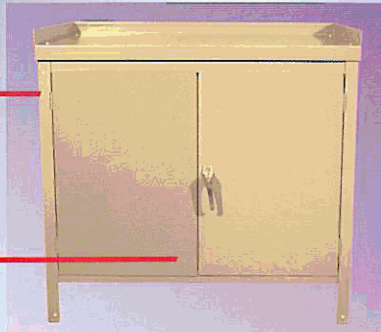


WORKHOLDING FIXTURE

Features 4 positioning quadrants for rapid positive setting of any compound angle. Ideal for parallel and angular chip breakers with positive or negative rakes. Also can be used for form tools.

PN: **CM-11**

DELUXE 2 DOOR CABINET



24" x 36" x 36", with a middle shelf. Extremely rigid, with plenty of storage space. Comes with locking doors.

PN: **CM-10**

CUP GRINDING WHEELS



All of our grinding wheels are American made.

PN: **CM-20** — Premium pink aluminum oxide—60 grit. General purpose use for high speed steel.

PN: **CM-22** — Blue Ceramic. Harder than aluminum oxide, they hold their form better, and allow for heavier material removal per pass.

PN: **CM-30** — Diamond; 1/16" depth, 75 concentration. For use with carbide tools only.

PN: **CM-31** — CBN; the very best for high speed steel. No wheel dressing, the best finish, and they hold their form.

PN: **CM-32** — CBN wheel, 100 grit with 3/4" wide face - for use with the drill attachment.

PN: **CM-35** — Diamond wheel, 120 grit with 3/4" wide face - for use with drill attachment.

DIAMOND DRESSER

PN: **CM-12**



COLLETS

PN: **5CS-7** — 7 piece 5C collet set; 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1".

PN: **5CMS-6** — 6 piece metric collet set; 6MM, 10MM, 12MM, 16MM, 20MM, 25MM. Metric collets are also available in individual sizes from 3MM–26MM.

PN: **5CHS-6** — 6 piece (1/4", 3/8", 1/2", 5/8", 3/4", 1") Hardinge 5ST 4 split collets—the best accuracy in a 5C collet.



END MILL HOLDERS

Needed to grind tools with larger shanks.

5CE-114 1-1/4" end mill holder.
5CE-32 32MM end mill holder.
5CE-112 1-1/2" end mill holder.
5CE-40 40MM end mill holder.
5CE-2 2" end mill holder.
5CE-50 50MM end mill holder.



TAPER ATTACHMENT

For grinding tapered end mills.

