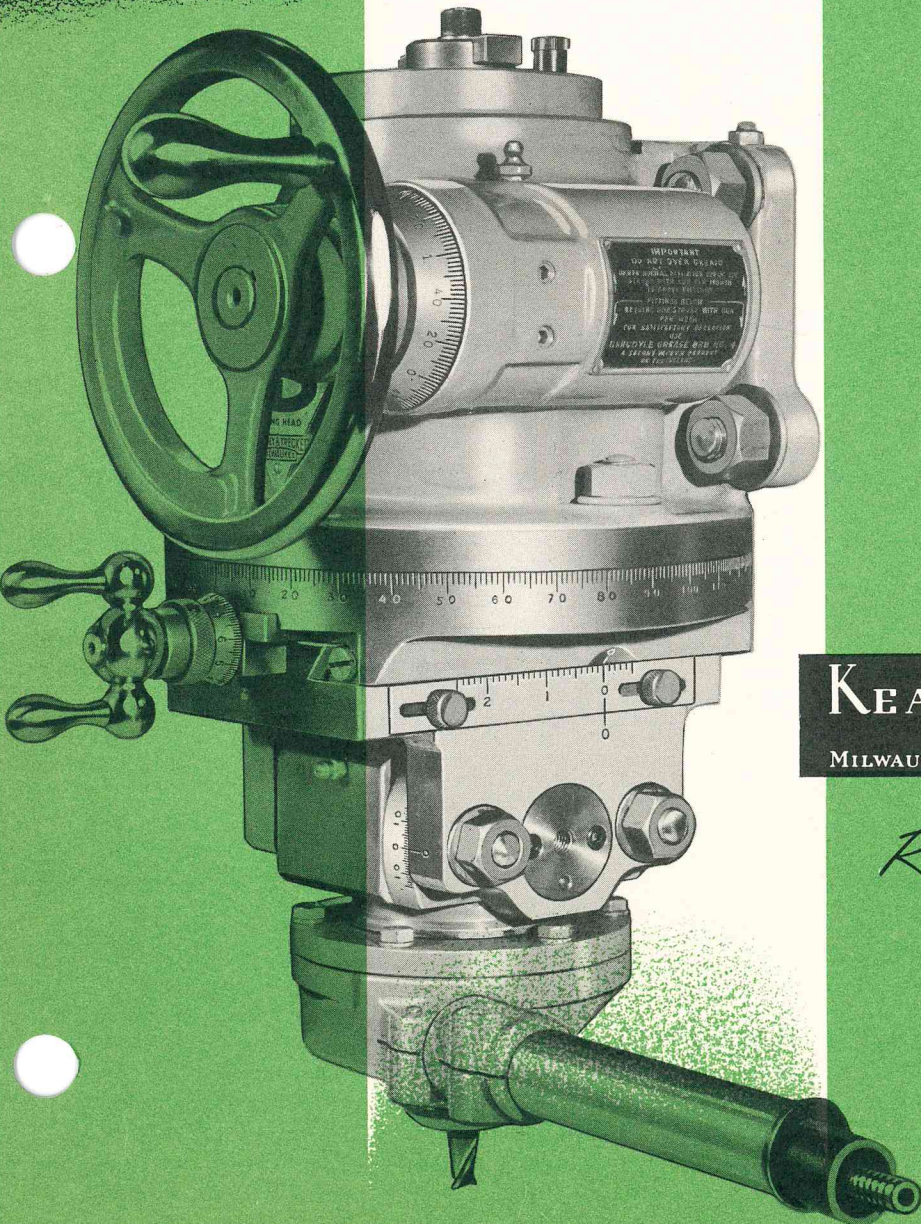


KEARNEY & TRECKER
MILWAUKEE

tri-D [®]

MILLING HEAD



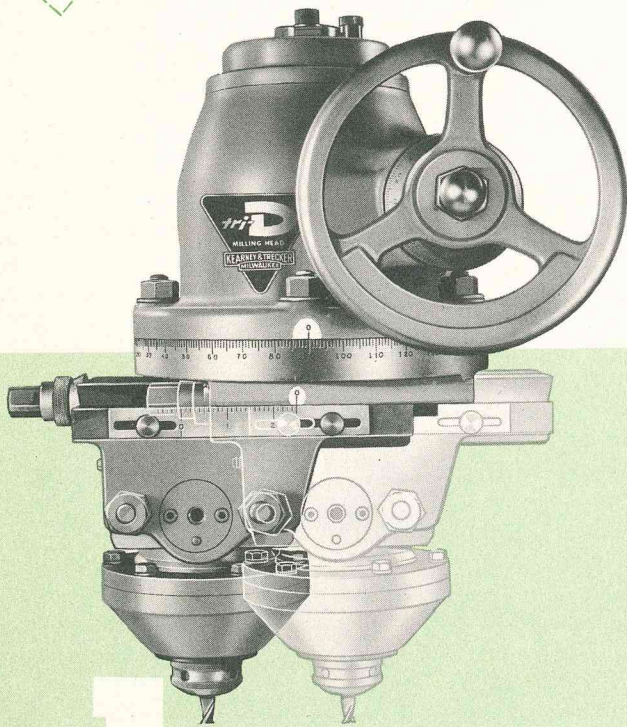
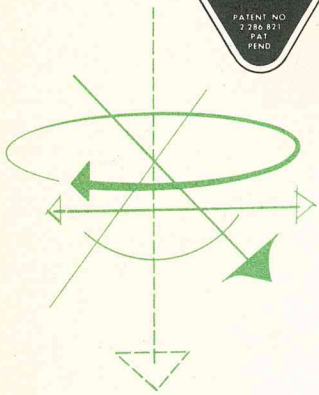
KEARNEY & TRECKER
CORPORATION
MILWAUKEE 14, WIS. U. S. A.

