-ferrous materials
- Small corner radius for added strength and smoother cutting action
- > Excellent cost value for small production runs
- Available in Metric

2 Flute • 45° square end mill

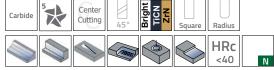
SERIES: AXMG45



- For universal operations on Aluminum and Cast Aluminum Alloys
- Edge prep provides superior edge strength and faster chip flow
- Wiper flats and polish grinding produce superior surface finishes on walls and floors
- Polished flute face and edge prep optimizes chip evacuation and avoids chip nesting
- > h6 Tolerance shank for use in shrink fit holders
- Available in Metric

5 Flute • 45° for trochoidal toolpathing

SERIES: GXMG5



- Outstanding performance for High Feed Finishing of Aerospace wing spars
- > Effective on all CNC machines 5-35 HP
- Generates 50-60% higher metal removal rates over 3 flute HP tools
- > Unique Edge Prep minimizes chatter, extends tool life
- Wiper flat and polish grinds produce superior surface finishes on both walls and floor
- Available in Metric

3 Flute • 35° for light duty CNC machines

SERIES: ELMG



- > For universal machining in non-ferrous materials
- Small corner radius for added strength and smoother cutting action
- > Excellent cost value for small production runs
- Available in Metric

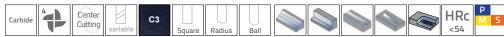


Melin Ultra High Performance - Titanium & Stainless

4 Flute • Variable index - square, radius, ball & reduced neck

Series: MTi4 & MTi4-RN





- 4 Flute Variable pitch for reduced chatter and increased productivity.
- Substrate, Geometry & Unique Coating optimized for difficult-to-machine materials such as TITANIUM AND STAINLESS STEELS, AS WELL AS TOOL STEELS
- For aggressive heavy Slotting up to 2x D, Peripheral Milling, Trochoidal & High efficiency Milling
- LONG OAL WITH REDUCED NECK FOR CLEARING WALLS WHILE REACHING INTO DEEP POCKETS.
- Square, Radius R.010 R.375, and Ball
- Chipbreaker can be added to any length to aid in avoiding chip build up and chip nesting
- LONG SHANK OPTION Allows the flexibility to add ANY LBS size you need without the wait! Stocked for quick turn around.

5 Flute • Reduced Neck - Square, Radius, Ball & Reduced Neck



























- 5 Flute Variable pitch for reduced chatter and increased productivity over 4 flute.
- Substrate, Geometry & Unique Coating optimized for difficult-to-machine materials such as TITANIUM AND STAINLESS STEELS, AS WELL AS TOOL STEELS
- For Slotting up to $1 \times D$, peripheral milling, trochoidal & high efficiency milling
- Square, Radius R.010 R.375, and Ball
- Long OAL with reduced neck for clearing walls while reaching into deep pockets
- Chipbreaker series available in STOCK to aid in avoiding chip build up and chip nesting.
- LONG SHANK OPTION Allows the flexibility to add ANY LBS size you need without the wait! Stocked for quick turn around.



7 Flute • Variable index - Square & Radius

Series: MTi7





- 7 Flute Variable pitch for reduced chatter and increased productivity.
- Substrate, Geometry & Unique Coating optimized for difficult-to-machine materials such as TITANIUM AND STAINLESS STEELS, AS WELL AS TOOL STEELS
- For Peripheral Milling, trochoidal & high efficiency Milling utilizing full length of cut up to 15% of DIA
- Radius R.010 R.120
- Chipbreaker can be added to any length of cut or reach combination to aid in avoiding chip build up and chip nesting

MELIN ULTRA HIGH PERFORMANCE - INCONEL

4 FLUTE ● REDUCED NECK - RADIUS & BALL

Series: MNi4



- 4 Flute Variable pitch for reduced chatter and increased productivity.
- Available sizes: 1/8 1/2"
- Substrate, Geometry & Coating optimized for difficult-to-machine materials such as INCONEL and Nickel Based materials as well as most other difficult to machine materials.
- For heavy aggressive Slotting up to 1x DIA peripheral milling, trochoidal machining
- Radius R.015 R.120 and Ball



5 Flute • Variable index - Radius & Ball

Series: MNi5



- 5 Flute Variable pitch for reduced chatter and increased productivity.
- Available sizes: I/4 I"
- Substrate, Geometry & Coating optimized for difficult-to-machine materials such as INCONEL and Nickel Based materials as well as most other difficult to machine materials.
- For SLOTTING up to 1x DIA, PERIPHERAL MILLING, TROCHOIDAL MACHINING
- Radius R.015 R.120 and Ball
- Ball End designed for 3D roughing & finishing

CHIPBREAKER - ADD A CUSTOMIZED DESIGN

Series: Melin Chipbreaker Designs























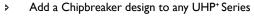












- Chipbreakers spaced to allow to be used for roughing & finishing
- Chipbreakers dramatically reduce tool pressure
- Geometry for machining Titanium & Stainless Steels