PN: **CM-08**

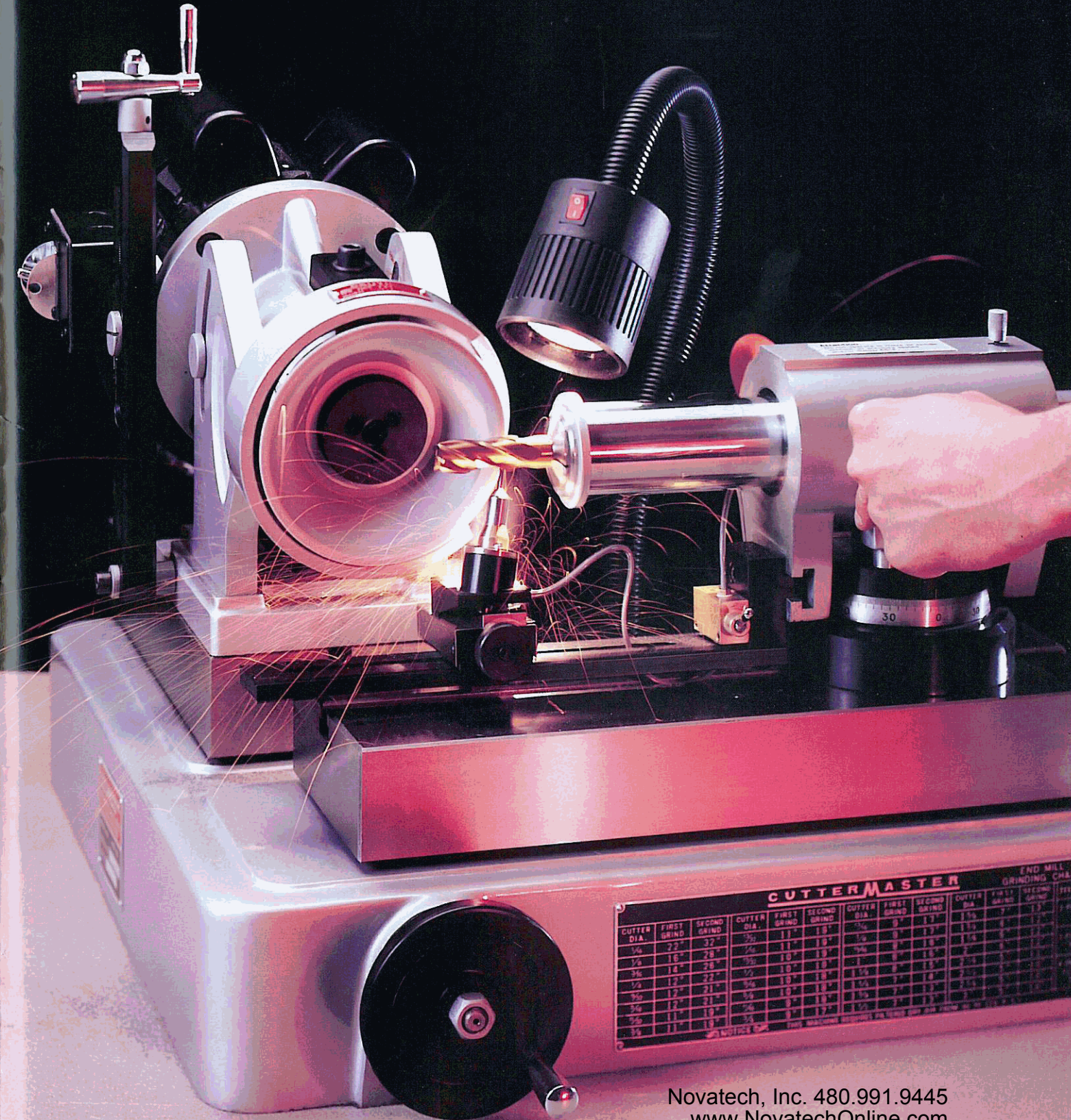
DISH GRINDING WHEELS

For use with the Z-Axis. Used to sharpen roughing end mills; for fluting, gashing and other operations. To be used only with the special Z-Axis wheel guard.

PN: **CM-25** — 6" Blue Ceramic with 1-1/4" arbor.
 PN: **CM-26** — 6" Pink aluminum oxide with 1-1/4" arbor.
 PN: **CM-33** — 6" Diamond dish, 1-1/4" arbor, 150 grit.
 PN: **CM-34** — 6" CBN dish, 1-1/4" arbor, 120 grit.



CUTTERMMASTER



CUTTERMMASTER											
CUTTER DIA.	FIRST GRIND	SECOND GRIND	CUTTER DIA.	FIRST GRIND	SECOND GRIND	CUTTER DIA.	FIRST GRIND	SECOND GRIND	CUTTER DIA.	FIRST GRIND	SECOND GRIND
1/2"	22"	32"	3/8"	11"	19"	1/2"	9"	17"	3/4"	15"	23"
3/8"	16"	26"	1/2"	10"	18"	5/8"	8"	16"	3/4"	14"	22"
1/2"	14"	24"	3/4"	10"	18"	1"	7"	15"	1"	13"	21"
3/4"	12"	22"	1"	9"	17"	1 1/4"	6"	14"	1 1/4"	12"	20"
1"	12"	21"	1 1/4"	8"	16"	1 1/2"	5"	13"	1 1/2"	11"	19"
1 1/4"	11"	19"	1 1/2"	7"	15"	1 3/4"	4"	12"	1 3/4"	10"	18"
1 1/2"	11"	19"	1 3/4"	6"	14"	2"	3"	11"	2"	9"	17"

CUTTERMASTER Gives You All the Versatility and Rigidity of a Full-Size Universal Tool & Cutter Grinder in One Simple Machine.

Motor tilts +35/-8 degrees

Halogen light standard

Forward/reverse switch standard

Y-Axis travels 3" motor slides 6"

X-Axis travels 6"

