Think Sharp

Harig® Fixtures and Grinders for Relief-Grinding, Drill Pointing and Tool and Cutter Grinding.
Relief-Grinding Fixture
Cam Relief-Grinder & Drill Pointer

Cutting lip helixpoints, self-centering helixpoints, sheet metal points, core drill points and all kinds of cam relief points. They're all simple to grind with Harig's Relief Grinding Fixture. Its single solid cam is infinitely adjustable so you can grind all lifts without changing cams or gears. Lip positioner precisely locates drills. No limit to number of flutes. Perfect automatic indexing. Perfect concentricity. Variable speed drive. Base graduated 360°. And it has all the capacity you'll ever need, #70 through 1-1/16". left- or right-hand, straight or tapered shank.

Harig's Relief-Grinding Fixture, manual or motorized, lets you grind to print or resharpen tools fast.

Spindle speeds infinitely variable from 0-140 RPM. Neutral knob disengages cam for plain cylindrical grinding. Spindle lock act as reference starting point for proper positioning of tools relative to cam action.

Cam headstock swivels 360° for universal angular settings. Cam adjusting knobs provide infinitely variable clearance angles. Long-bearing collets with 4-split design accurately grip drill flutes.

Cam followers adjustable for wear. Easily changed index hubs for 2, 3 or 4 flutes are standard. Other index hubs available to 12 flutes. Quarter arc cam recommended for use with index hubs with 4 or more flutes.

Infinite cam adjustment to vary clearance angle are made by turning two knobs.
Tools sharpened on a Harig Air-Flo® Fixture cut smoother. The spindle floats on a .0001" film of air. No metal-to-metal contact. No friction. "Finger-sensitive" control for sharpening end mills as small as 1/32" diameter. Or sharpen end mills and router bits up to 2-1/2" diameter with 1/8" through 1-1/4" shanks. ** Sharpens all over—periphery, end-teeth, notches, flute faces and corner chamfers. Has 2, 3, 4 and 6 indexes and graduated tilt positions for sharpening end-teeth more conveniently. Optional independently-mounted solid finger support permits grinding of tapered end mills.

- Tools sharpened on a Harig Air-Flo® Fixture cut smoother.
- The spindle floats on a .0001" film of air.
- No metal-to-metal contact. No friction.
- "Finger-sensitive" control for sharpening end mills as small as 1/32" diameter. Or sharpen end mills and router bits up to 2-1/2" diameter with 1/8" through 1-1/4" shanks.
- Sharpens all over—periphery, end-teeth, notches, flute faces and corner chamfers.
- Has 2, 3, 4 and 6 indexes and graduated tilt positions for sharpening end-teeth more conveniently.
- Optional independently-mounted solid finger support permits grinding of tapered end mills.

**Precision spindle floats on .0001" film of air.**

- Precisely spaced grooves in collars give 2, 3, 4 or 6 indexes when used with finger to sharpen end teeth.

**Single bolt tightens finely graduated goose-neck in tilted up or down position.**

- Collars can be used with optional solid finger support to grind tapered end mills.

**Graduated micrometer thimble gives instant fine adjustment to finger (up or down) for determining clearance angle.**

- Direct reading "clearance angle collar" makes angular settings easy—swivels universally for radial relief sharpening.

- Base finely graduated for swiveling to angles.

- "Rocking" action pulls tool away from grinding wheel for rapid indexing.

---

\*With optional finger assembly and stub arbor.

\**Model 5C 1/32" to 1-1/16".**
Harig's versatile Steptool frees your production grinders from tool maintenance and turns your tool crib into a profit center. Compact, rugged base includes a 1/2 HP double-ended spindle, and 2-speed table control. Steptool has a big 5 1/4" x 27" table. Longitudinal travel is 14". Cross feed travel is 7 1/2" x 1" per revolution. Vertical travel is 7" x 0.05" per revolution. Table feed is 2 3/4" per revolution or 1/2" per revolution. Select from models with Harig fixtures for cam relief grinding and drill point grinding, end mill and cutter grinding, or both. Fast changeovers. Simple operation. Exceptional accuracy and speed. Specify the Harig options and accessories you need to extend your tool sharpening capabilities. Long-bearing collets with 4 split design accurately grip drill lands. Optional 1 HP grinding wheel spindle.