-.002

- Geometry along with chipbreaker increases MRR
- Additional Customizations
- Weldon Flat
- Rough Grip
- Haimer Safe Lock TM (can be added at your request)





HIGH PERFORMANCE TITANIUM & HIGH TEMP ALLOYS

3 Flute • Variable flute - HP ROUGHING & FINISHING APPLICATIONS

Series: VXMG3T



- Geometry designed to reduce chatter, universal machining operations
- Unique Titanium focused geometry and edge prep enables efficient cutting action
- Eccentric relief provides an exceptionally strong cutting edge
- Proprietary nACRo coating allows for higher SFM and is especially effective in extending tool life
- Available in Metric

6 Flute • Variable fl- Roughing & Finishing applications

Series: VXMG6T



- Geometry designed to reduce chatter, universal machining operations
- Unique Titanium focused geometry and edge prep enables efficient cutting action
- Eccentric relief provides an exceptionally strong cutting edge
- Proprietary nACRo coating allows for higher SFM and is especially effective in extending tool life
- Excellent for roughing & finishing applications

7 Flute • Variable fl - Light to medium finishing applications

Series: VXMG7-



- Geometry designed to reduce chatter, utilizing maximum metal removal rates
- Unique titanium focused geometry and edge prep enables efficient cutting action
- Additional flutes provide over 40% higher metal removal rates over 4 & 5 flute tools
- Extreme metal removal rates delivered at full flute length & up to 15% x D radial depth
- Excellent for high feed machining processes
- Available in Metric

9 Flute • Variable fl - fine-finishing applications

Series: VXMG9- -NACRO



- Designed to deliver outstanding surface finishes, utilizing maximum metal removal rates
- Unique Titanium focused geometry and edge prep enables efficient cutting action
- Extreme metal removal rates delivered at full flute length & up to 10% x D radial depth
- Proprietary nACRo coating allows for higher SFM and is especially effective in extending tool life
- Ideal for finishing tight tolerance walls
- Available in Metric

3 Flute • 35° for stainless steel

Series: EMG35





- Unique geometry and higher helix maximizes heat & wear
- Outstanding performance in single pass slotting
- Cost effective for use on older, NC machines on short run production
- Available in Metric

5 Flute • 45° for stainless steels/nickel based alloys

SERIES: GMG



- Unique geometry and higher helix maximizes resistance to heat and wear
- Outstanding performance in heavy profiling applications
- Cost effective for use on short run production
- Available in Metric



HIGH PERFORMANCE TITANIUM & HIGH TEMP ALLOYS

4 OR 6 FLUTE • COBALT AEROCUT ROUGHING END MILL

SERIES: CCAC





- Designed for high volume removal of Titanium Alloys
- > Unique sinusoidal wave along flute provides ideal chip evacuation
- Enables heavy cuts at high feed rates while eliminating chip nesting
- > Outstanding performance on large Gantry-style machines

HIGH PERFORMANCE FERROUS MATERIALS

4 Flute • Variable flute - HP ROUGHING APPLICATIONS

5 Flute • Variable flute - HP ROUGHING APPLICATIONS

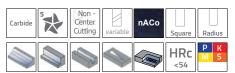
Series: VXMG4





- Geometry designed for reducing chatter, universal machining operations
- > Ideal for use on Steel and Stainless Alloys and Cast
- Proprietary nACo coating provides extended tool life over conventional coatings
- Excellent for heavy cuts, deep slotting and long axial depth profiling
- > Available in Metric

SERIES: VXMG5



- Geometry designed for reducing chatter, universal machining operations
- > Ideal for use on Steel and Stainless Alloys and Cast Iron
- Proprietary nACo coating provides extended tool life over conventional coatings
- Excellent for heavy cuts, deep slotting and long axial depth profiling
- > Available in Metric

7 Flute • Variable fl-semi roughing & finishing applications

9 Flute • Variable FL - Optimum fine finish profiling application

Series: VXMG7





- Geometry designed for reducing chatter, utilizing maximum metal removal rates
- Additional flutes provide over 40% higher metal removal rates over 4 & 5 flute tools
- Extreme metal removal rates delivered at full flute length & up to 15% x D radial depth
- Proprietary nACo coating provides extended tool life over conventional coatings
- Available in Metric





- Designed to deliver outstanding surface finishes, utilizing maximum metal removal rates
- \Rightarrow Extreme metal removal rates delivered at full flute length & up to $10\% \times D$ radial depth
- Proprietary nACo coating provides extended tool life over conventional coatings
- Ideal for finishing tight tolerance walls
- > Available in Metric



HIGH PERFORMANCE FERROUS MATERIALS

4 Flute • Performance end mill

SERIES: MPMG





- Good for a Wide Variety of materials.
- Blend between High Performance and General Purpose end mill.
- Comes in Stub, Standard, Long, & XL lengths.

5 Flute • Performance end mill

SERIES: MPMG5



- Good for a Wide Variety of materials.
- Blend between High Performance and General Purpose end mill.
- > Comes in Stub, Standard, & Long lengths.



