

2012

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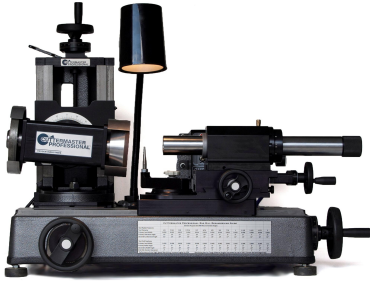
# CUTTERMASTERS

High Performance Cutting Tools  
Professional Grade Tool Grinding Equipment

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# Index

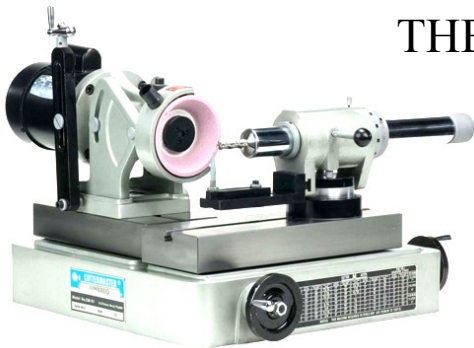
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THE CUTTERMASTER  
PROFESSIONAL



THE TRADESMAN DC  
GRINDER



THE CUTTERMASTER



GRINDING WHEELS



GSC MACHINES

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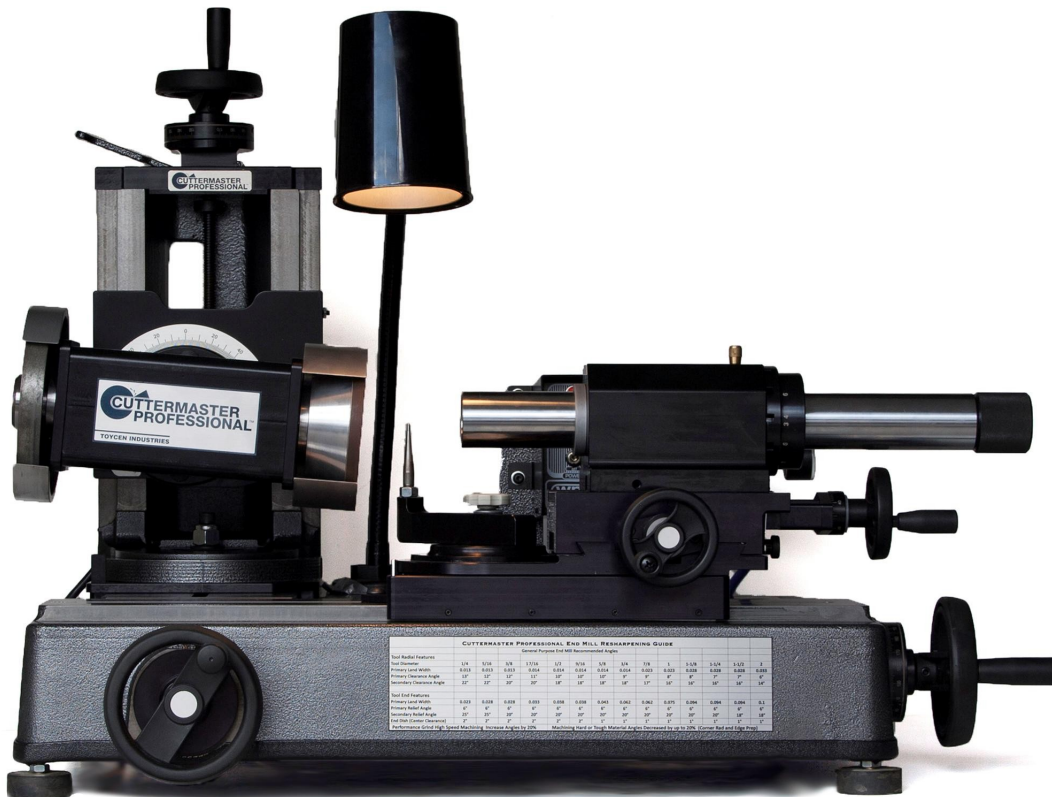
## DRILL SHARPENING

Don't we throw those away? By Jeff Toycen, President

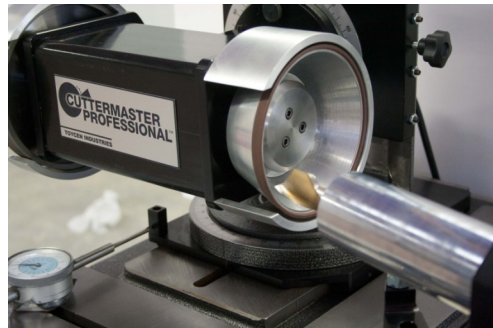
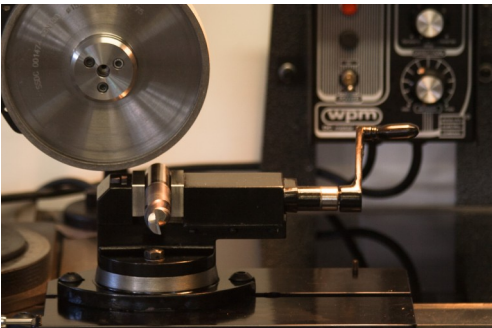
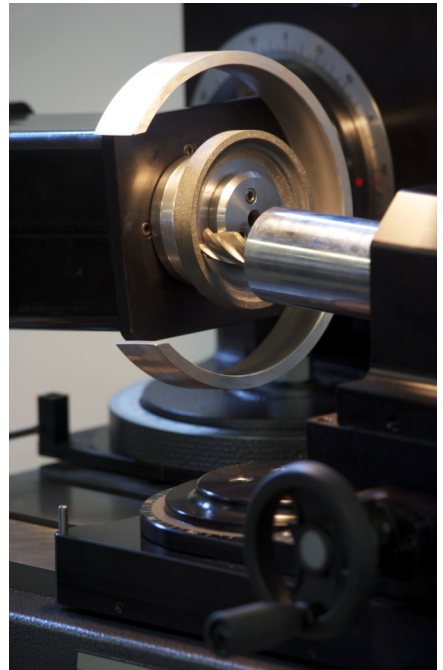
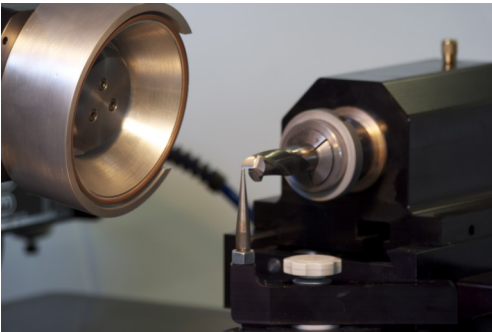
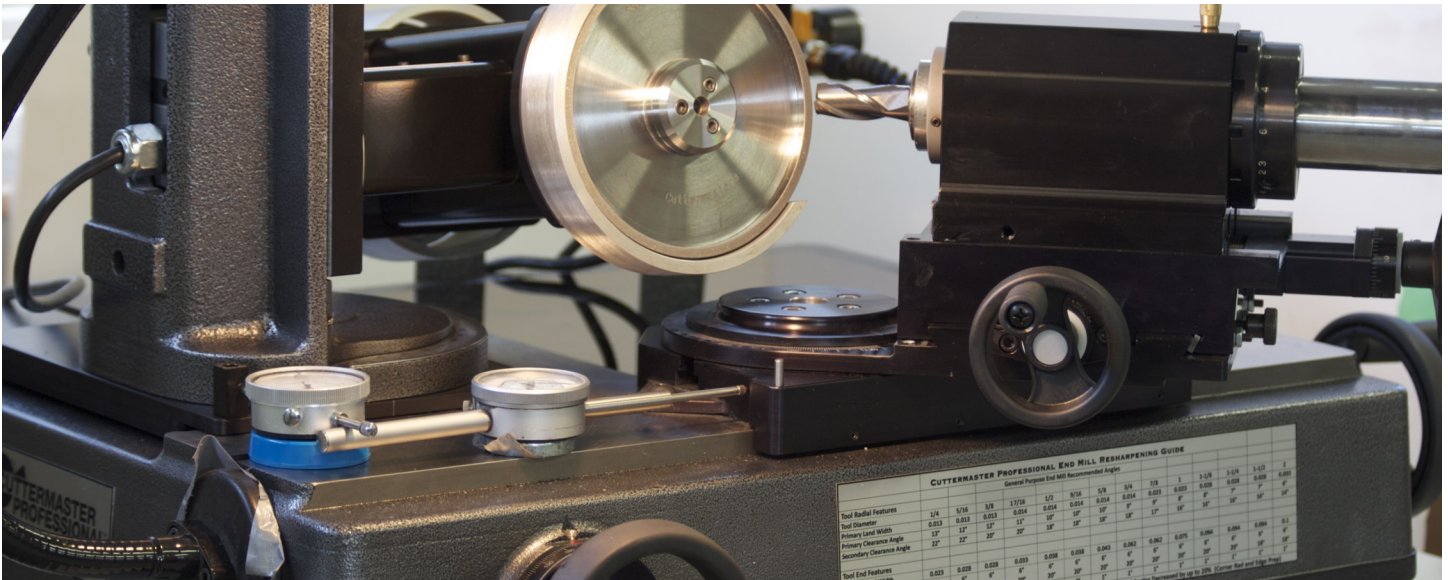
## 2012 PRICE LIST