Long spindle can handle up to 10" flute lengths

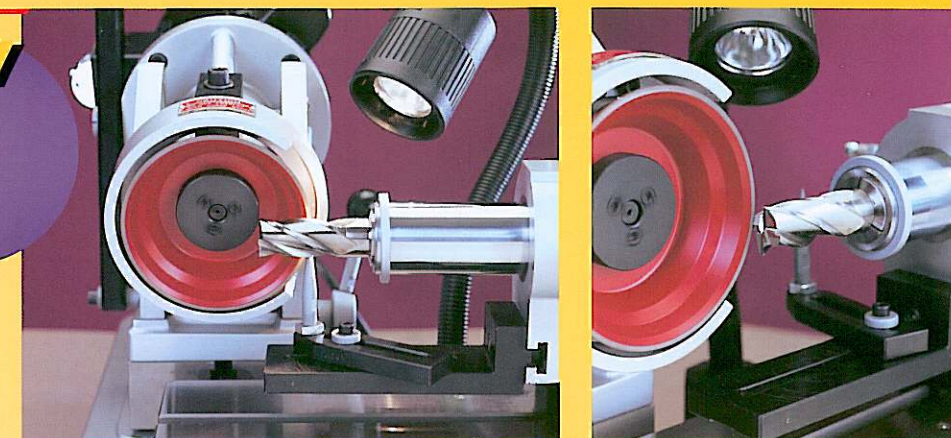
Indexing collar for end grinding

360 degree swivel base for tapered grinding

Table feed graduations in .001

Clearance reference chart provides mild steel clearance angles

CUTTERMASTER END MILL GRINDING CHART											
CUTTER DIA.	FIRST GRIND		SECOND GRIND		CUTTER DIA.	FIRST GRIND		SECOND GRIND		CUTTER DIA.	FIRST GRIND
	FLUTES	ANGLE	FLUTES	ANGLE		FLUTES	ANGLE	FLUTES	ANGLE		
1/8"	2	22°	2	22°	1/8"	2	22°	2	22°	1/8"	2
3/16"	2	22°	2	22°	3/16"	2	22°	2	22°	3/16"	2
1/4"	2	22°	2	22°	1/4"	2	22°	2	22°	1/4"	2
5/16"	2	22°	2	22°	5/16"	2	22°	2	22°	5/16"	2
3/8"	2	22°	2	22°	3/8"	2	22°	2	22°	3/8"	2
1/2"	2	22°	2	22°	1/2"	2	22°	2	22°	1/2"	2
5/8"	2	22°	2	22°	5/8"	2	22°	2	22°	5/8"	2
3/4"	2	22°	2	22°	3/4"	2	22°	2	22°	3/4"	2
7/8"	2	22°	2	22°	7/8"	2	22°	2	22°	7/8"	2
1"	2	22°	2	22°	1"	2	22°	2	22°	1"	2



O.D.s and Ends ground from one setup: After the O.D. has been ground (photo, above left), the end is sharpened (photo, above right) by feeding the grinding wheel past the face of the end mill. The air bearing centerline is automatically set 1/2" below the grinding spindle centerline; end clearance angles are generated by the radius of the wheel. A 2 degree fishtail (or as desired) is achieved by setting the angle on the air bearing swivel base.

FEATURES:

- Grinds O.D.s and ends of standard end mills in one setup within just a few minutes.
- Extremely versatile, and is used for much more than just end mills. With the z-axis you get 8 different axes to work with for unlimited versatility.
- 1 machine grinds it all—end mills, drills, roughing end mills, taps, countersinks, carbide tools, radius end mills, lathe tool bits, various forms tools, reamers, performs gashing and much more! No need to buy extra machines to grind different tools.
- The pneumatic finger instantly & automatically sets primary and secondary clearance angles with the flip of a switch.
- Extremely easy to use—and fast! The machine is always set up and ready to go.

- Dials zero out.
- The Cuttermaster is supplied standard with our patented Jet-Stream air bearing fixture.
- The Jet-Stream air bearing fixture is precision honed and capable of grinding to close tolerances. The spindle sleeve is made from stainless steel, and the spindle itself is hard chromed steel.
- Air bearing has a 360 degree swivel base for taper grinding.
- Takes standard 5c collets, with end mill holders available that can hold shank sizes up to 2" (50mm).
- Tables are cast 50mm iron & precision ground.
- Motor comes standard with forward & reverse switch.
- Motor/spindle assembly tilts to positive and negative angles; cutting tool clearance angles can be adjusted as needed.
- Available with metric or inch graduations.
- Grinding chart provides clearance angles for all end mills from 3/16"–3".
- 1 year warranty against factory defects and workmanship.

