

Diagram of the handle assembly. A thumb screw is inserted into the handle, and a groove pin is used to secure the handle to the frame.

Labels:

- $\frac{1}{2}$ " - 20 x $\frac{1}{2}$ " THUMB SCR.
- $\frac{3}{16}$ " x $\frac{3}{4}$ " GROOV PIN



Order all repair parts by **PART NUMBER** and **NAME**. Standard parts, such as screws, nuts and washers, shown without part numbers, should be purchased locally.

ATLAS PRESS COMPANY
KALAMAZOO, MICHIGAN, U. S. A.

Atlas No. 2915

DRILL GRINDING ATTACHMENT



ATLAS PRESS COMPANY

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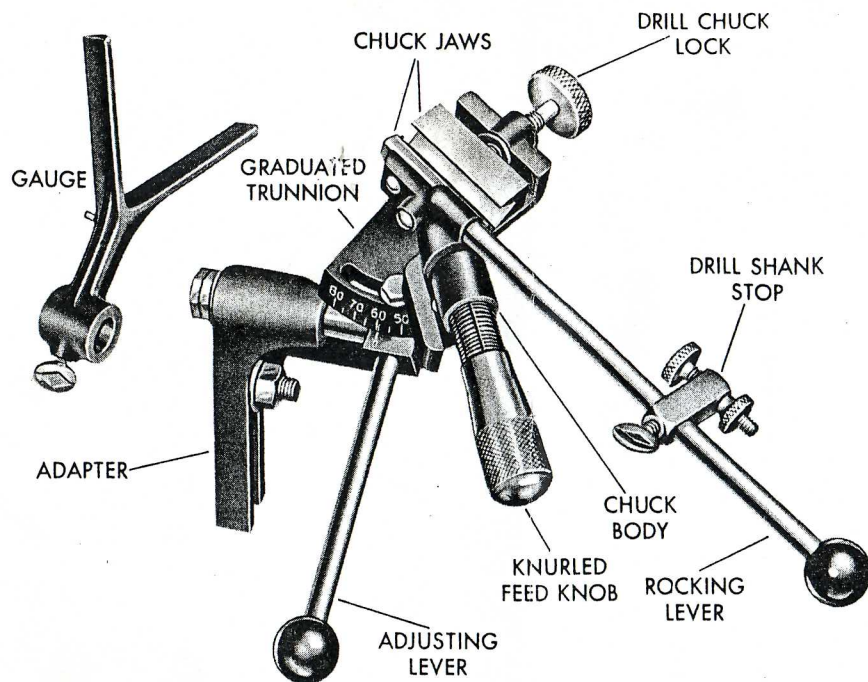


Fig. 1 Parts of the Drill Grinding Attachment.

WHEELS FOR DRILL GRINDING

The grit of the wheel for drill grinding should be about No. 60, and the grade medium hard. Straight wheels may be used, but their sides must be flat, not tapered or bowed. Recessed wheels give the best results — they are designed especially for sharpening, have less surface to dress than the straight wheel, and so have a longer service life.



Fig. 2 The best wheel for drill grinding is the recessed wheel.

MOUNTING INSTRUCTIONS

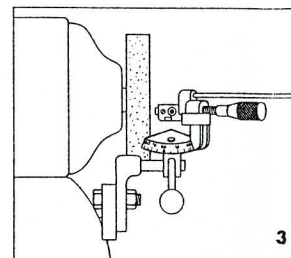


Fig. 3 Drill grinding attachment mounted on the hand rest bracket.

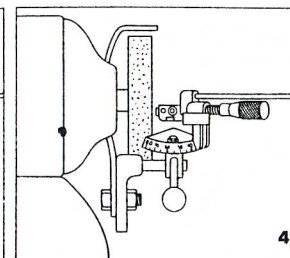


Fig. 4 Drill grinding attachment mounted to wheel guard.

