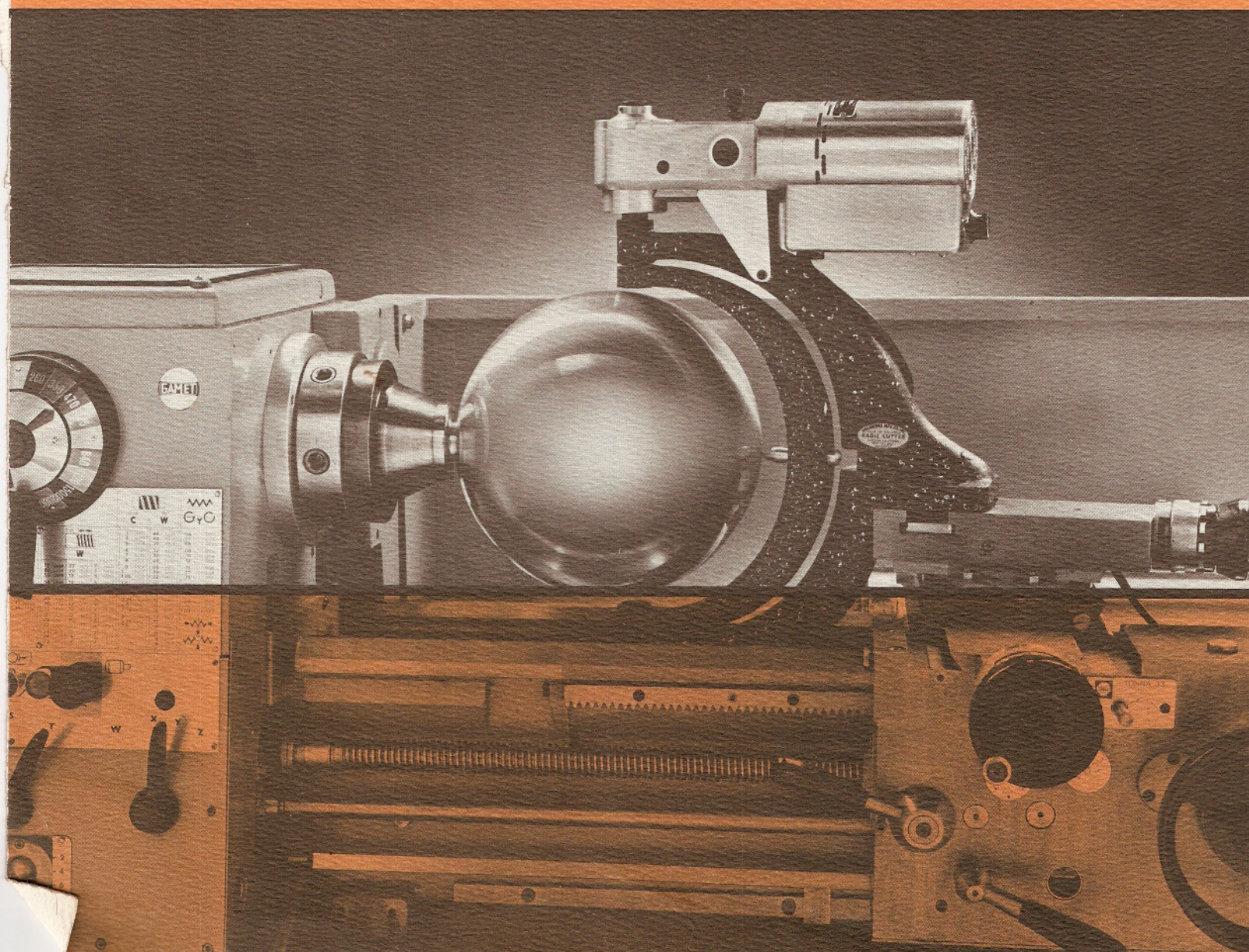


# The Holdridge RADII-CUTTER

*Cuts and Forms Spherical Shapes Accurately and Economically*



## MODEL 3S STANDARD AND 3D DELUXE RADII-CUTTER

The small model Radii-Cutter is specifically designed for all small lathes, will cut from 0" to 3" diameter convex ball shapes and from 0" to 3" concave sockets to radius depth. By reversing the yoke, sockets up to 8" may be formed; however, radius depth will be minus 17/32" to allow for the "boss line" of the tool.

Two additional straight spindle yokes and two additional tool bits as well as a dial calibrated in degrees are supplied in the deluxe model for forming pipe bending dies, form rollers, etc.

Compound height from the base of the tool to the center line is 1". Tool may be shimmed to fit various model lathes and turret lathes.