Representative: _____

Designed for Use with All Makes of Milling

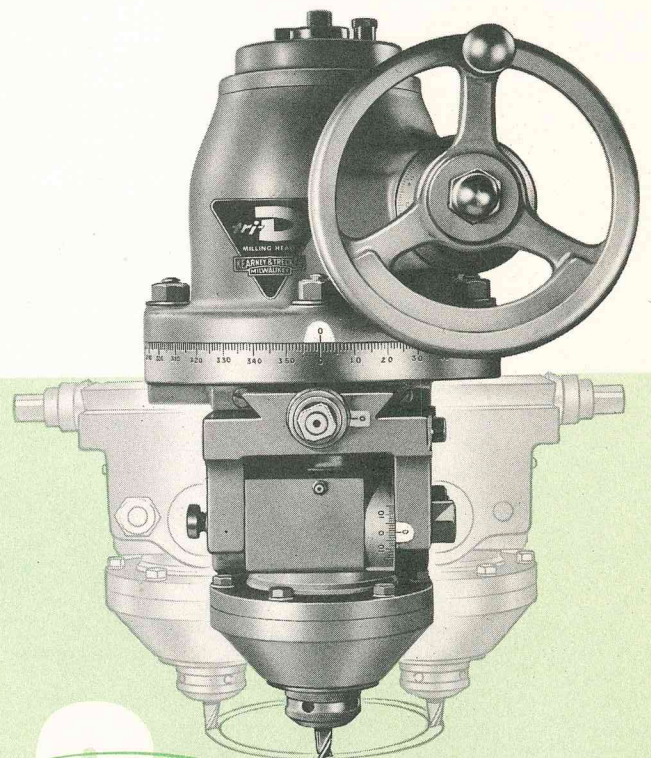


The TRI-D MILLING HEAD is the latest addition to Kearney & Trecker's famed Rotary Head milling family. TRI-D is an extremely versatile attachment, readily adaptable to almost any make of horizontal milling machine and some types of vertical mills. Power to the spindle is transmitted through a heavy-duty flexible shaft driven by the machine spindle or a separate motor equipped with variable speed pulleys. TRI-D will produce almost any geometric shape in metal, employing straight lines, radii or angles, using only simple arithmetic.



**LATERAL
ADJUSTMENT**

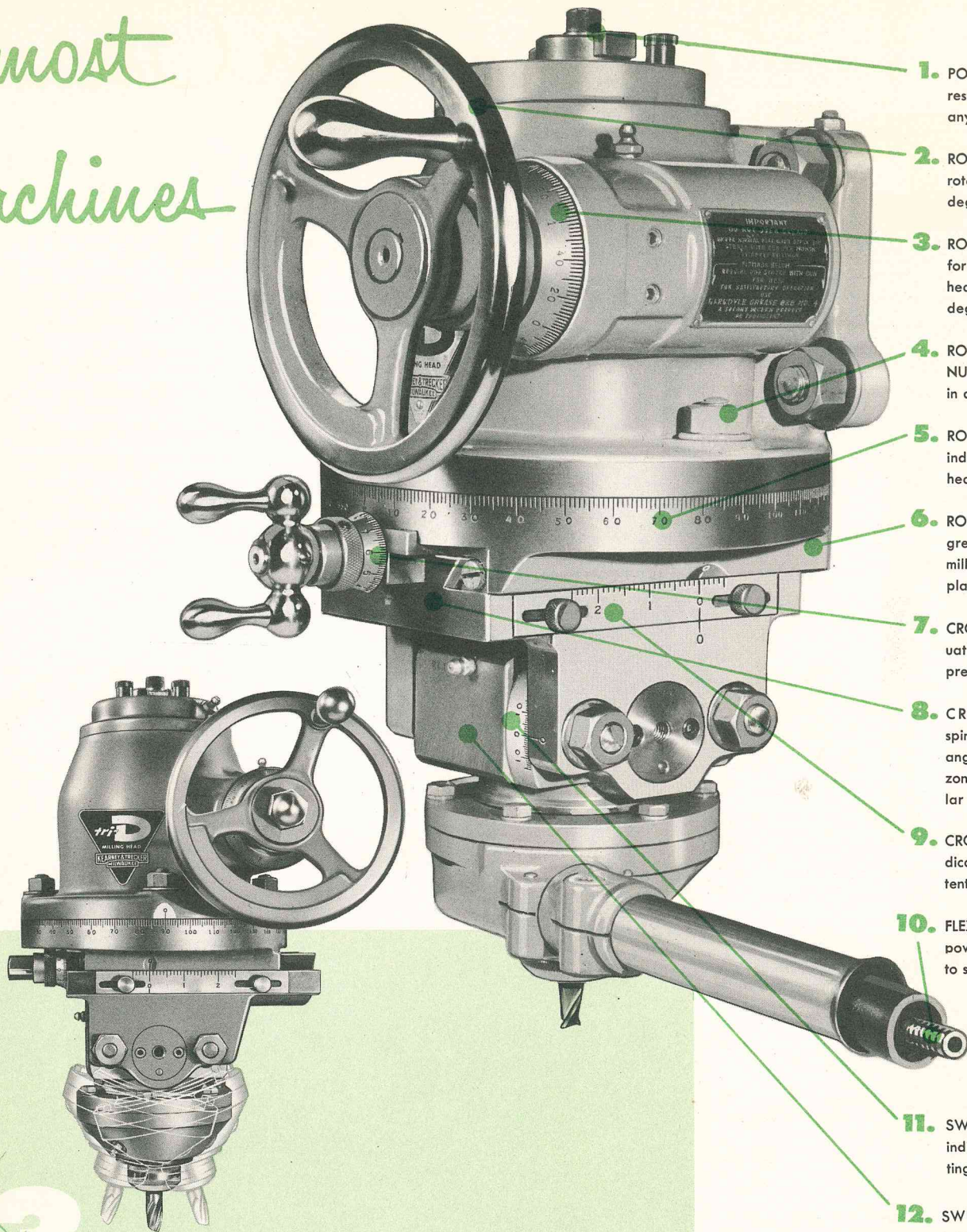
of the cross-slide permits offsetting the spindle up to 2½ inches. The precision, satin finished scale on the cross-slide is graduated in tenths of an inch. A dial, with large easy to read figures, graduated in thousandths, is mounted on the cross-slide screw. The screw is precision ground assuring the ultimate in accuracy and long-life. A friction lock is provided to secure cross-slide positions.



