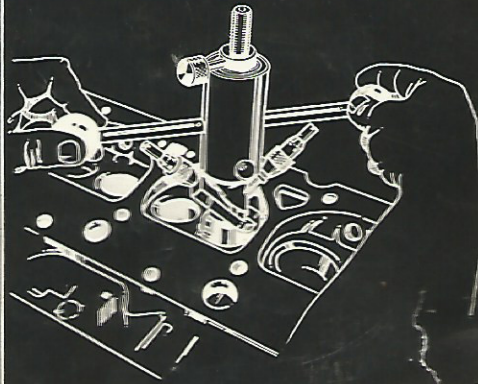


# UNIVERSAL VALVE SEAT CUTTER

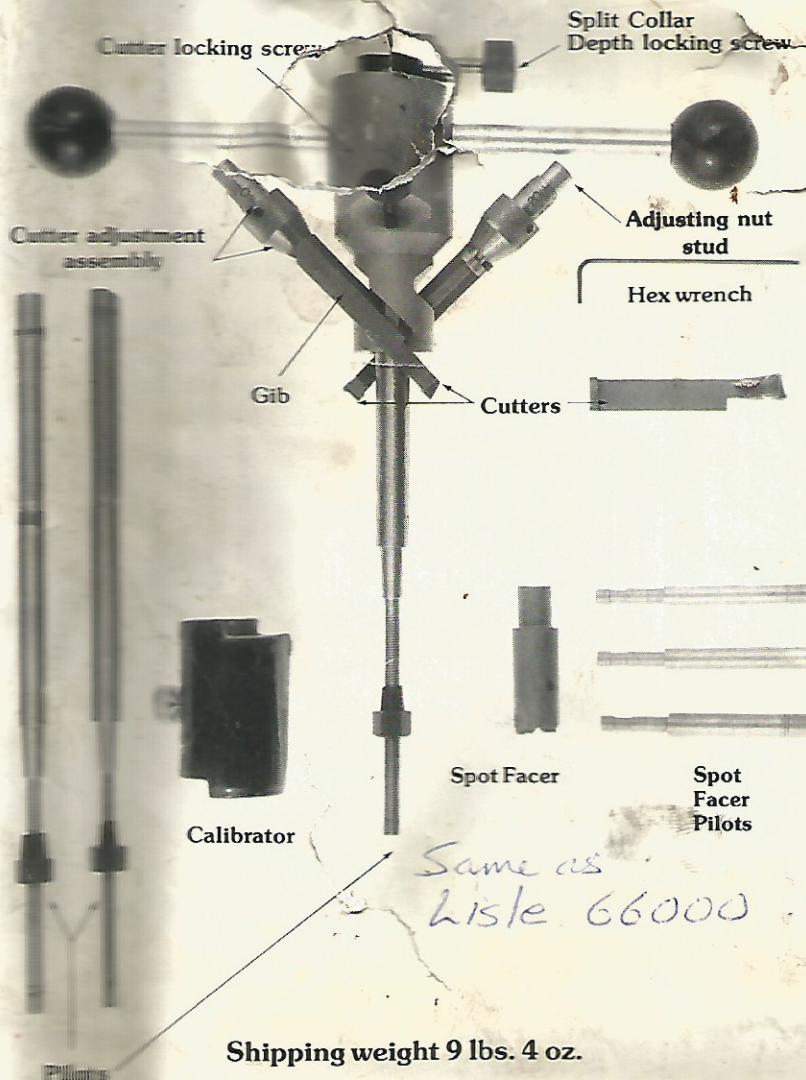
An accurate, low cost hand tool that cuts new seats in minutes!

Fast, because carbide cutters cut all three seat angles at once!

This tool will cut virtually all foreign and domestic auto and truck valve seats with 30° or 45° angles. Range up to 2½". You measure the valve face diameter, set the tool micrometer to this setting and cut the new seats to the exact size. Adjustable cutters eliminate the need for grinding stones, multiple cutter sets and other accessories.



There are three tapered pilots included in the tool set. The ranges go from .242" to .452" (6.2 mm - 11.4 mm). This covers most valve guides.