**Model 3S**  
Standard Radii-Cutter

**Model 3D (illustrated)**  
Deluxe Radii-Cutter

**Model 3S\***

Priced as a unit includes

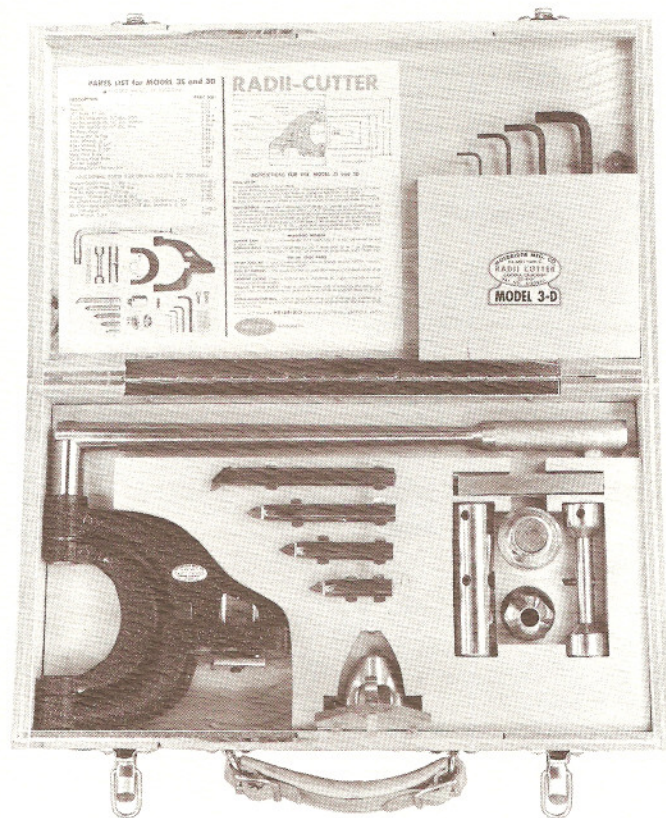
- Frame and Handle
- Hardwood carrying case
- "C" yoke for 0-3" dia. contours
- Three 1/2" dia. carbide-tipped tool bits
- Parallel micrometer bar
- Tie down plate
- Grinding fixture
- Three Allen wrenches
- Tool bit support

\* Any of the Deluxe Model equipment may be added to Standard Model as needed (See price list)

**Model 3D**

Includes all standard equipment plus these additional parts which greatly increase the versatility of the Radii-Cutter.

- Dial calibrated in degrees— saves time on repeat cuts and gives maximum accuracy
- One 1/2" diameter straight spindle yoke with 7/32" diameter carbide tool bit
- One 1-1/16" diameter straight spindle yoke
- One 30° or 45° 1/2" diameter offset carbide tipped tool bit



Complete instructions on inside lid of carrying case.

## MODEL 4S STANDARD AND 4D DELUXE RADII-CUTTER

The popular Model 4 Radii-Cutter for medium lathes will cut from 0" to 4" diameter convex ball shapes and from 0" to 4" concave sockets to radius depth.

By reversing the "C" yoke, sockets up to 12" in diameter may be formed. However, radius depth will be minus 17/32" to allow for the "boss line" of the tool.

Compound height from the base of the tool to the center-line is adjustable from 1 1/8" to 1 3/4". Tool may be shimmed to fit various model lathes and turret lathes.

**Model 4S Standard**  
Radii-Cutter

**Model 4D Deluxe**  
(illustrated)  
Radii-Cutter

**Model 4S\***

Priced as a unit includes

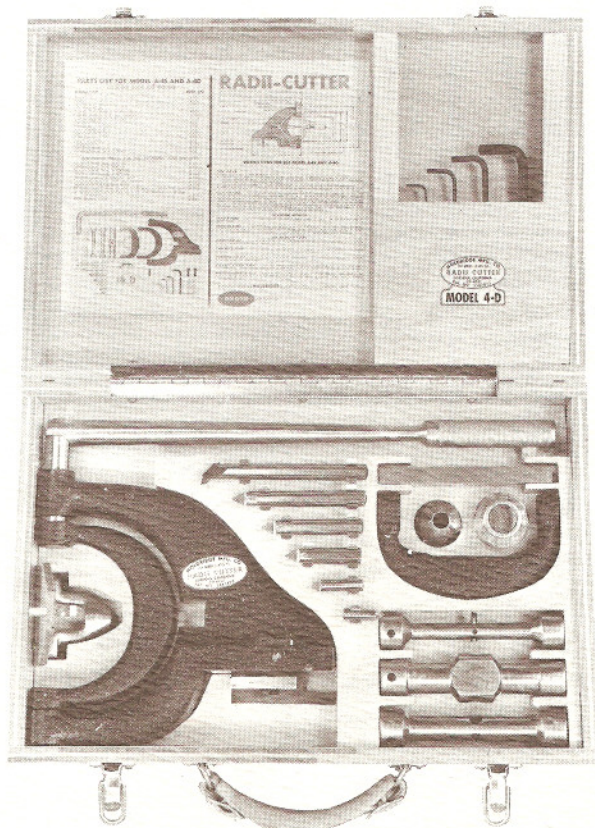
- Frame and Handle
- Hardwood carrying case
- "C" yoke for 2-4" diameter contours
- "C" yoke for 0-2" diameter contours
- Three 1/2" diameter carbide tipped tool bits
- Tie down plate
- Grinding fixture
- Three Allen wrenches
- Tool bit support