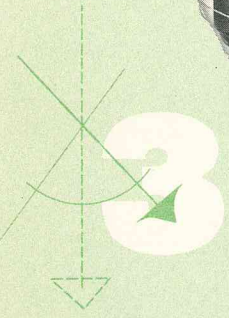
**ROTARY
MOVEMENT**

of the head through a complete circle or any specific part of a circle, is easily accomplished by turning the large handwheel in either direction. Combined with lateral adjustment of the cross-slide, this rotary movement permits the milling of circles up to 5 inches in diameter. Two positive limit stops, mounted in T-slots on top of the head, restrict rotation to any arc of a circle. Satin-finished precision scales, one graduated in 2 minute increments, the other in degrees, assure accurate settings.

Almost Machines



1. POSITIVE LIMIT STOPS—restricts head rotation to any portion of a circle.
2. ROTARY HANDWHEEL—rotates head through 360 degrees in either direction.
3. ROTARY MINUTE DIAL—for rapid setting of rotary head in minutes of a degree.
4. ROTARY HEAD CLAMP NUTS—secures rotary head in any radial position.
5. ROTARY DEGREE SCALE—indicates radial position of head in degrees.
6. ROTARY HEAD—360 degree rotation for circular milling in the horizontal plane.
7. CROSS-SLIDE DIAL—graduated in thousandths for precise cross slide settings.
8. CROSS SLIDE—offsets spindle up to 2½" for angular milling in the horizontal plane and for circular milling.
9. CROSS-SLIDE SCALE—indicates cross slide offset in tenths of an inch.
10. FLEXIBLE SHAFT—transmits power from motor source to spindle.
11. SWIVEL BLOCK SCALE—indicates cutter angle setting in degrees.
12. SWIVEL BLOCK—inclines cutter for milling at any angle up to 15° in the vertical plane.



3 ANGULAR ADJUSTMENT

of cutter, an exclusive feature of TRI-D, is the swivel block which enables the operator to position the cutter at any angle in the vertical plane, up to 15 degrees, either side of center. Large, easy to read graduations make setting to a precise angle a very simple operation. Two large clamp nuts secures setting. Combining angular and lateral adjustments with rotary head movement, almost any geometric shape can be milled accurately and in a single setup.

