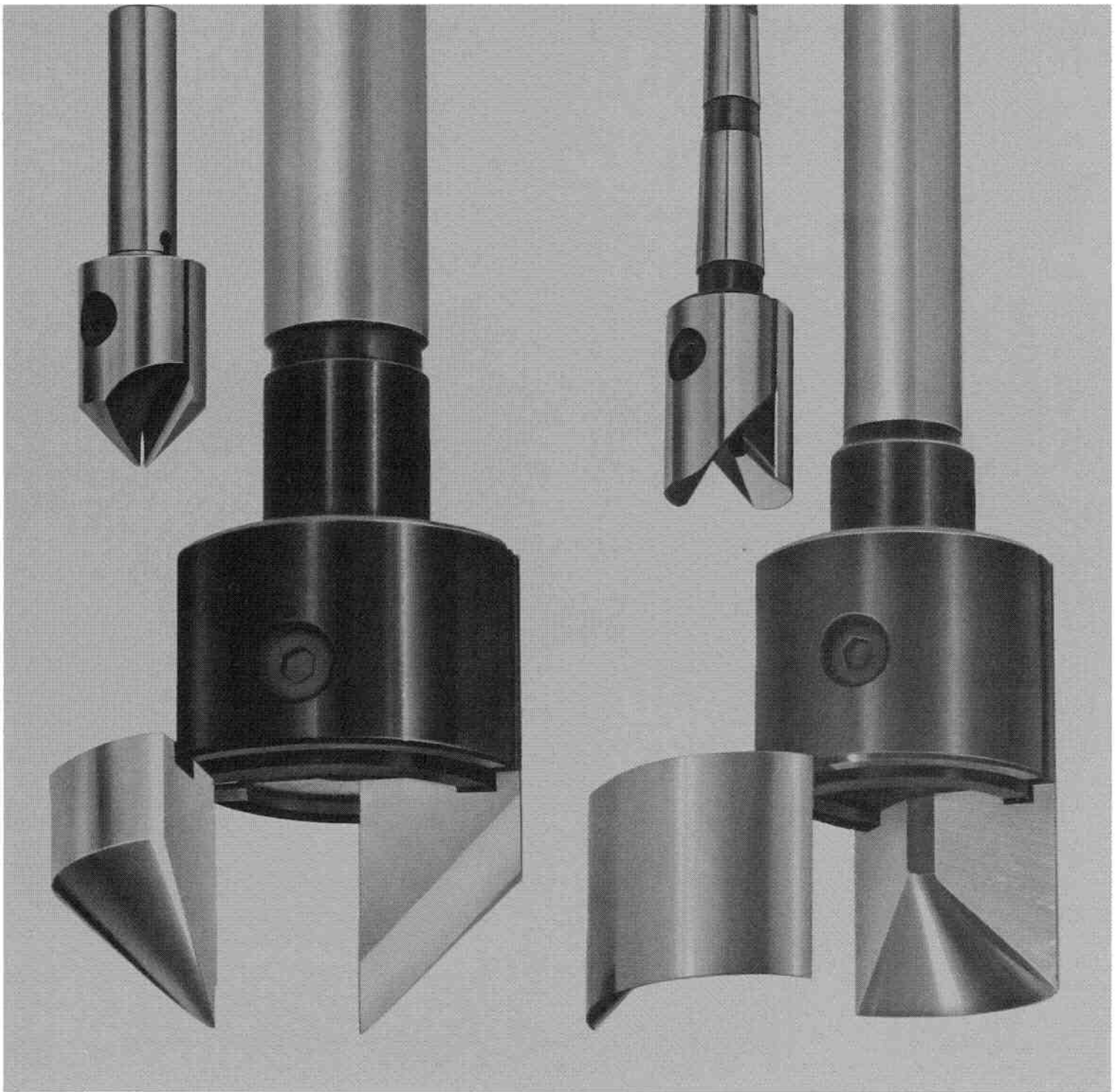


New

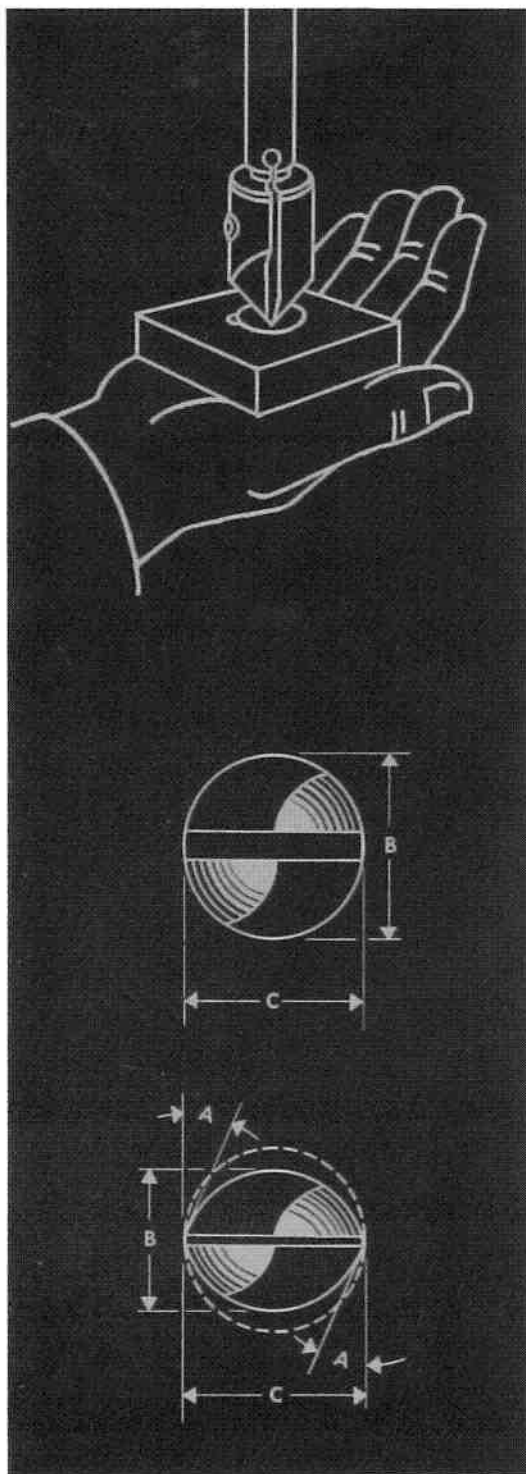
Marwa-Countersinks with exchangeable cutters