\* Any of the Deluxe Model equipment may be added to Standard Model as needed (See price list)

**Model 4D**

Priced as a unit includes all standard equipment plus these additional parts

- Dial calibrated in degrees— saves time on repeat cuts and gives maximum accuracy
- One 1/2" diameter straight spindle yoke with 7/32" diameter carbide tool bit
- One 3/4" diameter straight spindle yoke
- Two 3/8" diameter carbide-tipped tool bits for 3/4" straight spindle yoke
- One 1 1/2" diameter straight spindle yoke (use 1/2" diameter carbide-tipped tool bits)
- One 30° or 45° 1/2" diameter offset carbide-tipped tool bit



Complete instructions on inside lid of carrying case.

## MODEL 8D DELUXE RADII-CUTTER

The Model 8D fits all medium and large lathes and will cut from 0" to 8" diameter convex ball shapes and from 0" to 8" concave sockets to radius depth.

By reversing the large "C" yoke sockets up to 20" may be formed; however, the radius depth will be minus  $\frac{3}{4}$ " to allow for the "boss line" of the Radii-Cutter.

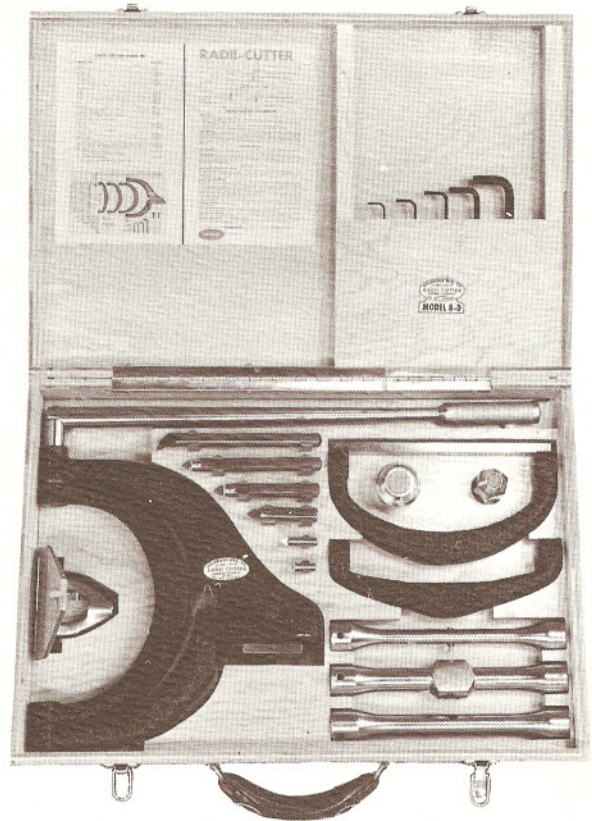
Compound height from the base of the tool to the centerline is adjustable from  $1\frac{1}{8}$ " to  $1\frac{3}{4}$ ". Tool may be shimmed to fit various model lathes and turret lathes.

Model 8D Deluxe Radii-Cutter\*

\*Available in the Deluxe Model only

Priced as a unit includes

- Frame and Handle
- Hardwood carrying case
- One "C" yoke for 0-3" diameter contours
- One "C" yoke for 3-6" diameter contours
- One "C" yoke for 6-8" diameter contours
- One  $\frac{5}{8}$ " diameter straight spindle yoke
- One  $\frac{7}{8}$ " diameter straight spindle yoke
- One 1-9/16" diameter straight spindle yoke
- One 30° or 45°  $\frac{5}{8}$ " diameter carbide-tipped tool bit
- One  $\frac{1}{4}$ " diameter carbide tool bit for use with  $\frac{5}{8}$ " diameter spindle
- Two  $\frac{3}{8}$ " diameter carbide-tipped tool bits for use with the  $\frac{7}{8}$ " diameter spindle
- Three  $\frac{5}{8}$ " diameter carbide-tipped tool bits for "C" yokes and 1-9/16" diameter straight spindle yoke
- Dial calibrated in degrees
- Parallel micrometer bar
- Grinding fixture
- Tie down plate
- Tool bit support
- 5 Allen wrenches



Complete instructions on inside lid of carrying case.