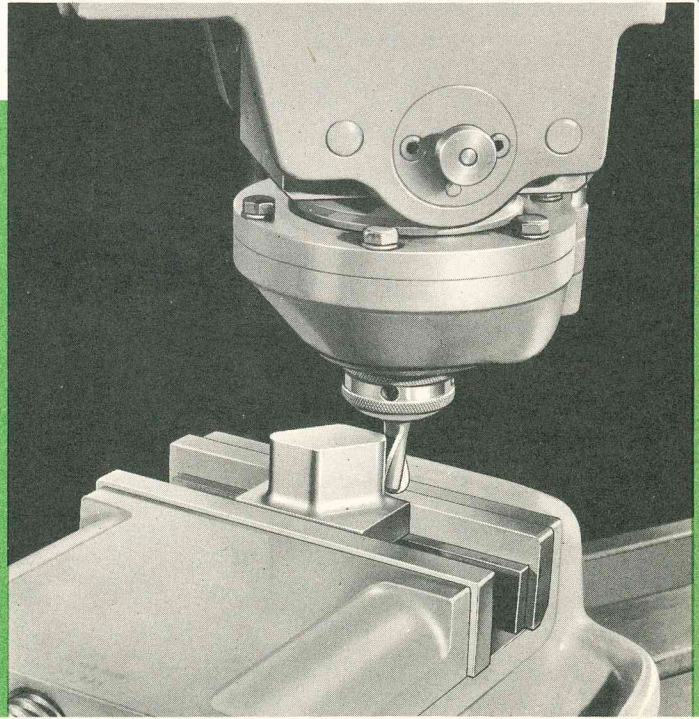
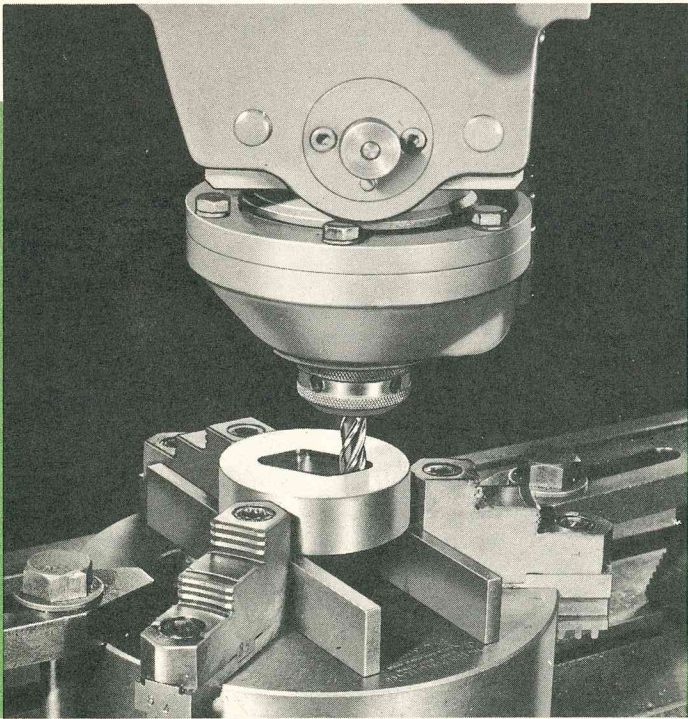
PROUDLY CREATED TO

Outperform



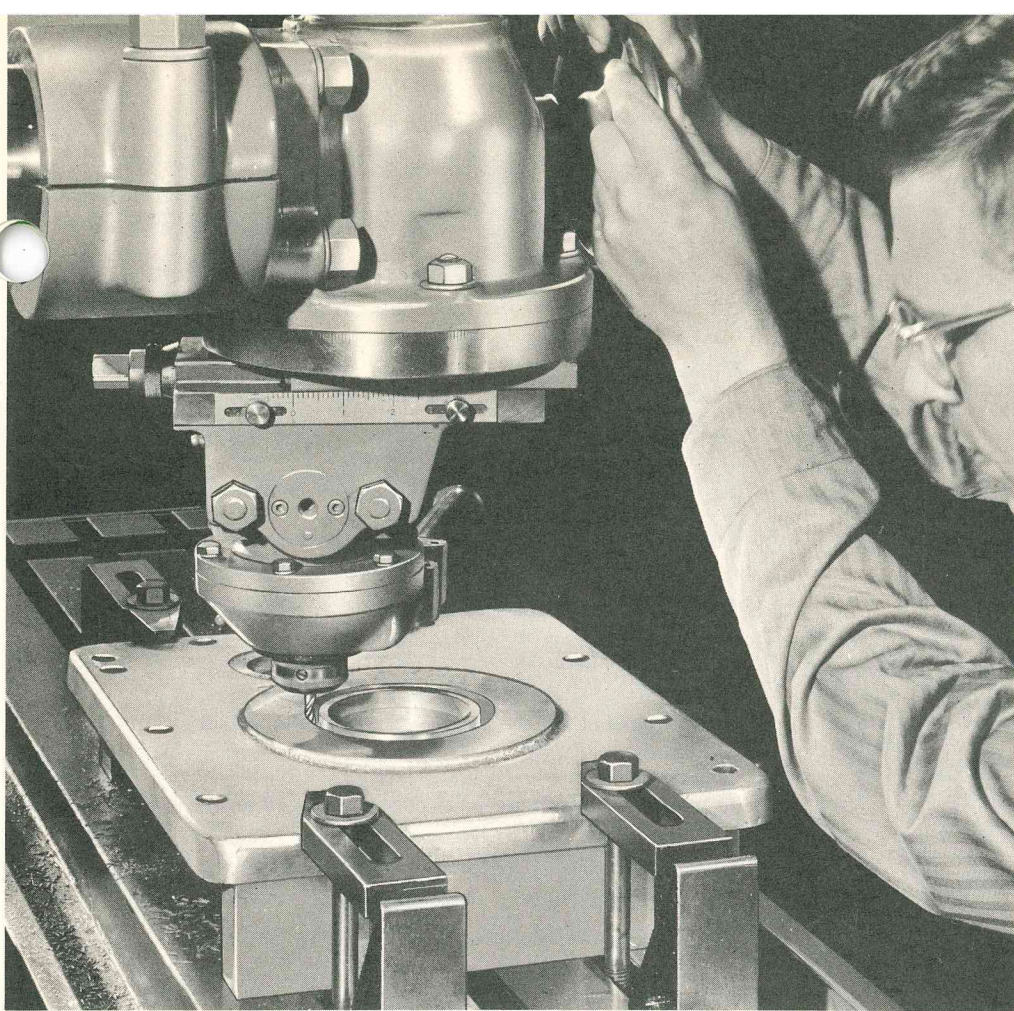
The matchless technical perfection which a TRI-D milling head brings to metal cutting can insure the investment as can no other single element of production.