MULTI FLUTE • FINE PROFILE ROUGHING END MILL

Series: CRMG

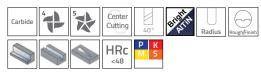




- > Sinusoidal ground profile enables maximum metal removal rates
- Provides outstanding heat resistance and minimum tool wear
- > Effective on all medium hardness Ferrous Materials
- > Available in Metric

Multi Flute • Rougher finisher

SERIES: CRFMG



- A single tool for roughing and semi-finishing in a single pass
- > Truncated, ground profile enables optimum chip evacuation
- > Enables heavy cutting while still leaving good finishes
- Available in Metric



3 Flute \bullet 60° general machining application in stainless steels

Series: EMG60



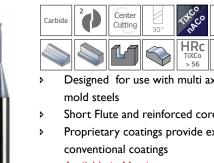


- > Extra High Helix keeps a cutting edge in the material throughout the machining process
- > Produces outstanding surface finishes
- > Requires minimum horsepower

HIGH PERFORMANCE DIE & MOLD - HARDENED STEELS

2 Flute • Corner radius for multi axis machining

SERIES: HMG1- -SF-R





- Designed for use with multi axis machines on die &
- Short Flute and reinforced core provide added strength

CORNER RADIUS

- Proprietary coatings provide extended tool life over
- Available in Metric

2 Flute • Ball nose for Z-axis machining

SERIES: HMG1- -SF-B



- Designed for use with multi axis machines on die & mold steels
- Short Flute and reinforced core provide added strength



Proprietary coatings provide extended tool life over conventional coatings

Available in Metric



2 FL • BALL NOSE FOR HARD MILLING IN DIE & MOLD APPLICATIONS

Series: HMG-





- Designed for use with multi axis machines on hardened materials
- Short Flute and reinforced core provide added strength
- Proprietary nACo coating provides extended tool life over conventional coatings
- Available in Metric

6 FLUTE • 45° PROFILING END MILL

Series: CCMG45



- Designed for use with multi axis machines on hardened materials
- Maximized core diameter provides exceptional rigidity and strength
- Proprietary nACo coating provides extended tool life over conventional coatings
- Available in Metric

HIGH PERFORMANCE GRAPHITE & COMPOSITES

2 Flute • SQ & BALL CVD DIAMOND COATING

Series: AMG- -DIA





- For optimum productivity in machining GRAPHITE, HIGH SILICON ALUMINUM & COMPOSITE MATERIALS
- Ideal for slotting, pocketing, Z-axis machining and taking heavy radial depth of cuts
- Special carbide substrate with 6% cobalt binder enables proper adhesion of coating
- Up to 20 micron thickness of pure crystalline diamond structure provides maximum tool life

4 Flute • SQ & Ball CVD DIAMOND COATING

SERIES: CCMG- -DIA



- For optimum productivity in machining GRAPHITE, HIGH SILICON ALUMINUM & COMPOSITE MATERIALS
- Ideal for finishing applications and long axial depths of cut
- Special carbide substrate with 6% cobalt binder enables proper adhesion of coating
- Up to 20 micron thickness of pure crystalline diamond structure provides maximum tool life



HIGH PERFORMANCE GRAPHITE & COMPOSITES

MULTI FLUTE • COMPOSITE ROUTER FOR CARBON FIBER

Series: CRMGD





- Designed for high productivity results in machining CRFP composite materials
- > Eliminates fiber breakout and delamination
- Provides improve edge finishes
- Ideal for work on airplane skins and other honeycomb work pieces

FIBERGLASS ROUTERS

SERIES: FRMG



- Designed for machining composites, graphite, carbon fiber, honeycomb & fiberglass materials
- NE No End Cut: For use where end of fiberglass router is not in contact with work piece
- SQ Square Cut: For use where square corners or smooth surfaces are required for work piece
- DP- <u>Drill Point Cut</u>: For use where plunging applications are required before routing operations



2 Flute • SQ & BALL DLC DIAMOND COATING

SERIES: AMG-__-DLC

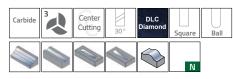




- For enhanced productivity in machining Graphite,
 High Silicon Aluminum & Composite Materials
- Ideal for slotting, pocketing and taking heavy radial depth of cuts
- Hydrogen free diamond-like carbon (DLC) provides extended tool life at lower tool cost

3 Flute • sq & ball DLC diamond coating

SERIES: EMG-__-DLC



- For enhanced productivity in machining Graphite, High Silicon Aluminum & Composite Materials
- Ideal for finishing applications and long axial depths of cut
- Hydrogen free diamond-like carbon (DLC) provides extended tool life at lower tool cost



4 Flute • sq & ball DLC diamond coating

SERIES: CCMG-_-DLC





- For enhanced productivity in machining Graphite, High Silicon Aluminum & Composite Materials
- Ideal for slotting, pocketing and taking heavy radial depth of cuts
- Hydrogen free diamond-like carbon (DLC) provides extended tool life at lower tool cost