## MODEL 12D DELUXE RADII-CUTTER

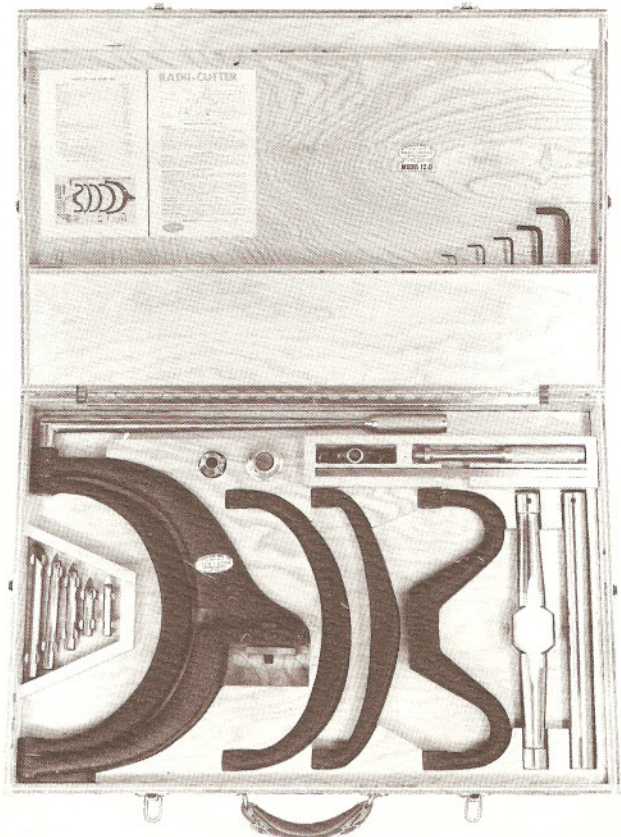
The Model 12D fits lathes 15" and larger and will cut from 0" to 12" diameter convex ball shapes and from 0" to 12" concave sockets to radius depth. By reversing the C yokes, large diameter sockets may be formed up to 24" depending upon capacity of lathe. The radius depth will be minus  $\frac{3}{4}$ " to allow for the "boss" line of the Radii-Cutter. Compound height from the base of the tool to the centerline is adjustable from  $1\frac{1}{8}$ " to  $1\frac{3}{4}$ ". Tool may be shimmed to fit various model lathes and turret lathes.

Model 12D Deluxe Radii-Cutter\*

\*Available in the Deluxe Model only

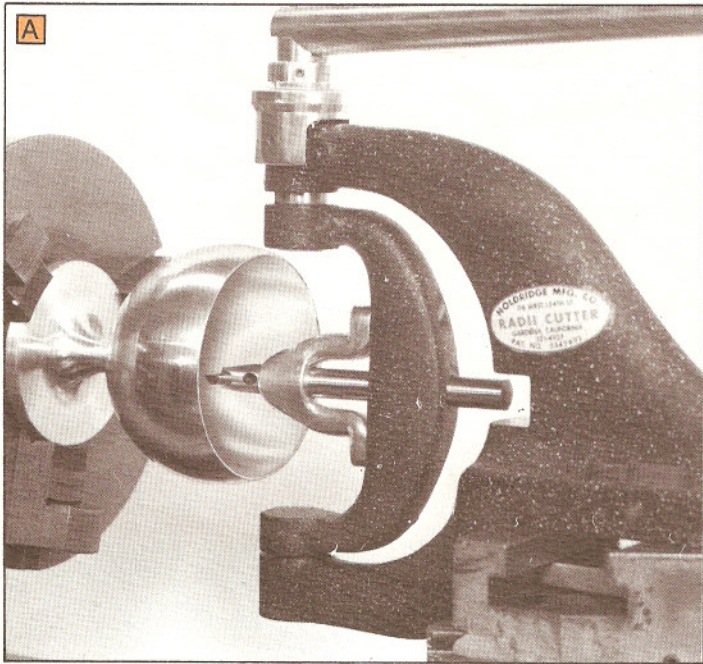
Priced as a unit includes

- Frame and Handle
- Hardwood carrying case
- One "C" yoke for 0-4" diameter concave, 0-3" diameter convex
- One "C" yoke for 3" to  $7\frac{1}{2}$ " diameter convex
- One "C" yoke for  $7\frac{1}{2}$ " to 12" diameter convex
- One "S" yoke for 4" to 12" diameter concave cuts only
- One 1-5/16" diameter straight spindle yoke
- One 2 $\frac{1}{2}$ " diameter straight spindle yoke
- One 30° or 45°  $\frac{5}{8}$ " diameter carbide-tipped tool bit
- Three  $\frac{5}{8}$ " diameter carbide-tipped tool bits for "C" and "S" yokes and 2 $\frac{1}{2}$ " diameter straight spindle yoke
- One  $\frac{1}{2}$ " diameter carbide-tipped tool bit for 1-5/16" diameter straight spindle yoke
- Dial calibrated in degrees
- Parallel micrometer bar
- Tie down plate
- Tool bit support
- Five Allen wrenches
- Handle extension
- Grinding fixture