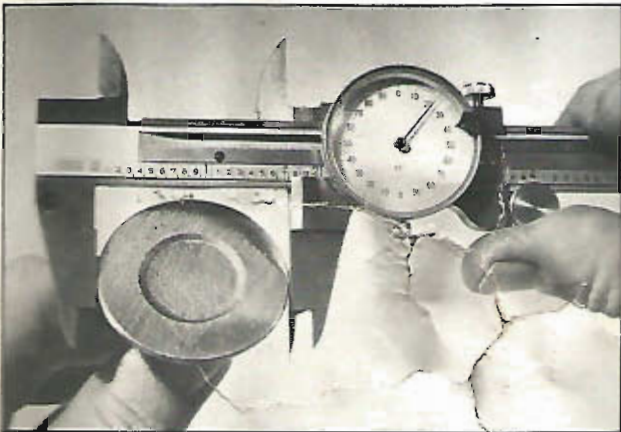
## PARTS LIST:

- Hex Wrench
- Depth Locking Screw
- Cutter Locking Screw
- Gib
- 60 Cutter
- 30 Cutter
- 45 Cutter
- Set Screw
- Adjusting Nut Stud
- Calibrator
- Cutter Adjustment Assy.
- .242"-.320" Tapered Pilot
- .308"-.386" Tapered Pilot
- .372"-.452" Tapered Pilot
- Spot Facer
- 5/16" Spot Facer Pilot
- 11/32" Spot Facer Pilot
- 3/8" Spot Facer Pilot

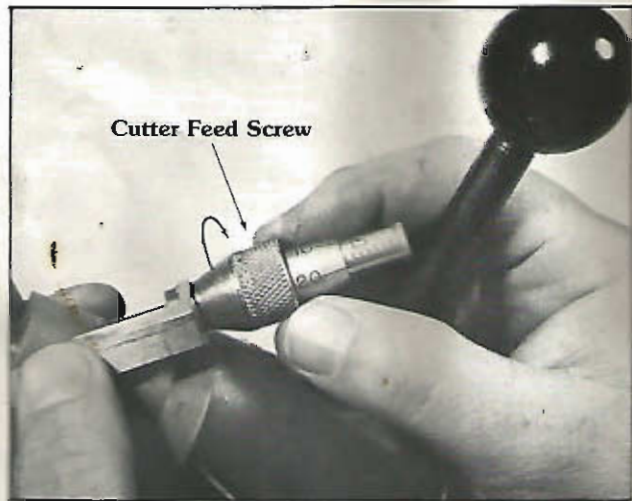
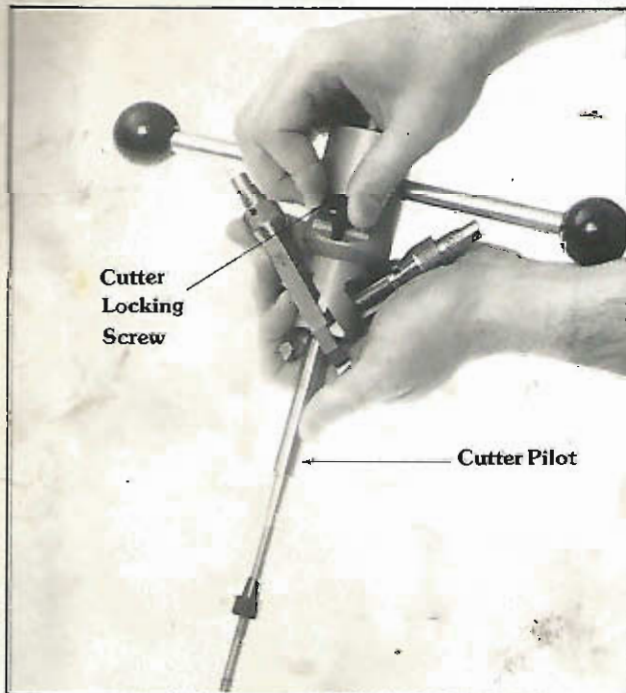
Shipping weight 9 lbs. 4 oz.



1. Spot facing is only required for integral valve guides. Select proper spot facer pilot. Install spot facer pilot and spot facer in drill. Spot face top of valve guide to assure that the cutter pilot will fit squarely against it.