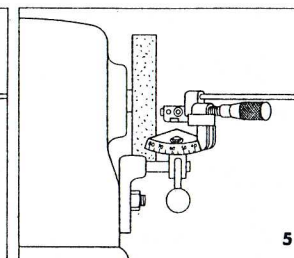


Fig. 5 Attachment mounted on grinder frame. To mount, drill hole in frame and fasten adapter with bolt or stud.

This attachment can be adapted to your grinder by one or more of the methods shown in the illustrations above and right. On most grinders the tool rest bracket provides a mounting spot. Remove the rest, and mount the attachment on the bracket (Fig. 3) or on the side of wheel guard (Fig. 4). If these methods are not usable, follow recommendations shown in Figure 5 or 6.

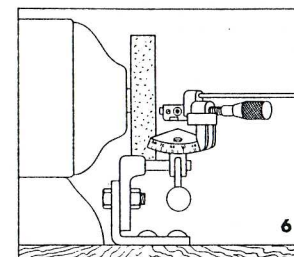
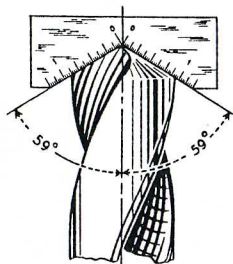


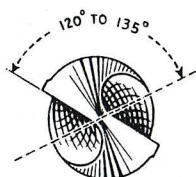
Fig. 6 If the attachment cannot be mounted as shown in Figure 3, 4, or 5, mount it on an angle bracket that is bolted to the bench.

THE PROPERLY GROUND DRILL



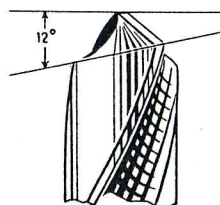
1. LIPS IDENTICAL

The two cutting lips must be equal in length and angle. Otherwise one lip does all the cutting, cuts unevenly and dulls quickly. Center of point must be at true center — if it isn't you'll drill an oversized hole. For most purposes an angle of 59° is best. Make this angle greater for soft metals, shallower for hard steels (see page 7).



2. PROPER ANGLE BETWEEN POINT AND LIP

A view directly into the drill point showing the proper angle between point and lip. This angle must be between 120° and 135° in order to provide correct lip clearance at the center of the drill.



3. PROPER LIP CLEARANCE

Another view of the point, showing the proper lip clearance at the circumference of the drill. For effective drilling this angle must be between 12° and 15°. Too much clearance weakens the point, causes chipping and rapid wear. Too little clearance makes the drill cut slowly, and requires greater power.

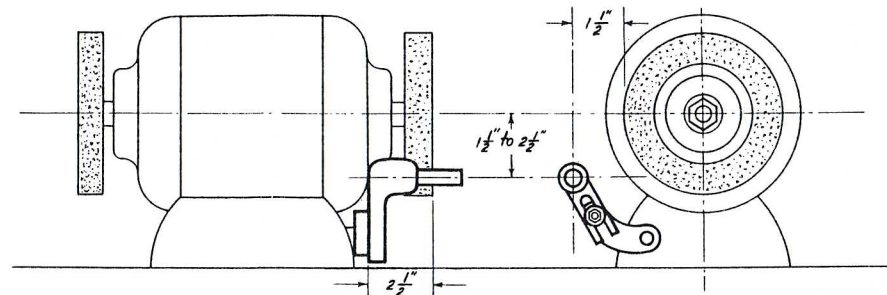


Fig. 7 The adapter shaft must be positioned according to dimensions shown above.

To mount the attachment, proceed as follows —

The attachment will grind drills accurately only if it is properly mounted.

- The adapter shaft must be parallel, both horizontally and vertically, with the grinder spindle.
- The adapter shaft must be placed so that a drill mounted in the attachment will be approximately on the horizontal center line of the wheel. Figure 7 shows the approximate position of this shaft.