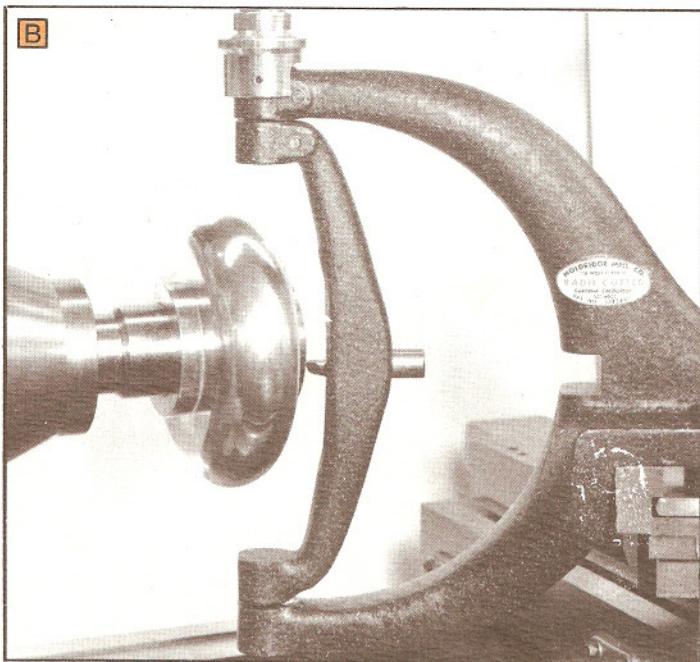


Complete instructions on inside lid of carrying case.

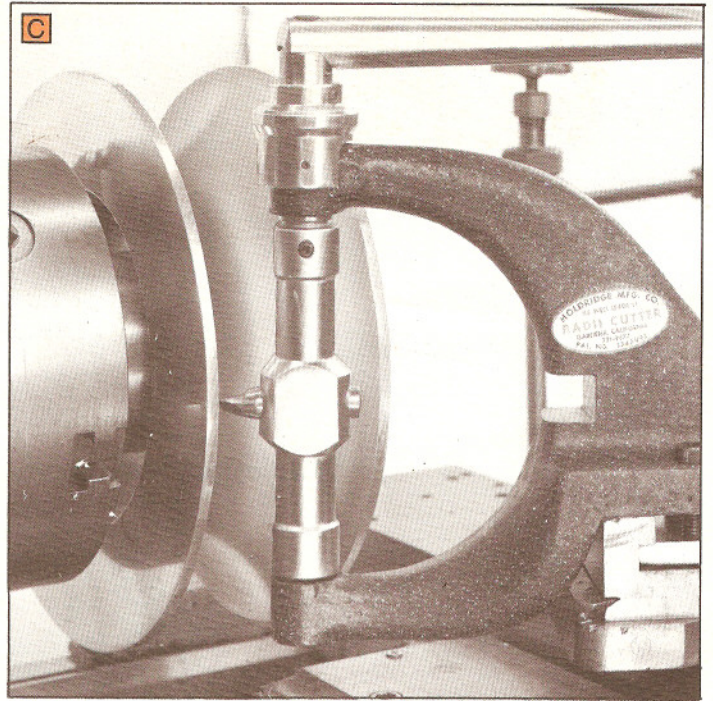
The front page picture (12D Radii-Cutter) shows the setup typical of all models for the machining of convex radii or balls. This cover picture shows the 12D Holdridge Radii-Cutter with Power Drive Unit attached forming a 12-inch diameter ball.



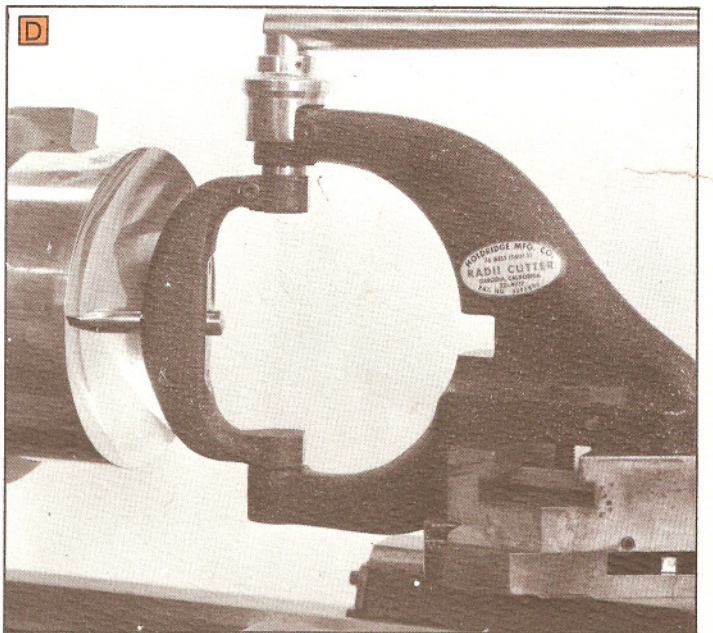
(A) By using the shallow yoke, tool bit support, and 45° offset tool bit, the 4-inch Radii-Cutter forms up to a 4-inch diameter socket. The part must enter the yoke up to the Radii-Cutter axis for radius depth sockets.