The operations illustrated below were selected to show the versatility of this amazing head. All jobs remained clamped in one position until completed—**ONLY A SINGLE SET-UP WAS USED IN EACH CASE.** That's truly time and temper saving.

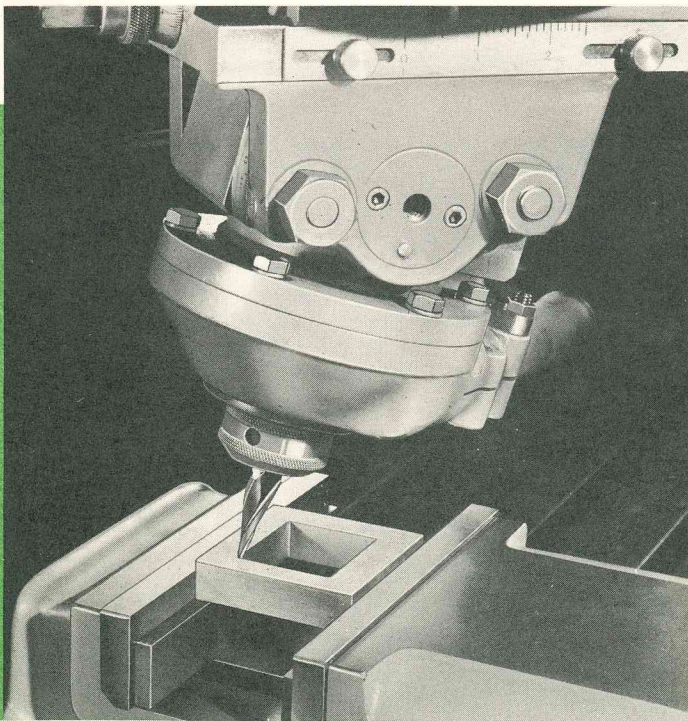


This odd shaped punch and die set was rough and finish milled in a *single setup*, using all three of the basic movements of TRI-D and the saddle, table and knee movements of a universal style milling machine. The machine table was swiveled 33 degrees to permit milling the straight sides of both workpieces. Machine table movement was used to mill the long straight side up to the tangent point of the radius. At this point the TRI-D head was rotated through the full arc and then saddle feed was engaged to mill the short straight side. At the tangent point of the next radius,

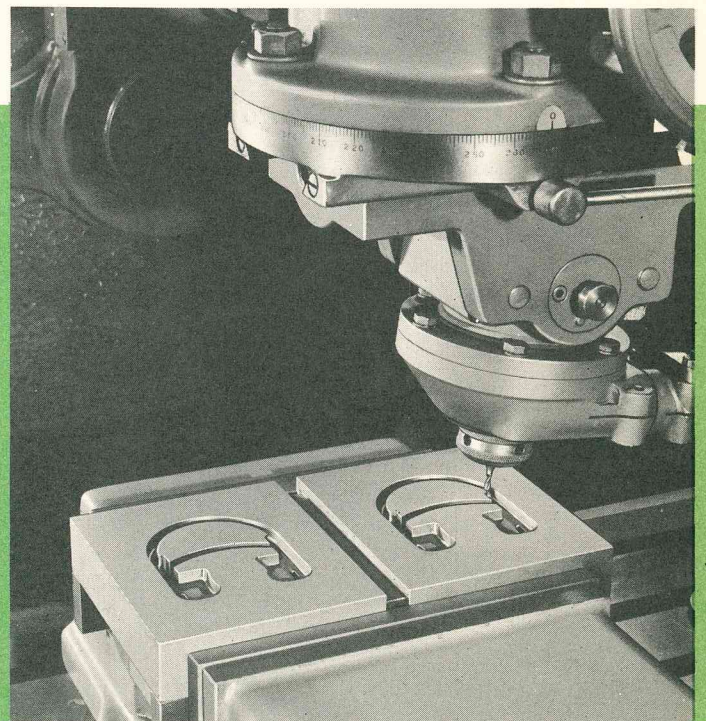
saddle feed was disengaged and the entire procedure repeated. After the die (left) was completed to the finished dimensions the clearance angle was milled. Here is where TRI-D's exclusive swivel block feature was used to great advantage. The punch (right), being of identical shape, was rough and finish milled in the same manner, using all the machine and TRI-D settings established for the die. The positive mechanical method employed in TRI-D made it possible to hold the proper clearance between punch and die, consequently eliminating all hand finishing.



To mill the "O" ring groove in this workpiece it was first necessary to offset the cross-slide of TRI-D to the required dimension for the first roughing cut. An endmill smaller than the finished width of the track was used, thus allowing sufficient stock on both sides for finishing cuts. Rotary movement of the TRI-D head simplified this operation considerably. It reduced the problem of locating and work-holding and eliminated revolving an unwieldy casting.

