

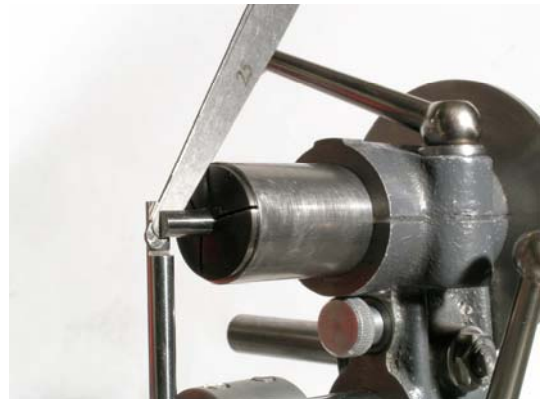
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In Six Steps to the Perfect Drill with the QUORN Tool and Cutter Grinder

1. Setting the distance between the axes of drill and rotary table

The drill's axis has to be positioned the distance X_A in front of the table's axis. With the drill diameter D_D it is:

$$X_A = a \cdot D_D$$



2. Mounting the drill and setting the tip's distance to the table axis

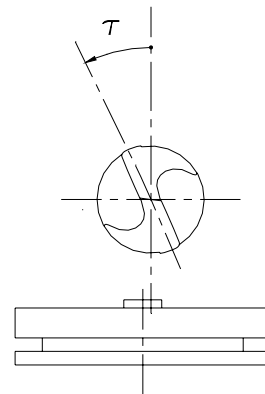
The drill is mounted in the tool holder and then the distance from the table axis to the tip in direction to the wheel must be:

$$X_T = t \cdot D_D$$



3. Alignment of the lips and setting the drill's angular position

The lips are aligned parallel to a plane perpendicular to the rotary table. Then the drill has to be turned the angle τ counter clockwise with view onto the tip.



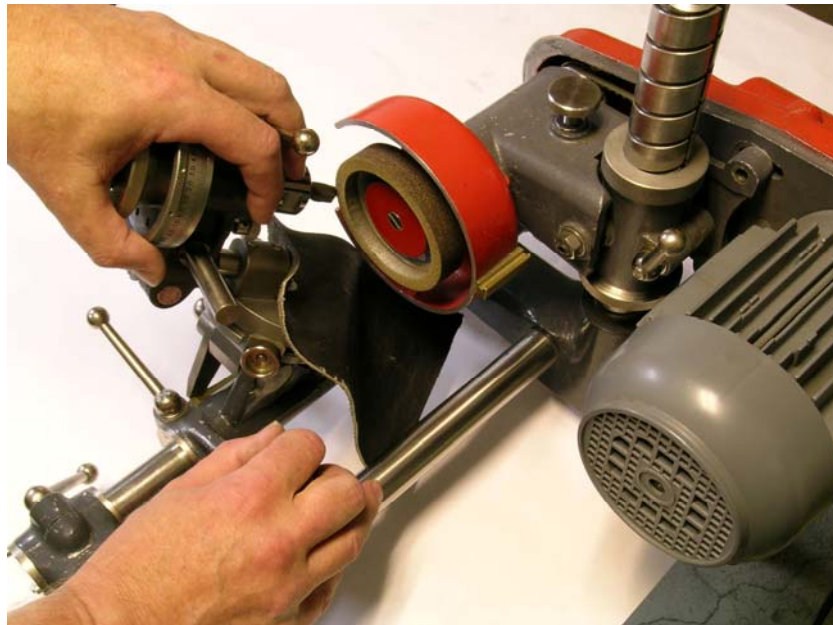
4. Setting the tilting bracket

The tilting bracket is set to $\rho = 31 \text{ Deg}$.



5. Grinding the two lips

Both lips are ground to the same setting of the front bar by swinging the rotary table. The rocking lever must be firmly pressed to the rear bar.



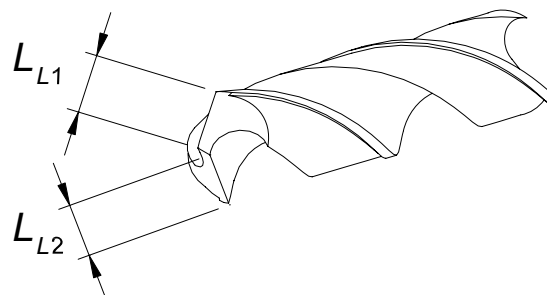
6. Measuring and in case correcting the length of the lips

The lips' lengths are measured. If there is any difference ΔL the shorter lip is ground again and brought closer to the wheel; the additional movement of the front bar for this correction is:

$$X_{LC} = c_L \cdot \Delta L$$

with the absolute value:

$$\Delta L = |L_{L1} - L_{L2}|$$



Setting Parameters

Drill Diameter D_D 1...2.5 mm			Example: $D_D = 1\text{ mm}$
Parameter	Symbol	Value	
Axial Distance	a	0.40	$X_A = 0.4\text{ mm}$
Tip Distance	t	1.70	$X_T = 1.7\text{ mm}$
Drill Angle	τ	12 Deg.	
Lip Correction	c_L	0.37	

Drill Diameter D_D 2.5...4 mm			Example: $D_D = 3\text{ mm}$
Parameter	Symbol	Value	
Axial Distance	a	0.30	$X_A = 0.9\text{ mm}$
Tip Distance	t	1.50	$X_T = 4.5\text{ mm}$
Drill Angle	τ	15 Deg.	
Lip Correction	c_L	0.37	

Drill Diameter D_D 4...6 mm			Example: $D_D = 5\text{ mm}$
Parameter	Symbol	Value	
Axial Distance	a	0.2	$X_A = 1.0\text{ mm}$
Tip Distance	t	1.40	$X_T = 7.0\text{ mm}$
Drill Angle	τ	20 Deg.	
Lip Correction	c_L	0.37	

Drill Diameter $D_D >6\text{ mm}$			Example: $D_D = 10\text{ mm}$
Parameter	Symbol	Value	
Axial Distance	a	0.12	$X_A = 1.2\text{ mm}$
Tip Distance	t	1.20	$X_T = 12.0\text{ mm}$
Drill Angle	τ	25 Deg.	
Lip Correction	c_L	0.36	