SPECIFICATIONS:

- Air bearing stroke—10.5" (266mm)
- Air bearing swing over table—9.8" (248mm)
- 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"
- Y-Axis table travel—3", plus motor slides back & forth 6"

- X-Axis table working 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/ 82 kilos
- Gross weight—232 pounds/ 106 kilos
- Machine dimensions, not including handles—21" x 20" x 21"
- Shipping dimensions—30" x 28" x 29"

SHARPENING YOUR TOOLS IN-HOUSE WITH THE CUTTERMASTER ENABLES YOU TO:

- Keep your machine tools running—constantly.** You can't afford to let a major investment like a machining center sit idle for lack of a sharpened cutting tool. Every second that you lose in downtime is a drain on your cashflow—and profits.
- Gain the ability to sharpen all your cutting tools the way you want them—NOW.** If you need a special O.D., or if you're cutting exotic (and even not so exotic) materials and need special clearance angles, you can't afford to wait several days for an outside source to turn them around. In today's fast paced world your deliveries have to be on time (or your competitor may take your place) and you must have the ability to react now.
- Enable your machine tools to run at peak performance** all of the time and improve the quality of your work—by machining with nothing but razor sharp tools.
- Get more machining time out of your cutting tools.** Because you'll know that you can regrind your cutting tools within a few minutes you won't push them until they dull or even break—which means that your cutters will last much, much longer.
- Reduce your tool crib inventory**—and save money.
- Eliminate regrind bills**—and save even more money.
- Fulfill your customer's needs on time**—and make more money.

PN: CM-01 — Cuttermaster end mill sharpener complete with air bearing fixture, halogen light, grinding wheel, air filter. Wired to 110v/60hz.

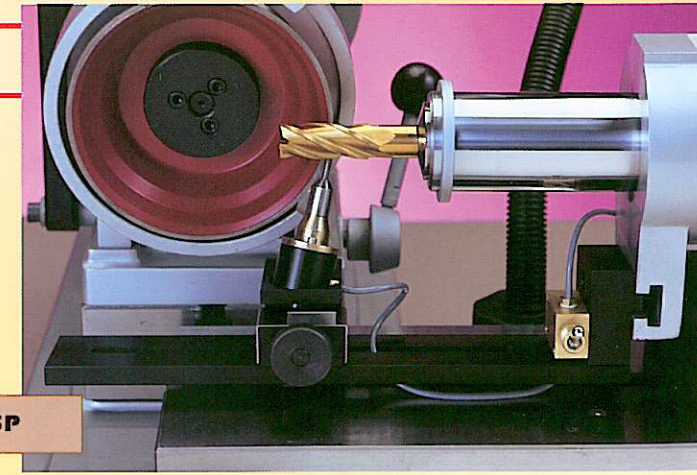
PN: CM-01F — Cuttermaster end mill sharpener complete with standard accessories and pneumatic finger.

PN: CM-01M — Cuttermaster end mill sharpener complete with standard accessories, metric leadscrews, dials & clearance chart. Wired standard to 220v/50hz.

PN: CM-01MF — Cuttermaster end mill sharpener complete with standard accessories, metric components and pneumatic finger.

PNEUMATIC FINGER

- Cuts sharpening time for end mills in half; eliminates the need for raising and lowering the grinding spindle.
- Automatically adjusts the clearance angles for every end mill. As the crossfeed dial moves the finger away from the wheel, the finger drops to a different height.
- Simply flip the toggle switch to go instantly from the primary to the secondary clearance angle!
- Air cylinder guaranteed for 2 million cycles; easily hooks into your existing air supply with an adaptor (included).
- Reduces user fatigue.
- End teeth can be ground from the same setup.
- Stylus is made from solid carbide.

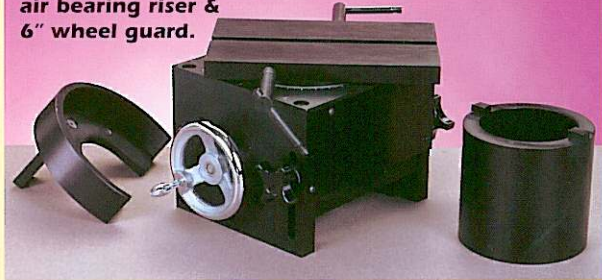


PN: CM-05P

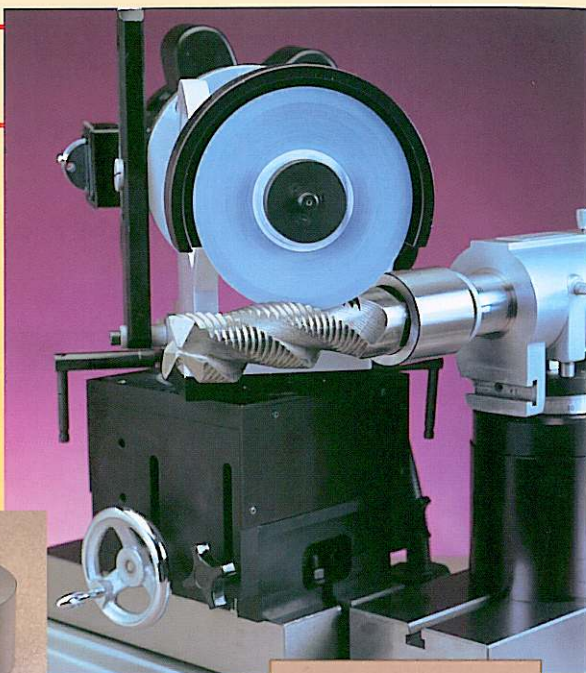
Z-AXIS — SHARPEN ROUGHING END MILLS, GASH AND MUCH MORE!