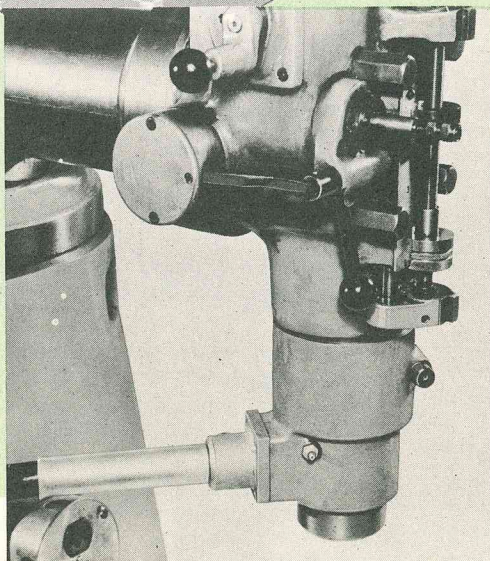
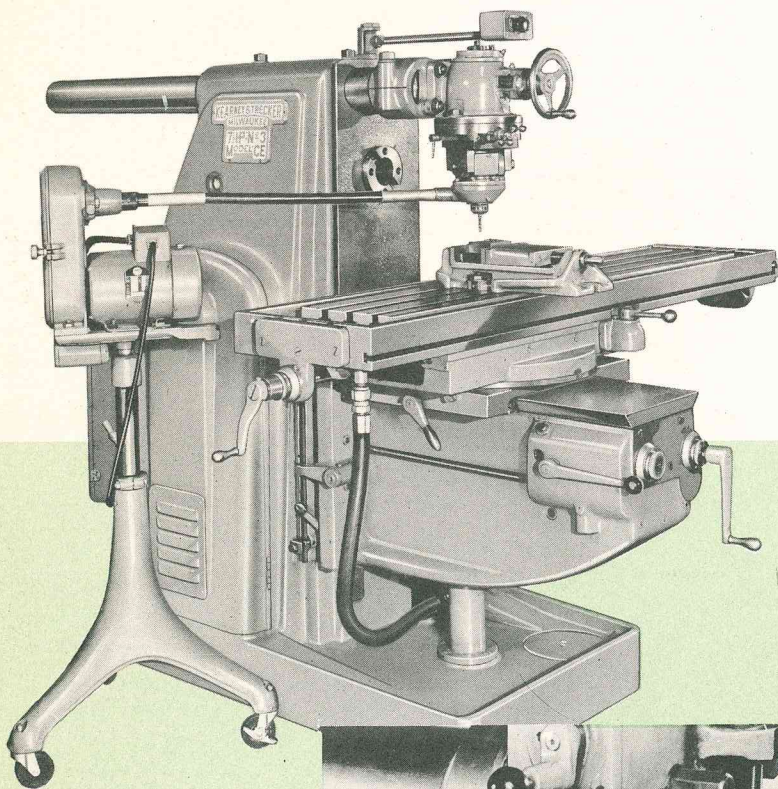
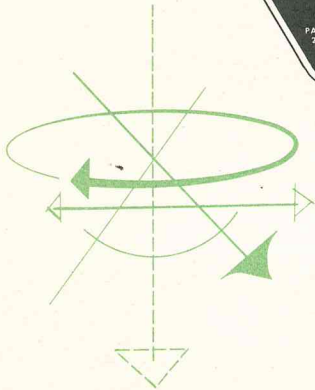
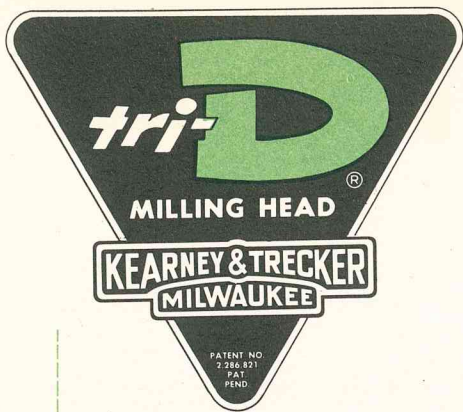


This is not an "optical illusion". It is a picture of TRI-D actually milling a "square corner". Briefly, it was accomplished by using an ordinary endmill, ground to a specific angle. The rotary head and swivel block were adjusted to prescribed settings and vertical feed of the milling machine knee was all that was required. This entire procedure is clearly described in the TRI-D Operator's Manual No. TDC-15.



This is a "multiple origination". From the first cut to the last only one setup was necessary to rough and finish mill this die set.

The start and completion of a particular operation on one block was duplicated on the second block before any machine or TRI-D settings were changed other than a simple movement of the table. This system assured the accuracy necessary to match the halves of the completed blocks at final assembly.



WHAT

BUILT BY KEARNEY & TRECKER MEANS TO YOU

The TRI-D Milling Head is manufactured by one of the world's largest builders of machine tools, who has been "producing with precision since 1898." The same skilled men who, for so many years, have contributed to making America mighty through machine tools, offer their same famous product and service guarantee with every TRI-D Milling Head.

WHY

THE TRI-D MILLING HEAD IS SUPERIOR

The TRI-D Milling Head has that superior "Kearney & Trecker look" and cannot be compared with any existing milling head on the market simply because it is exclusively different.

There are two major factors which contribute equally to TRI-D superiority: one is patented design; the other is workmanship. The design of TRI-D is not based upon the ideas of one man or a dozen men, but rather the sum total of knowledge acquired through many years of manufacturing machine tools. It is based upon performance requirements of industry.