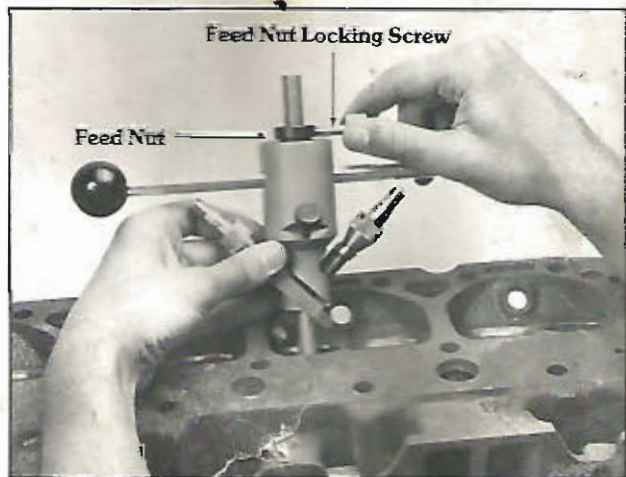
2. Measure valve face diameter or refer to service manual to determine proper diameter.



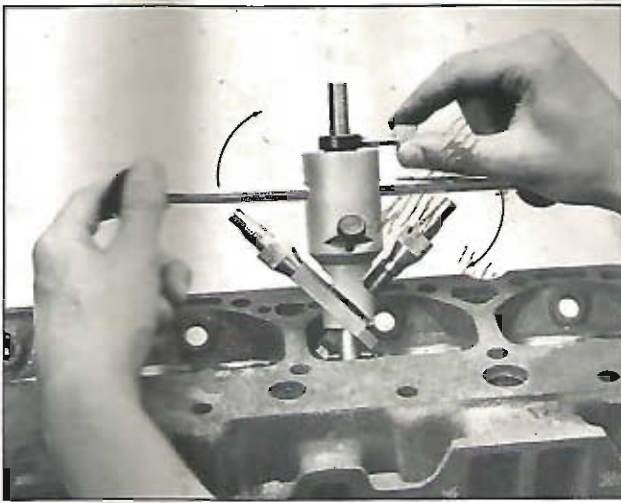
4. Set micrometer cutter adjustment to measurement of valve diameter. Always turn cutter feed screw in a clockwise direction when making the final cutter setting. This should be done on both cutters. Retighten cutter locking screws.



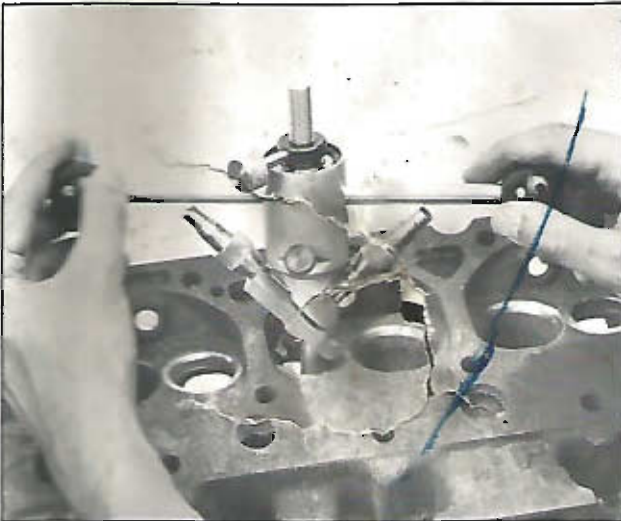
5. Install tool on the head by inserting cutter pilot through valve guide. **DO NOT** allow cutters to contact seat surface. Secure cutter pilot by placing tapered hex nut on bottom threads of pilot and tightening.