STEP 1

Remove right hand rest and wheel guard cover from grinder. Check wheel, see WHEELS FOR DRILL GRINDING, page 3.

STEP 2

Remove drill grinding attachment from adapter. Mount adapter on grinder or on a mounting fixture. See Figure 7 for location of adapter.

STEP 3

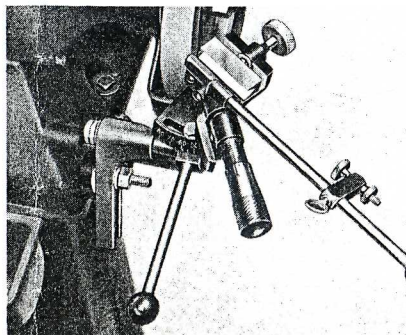
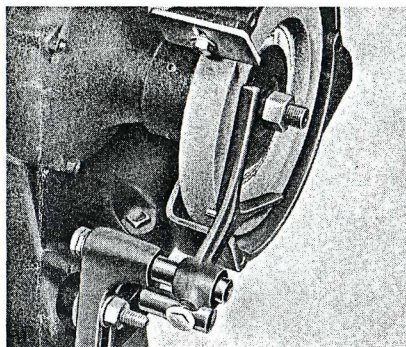
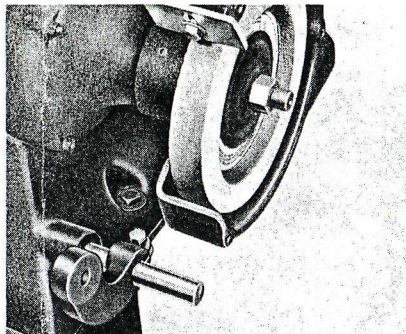
To align adapter shaft with grinder spindle —

- Slide gauge onto adapter shaft with finished faces of V-prongs towards wheel.
- Adjust gauge so that its faces fit flat against side of wheel, and pin against the outside of the wheel. GAUGE SHOULD NOT TOUCH ADAPTER BRACKET.
- Shaft is parallel if V-prongs fit flat against wheel. If gauge doesn't fit, file, grind or shim the surface that the adapter is fastened to.

STEP 4

Slide the attachment onto the bracket. The attachment is now properly mounted for sharpening drill.

**To Insure Accuracy,
Dress the Wheel Before
Sharpening Drills**



DRESSING THE WHEEL

To obtain best results keep grinding wheel true. Frequent dressing with a diamond point will be well repaid in an accurately and properly ground drill.

How to dress the wheel —

1. Swing graduated trunnion to end of slot, beyond the 80 degree mark, and clamp in place with lock screw — see Figure 8.
2. Turn knurled feed knob to left until chuck body rests against cylinder on trunnion.
3. Fasten diamond tool in drill chuck.
4. Raise rocking lever and position attachment so that diamond point clears wheel about $\frac{1}{8}$ ". Clamp in this position.
5. Chalk the side of the grinding wheel.
6. Start the grinder, and with rocking lever held in its highest position, feed diamond dresser up to wheel with feed knob.
7. Slowly swing adjusting lever back and forth, taking light cuts across the wheel until chalk is removed. Wheel is now properly dressed.

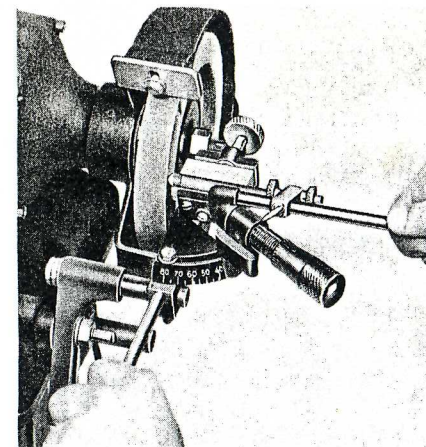
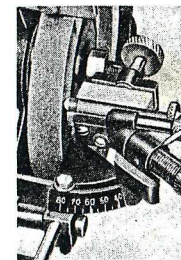


Fig. 8 (Above)
Dressing a wheel
using a diamond
tool mounted in
the drill grinding
attachment.