Chatterless countersinking
Regrinding without problems



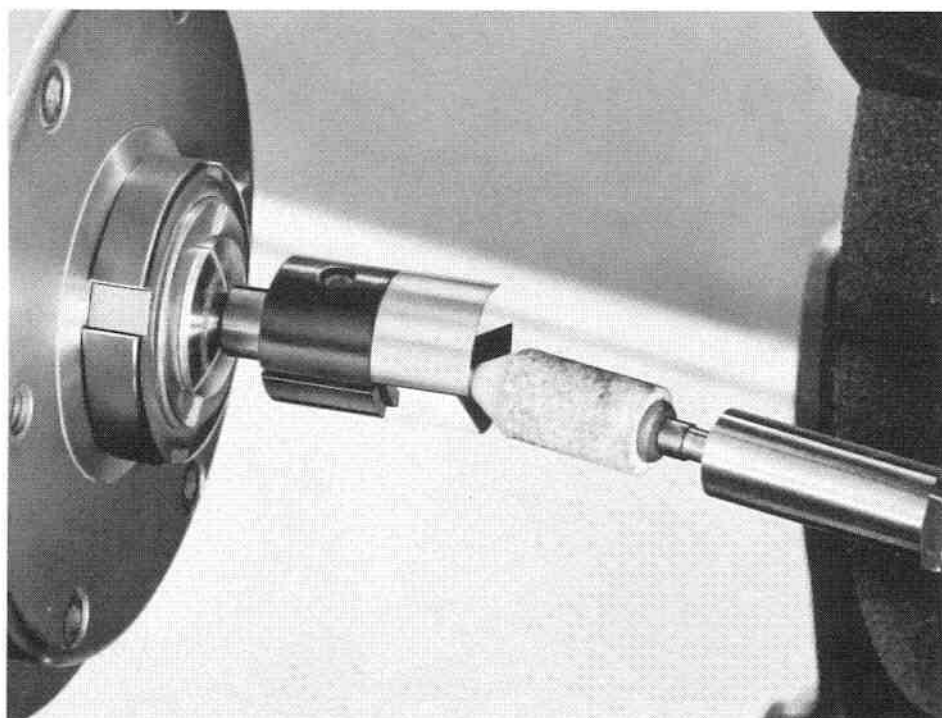
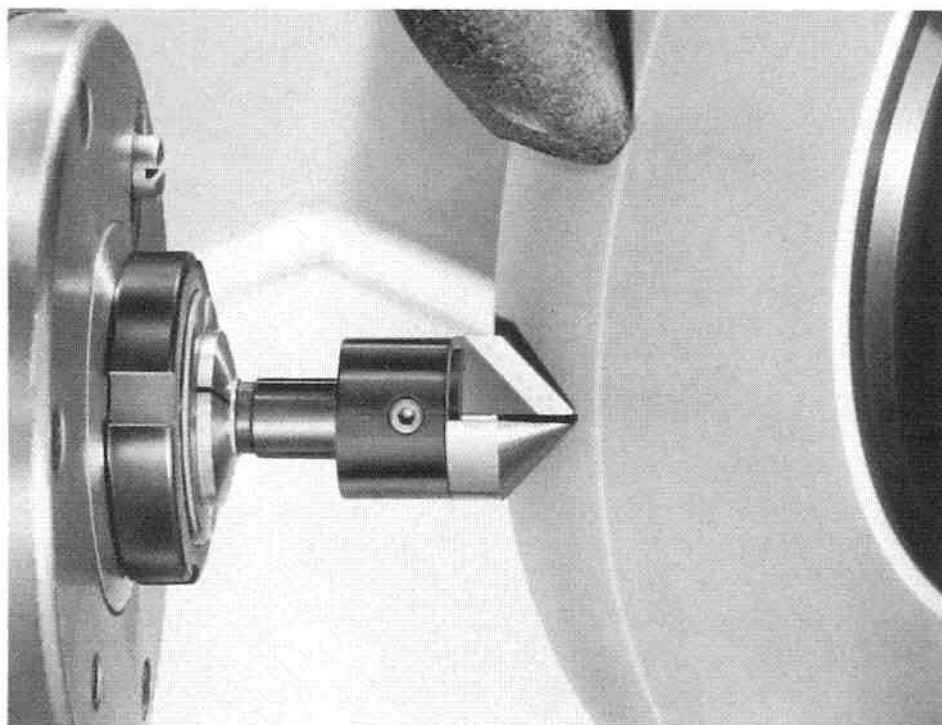