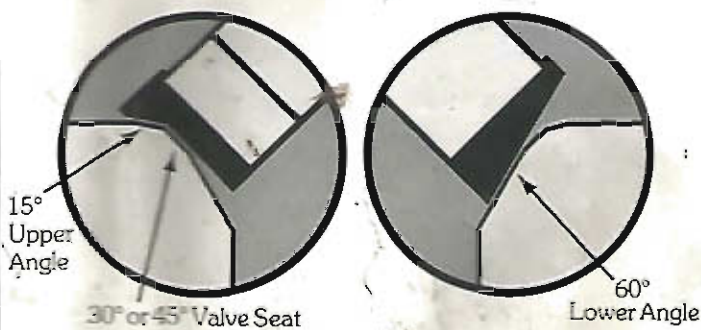
6. Loosen feed nut locking screw and feed cutter



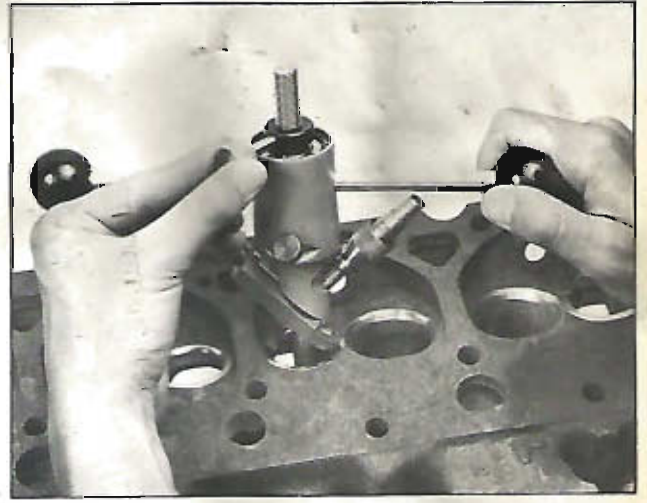
7. Cut seat by rotating tool in a clockwise direction only: depth of this cut is controlled by turning feed nut approximately  $\frac{1}{8}$  turn at a time. Important: Retighten locking screw after each adjustment. Note: Finish may be improved by using alcohol while cutting.



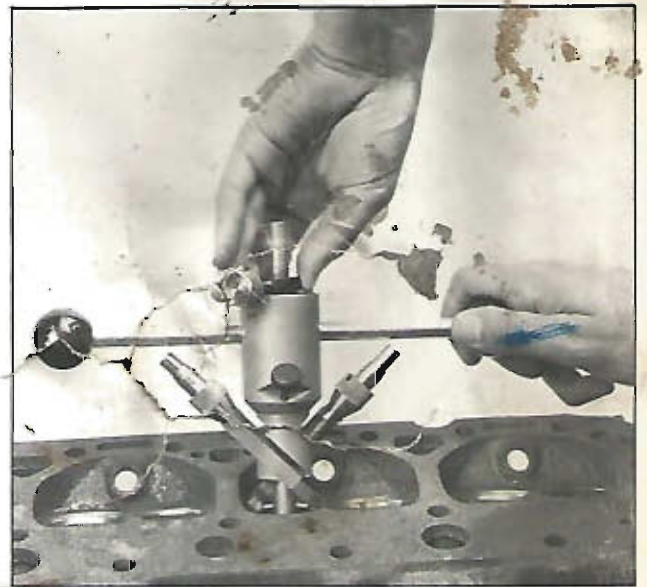
8. After each advancement of the feed nut, continue rotating tool in a clockwise direction until it turns freely. After each cut, stop the tool at a different position to assure a smooth finish. Never turn tool backwards as damage to the cutter may result.



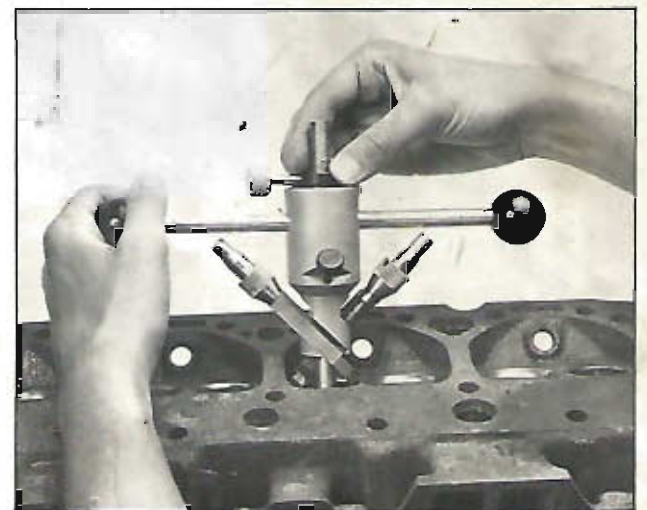
## VALVE SEAT



9. Continue cutting and feeding until seat is renewed. At this point leave locking screw tight and continue rotating tool until desired finish is obtained.