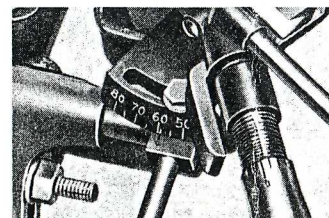
(Right) When
dressing wheel, be
sure trunnion is positioned at end of
slot.

GRINDING DRILLS

Broken drills should be ground to approximate shape by hand before sharpening drills in the attachment.

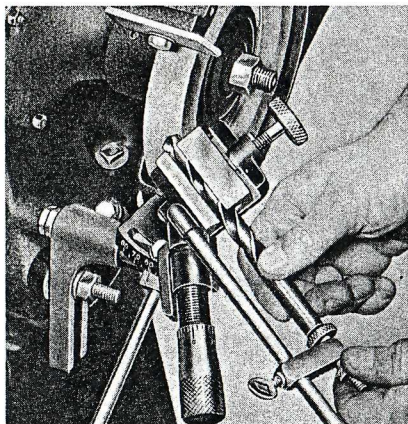
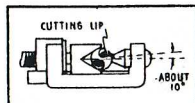
Before sharpening drills be sure wheel is true — dress if necessary.

Drill capacity, between $\frac{3}{32}$ " and $\frac{5}{8}$ " in diameter.

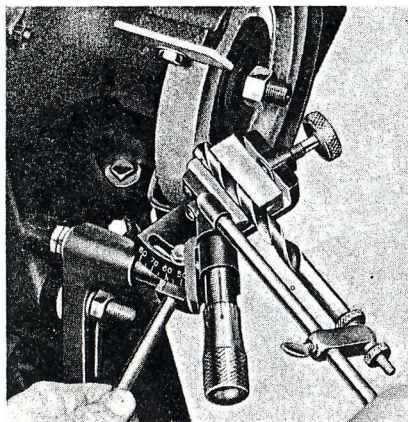


1. Set trunnion for correct drill angle — this is 59° for twist drills and is marked on the scale. The standard countersink angle for flat head wood and machine screws is 82° included — this is marked at 41° on the scale.

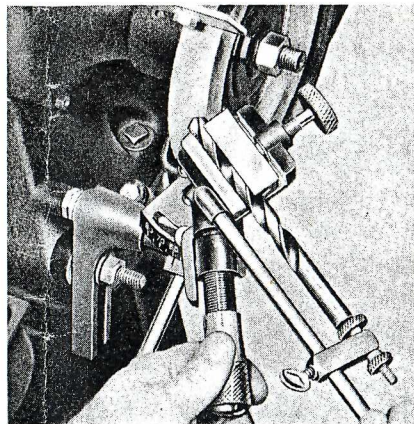
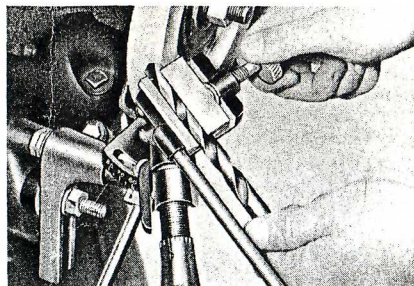
2. Put drill in chuck so that lip of drill is under the stop pin at end of rigid jaw. Turn drill until edge of cutting lip to be ground is at an angle of about 10° with horizontal chuck surface. Clamp in this position.