# CUTTERMASTER PROFESSIONAL



- ◆ Sharpens end mills, carbide tools and reamers (circumferential lands), annular cutters, drills and countersinks.
- ◆ Roughens endmills.
- ◆ Reduced neck grinds.
- ◆ Weldon flats.
- ◆ Carbide and HSS cut offs.
- ◆ Side and face cutters.
- ◆ Grinds diameters and ends of standard end mills in one setup within a few minutes.
- ◆ There are 9 different axis providing substantial versatility.



**The Cuttermaster Professional CMX Series has been designed with the capabilities to meet the demands of today's prototype and production shops and provides superior flexibility and ease of use for tool regrinding and tool modifications.**

# Cuttermaster Professional CMX Tool Grinder

The Cuttermaster Professional CMX end mill grinding center comes into a market that has changed significantly in the last two decades. Modern machine shops run fast machining centers that operate at speeds never even dreamed of when the last two end mill sharpeners entered the market. Machine shops universally use end mills for a good portion of everything they do. Over the last two decades CNC (Computerized Numerical Control) machining centers have increased in speed ten-fold and with this, the consumption tool environment has changed. Milling cutters now commonly have exotic coatings or are made from solid carbide to improve part cycle time and tool life. Contemporary tools have more aggressive geometry, are more expensive than regular high-speed steel (HSS) cutters, and are more difficult to recondition.

The dominant sharpening center is the original Cuttermaster (35% market share in the US), designed in 1972, which does a fine job on HSS end mills, and the Darex end mill sharpener which was introduced as new patent in April 1990 and also does an acceptable job on HSS. However over the last twenty years CNC machines have been getting faster to the point that over 50 percent of the cutting tool market belongs to the solid carbide tool. High speed steel tools for which the Cuttermaster and DareX were designed are no longer used in high volume production applications. In today's mainstream production machining centers the end mills primarily used are more expensive than traditional high speed steel and are made from the most premium grades of solid carbide. They are rotating at spindle speeds much higher than ever before, requiring different structural and performance geometry with high finish and accuracy. High levels of attention must be given to tool feature, and tolerance and finish or they will not cut and extract material with tolerable heat and friction at the higher speeds.



The Cuttermaster Professional CMX has been designed for shop floor use. Primary features are a substantial U.S. made cast iron base for rigidity and harmonic stability (absorbs resonant energy), large incremental dials, and multi-axis positioning capability for both tool and motor. Unique to the this tool grinder is the tool spindle which combines conventional linear air bearing capability with radius grinding, wheel dressing, and independent feeds in two axis.



*The Cuttermaster Professional CMX is the finest tool grinder in its class and can be operated without years of complex training.*

Until the Cuttermaster Professional CMX entered the picture, there were no shop floor sharpening or tool modification solutions available in the world to sharpen cut off neck or radius carbide end mills. The CMX series has been designed to sharpen both high speed steel and carbide end mills and delivers unparalleled flexibility when reconditioning or producing custom tools.

## Capability comparison of end mill grinding centers in the market.

Operation	Cheva- lier FCG- 610	Darex E85/ E90	Cutter- master	Cuttermas- ter Profes- sional CMX 11
Cut Off HSS or Carbide	No	No	No	Yes
Gash	Yes	No	No	Yes
End Grind Primary X Axis	No	No	No	Yes
End Grind Secondary X Axis	No	No	No	Yes
End Grind Primary Y Axis	No	No	No	Yes
End Grind Secondary Y Axis	No	No	No	Yes
Grind Flats	No	No	No	Yes
Flute ID Grind	No	No	Yes	Yes
Grind Reduced Neck	No	No	No	Yes
OD Primary Relief Angle	Yes	Yes	Yes	Yes
OD Secondary Relief Angle	Yes	Yes	Yes	Yes
Ball and Bull Nose Radius End Grind	Yes	Yes	Yes	Yes
Reamer Sharpening (Ends)	Yes	No	Yes	Yes
Reamer Diameter Grind	No	No	No	Yes
Reamer or Small Cylinder Grind	No	No	No	Yes
Stone Wheel Truing with Diamond Bit	Yes	Yes	No	Yes
Grinding Wheel Profiling (Stone Wheels)	No	No	No	Yes



