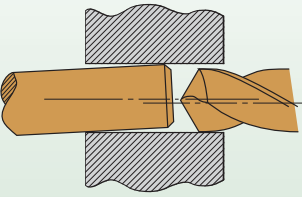
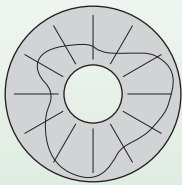
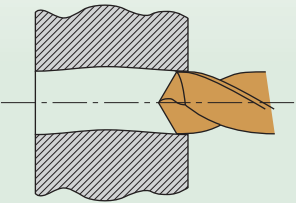


problem	source	solution
hole too big 	cutting conditions	Check cutting values, increase cutting speed, or reduce feed.
	clamping chuck	Check clamping accuracy and torque transmission. Use hydraulic clamping chuck or high-precision chucking system.
	wrong drill	Check drill diameter. Please note that drills are ground to a positive tolerance. Check concentric running.
hole too small 	insufficient coolant	Check cooling lubricant. In the case of internal coolant supply, increase coolant pressure. In the case of external coolant supply, adjust positioning of coolant jet. Cool from both sides.
	cutting conditions	Decrease feed; increase speed.
	wrong drill	Check cutting-edge diameter.
hole not cylindrical 	clamping chuck	Check clamping accuracy and torque transmission. Use hydraulic clamping chuck or high-precision chucking system.
	workpiece movement	Stabilise workpiece chucking and check stability of machine tool.
	wrong drill	Check drill type and drilling depth. Use longer drills.
	cutting conditions	Reduce feed at entry.