HIGH PERFORMANCE VARIOUS MATERIALS

2 & 4 Flute • 220° SPHERICAL BALL END MILLS

SERIES: VBMG_





- Designed for multi axis cavity work in die & mold applications
- For undercutting & deburring applications on multi-axis CNC machines
- Available in Metric

2 & 4 Flute • 270° SPHERICAL BALL END MILLS



- Designed for multi axis cavity work in die & mold applications
- Micro sizes available
- For undercutting & deburring applications on multi-axis
 CNC machines



2 & 4 Flute • 300° SPHERICAL BALL END MILLS

Series: VBMG - -300





- Designed for multi axis cavity work in die & mold applications
- > Micro sizes available
- For undercutting & deburring applications on multi-axis CNC machines

Multi Flute • 60° & 90° double angle cutter

SERIES: DA



- Geometry designed for deburring, chamfering, back chamfering, and for milling a "V" groove.
- Designed for long reach applications
- 60° double angle cutter can be used in thread milling application
- > 90° double angle cutter



3 Flute • 60°, 90°, 120° CHAMFER MILL

Series: CMG3H





- > Helical flutes for superior finishes
- Geometry designed for added strength and programming accuracy
- > h6 tolerance shank for using shrink fit holders
- ZrN coating designed for aluminum and non ferrous alloys
- Geometry design enables aggressive machining while providing excellent finish

5 Flute • 60°, 90°, 120° chamfer mill

Series: CMG5H



- > Helical flutes for superior finishes
- Geometry designed to allow aggressive machining while providing outstanding finishes in all material
- h6 tolerance shank for using shrink fit holders
- AITiN coating designed to add lubricity, allows for high speed chamfer machining or deburring



HIGH PERFORMANCE VARIOUS MATERIALS

2 & 4 Flute • HIGH FEED CARBIDE END MILL

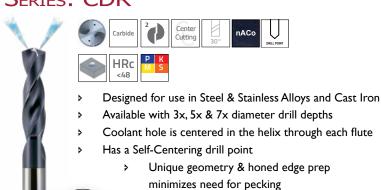
SERIES: HXMG



- HRc
- Designed for use in High Feed milling processes that reduce total machining time by 3-4 times over conventional methods.
- Enables high feed per tooth with shallow depth of cut for highest metal removal rates
- Cutting forces are directed at the machine spindle in the axial direction which means less vibration and greater
- Especially suited for small molds and medical work
- Available in Metric

2 Flute • 140° POINT COOLANT HOLE DRILL

SERIES: CDR



- Proprietary nACo coating provides extended tool life over conventional coatings
- Available in Metric

MULTI FLUTE • 60° STRAIGHT & HELICAL FLUTE, UN THREAD MILLS

4 Flute • HIGH FEED CARBIDE END MILL

Series: HXMG4- -HM



- Designed for use in High Feed milling processes that reduce total machining time by 3-4 times over conventional methods. (-HM=Hard Milling)
- Enables high feed per tooth with shallow depth of cut for highest metal removal rates
- Cutting forces are directed at the machine spindle in the axial direction which means less vibration and greater tool life.
- Especially suited for small molds and medical work
- Available in Metric

2 Flute • 140° Point without coolant hole drill

Series: MDR



- Designed for use most Ferrous Materials
- Has a Self-Centering drill point
- Unique geometry & honed edge prep minimizes need
- Proprietary nACo coating provides extended tool life over conventional coatings

MULTI FLUTE • STRAIGHT & HELICAL FLUTE, NPT THREAD MILLS

Series: TM-_ -NPT-

Series: TM- -



STRAIGHT	Carbide	MULTI FLUTES	0°	AlTiN 60	HRc <52	P M H	K S N
HELICAL	Carbide	MULTI FLUTES	15°	AlTiN 60	HRc <52	P M H	K S N

- Threads large diameter holes faster and more accurately than conventional or high performance
- Helps to save on tooling costs versus using larger
- Reduces chatter
- Available in Metric



- Reduces chatter

STRAIGHT Carbide



HIGH PERFORMANCE VARIOUS MATERIALS

Multi Flute • Straight & Helical Flute, NPTF THREAD MILLS

Series: TM-__-NPTF-



- STRAIGHT Carbide MULTI OF AITIN 600 HRC 52 H N

 HELICAL Carbide FLUTES 155 AITIN 600 HRC 52 H N
- Helps to save on tooling costs versus using larger taps
- > Reduces chatter
- > NPTF (Dryseal)

MULTI FLUTE • SINGLE FORM THREAD MILLS

SERIES: TM











- Designed for milling precision I.D. & O.D threads in all types of steels, non-ferrous metals, & exotic metals
- Single form thread can be used for a wide range of thread pitches