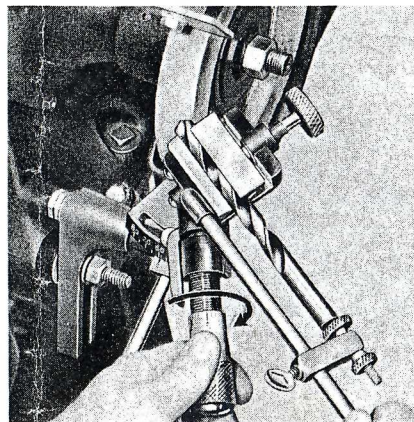
3. Slide drill shank stop along rocking lever until it touches the end of the drill shank. Make final adjustment with knurled adjusting screw, and lock the stop in place. In case of short or broken drills use a spacer pin behind drill.



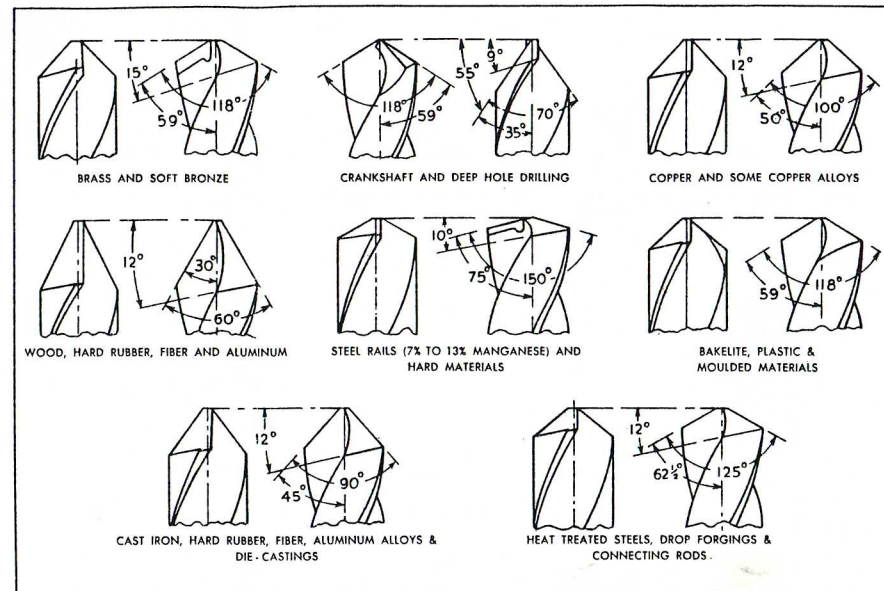
5. Start grinder; raise adjusting lever until drill is opposite faced surface of wheel. **IMPORTANT** — Position small drills near outside edge of wheel to prevent wheel from striking chuck jaw.



4. Turn feed knob to left until cylinder on chuck touches cylinder on trunnion. Slide the attachment along mounting shaft until drill is about 1/8" from face of grinding wheel. Then clamp the attachment securely.



6. Rock the drill slowly with rocking lever, at the same time turning feed knob to right until sparks appear. Continue to rock and feed until 10° angle of cutting lip (Step 2) is



DRILL POINTS RECOMMENDED FOR SPECIAL WORK.

reduced to zero, or until the drill lip is sharp.

For greater lip clearance, stop grinding when edge of cutting lip is still at a slight angle with chuck surface.

7. Note the number on the feed sleeve and turn back exactly one turn.

8. Push adjusting lever to raise the drill away from the wheel.

9. Unlock chuck and turn drill one-half turn. **Caution:** Accurate sharpening depends on exactly reversing drill position as set in steps 2 and 3 — be sure other lip rests on stop pin and end of shank remains against shank stop. Reclamp the drill while holding it securely in position.

10. Rock the drill as in Step 6, and slowly turn the feed knob to the same graduation reached in grinding the first lip.

IF DRILL IS NOT SHARPENED PROPERLY —

1. Use the set-up gauge to recheck the alignment of the adapter shaft.
2. Dress grinding wheel.
3. Check alignment of the chuck jaws — loosen screw that holds stationary jaw in place, and bring sliding jaw snugly up against the stationary jaw. Then tighten lock screw securely.