Optional matched centers—one solid, one spring-loaded—for cutter grinding.

Optional stub arbor for milling cutters. Optional Universal snap-finger assembly.

Web Thinning Head
For web thinning, crankshaft and splitpoint grinding. Uses interchangeable long-bearing collets. Range 1/64" thru 1 1/16".

Auxiliary Slide Table
Optional auxiliary table is shown with Air-Flo® set up for split point grinding.

Relief-grinding fixture (standard on all models except model 101E).

Overhead angle dresser.

Table swivels 225°.

Two-speed table control.

Heavy-duty, table-mounted dresser.

Convenient front mounted operator controls.

Optical Comparator
Gives a magnified view of work—no need to remove tool for checking. Large, easy-to-read, eye-level comparator includes hood, screen protractor ring, contour illuminator, compound slide and 10X lens. (20X optional.)

Web Thinning Head
For web thinning, crankshaft and splitpoint grinding. Uses interchangeable long-bearing collets. Range 1/64" thru 1 1/16".
Make shop personnel more productive.
Harig® fixtures are easily mounted to your small toolroom grinders, always there when you need them. All are easy to operate and instantly adjustable to the job. Existing personnel can be trained to keep your cutting tools sharp. This makes everyone more productive, allows everyone to produce consistently high quality parts, and gives you better control over tool inventory and costs. You get increased productivity from people, tools and machines.

Grind everything from simple basic tools to intricate "specials."
Harig drill point, tool and cutter grinding fixtures will keep your tools cutting sharp. They're fast, simple to use and exceptionally accurate. They'll grind to print or resharpen taps, stepdrills, countersinks, deburring cutters, end and side mills, reamers, slotters and cutting lip and self-centering helixpoints for NC drilling. By maintaining tools in-house, you'll increase cutting machine productivity, decrease perishable tooling costs.

Sharp tools cut longer and produce better work.
Dull tools don't cut metal, they scrape and wear it away. Tools sharpened on our fixtures penetrate the workpiece cleanly, cut to specified tolerances and leave a smooth surface finish. And with properly ground tools, you get longer life between regrinds, more parts per tool.

Cut perishable tool costs and get more machine productivity.
Harig fixtures let you set up an in-house tool maintenance program that can pay for itself in as little as three months. Dull or damaged tools are reclaimed, not thrown out. Fewer workpieces are scrapped because of tool damage. Secondary operations to clean up rough cuts or bring dimensions to spec are eliminated. These savings add up fast, and often have as great an impact on costs as buying new, more productive equipment. Sharp tools will extend the life of your metalcutting equipment, too, because fixture flexing and machining stresses are minimized.

Turn your toolcrib into a profit center.
Sharpening is the single most critical aspect of maintaining twist drills and cutting tools. Harig grinding fixtures provide an affordable way to sharpen tools in-house. Our Air-Flow® fixture, Steptool Relief-Grinding fixture and Steptool Grinder will lower perishable tool costs, minimize workpiece damage, make unskilled help more productive and extend the life of metalcutting machines. Harig grinding fixtures are your answer to increased productivity.
The HARIG Life Line

Lasting performance and accuracy for your every toolroom and production grinding need.

612 Hand Feed

612 Ball Way

618 Hydraulic

618 Automatic

618 Autostep

618 Hogger

618 Vertical

618 Slicer

HARIG®

Harig Products
Bridgeport Machines Division
of Textron Inc.
P.O. Box 538, Elgin, IL 60120-0538
(312) 695-1000
Call toll-free 1-800-243-4292 (in Connecticut call 1-800-972-4093).