- Enables you to easily sharpen expensive roughing end mills in a matter of minutes.
- Greatly enhances the Cuttermaster's versatility; provides you with a total of 8 working axes.

Basic unit comes complete with z-axis unit, air bearing riser & 6" wheel guard.



- Provides 3-1/4" of vertical travel.
- Enables the motor to swivel 180 degrees.
- Mounts in minutes—easy to use.
- The air bearing riser enables you to sharpen standard end mills without breaking down the setup.



SPINDLE EXTENSION

Necessary for sharpening roughing end mills.

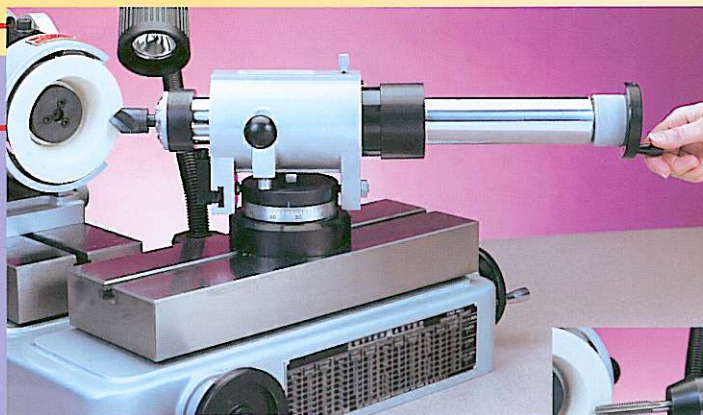
PN: **CM-M70**



PN: **CM-15**

CAM SYSTEM — FOR COUNTERSINKS & TAPS

The Cam Grinding System transforms your Cuttermaster Air Bearing into an Axial/Radial relief fixture. The standard stylus bracket is removed, and replaced with an axial follower. A cam is installed on the front of the air bearing, and the spring housing mechanism pulls the cam back into the axial follower. The basic unit, which is required to use all cams (part number **CM-C1**) comes with an axial follower; the spring housing mechanism, a handle, and 2 cams for grinding uniflute countersinks. A special wheel with a wide 3/4" face (part number **CM-21**) is highly recommended. 2 additional cams are available to grind 3, 6, 4 & 8 flute countersinks.



Cam Grinding Wheel
5" cup, 3/4" wide face,
1-1/4" arbor.

To grind taps, the radial follower (part number **CM-C50**, pictured at right) is mounted on the X-Axis table, and aligned off of the O.D. of the cam. This provides the radial movement necessary to grind taps. 6 different cams are available to grind 2, 3 & 4 flute taps.



PN: **CM-C1** — Basic Cam Grinding Attachment—includes 2 cams for uniflute countersinks, spring housing, handle and axial follower. Required to use any of the cams.

PN: **CM-C21** — Tap Cam; 2 flutes, 0-3/8".

PN: **CM-C31** — Tap Cam; 3 flutes, 0-3/8".

PN: **CM-C32** — Tap Cam; 3 flutes, 3/8" & up.

PN: **CM-C41** — Tap Cam; 4 flutes, 0-5/16".

PN: **CM-C42** — Tap Cam; 4 flutes, 3/8-5/8".

PN: **CM-C43** — Tap Cam; 3 flutes, 3/4" & up.

PN: **CM-C50** — Radial follower—required to sharpen taps.

PN: **CM-C53** — 3 & 6 flute Countersink cam.

PN: **CM-C54** — 4 & 8 flute Countersink cam.

PN: **CM-C1P** — Special Cam Package—includes basic unit (**CM-C1**), all cams as shown above, and radial follower (**CM-C50**).

PN: **CM-21** — Special wheel for cam grinding —5" cup wheel with 3/4" wide face.

RADIUS ATTACHMENT

For sharpening ball end mills, and generating a corner radius on a standard end mill.

- Fixture has a 90 degree stop, and takes 5C collets.
- The optional center finder (right) is needed for grinding corner radii.



RADIUS ATTACHMENT CENTER FINDER

Necessary for grinding corner radii with the radius attachment.

PN: **CM-03**

PN: **CM-04**