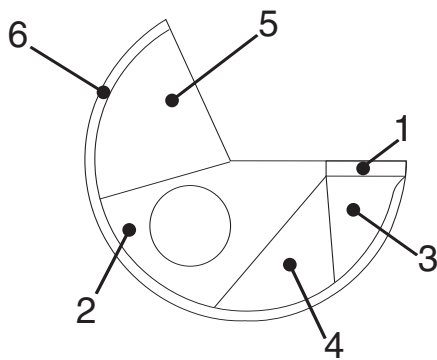


# Instructions for **Accu-Finish**<sup>®</sup> GUN DRILL Sharpening Fixture



1. Remove the standard Accu-Finish tool guide and mount the slotted guide plate on the table. Align zero mark and tighten the flat head screw.
2. Clamp the drill in the holder block. Be sure the drill is level.
3. Sharpen drill using the sequence below. If drill is slightly dull, it may require only #1 in the sequence. **Note:** The angles shown will work in many applications. Modify angles as needed; but use the recommended sharpening sequence. Consult drill manufacturer for recommendations of angles based on materials and specific applications.

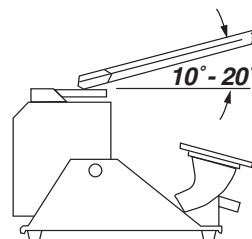
## Sharpening Sequence 1 → 2 → 3 → 4 → 5 → 6

		SLOT ANGLE FOR		
		3/4 Round	1/2 Round	LEFT ↔ RIGHT
	<b>1. Primary Relief</b>	12° Down	30° Left	<b>Comments</b> Grind until wear is removed from cutting edge. Use fine wheel or ceramic lap for finishing. Grind "Y" slightly long because step 3 will shorten it. Maintain D/4 (.25 times drill diameter) or as specified by drill supplier. Use caliper or calibrated magnifier to measure. Some applications may use other values such as D/3. Maintain "Y" of .01"-.03" (0,2-0,8mm) or as specified by drill manufacturer. Grind until triangle just reaches the bottom of the primary relief ground in step 1.
	<b>2. Inner Relief</b>	12° Down	20° Right	
	<b>3. Secondary Relief</b>	20° Down	30° Left	
	<b>4. Front Clearance</b>	25° Down	0° Center	
	<b>5. Oil Clearance</b>	<b>IMPORTANT!</b> 25° Down	20° Right	
		<b>SKIP STEP 5</b>		

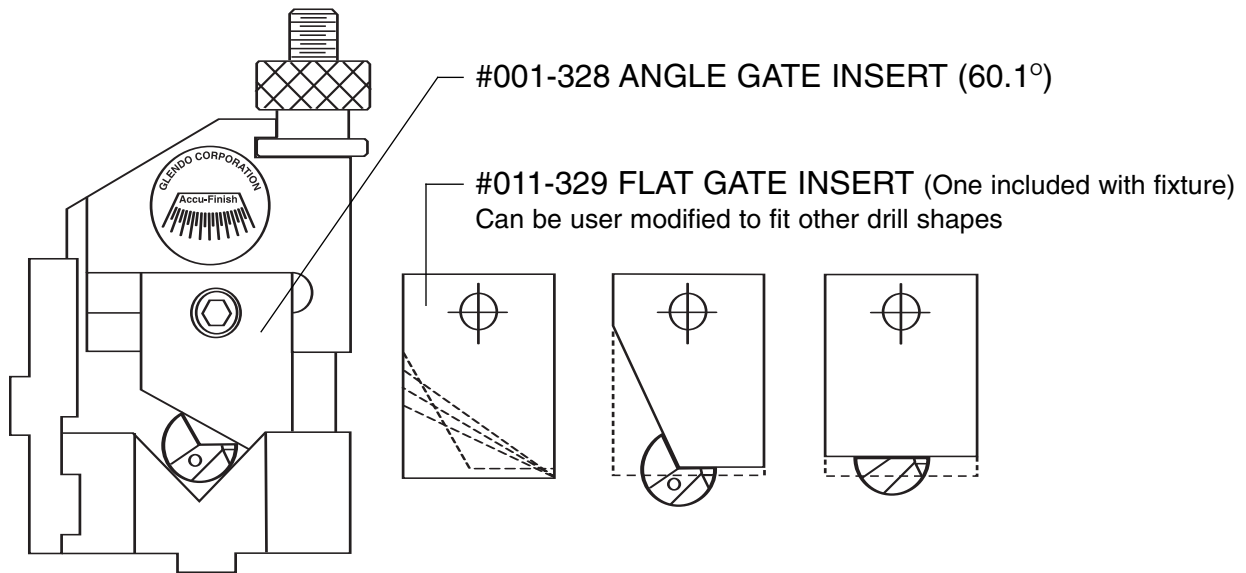


### 6. Chamfer

Rotate Wheel to horizontal position



Remove drill from holder. Hand rotate to chamfer the periphery at 10°-20° from the drill axis or as specified by drill supplier. The width of chamfer is normally about the same as the "Y" of Step 1. Chamfer should NOT enter the primary relief. Diamond files (#001-714) are also useful for chamfering.



## Gun Drill Sharpening Tips

- Resharpen before the cutting edge breaks or chips. After the drill dulls, wear will rapidly accelerate. Pushing a dull drill by trying to make a few more parts can make resharpening much more difficult or even ruin the drill.
- The length and angle of the primary relief (D/4 dimension) can change the drilling characteristics. In some applications, D/3 works better than D/4. Consult the drill supplier's technical information on this subject.
- **Wheel Recommendations:**  
Roughing: 360 "Gator" Diamond (# 001-234)  
Finishing: 600 Diamond (# 001-235)  
Polishing: Ceramic Lap charged with spray diamond. (LAP #001-671, spray diamond #002-754)

**NOTE:** Polishing the primary relief with the ceramic lap can extend drill life up to 300% and improve hole quality. For heavier roughing, try 180 "Gator" Diamond Wheel (#001-387).

- **Primary Relief:**

Follow drill supplier's specifications. If this is not available, grind "Y" in step 1 to:  
.010" - .020" for drill diameters .100" - .200"  
.020" - .030" for drill diameters .200" - .400"  
.030" - .040" for drill diameters .400" - .700"

- **Wheel Rotation:**

Grind most surfaces with the wheel rotating from top to bottom of the drill (this automatically holds the drill down on the table). If chatter (vibration) occurs during sharpening, reverse the rotation. This requires holding the drill firmly on the table, but will stop the chatter. The cutting edge will NOT be hurt by this reversed wheel rotation due to the special low speed Accu-Finish grinding process.

# Accu-Finish®

Mfg. by: **Glendo Corporation**  
900 Overlander Road  
Emporia, Kansas 66801 USA