10. To remove tool, loosen feed nut locking screw. Turn tool clockwise and turn feed nut counter clockwise until cutters are clear of seat.



11. Continue rotating the feed nut a few turns counter clockwise to prevent damage when installing in next guide.

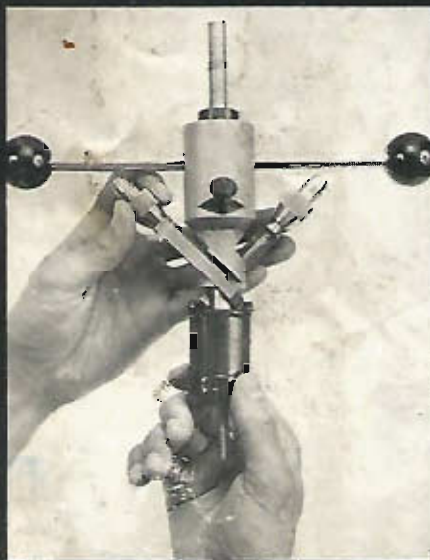
# CALIBRATION:

The tool is calibrated at the factory with the 45 degree cutter installed. Recalibration will be necessary when changing to the 30 degree cutter or when cutters are replaced. The calibrator body is a facsimile of valve seats for a 1½" diameter valve. (45° on one end — 30° on the other).

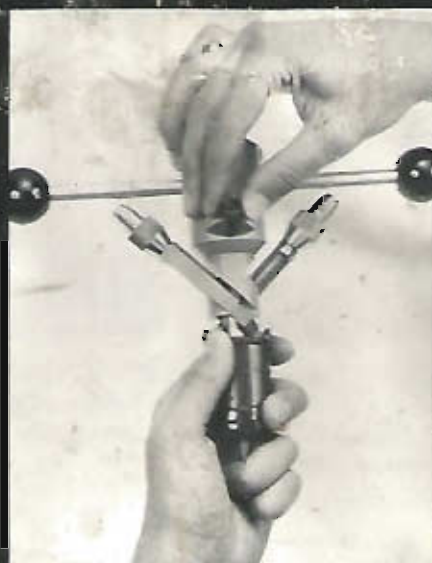
The tool is set to produce a 1/16" seat. If another width is desired, set the cutter micrometers to the desired seat width.



1. Install the pilot in the tool and insert calibrating gauge on the pilot with the desired angle (30° to 45°) on the gauge facing the cutters.



2. Loosen cutter locking screws. Adjust the two-angle cutter first. Adjust cutter until apex of the cutter edge is aligned with the sharp top edge of the calibrator. (See diagram)



3. Lock calibrator locking screw. Now rotate tool on guide pilot to insure the two-angle cutter blades barely touch the calibrator. Lock cutter locking screw on 2 angle cutter.



4. Feed 60° cutter on tool downward until it touches the calibrator. Tighten locking screw.

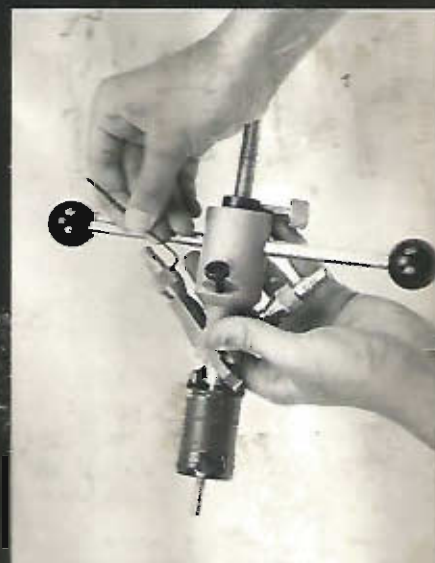
15° Upper Angle



30° or 45°  
Valve Seat



60°  
Lower Angle



5. Loosen set screw on the cutter micrometers.



6. Adjust micrometer barrels until a reading of 1/16" is obtained. Tighten micrometer set screws. Tool is now calibrated with a 1/16" seat diameter as the measuring point.