### System Summary

- ◆ 1 Cuttermaster Professional CMX Universal Base
- ◆ 1 Toycen Radius Air Spindle
- ◆ 1 Cuttermaster Professional Variable Speed Twin Motor Tower with Control and Operating manual
- ◆ Options:
  - ◆ 11V9 Cuttermaster Diamond, or CBN Resin Bond Wheel, or Cuttermaster Pro Poly Wheel (Diamond or CBN) - Cuttermaster 1A1, 180 Grit Diamond or CBN wheels (for grinding reduced necks, flats, etc...)
  - ◆ 7 Piece 5C Collet 1,7/8,3/4,5/8,1/2,3/8,1/4, or Metric Available
  - ◆ CMX Helical (Drill, Tap, and Countersink Grinding System)
  - ◆ Airspindle Tailstock (for grinding reamer OD)

FOB Ottawa (Customs and Duty Paid), Freight quoted separately, Wire in Advance or Cash with Order, Shipment TBA

### System Features

- ◆ The Air Bearing Fixtures are precision honed and capable of grinding close tolerances. The spindle sleeve is a replaceable bronze component.
- ◆ Toycen Radius Air Bearing has a 180 degree swivel base for corner radius grinding or other angular features. It takes standard 5c collets, with End Mill holders available that can hold shank sizes up to 2" x 6" in length.
- ◆ The CMX 11 base and motor tower are cast and aged Monolithic Grey Iron.
- ◆ The DC Motor comes standard with two spindles so motor/spindle assembly tilts to positive and negative angles and rotates 360 degrees. Cutting tool clearance angles can be adjusted as needed providing "real angle result" when setting angles. Available in imperial graduations: .0005.
- ◆ Air Bearing stroke - 8.5" (266mm) Air Bearing Standard 5C Collet Cutting tool capacity - 2" shank, 9.8" O.D., 8.5" flute length T-slot dimension - .800x.500x.670 Table feed graduations - .0005 X-Axis table working space - 26.5"x5.5" Y-Axis working space - 13"x6.5" Z-Axis carrier travel - 6" Wheels are standard 1-1/4" arbor. Cuttermaster Professional Wheels for Dry Grinding Optional. Motor Tilt – Infinite; Motor - 250 Watt DC Reversing Variable, Two Year Warranty on Motor and Control Net weight - 275 pounds Dimensions – 30"D x 34"W x 26"H.
- ◆ Shipping dimensions - 36"x33"x29".

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# THE TRADESMAN DC BENCH GRINDER



**The world's best  
grinding wheels  
on the world's  
best grinder.**

Our Resin bond, CBN and Diamond grinding wheels are on page xx.

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**The Tradesman combines the ability to support rough grinding and fine finishing capabilities into one machine. This is possible due to the ability to operate at low speeds (minimizing heat creation) combined with industry leading plated wheel technology.**

**The Tradesman series is a game changer in bench-top grinding and will carry a 10 Year Warranty on parts and labor.**

# Benchtop Grinders

## “Heat, Smoke, Dust and Burnt Tools”

Let's talk about Bench Grinders. Alternating Current (AC) 3600 RPM motors are commonly used for bench grinders, but 3600 rpm is too fast. These motors are used because that's what the motor builders build, with little respect to what speeds and torques are appropriate for what is being ground.

AC Induction Motors are cheap to build, and by design you cannot slow them down without losing torque so they run at the speeds that suit the motor manufacturers needs, not the need of the tool grinder. So, they run fast, hot, and they can burn up and de-temper your tools even with a good operator. Here's the first clue something is wrong, most shop grade bench grinders come with a water bucket attached. Unless the operator is a specialist with knowledge about the specific physical and metallurgical characteristics of that which is being ground, it's very possible over-heating will occur which will cause of loss of physical integrity.

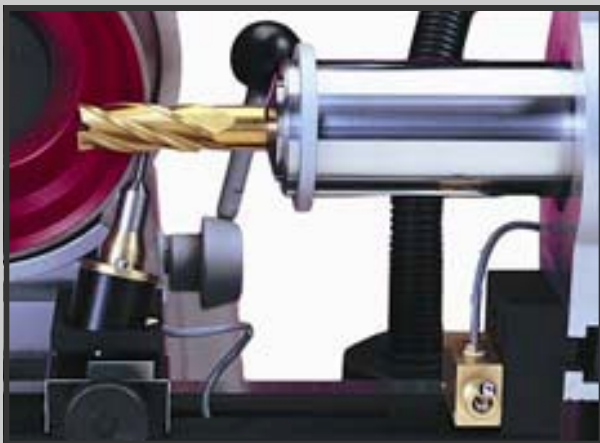
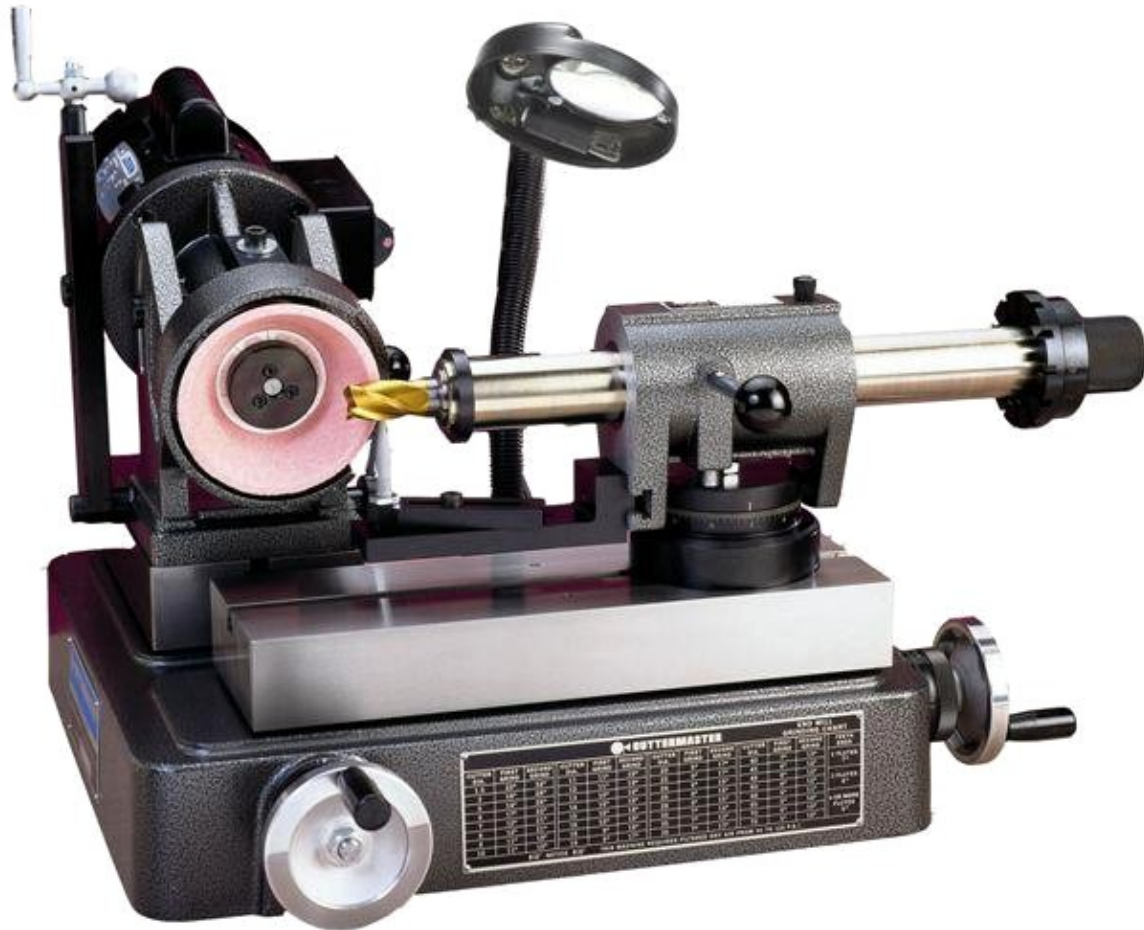
Most materials become weaker and fail due to thermal cycling when subjected repeated quenching. This repeated quenching destroys the substrate in the case of carbide, and the temper in the case of steels.