POWDERED METAL END MILLS

MULTI FLUTE • PM FINE & COARSE PITCH ROUGHING

SERIES: CCFPM, CCRPM





Fine Pitch

- Fine Pitch finer sinusoidal form on cutting edge, finer chips are produced compared to coarse
- Provides longer tool life and enable faster SFM than M42 Cobalt
- For use in profiling cuts and shallow slots (less than 1x diameter axial depth)
- Ideal for stainless & exotic materials

Coarse Pitch

- Coarse Pitch have sinusoidal form on cutting edge, small chips are produced which allow for faster feed rates then conventional end mills
- For use in all heavy cuts and pocketing
- > These tools will plunge out

4 Flute • PM FINISHING END MILLS

SERIES: CCPM



- > Available in stub, medium, and long lengths
- > Reinforced core geometry provides exceptional rigidity
- > Up to 4 times diameter length of cut
- > Designed for use in titanium, stainless, & exotic materials.



Speed & Feed •



Online Tech Info

Visit www.melintool.com to get copies of Melin Speed and Feed information on each series. Along with speeds & feeds, Melin website offers several resources to help make using a Melin products easier. Can't find what you need? Chat with a Melin customer service representative to help get you what you need.

GENERAL PURPOSE CARBIDE END MILLS

2, 3 & 4 Flute • 30° SINGLE END MILLS

SERIES: AMG, EMG, CCMG





- Used for general purpose milling in most materials
- Higher helix provides freer cutting
- Enhanced performance in Stainless Steels
- > Long reach sizes available
- > Available in stub, long, & extra long lengths
- > Also available in Metric/Inch & Metric

2, 3 & 4 FLUTE • 30° BALL NOSE SINGLE END MILLS SERIES: AMG-_-B, EMG-_-B, CCMG-_-B



- Used for general purpose milling in most materials
- Higher helix provides freer cutting
- Provides enhanced performance in Stainless Steels
- Long reach sizes available
- > Available in stub, long, & extra long lengths
- Available in Metric



2 & 4Flute • 30° corner radius end mills

Series: AMG-__-R___, CCMG-___-R___





- Used for general purpose milling in most
- > Corner radius provides added strength
- Used when a radius on the finished piece is permissible or required
- > Made from premium submicron grain carbide
- Available in Metric

2 & 4 Flute • 30° NC TOLERANCE SQ END MILLS SERIES: AMG-__-NC, CCMG-__-NC



- Used in applications when cutting compensation is not available
- Special OD tolerance
- > Made from premium submicron grain carbide



2 & 4 Flute • 30° NC TOLERANCE BALL NOSE END MILL

Series: AMG-__-B-NC, CCMG-__-B-NC

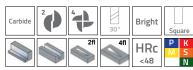




- Used in applications when cutting compensation is not available
- Special OD tolerance
- > Made from premium submicron grain carbide

2 & 4 Flute • Double End sq end mills

SERIES: BSMG, DDSMG



- > Used for general purpose milling in most materials
- Economical alternative to single mills
- > Used for radius and contouring part surfaces
- Short flute length. High rigidity and minimal tool deflection



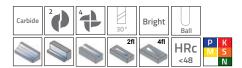


GENERAL PURPOSE CARBIDE END MILLS

2 & 4 Flute • Double End Ball nose end mills

SERIES: BSMG-__-B, DDSMG-___-B





- Used for general purpose milling in most materials
- Economical alternative to single mills
- Used for radius and contouring part surfaces
- Short flute length. High rigidity and minimal tool

2, 3 & 4 Flute • 40° SINGLE END MILLS SERIES: AMG40, EMG40, CCMG40



- Used for general purpose milling in most materials
- Long reach sizes available
- Available from 1/16 to 1 inch. (In 1/64 increments through 1/2 inch)
- Available in stub, long, & extra long lengths

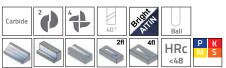


Special Use Carbide End Mills

2 & 4 Flute • STRAIGHT FLUTE END MILLS

SERIES: SAMG





Series: AMG40- -B, CCMG40- -B

- Used for general purpose milling in most materials
- Long reach sizes available

2 & 4 Flute • 40° ball nose end mills

- Available from 1/16 to 1 inch. (In 1/64 increments through 1/2 inch)
- Available in stub, long, & extra long lengths



- Used for cutting keyways
- Used on CONVENTIONAL materials
- Made from premium submicron grain carbide



Single or 2 Flute • routers for plastic, aluminum, wood

SERIES: PRMG (PLASTIC), ARMG (ALUM) WRUMG & WRDMG (WOOD)





- Plastic & Aluminum routers have a unique rake and clearance angles for fast removal
- Wood routers have right hand spirals (up cut) or left hand spirals (down cut)
- Made from premium submicron grain carbide

2 Flute • DIE SINKING BALL END MILLS

SERIES: AMGDS- - B



- Straight Flute
- Available in 6°, 10°, 14°, and 20° included angles
- Used for reworking die and mold steels
- Made from premium submicron grain carbide

