

Name \_\_\_\_\_

## Lab # 4 -- Tool Sharpening

### Description:

Tool maintenance is an on-going shop task. Keeping cutting tools sharp is part of shop maintenance. Dull tools do not operate correctly and may be a hazard. In this lab you will sharpen two of the most common tools, a twist drill and a plane iron.

### Materials:

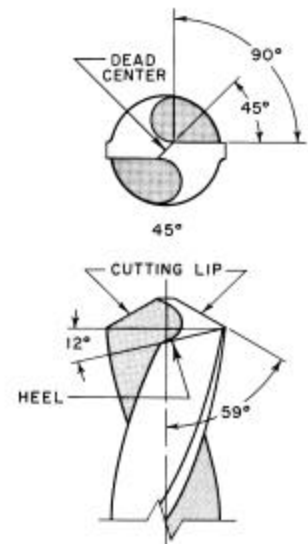
- 1 - 5/8" to 3/4" twist drill
- 1 - Plane iron or equivalent

### Tools:

- Sharpening gauge (from previous lab)
- Grinder
- Water can (for cooling)
- Stone Dresser (as needed)
- Combination Square (to check stone)
- Whet Stone
- Light machine oil
- Rags

### Directions:

1. Check the grinder stone. True if necessary.
1. Sharpen the provided twist drill. Standard angles are shown in the sketch to the right.
2. Treat the provided material as a plane iron. Sharpen one end to the standard angle shown below. Finish your work with a whetstone. The finished edge should be straight, square with the side, and hollow ground.
3. Turn in this sheet with your sharpened tools.



Name: \_\_\_\_\_

Grading:

Criteria	Possible Points	Score
<b>Twist Drill</b>		
Lip Angle	3	
Clearance/Relief Angle	3	
Point Angle	3	
Cutting Lips Equal Length	3	
Work Kept Cool	3	
Craftsmanship/Grinder Finish	3	
<b>Plain Iron</b>		
25° Blade Angle	3	
Cutting Edge Straight & Square	3	
Work Kept Cool	3	
Final Whetting & Craftsmanship	3	
<b>TOTAL</b>	30	