What else is wrong? Well, stone grinding wheels are dirty, constantly dull or glazed, and never in shape when you need them to be. So, you almost always have to dress or true them up just so you can use them, creating dust.

We have designed a new Benchtop Grinder to address all these issues, and more, and hope you approve of our newest product, the Toycen Tradesman.

Thanks, Jeff.

# CUTTERMASTER



- ◆ Grinds O.D.s and ends of standard endmills in one setup.
- ◆ Pneumatic finger automatically sets primary and secondary clearance angles with the flip of a switch.
- ◆ Air bearing has a 360° swivel base for tapered grinding.
- ◆ Takes standard 5C collets, shank sizes up to 2".
- ◆ Side and face cutters.
- ◆ 8 different axis providing substantial versatility.
- ◆ 1 year warrantee on factory defect and workmanship.



The Cuttermaster is the original bench-top tool grinder and continues to meet the needs of grinding operations which predominantly focus on High Speed Steel cutters. The Cuttermaster offers exceptional value and solid performance.

## CUTTERMASTER PROFESSIONAL CMX Series Vs. the CUTTERMASTER CM-01

While the CUTTERMASTER PROFESSIONAL CMX and the CUTTERMASTER CM-01 are similar in appearance they are vastly different in capabilities. If your requirement is basic sharpening (end mill primary and secondary angles, and flutes) then the CM-01 is the machine for you; it offers solid "Made in the U.S." quality with a long history of successful support. It also offers a long list of accessories and options (please see the Price List).

The CUTTERMASTER PROFESSIONAL CMX is designed as a Bench Top Tool Grinder and Tool Modification machine and supports much more complex operations without significant training. In addition to basic grinding support, the CMX can perform the full range of tool modifications required to keep a modern, high-speed machine shop operating at peak efficiency.

Select the machine that's best for your current and future needs. Both the CUTTERMASTER PROFESSIONAL CMX or the CUTTERMASTER CM-01 offer tremendous value and provide a solid return on investment.

### System Features

- ◆ Air bearing stroke - 10.5"
- ◆ Air bearing swing over table - 9.8".
- ◆ Cutting tool capacity - 2" shank, 9.8" O.D., 10.5" flute length
- ◆ T-Slot dimension - .800 x .500 x .670
- ◆ Table feed graduations - .001 or .02mm
- ◆ X-Axis table travel - 6"
- ◆ X-Axis table working space - 16.5" x 5.5"
- ◆ Y-Axis travel working space - 13" x 5.5"
- ◆ Wheel - 5" cup (or 6" dish with Z-axis), 1-1/4" arbor
- ◆ Motor tilt - +35/-8 degrees
- ◆ Motor - 1/3 hp, 3450 rpm, 110v/60hz or 220v/50hz
- ◆ Net weight - 180 pounds, Gross weight - 232 pounds
- ◆ Machine dimensions, not including handles - 21" x 20" x 21"
- ◆ Shipping dimensions - 30" x 28" x 29"



Drills

Endmills

Cutoff

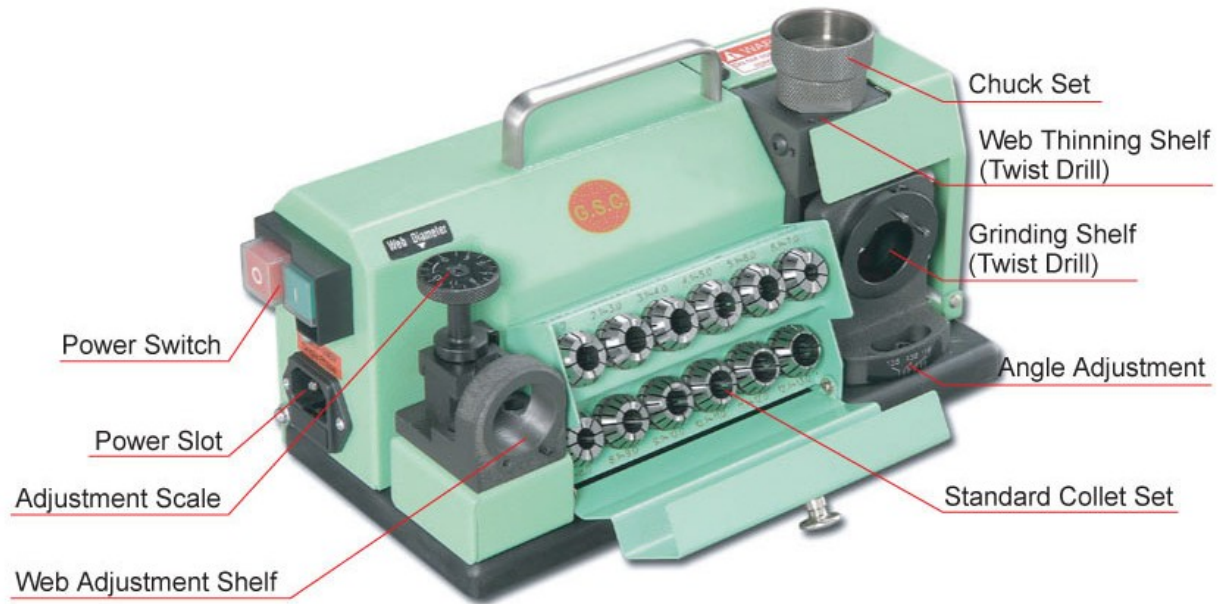
## **Sharp tools when you need them. Not difficult.**

In North America we have had easy access to inexpensive tools and few cost effective options in drill point grinding equipment. To a great extent we have become accustom to using drills “right out of the bag”. This approach is flawed and we may run the risk of losing our competitive edge to those who can run faster cycle times, less expensive set ups, and reduced down time because all of their shop staff can drill point grind. This is the reason for our focus on getting good, easy to use tool grinders onto the shop floor.