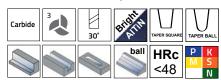


Special Use Carbide End Mills

 $3\ \text{Flute} \bullet 30^{\circ} \text{ tapered sq } \& \text{ ball nose end mills}$

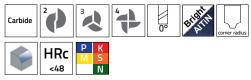
Series: EMG-__-T, EMG-__-TB





- Used in the die and mold industry
- > Made from premium submicron grain carbide

2, 3 & 4 Flute • CORNER ROUNDING END MILLS SERIES: BRMG, RMG, RCMG



- 2 Flutes are double ended corner rounding end mills - Micro sizes available
- Ideal for adding a small radius to the workpiece corners for optimal edge finish in medium hard ferrous materials.
- > Can provide uniform finish on corners
- > Made from premium submicron grain carbide



2 & 4 Flute • SINGLE & DOUBLE END CHAMFER MILLS

Series: CMG2, CMG4, DMG2

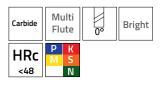




- > Available in 60° or 90°
- Eliminate hard deburring operations & provides uniform finish
- Also available in M7 HSS

MULTI FLUTE • BACK CHAMFER TOOLS

SERIES: BC, BCL



- Used for front and back chamfering of blind holes
- BC Multiple flute milling cutter
- > BCL Single flute lathe tool
- > Solid carbide head brazed to carbide shank
- > 1/32 flat with 90° included angle
- > Long length option available, necked for reach

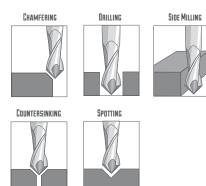


2 & 4 Flute • 60°, 82°, 90° DRILL POINTS

Series: AMG-__-DP, CCMG-__-DP



Micro sizes available



*Sharp point for groove milling available

CARBIDE BLANKS - CENTERLESS GROUND, PLAIN, 1/2 ROUND, SQUARE, BALL, CONICAL & SPLIT BALL

SERIES: MELIN EDPS



- Single and double end available for engraving blanks
- > Available in 30°, 60° & 90°
- Made from premium submicron grain carbide



MICRO END MILLS

2 & 4 Flute • 30° MICRO SQUARE END MILLS

SERIES: AMG, CCMG

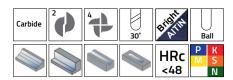




- Designed for aggressive machining
- Unique geometry reduces cutting pressures and vibration at high feed rates
- Highly polished OD and flute face prevents chip build-up
- 4 Flute available Diamond Coated

2 & 4 Flute • 30° micro ball nose end mills

Series: AMG-__-B, CCMG-___-B



- Designed for aggressive machining
- Unique geometry reduces cutting pressures and vibration at high feed rates
- Highly polished OD and flute face prevents chip build-up
- 4 Flute available Diamond Coated



3 Flute • 30° MICRO SQUARE END MILLS

SERIES: EMG

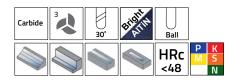




- Designed for aggressive machining
- Unique geometry reduces cutting pressures and vibration at high feed rates
- Highly polished OD and flute face prevents chip build-up

3 Flute • 30° MICRO BALL NOSE END MILLS

SERIES: EMG-__-B



- Designed for aggressive machining
- Unique geometry reduces cutting pressures and vibration at high feed rates
- Highly polished OD and flute face prevents chip build-up



4 Flute • 30° micro corner radius end mills

Series: CCMG-__-R__





- Designed for aggressive machining
- Unique geometry reduces cutting pressures and vibration at high feed rates
- Highly polished OD and flute face prevents chip build-up
- 4 Flute available Diamond Coated

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COBALT & HSS ROUGHING END MILLS

Multi Flute • Fine Pitch Roughing - cc & NCC Series: CCFP, CFP

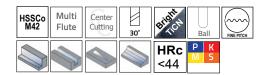




- Due to the finer sinusoidal form ground on profile, finer chips are produced than coarse pitch, which are easier flushed away and reduced re-cutting and packing
- For use in profiling cuts & shallow slots (less than 1x dia axial depth)
- > Ideal for stainless & exotic materials
- All rougher's 5/8 and under are ONLY available center cutting

Multi Flute ullet fine pitch ball nose roughing

SERIES: CCFP- -B



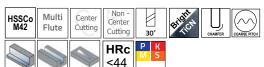
- For use in profiling cuts and shallow slots (less than 1x dia axial depth
- > Ideal for stainless & exotic materials
- > Provides extended tool life in profiling applications



Multi Flute • coarse pitch roughing - cc & ncc

SERIES: CCRP, CRP, CR(HSS)





- For use in all heavy cuts and pocketing applications
- Designed for maximum metal removal rates in ferrous materials
- All rougher's 5/8 and under are ONLY available center cutting

Multi Flute • T-slot coarse pitch rougher

SERIES: CRPN



- Used for roughing out "T" slots
- For machining in steel & cast iron materials



3 Flute • 35° High Helix fine & Coarse Rougher Series: EFP, ERP FOR ALUMINUM





- Designed for heavy cuts in aluminum alloy materials
- > Sinusoidal form is ground on the profile
- > 35° helix provides ideal chip evacuation
- Coarse pitch is designed for deep axial profile or slotting cuts
- Fine pitch enables enhanced chip evacuation in shallow slots and light to medium profile cuts