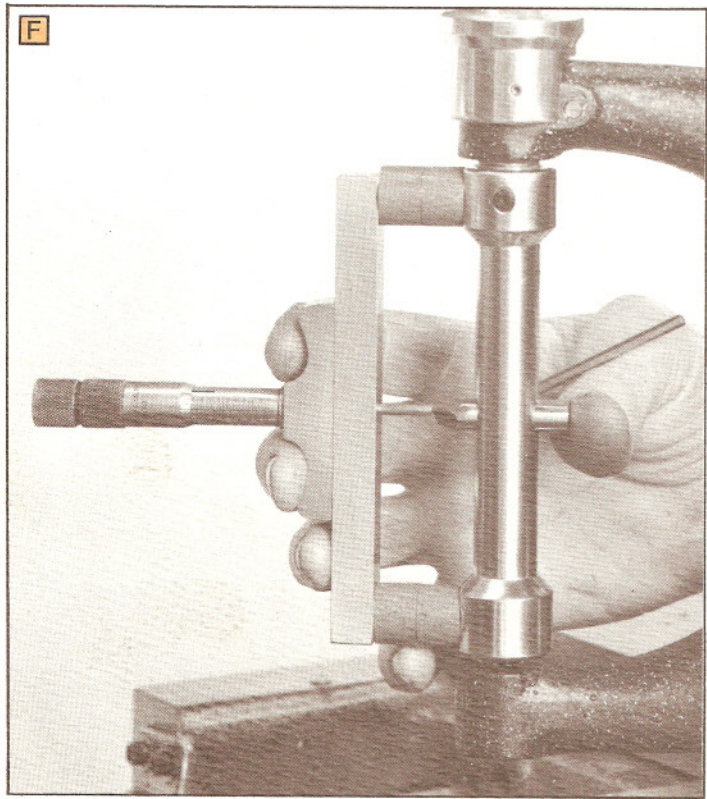
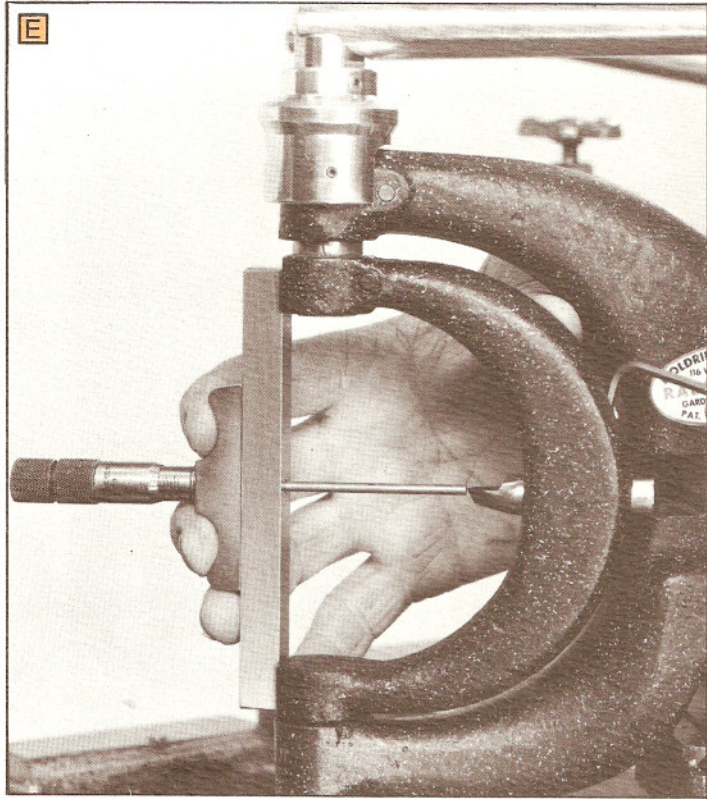
(B) The shallow yoke of the 8D Radii-Cutter is used to shape a form roll. Because of the small radius on the part and the large diameter, the 8D Model is required. Work must fall in between "boss" lines of the yoke of the Radii-Cutter.