The type of workmanship that goes into every TRI-D milling head defies duplication. Each part is made of the finest materials, machined to exacting tolerances. Assembly is a methodical procedure, and the completed unit is carefully tested to insure continuously perfect operation.

Here TRI-D is shown mounted on a No. 3, Model CE Kearney & Trecker—Milwaukee universal milling machine. The power source is a Walker-Turner flexible shaft machine.

On certain light duty vertical milling machines, power to the TRI-D head is obtained directly from the machine's spindle by the application of this right angle power take off bracket.

No time or effort was spared to build into TRI-D some of the greatest ideas ever to be created for the modern machine shop. TRI-D is unequalled in performance and unsurpassed in efficiency and quality.

HOW

TRI-D WILL BENEFIT YOU

One look and you will at once realize the technical benefits to be derived from the TRI-D Milling Head. Its remarkable flexibility makes it ideal for the tool room, the die shop or production milling.

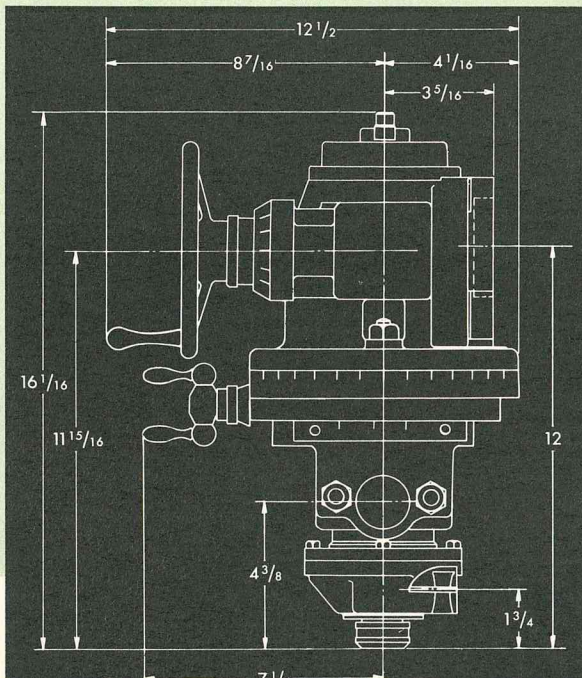
TRI-D's chief claim to fame is that it is possible to mill circles and angles in the horizontal plane and angles up to 15° in the vertical plane—and all in a single setup. TRI-D is truly a short-cut to greater profits.

Your production costs in milling are sure to drop measurable when a TRI-D is used, since valuable time consumed in multiple setups is eliminated.

By making the machine operator's job easier, you save time and temper and assure accurate results. The rugged construction of TRI-D means little, if any expense for repairs.

Get TRI-D today! Hundreds of new adventures in milling are yours when you own the amazingly new TRI-D Milling Head.

An "Operator's Practice Project" (right), is described in detail in the Operator's Manual, No. TDC-15, which is furnished with each TRI-D Milling Head. It is a comprehensive handbook, adequately illustrated, and designed to acquaint an operator with the full potential of TRI-D.

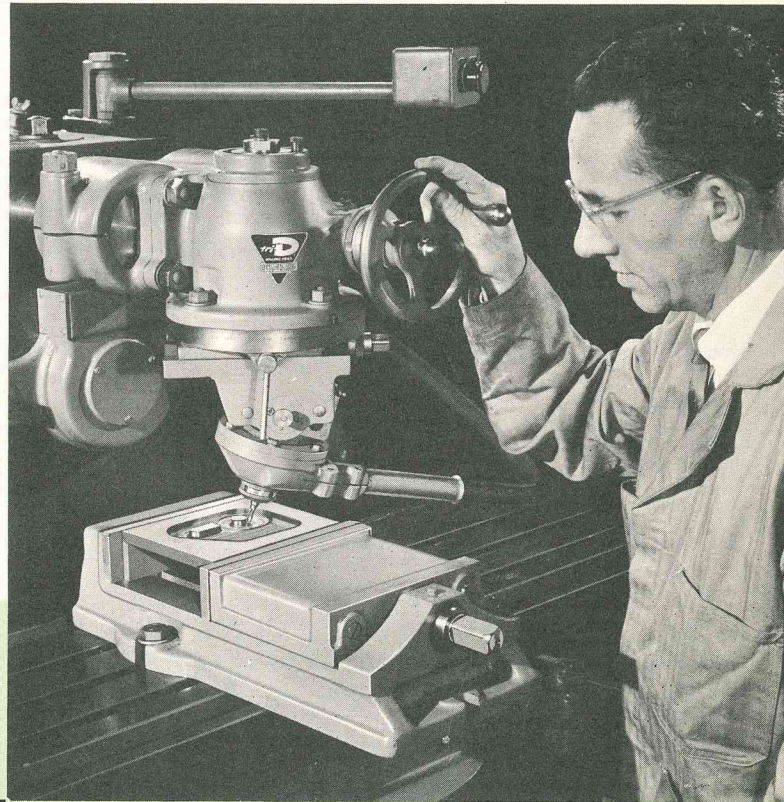


PROOF

IS IN THE USING

To learn what TRI-D can do for you—how different it is from all other types of milling heads—see it at your nearest Kearney & Trecker representative listed on the back cover of this brochure. He will be glad to arrange a "proof-positive" demonstration, without any obligation.