Multi Flute • Roughing/Finishing end mills Series: CCRFP, CRFP, ERFP



- Can remove material at high roughing speeds while producing finishes close to conventional end mills, due to the chip breaker form
- Can produce a 100-125 RMS surface finish in a single pass
- > ERFP- 35° fine pitch rougher/finisher for aluminum
- <u>CRFP</u> All rougher's 5/8 and under are only available center cutting





GENERAL PURPOSE COBALT & HSS END MILLS

2, 3, 4, 6 & 8 Flute • SINGLE END SQ END MILLS

SERIES: A, E, C(NCC), CC

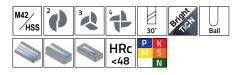




- General purpose milling in most materials
- Offered in stub, standard, medium, long, and extra
- 3 flutes usually enable feed rates at least 50% heavier than 2 flute
- Offered in a "AS or CS" series which provides an undersized shank for bridgeport style mills
- C Non Center Cutting Series
- Available in Metric

2, 3, & 4 Flute • SINGLE END BALL NOSE END MILLS

Series: A-__-B, E-__-B, CC-__-B



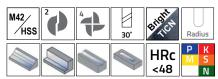
- General purpose milling in most materials
- Offered in stub, standard, medium, long, and extra long lengths
- 3 flutes usually enable feed rates at least 50% heavier than 2 flute
- Available in Metric



2 & 4 Flute • SINGLE END CORNER RADIUS END MILLS

Series: A- -R , CC-





- General purpose milling in most materials
- Offered in stub, standard, medium, long, and extra long lengths

Specials/Custom Tools •

WE LOVE SPECIALS!!! Get the most from your tooling and truly maximize performance! Many times, that requires customizing the cutting tool geometry and even the coating recipe so the least amount of machining time is required. That LOWERS manufacturing costs! But it also requires SPEED OF SUPPLY. Melin Tool is set up to deliver what you need... **FAST!**



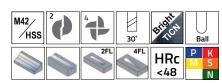
2, 3, & 4 Flute • single end long reach sq end mills SERIES: AN, EN, CN (NCC), CCN





- Short flute & extended neck provide maximum rigidity and reduced deflection
- CN- Non-Center Cutting Series
- 2 & 4 Flute neck diameter reduced by .020 for clearance

2 & 4 Flute • SINGLE END LONG REACH BALL NOSE SERIES: AN- -B, CCN- -B



- Short flute & extended neck provide maximum rigidity and reduced deflection
- 2 & 4 Flute neck diameter reduced .020 for clearance



GENERAL PURPOSE COBALT & HSS END MILLS

2, 3, & 4 Flute • Double end sq end mills

SERIES: B, F, D



- 3 & 4 flute available both center-cutting and non-center-cutting
- Available in Metric

2, 3, & 4 FLUTE • DOUBLE END BALL NOSE END MILLS

SERIES: B- -B, F- -B, DD- -B



- General purpose milling in most materials
- Double ended end mills
- Available in Metric



3 Flute • 60° Helix single end mills

Series: E60

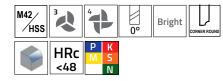




- Used in stainless steel, titanium, inconel, and high temperature alloy materials
- High helix increase length of cutting edge which reduces cutting load variation and provides excellent surface finish

3 & 4 Flute • corner rounding end mills

SERIES: R, RC



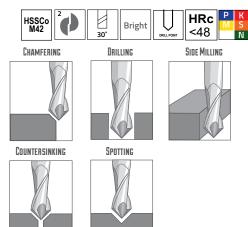
- Designed to produce a radius between a horizontal and vertical surface
- Tools are formed-relieved which allows the form to be maintained after resharpening
- Cutters with radius 1/32 to 7/16 are M42 cobalt
- Cutters with radius ≥ to 15/32 are M7 HSS

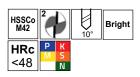


2 Flute • 60°, 82°, 90°, 100° & 120° DRILL POINTS 2 FLUTE • SINGLE END & DOUBLE END ANGLE END MILLS

SERIES: A-_-DP







- Designed to produce chamfers on an edge of any Ferrous or Non-Ferrous Materials
- 10° Helix provides outstanding edge strength
- Available in standard, medium, long and extra long lengths.