- Effortless and clean countersinking without chatter for all materials due to adjustable backoff angle
- Cost saving and problemfree regrinding by simple cylindrical grinding. No special grinding machine for re-sharpening
- Cutterhead made of top quality high-speed steel
- From 1½" dia with interchangeable cutters for use as countersink and external deburring attachment or tube trimmer. All cutters available with different cutting angles
- Big savings with the first set of cutters already



1. Countersink released, in zero position
2. Countersink tightened, ready to cut

The two cone sections are brought together by tightening the adjusting screw. In released condition, the tool will not cut as it is a simple cone. Clearance angle "A" is determined by tightening the screw, thus decreasing diameter "B" and creating a cutting edge. Diameter "C", of course, remains unchanged.



1. Re-sharpening countersink
2. Re-sharpening external deburring tool

Simply release the adjusting screw so that diameter "B" equals diameter "C" (see illustration). Then grind as you would a lathe center. For the O.D. tool shown below, reverse the procedure by tightening the adjusting screw and circular grind.

Chart showing the sizes of strain washers to use for re-sharpening:
(Available sizes are shown in the price list)

Diameter of countersink	Washer for countersink
$\frac{1}{8}$ inches	0,016"
$\frac{1}{4}$ inches	0,020"
$\frac{5}{16}$ inches	0,032"
$\frac{3}{8}$ inches	0,032"
$\frac{1}{2}$ inches	0,040"
$\frac{5}{8}$ inches	0,047"
1 inches	0,060"
$1\frac{1}{2}$ inches	0,060"
$1\frac{3}{4}$ inches	0,080"
2 inches	0,100"
$2\frac{1}{2}$ inches	0,100"
3 inches	0,120"
4 inches	0,120"

For external deburring tools up to $\frac{5}{8}$ " dia the ring is 0,01" thinner, and from 1" dia on up to 3" the ring is 0,012" thinner than the values given in the table above.

Chip breakers:

For use on cast iron, brass, bronze or other materials forming short chips we recommend a countersink without a chip breaker.

If nothing else specified, all countersinks will be delivered with chip breakers.

Lubricants:

If the right lubricant is used the cutting edges will last a long time.

When ordering, please specify:

1. Quantity
2. Head-diameter
3. Cutting angle
4. Shank
5. With or without chip breaker

Special angles, shanks and sizes up to 4" diameter on request



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