The drill grinders produced by GSC are designed to address these issues. They can be operated with minimal training, and produce NAS 907b tip profiles in less time than it takes to load a new drill.

Best Regards, Jeff

# GS-1 - .08" to 1/2" Drill Grinder



For sharpening .08" to 1/2" twist drills (optional to 5/8" ), the GS-1 Drill Grinder quickly and easily produces precise grinding results to within 0.007". Comes equipped with a superior quality GE CBN grinding Wheel. Additional diamond wheel can be purchased for \$114 .

## Specifications

Drill Diameter	Φ2~13mm
Point Angle	°90~140
Power Supply	AC 110V 50/60Hz, AC 220V(Opt.)
R.P.M of Motor	5000
Grinding Wheel	CBN#200
Weight N.W	8Kg G.W 9Kg
Machine Size	L 286mm, W 133mm, H 155mm
Packing Size	L 330mm W 205mm, H 225mm
Type of Thinning	X Thinning
Standard Accessories	Collet x 12 pcs Collet Holder x 1 set Metal Shim 0.1mm x 2 pcs / 0.3mm x 1 pcs Hexagon Wrench 3mm x 1pcs / 4mm x 1 pcs * Optional SD Grinding Wheel for Carbide Drills

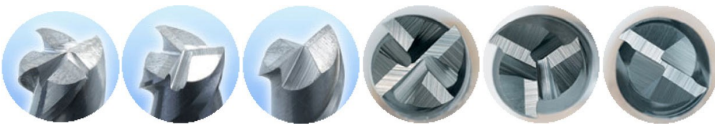


# GS-6 - 1/8" to 5/8" End Mill Grinder



For 3/32" to 1/2", two, three and four flute end mill re-sharpening, the GS-6 End Mill Grinder is precise to within 0.0078" and easy to use. Provides center cutting end geometry and ensures high accuracy balance between each flute. The GS-6 features a high efficiency DC Motor, invisible tool box, and superior quality GE diamond grinding wheel.

## GS-6 Endmills

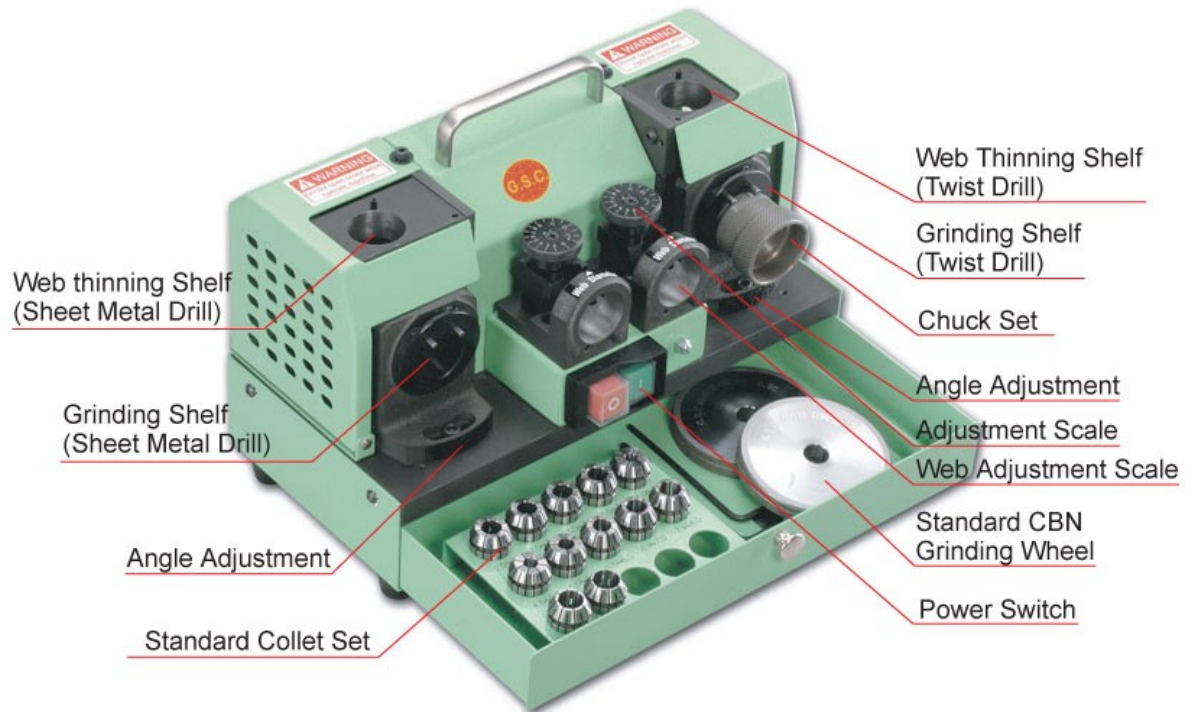


### Specifications

Drill Diameter	Φ3~Φ12mm
Power Supply	AC 110V 50/60Hz, AC 220V(Opt.)
R.P.M of Motor	5300
Grinding Wheel	SD#200
Weight	N.W 14.7Kg G.W 15.7Kg
Machine Size	L 300mm, W 165mm, H 245mm
Packing Size	L 380mm W 245mm, H 325mm
Standard Accessories	High Accuracey Steel Collet (ER-20) x 6 pcs Bushings x 6 pcs Chuck Set: 3 sets (6 pcs) Hexagon Wrench 3mm x 1pcs / 4mm x 1 pcs * Optional CBN Grinding Wheel



# GS-7 Dual Function Drill Bit Re-Sharpener for Sheet Metal Drills



For 3mm-13mm Sheet Metal Drill Re-sharpening at angle 165°-180° , and 2mm-13mm Twist Drill re-sharpening at angle 90°-140°. The GS 7 provides precision assurance to within 0.02mm, and is easy to operate grinding a drill within 10 seconds. The GS-7 features a high efficiency DC Motor, invisible tool box, and superior quality GE diamond grinding wheel.