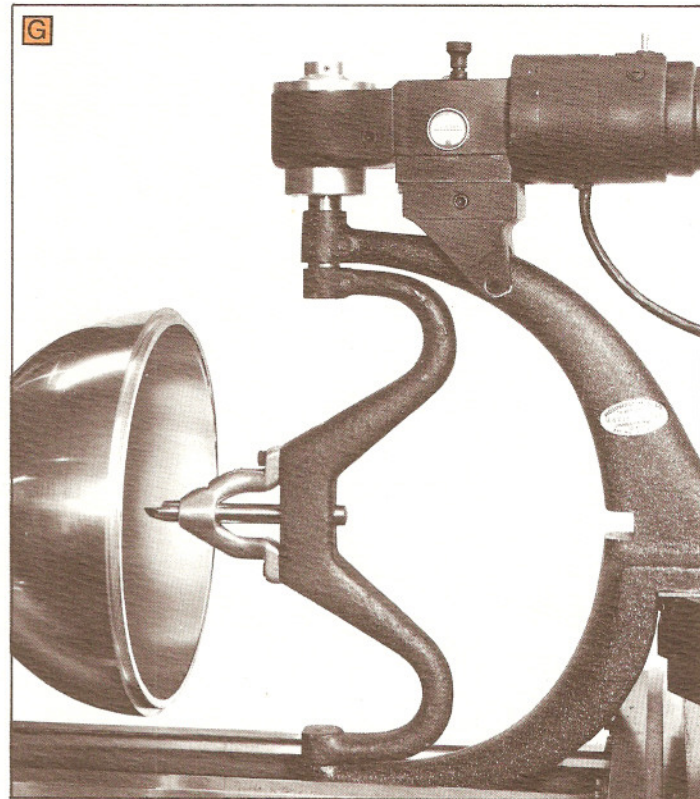
(C) The Radii-Cutter forming a radius on the outer portion of a bending die. In this type of work the cut can be made much deeper than the depth of the radius, due to the fact that the whole tool will fall into the groove. By using the Dial of the Radii-Cutter, the tool bit can be turned 90° from the perpendicular and enough friction can be applied by the lock screw in the frame to enable operator to clean one wall while feeding downward. The operator can cut the radius at the bottom while swinging the tool bit through 180°; then reverse the feed to clean the opposite wall in one continuous cut.



(D) By reversing the "C" yokes of any model of the Radii-Cutter, concave mirror-shaped parts may be formed of much greater diameter than the method depicted in (A). However, radius depth cuts cannot be made in this way unless the entire Radii-Cutter falls into the cavity formed, because the yoke and frame bosses will prevent the part from entering up to the Radii-Cutter axis.



(E & F) The pictures indicate the method of making radii settings with a depth micrometer (not included in Set). Measurements are made by placing the parallel bar (in Set) across the flat surfaces on the faces of the C yokes (E) and straight spindle yokes (F) of Radii-Cutter, inserting the depth micrometer so the spindle contacts the tip of the tool bit. All micrometer readings are on scale. Full instructions on radii settings are included in every Radii-Cutter carrying case.



(G) The "S" yoke on the 12D Radii-Cutter is used to eliminate tool bit extension and, for added rigidity, the tool bit support is mounted. Up to 12-inch diameter sockets, radius depth, can be formed.