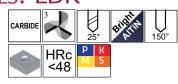
Series: AM



*Sharp point for groove milling available

3 Flute • 150° general purpose carbide drill

SERIES: LDR



- > 150° point angle
- > Made from Premium submicron grain carbide
- > Available in fractional, letter, & metric sizes

2 Flute • 118° jobber length carbide drill

GENERAL PURPOSE DRILLS

SERIES: HDR



- General purpose carbide drill
- > Jobber length drills are 118° notched point
- > Made from premium submicron grain carbide
- Available for fractional, letter, wire & metric sizes

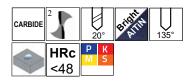
2 Flute • 140° STRAIGHT FLUTE CARBIDE DRILL Series: JDR



- 140° point used to drill approximately 3X the diameter depth
- > Made from premium submicron grain carbide
- > Hardened Steel up to HrC 63
- > Short chipping mateiral like brass, bronze, copper alloys.
- Available in fractional, letter, wire & metric sizes

2 Flute • 135° Stub Length Carbide Drill

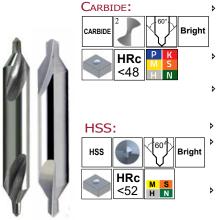
SERIES: IDR



- General purpose carbide drill
- > Stub length drills are 135° notched point
- Made from premium submicron rain carbide
- Available in fractional, letter, wire, & metric sizes

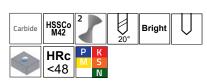
2 Flute • 60° included angle combo drill & CSK

SERIES: KDR & HSCD



- For centering and spot drilling applications when high accuracy is necessary
- Especially suited for difficult to machine materials
- 60° included angle
 - 60° included angle
 - For centering & spot drilling applications when high accuracy is necessary
 - Economical alternative to single end

2 FL • 80°, 90°, 120° & 142° NC SPOT DRILLS SERIES: HDRNC, HSNC (M42)



- Carbide point angles: 60°, 90°, 120° & 142°
- M42 Cobalt point angles: 82°, 90° & 120°
- Available in metric

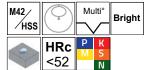


COUNTERSINKS

0 Flute • HSSCo M42 & HSS single & double end

SERIES: HSPO, HSO



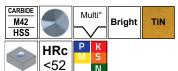


- Designed with a radial relieved single edge for the fast removal without chatter
- Higher heat & abrasion resistance for use on high-tensile, alloys, stainless steel, & other hard to machine abrasive materials

3 Flute • CARB, HSSCo M42, & HSS Countersinks

Series: C3, HSP3, HSP3-__-T, HS3

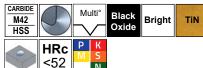




- Carbide: For highly abrasive & hard to machine materials. Applications in Cast Iron Alloy Steel, or Glass Reinforced Plastics
- Radial relief on the angle contributes to smooth, chatter-free operations
- Used for countersinking holes for centers or enlarging existing holes

1 Flute • CARB, HSSCo M42, & HSS Countersinks

Series: C1, HSP1, HSP1-__--T,

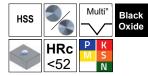


- Available in extended lengths
- <u>Carbide:</u> for highly abrasive & hard to machine materials. Applications in cast iron, alloy steel, or glass reinforced plastics
- HSSCo M42: Excellent for countersinking abrasive, high strength, heat resistant, exotic & other difficult to machine materials
- HSS: radial relief ensures smooth, chatter free cutting without overfeeding and makes the tool self-centering.



MULTI FLUTE • CENTER REAMER

Series: HSCR



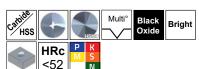
- Used for countersinking holes for centers or enlarging existing holes
- Radial relief on the angle contributes to smooth, chatter-free options



4 Flute • CARB & HSS Countersinks

SERIES: C4, HS4, HS4DP, HSMC

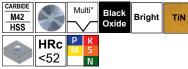




- <u>C4:</u> For highly abrasive and hard to machine materials. Eliminates high cost tool changes.
- HS4: 2+2 staggered flute design for smooth, chatter-free cutting, works well in non- ferrous applications such as Aluminum AND PLASTIC
- HS4DP: Drill and countersink with one tool, geometry allows spot drilling & countersinking in one operation
- HSMC: radial clearance & added shank length for use in turret lathes and screw machine work

6 Flute • CARB, HSSCo M42, HSS Countersinks

SERIES: C6, C6NC, HSP6, HS6, HS6EL



- C6: For highly abrasive and hard to machine materials
- > C6NC: Use on CNC & preset machines
- HSP6: Excellent for countersinking difficult to machine materials
- HS6: Flutes are staggered to ensure smoother, chatter-free cutting action. HS6EL has extended length for hard to reach applications



COUNTERSINKS & BURS

Multi Flute • Double end Countersinks

SERIES: DC1, DC4, DC6, DHS1,

DHS4, DHS6

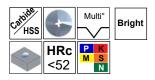




- Standard angle of 60°, 82°, 90°, 100°, 110°, & 120°
- Economical alternative to single end
- Available in both Solid Carbide and HSS

4 FLUTE • DRILL POINT COUNTERSINKS

SERIES: DC4DP, DHS4DP



- Standard angle of 60°, 82°, 90°, 100°, 110°, &
 120°
- Drill & countersink with one tool
- Economical alternative to single end
- Available in Solid Carbide and HSS



Multi Flute • Countersink sets



Solid Carbide Burs • Double Cut

SERIES: S_

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