## Specifications

Grinding Type	Sheet Metal Drill	Twist Drill
Drill Diameter	Φ3~Φ13mm	Φ2~Φ13mm
Point Angle	9165°~180°	90°~140°
Power Supply	AC 110V 50/60Hz, AC 220V(Opt.)	
R.P.M of Motor	5300 R.P.M	
Grinding Wheel	CBN#200	
Weight	N.W 13Kg G.W 13.5Kg	
Machine Size	L 283mm, W 145mm, H 210mm	
Packing Size	L 360mm W 215mm, H 265mm	
Type of Thinning	X Thinning	
Standard Accessories	High Accuracy Steel Collet x 12 pcs Collet Holder x 1 set Metal Shim 0.1mm x 2 pcs / 0.3mm x 1 pcs Hexagon Wrench 3mm x 1pcs / 4mm x 1 pcs	
	* Optional SD Grinding Wheel for Carbide Drills	



# GS-13N - Tool Cut Off and Reduced Neck Grinder 1/8" to 1"



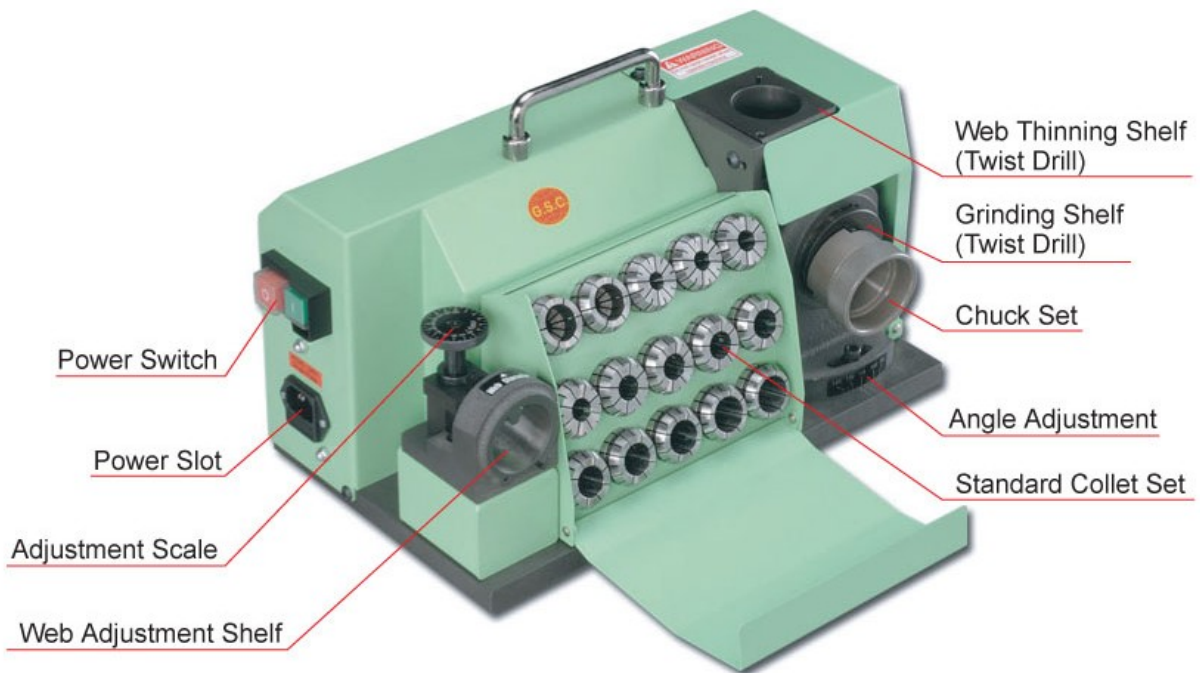
One of our newest machines; developed by GSC and Cuttermasters we can now neck or cut off up to 1 inch with the collet assembly, or using the chuck it is good for short odd size large rounds. This machine has X travel and Y travel and unlike any other machine the tool rotates during cutting or the collet spindle can be turned off. Also, there is a port for a vacuum pick up in the bottom of the machine.

Easy to use and very versatile. GS-13N comes as either a collet or chuck machine; please specify which you prefer at time of order.

- Cutting Diameter 1/8" to 1"
- 5,300 RPM
- CBN200 Grinding Wheel
- Weighs 64 lbs
- Dimensions: L 17", W 10.2", H 9"

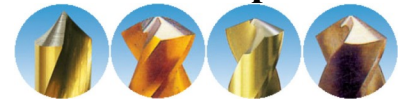


# GS-21B - 5/16" to 1" Drill Grinder



For 5/16" to 1" Twist Drills, Angle 90°-140°, The GS—21 provides precision assurance to within 007", and is easy to operate grinding a drill within 10 seconds. The GS-7 features a high efficiency DC Motor, invisible tool box, and superior quality GE diamond grinding wheel. Weighs only 44lbs.

## GS-1 Drill Tips



### GS-21 Optional Accesso-

GS-21/P-D Optional Collet Set	Φ23mm~Φ25.4mm (4 pcs)
GS-21/P-E Optional Collet Set + Adaptor	Φ3.0mm~Φ7.0mm (5 pcs)
GS-21/P-F Imperial Collet Set	Φ3.5mm~Φ6.5mm (4 pcs)
GS-21/P-D Imperial Collet Set + Adaptor	Φ2.5mm~Φ21.5mm (20 pcs)
GS-21/ Optional Collet Set	Φ26mm (1 pcs)
GS-21/P-SD	SD Grinding Wheel for Carbide Drills

Portable LED light

### Specifications

Drill Diameter	Φ8~Φ22mm
Point Angle	90°~140°
vPower Supply	AC 110V 50/60Hz, AC 220V (Opt.)
R.P.M of Motor	3280
Grinding Wheel	CBN#200
Weight	N.W 19.8Kg G.W 22Kg
Machine Size	L 365mm, W 204mm, H 223mm
Packing Size	L 430mm W 270mm, H 270mm
Type of Thinning	X Thinning
Standard Accessories	Collet x 15 pcs Collet Holder x 1 set Metal Shim 0.1mm x 2 pcs / 0.3mm x 1 pcs Hexagon Wrench 3mm x 1pcs / 5mm x 1 pcs * Optional SD Grinding Wheel for Carbide Drills

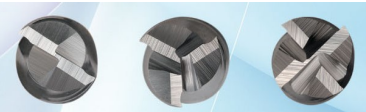


# GS-26 - 5/16" to 1" End Mill Grinder



For 5/16" to 1" Twist Drills, Angle 90°-140°, The GS—26 provides precision assurance to within 0.0078", and is easy to operate, grinding a drill within 10 seconds. The GS-26 features a high efficiency DC Motor, a superior quality GE diamond grinding wheel and a cabinet and vacuum system. Weighs only 53lbs.

## GS-26 End Mills



### Specifications

End Mill Diameter	Φ10~Φ26mm
Power Supply	AC 110V 50/60Hz, AC 220V(Opt.)
R.P.M of Motor	4600
Grinding Wheel	Standard SD#200 for carbide.
Weight	N.W 28kg G.W 44Kg
Machine Size	L 510mm, W 290mm, H 270mm
Packing Size	L 710mm W 400mm, H 860mm
Standard Accessories	High Accuracy Steel Collet 16 pcs Bushings x 5 pcs Chuck Set: 4 pcs Hexagon Wrench 3mm x 1pcs / 5mm x 1 pcs * Metal Desk and Dust Collector





# Grinding Wheels

Cuttermasters Grinding Wheels are built to exacting standards based on our own experience and feedback from customers.