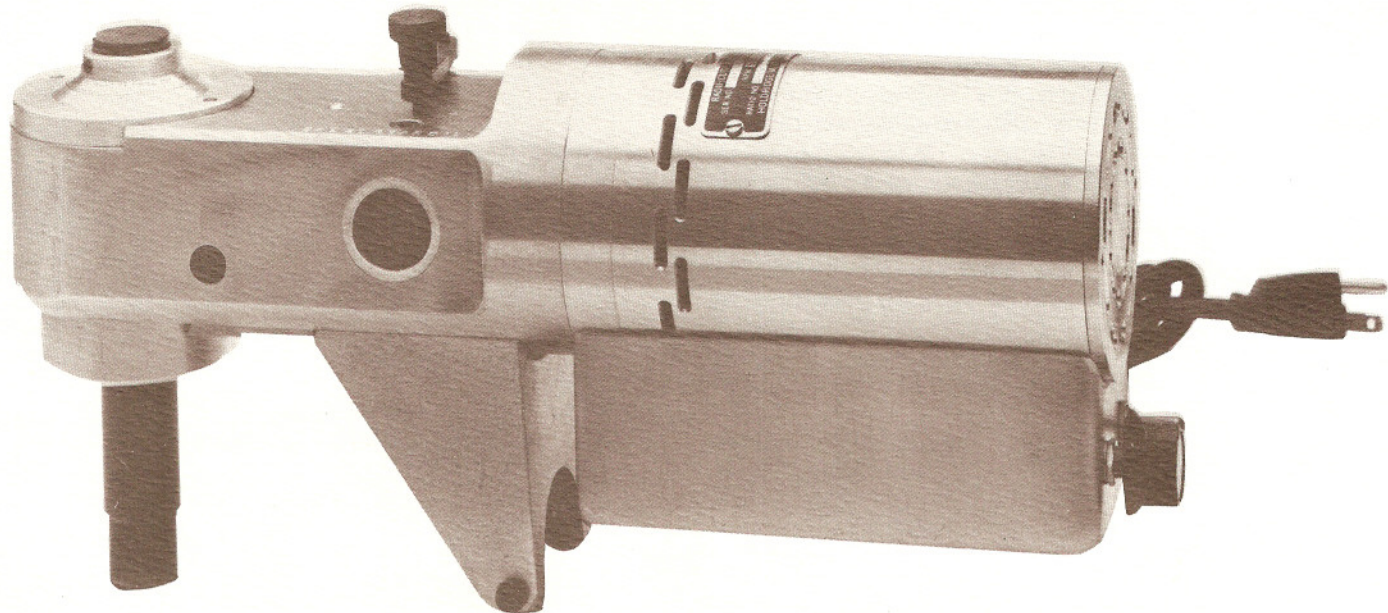
**THE HOLDRIDGE RADII-CUTTER**

The Holdridge Radii-Cutter cuts a wide variety of concave and convex shapes including ball and socket parts, ball bearing races, precision patterns and profile templates, form rollers, bending dies, etc.

The Radii-Cutter attaches quickly and easily to the compound of any lathe; it can also be used on turret lathes and Excello milling machines.

Capable of holding extreme micro-tolerances, the precision built Radii-Cutter eliminates the need for costly form tool bits, multiple tool setups, and repetitious measurements—and does not require a highly skilled operator.

**PATENTED**



## THE RADII-CUTTER POWER DRIVE UNIT FOR ALL HOLDRIDGE RADII-CUTTER MODELS

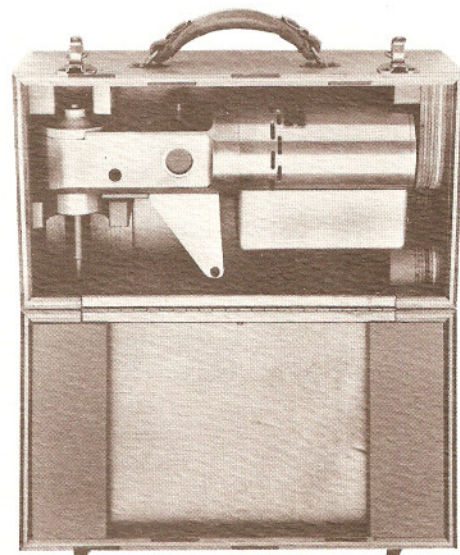
The Radii-Cutter Power Drive Unit provides a motor drive in place of the manually operated handle for all models of the Radii-Cutter. For diameters larger than 5 inches, the amount of cutting time on any one sweep increases to such an extent that it becomes tedious for the operator to use the Radii-Cutter handle. The handle is faster, in most cases, for diameters from 0" to 5". On all larger diameter work and especially on exotic metals, it is recommended that the Power Drive Unit be used.

The Power Drive Unit operates on standard 110-volt A.C. 60-cycle electric current. A smooth feed is achieved using a Permanent Magnet D.C. continuous-duty electric motor having infinitely variable speeds from 100 r.p.m. to 7500 r.p.m. In addition, the Power Drive Unit design incorporates a two-speed gearbox; the ratio between the high and low speeds is 1.666. One of eight different gear ratios will be supplied in the gearbox according to the table below. Thus, the operator has at his disposal a large variety of cutting speeds from the Power Drive Unit.

When ordering, **specify the Radii-Cutter model on which the Power Drive Unit is to be used**, so that the proper output shaft can be installed. Also, unless otherwise specified, the Power Drive Unit will be delivered with the factory recommended gear ratio, which depends on the size of the Radii-Cutter.

By shifting the lever located on top of the gear housing, from high range to low range, the following ratios are selected:

RATIO	HIGH	LOW	RATIO	HIGH	LOW
1	2500 : 1	4166 : 1	5	40000 : 1	66666 : 1
2	5000 : 1	8333 : 1	6	80000 : 1	133333 : 1
3	10000 : 1	16666 : 1	7	160000 : 1	266666 : 1
4	20000 : 1	33333 : 1	8	320000 : 1	533333 : 1



Write for Holdridge Collet Closer and Bar Feed brochure