PATENT NOTICE: The novel features of the Kearney & Trecker—Milwaukee Milling Machines and Attachments illustrated and described in this catalog are protected by issued and pending United States and Foreign Patents. The manufacturer reserves the right to improve, change, or modify the construction of these milling machines or attachments or any part thereof as he may see fit, without incurring any obligations to make like changes on KEARNEY & TRECKER CORPORATION—MILWAUKEE Milling Machines or attachments previously sold.

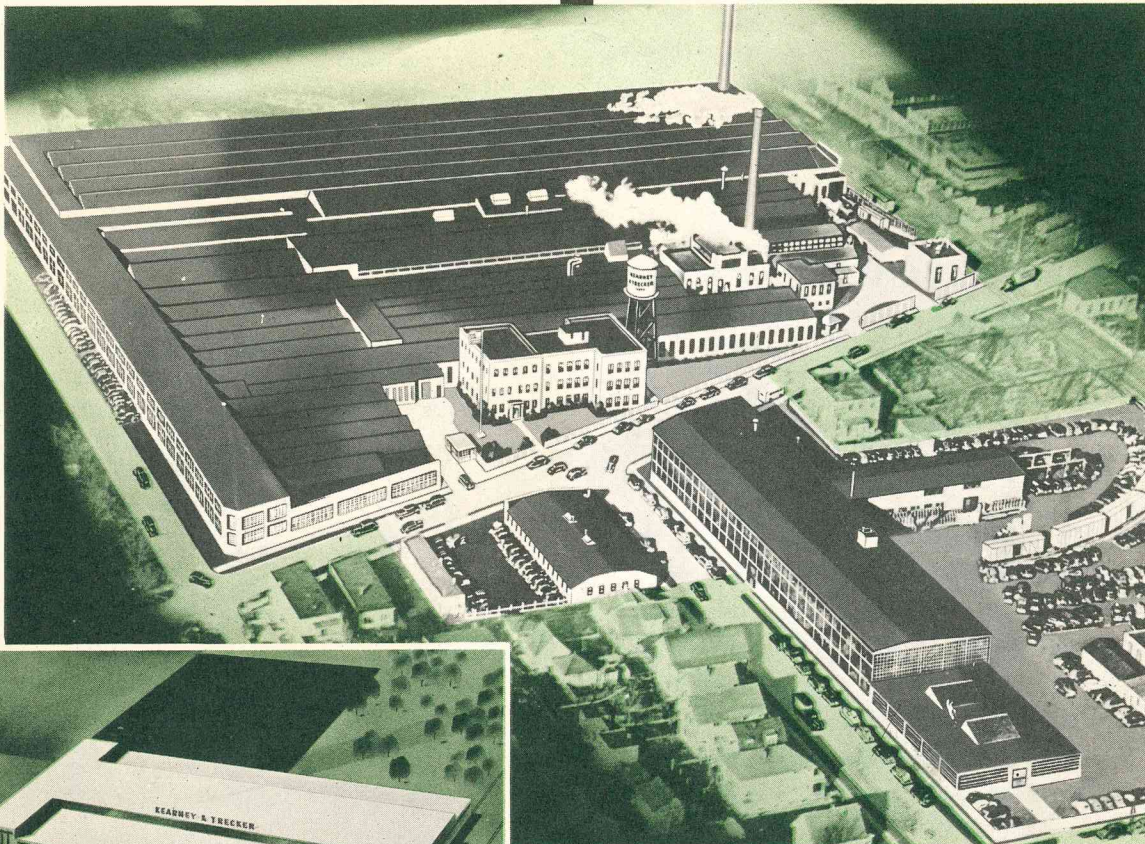


SPECIFICATIONS

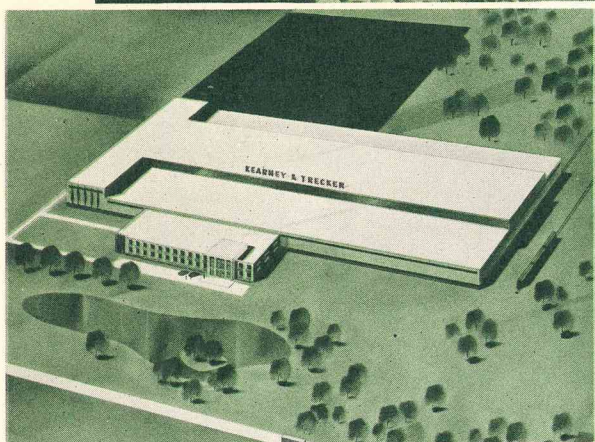
- Spindle offset up to 2 1/2"
 - Head Rotation 360°
(Ratio—72 to 1; 5° per turn)
 - Angular adjustment of the spindle in vertical plane,
either side of center up to 15°
 - Collet size 1/2" No. 20NST (3 1/2" per foot)
(Not included but available at extra cost)
 - Attachment Spindle Speed
Horizontal Machines 1.5 x Machine Spindle
Vertical Machines66 x Machine Spindle
 - Net Weight of Head only approx. 91 lbs.
- Adapter Brackets for the mounting of TRI-D Milling Head are available for most of the popular makes of horizontal machines and some verticals. See "Dimension Sheet" before ordering.

**PRODUCING
WITH PRECISION**

since 1898



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STANDARD MACHINE DIVISION



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SPECIAL MACHINERY DIVISION

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