When is the last time you put on a new wheel and it ran straight and true? All Cuttermasters Wheels are trued after manufacture and will run straight when installed....no wobble and no delay in putting them to work.

# ASD Grinding Wheels Pg 1



Precision Plated  
Diamond Grinding Wheels.



1A1 – ASD 100



1A1 – ASD 180



CMS 40 – 11V9 – ASD 150

# ASD Grinding Wheels Pg 2



Resin Bonded Diamond



CMS 30 – 11V9 – ASD 120



CMS 30 – 11V9 – ASD 500



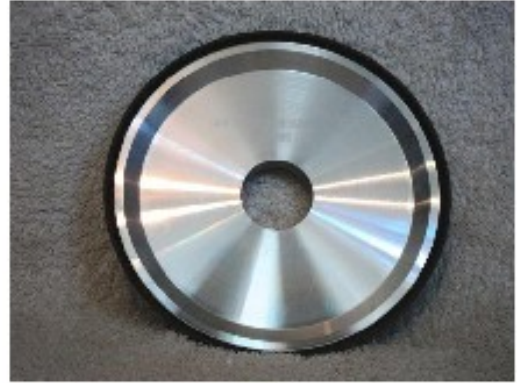
CMS 33 – 12V9 - ASD 150



# ASD Grinding Wheels Pg 3



Resin Bonded Diamond



CMS 35 – 12V9 – ASD 500

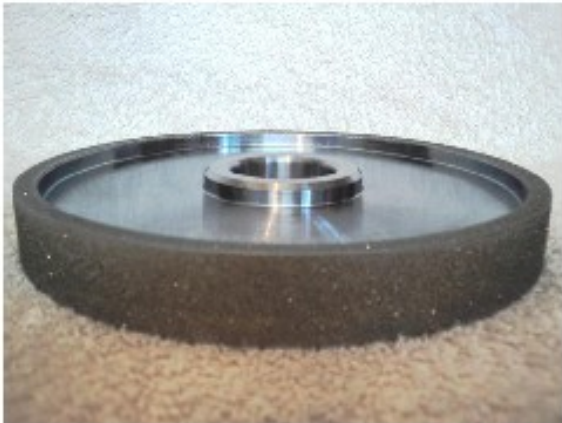


CMS 33 – 11A2 – ASD 120

# Metallic Bond ASD Grinding Wheels



Metallic Bond  
Precision Diamond Grinding Wheels



1A1 – ASD 100



1A1 – ASD 180



CMS 40 – 11V9 – ASD 150



# CBN Grinding Wheels Pg1

**Cuttermasters**  Resin Bonded Diamond



CMS 31 – 11V9 – CBN 100



CMS – 11V9 – CBN 120



CMS 34 – 12V9 – CBN 120

# CBN Grinding Wheels Pg 2

**Cuttermasters** Precision Plated CBN Grinding Wheels



1A1 – CBN 100



1A1 – CBN 180



# Metallic Bond CBN Grinding Wheels



Metallic Bond  
Precision Plated CBN Grinding Wheels



1A1 – CBN 100



1A1 – CBN 180

# Price List End Mill and Tool Grinding

ITEM	CATALOG NUMBER	PRICE
<b>CUTTERMASTER PROFESSIONAL CMX-11</b> Includes: CUTTERMASTER PROFESSIONAL CMX Uni-versal Base, Toycen Radius Air Spindle, CUTTERMASTER PROFESSIONAL Variable Speed Twin Motor Tower with Control and Operating manual.	CMX-11	\$8,875
<b>Options for CMX-11</b>		
CUTTERMASTER PROFESSIONAL Travel Stop	CPTS	\$66
Large Handwheel for Neck Reduction Grinds	CPLH	\$196
CUTTERMASTER PROFESSIONAL Magnetic Base	CPML	\$145
Light	CPWG	\$615
CUTTERMASTER PROFESSIONAL Wheel Truing De-vice (Wheel Grinder)	CPRF	\$69
CUTTERMASTER PROFESSIONAL Diamond Radius File (.03 & .06)	CLMH	\$405
CUTTERMASTER Large End Mill Holders (1.25, 1.5, & 2")	CPTS	\$169
Tailstock for Radius Air Spindle	CPCS	\$196
Expanding Collet Set (.25 to 1.25")	CPMS	\$145
Maintenance and Tool Set		
CUTTERMASTER PROFESSIONAL Drill Sharpening At-tachment (1/8 to 7/8") (shown above)	CDSA	\$415
CUTTERMASTER PROFESSIONAL Countersink At-tachment	CPCA	\$TBD



# Price List End Mill and Tool Grinding

ITEM	CATALOG NUMBER	PRICE
<b>CUTTERMASTER PROFESSIONAL CMX-12</b> Includes: CUTTERMASTER PROFESSIONAL CMX Uni-versal Base, Toycen Radius Air Spindle, CUTTERMASTER PROFESSIONAL Variable Speed Twin Motor Tower with Control, Operating Manual, and all options listed for the CMX-11.	CMX-12	\$12,875
<b>CUTTERMASTER Tool &amp; End Mill Sharpener CM-01</b> <b>Includes:</b> Air Bearing Fixture, Work Area Lighting, 5" Cup Aluminum Oxide Wheel & Air Filter	CM-01/110	\$3,360
<b>Attachments and Options for CUTTERMASTER CM-01</b> Air Bearing Fixture with stylus & index collar Radius Attachment; includes center finder Center Finder for Radius Attachment Dual Positioning Pneumatic Finger Drill Attachment complete with two chucks (capacity .125- .875) Taper Attachment Gun Drill Sharpening Attachment Attachment Tool Holder for Drill Diameter of 1.0-3.5mm Gun Drills Stylus Cabinet Base Work Holding Fixture Diamond Dresser Z-Axis with wheel guard & ABF riser. (Spindle extension re-quired, see below) Spindle Extension for use with Z Axis Universal Grinding Fixture (with cam action & 12 index col-lar) Extended length draw bar (works w/ Universal Grinding Fix-ture) Complete Assembly, Stylus, Nut & Bolt	CM-02A CM-03C CM-04 CM-05P CMS-06 CM-08 CM-GDA CM-GDA-TH CM-A24 CM-10 CM-11 CM-12 CM-15 CM-M70 CM-16 CM-17 CM-A22B	\$1,690 \$1,255 \$36 \$615 \$410 \$96 \$4,230 \$2,884 \$48 \$395 \$689 \$105 \$1,830 \$255 \$1,580 \$146 \$285



ITEM	CATALOG NUMBER	PRICE
<b>Attachments and Options for CUT-TERMASTER CM-01 Con't</b> 7 pc. 5C Collet Set (economy) 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, & 1" 7 pc. Hardinge 5C 3 split Collet Set (inch) 6 pc. Hardinge 5ST 4 split Collet Set (high accuracy) 6 pc. 5C metric Collet set (economy) 6, 10, 12, 16, 20 & 25mm 6 pc. Hardinge 5C metric 3 split Collet Set 1-1/4" 5C End Mill Holder 1-1/2" 5C End Mill Holder 2" 5C End Mill Holder 32mm 5C End Mill Holder 40mm 5C End Mill Holder 50mm 5C End Mill Holder 8 pc. Expanding Arbor Set (1/4 to 1 1/4)	CM-5CS-7 CM-5CRS-7 CM-5CHS-6 CM-5CMS-6 CM-5CRSM-6 CM-5CE-114 CM-5CE-112 CM-5CE-2 CM-5CE-32 CM-5CE-40 CM-5CE-50 CM-EAS-8	\$70 \$310 \$398 \$60 \$212 \$96 \$212 \$125 \$96 \$112 \$125 \$196
<b>Grinding Wheels for CUTTERMASTER CM-01</b> 5" Cup, pink aluminum oxide, 60 grit 5" Cup, white aluminum oxide, 80 grit with 3/4" face 5" Cup, blue ceramic, 80 grit 5" Cup, pink aluminum oxide, 60 grit with 3/4" face 6" Dish, blue ceramic, 60 grit 6" Dish, aluminum oxide, 38 grit 5" Cup, diamond, 120 grit 5" Cup, diamond 500 grit 5" Cup, CBN, 100 grit 5" Cup, CBN, 100 grit with 3/4" face 6" Dish, diamond, 150 grit 6" Dish, diamond, 500 grit	CM-20 CM-21 CM-22 CM-23 CM-25 CM-26 CM-30 CM-30/500 CM-31 CM-32 CM-33 CM-33/500	\$60 \$90 \$196 \$89 \$99 \$138 \$236 \$276 \$255 \$260 \$278 \$278
<b>GS-6 - 3/32" to 1/2" End Mill Grinder</b> <b>Option:</b> Chuck Set for up to 5/8"	GS-6 GS-6 CS	\$2,450 \$160
<b>GS-26 - 5/16" to 1" End Mill Grinder</b> Includes Cabinet and Vacuum System	GS-26	\$3,850
<b>GS-13N - Tool Cut Off and Reduced Neck Grinder 1/8" to 1"</b> . Choose Collet or Chuck at time of ordering. <b>Option:</b> XXXX	GS-13N	\$1,580

# Price List for Drill Grinder, Bench Top Grinder and Accessories

	CATALOG NUMBER	PRICE
<b>GS-1 - .08 to 1/2" Drill Grinder</b>	GS-1	\$1,220
<b>Options:</b>	GS-1 CS	\$130
Chuck set to 5/8" - \$130	GS-1 DW	\$114
Diamond Wheel - \$114		
<b>GS-21B - 5/16" to 1" Drill Grinder</b>	GS-21	\$2,275
<b>Option: Diamond Wheel</b>	GS-21 DW	\$160
<b>Toycon Tradesman Bench Top Tool Grinder</b>	TT-1	\$800
1A1-ASD 100	\$179	
1A1-ASD 180	\$179	
CMS 40-11V9-ASD 150		
CMS 30-11V9-ASD 120	\$192	
CMS 30-11V9-ASD 500	\$320	
CMS 33-12V9-ASD 150	\$326	
CMS 35-12V9-ASD 500		
CMS 33-11A2-ASD 120		
CMS 31-11A1-CBN 100	\$192	
CMS 32-11V9-CBN 120	\$210	
CMS 34-12V9-CBN 120	\$366	
1A1-CBN-100	\$179	
1A1-CBN-180	\$179	

# Price List Drill Grinders, Bench Top Grinder and Accessories

## Radius Hone - RF1 (shown below) - \$69

Diamond Corner Radius files for Edge Prep and Profiling Corner Rads on end mills.

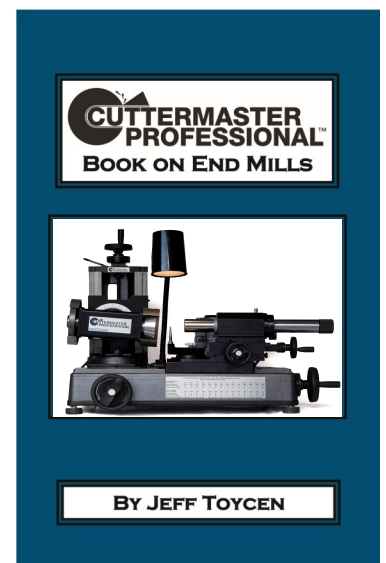
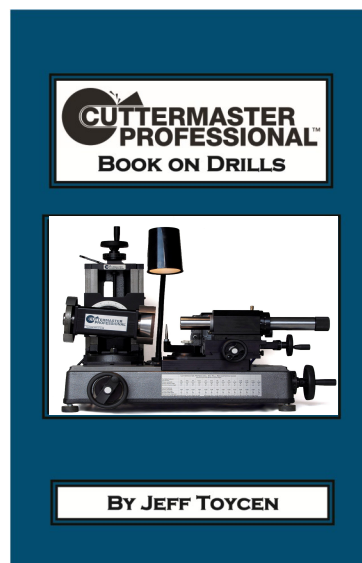
Radius profile +/- .004 , These High quality files have a synthetic Diamond 200 Grit

Surface and are bonded .0016 with Hard Nickel. The files are .031 and .062 radius and are ideal for producing small rads. Carbide End Mills should always be



## Books

Toycen books on End Mills and Drills are based on thousands of hours research and use. Great information for anyone studying the subjects and great refer-



# Edsal Cabinets and Workbenches

Cuttermasters is a dealer for Edsal cabinets and maintenance benches. We selected Edsal due to the very high quality and our personal experience with the brand.

To view the complete line of cabinets, benches, racking, inventory management, and maintenance support equipment please review the Edsal Website at [www.edsal.com](http://www.edsal.com) and then contact us for the best possible price.





# Price List Grinding Wheels

## Precision Plated Diamond

1A1-ASD-100 \$179

1A1-ASD-180 \$179

CMS 40-11V9-ASD 150

## Resin Bond Diamond

CMS 30-11V9-ASD 120 \$192

CMS 30-11V9-ASD 500 \$320

CMS 33-12V9-ASD 150 \$326

## Resin Bond Diamond

CMS 35-12V9-ASD 500

CMS 33-11A2-ASD 120

## Resin Bonded CBN

CMS 31-11V9-CBN 100 \$192

CMS 31-11V9-CBN 120 \$210

CMS 34-12V9

## Precision Plated CBN

1A1-CBN 100 \$179

1A1-CBN 180 \$179