
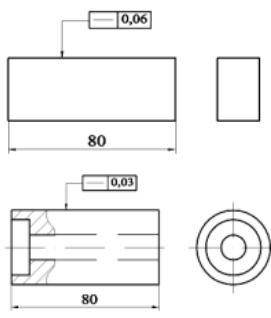

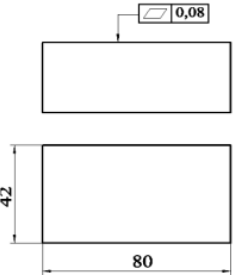

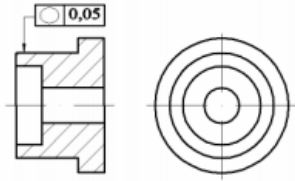
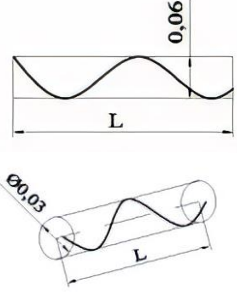
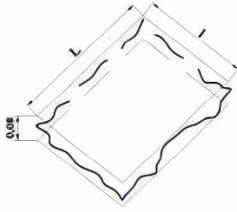
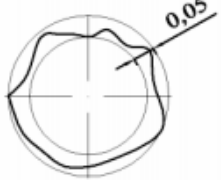

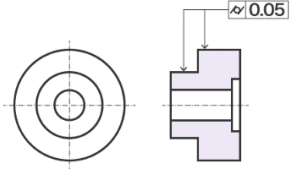
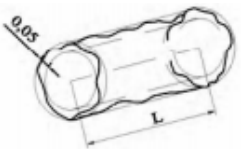

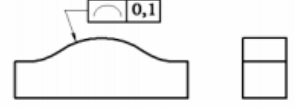


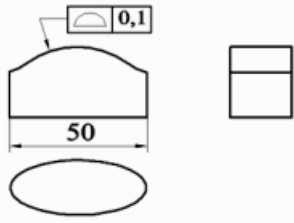
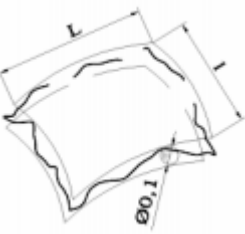



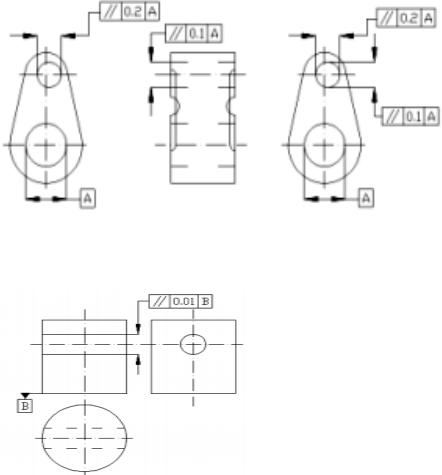
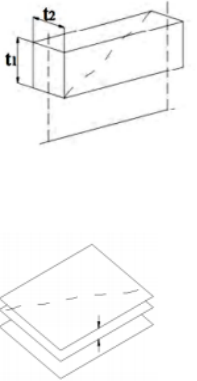
Geometric characteristic symbols	Symbolization on drawing	Explanation
Tolerances of form		
	<p>Straightness</p>	 <p>At all points across L=80 mm the surface curve must lie between two parallel lines spaced max t=0,06 mm</p>
	<p>Flatness</p>	 <p>The tolerance surface must be located between two parallel planes spaced apart a distance of t=0,08 mm</p>
	<p>Circularity</p>	 <p>The circumferential line must lie between two concentric circles spaced at a distance t=0,05 mm in each point of the length</p>
		

	<p>Cylindricity</p>	 <p>The shell surface of the cylinder must lie between two coaxial cylinders, which are spaced at a radial distance $t=0,05$ mm</p>	
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	<p>Profile of line</p>	 <p>The profile line must lie between two enveloping lines, whose gap is bounded by circles of diameter $t=0,05$ mm in each point of the workpiece thickness.</p>	
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	<p>Profile of surface</p>	 <p>The surface of the sphere must lie between two enveloping surfaces, whose gap $t=0,1$ mm is created by spheres.</p>	
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Orientation tolerances

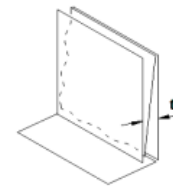
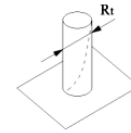
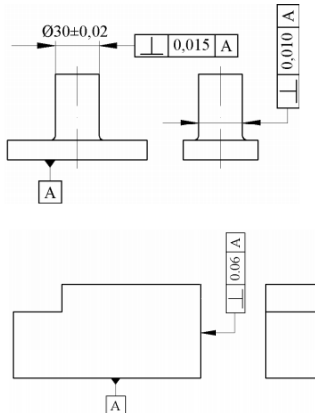
	<p>Parallelism</p>		
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The hole's centerline must lie between two parallel planes spaced at a distance of $t=0,01$ mm. The planes are parallel to datum line.

The hole's centerline must lie within a cylinder of diameter $t=0,01$ mm. The centerline of this cylinder is parallel to datum line.

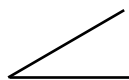


Perpendicularity

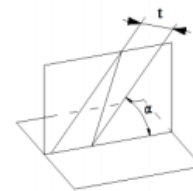
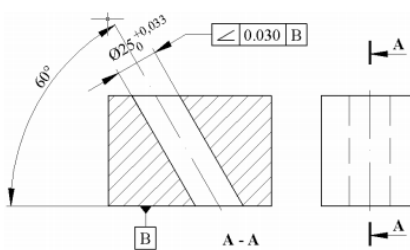


The centerline must lie within a cylinder of diameter $t=0,015$ mm that is perpendicular to datum plane A.

The plane surface must lie between two planes perpendicular to A at a distance of $t=0,06$ mm.

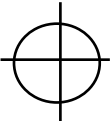
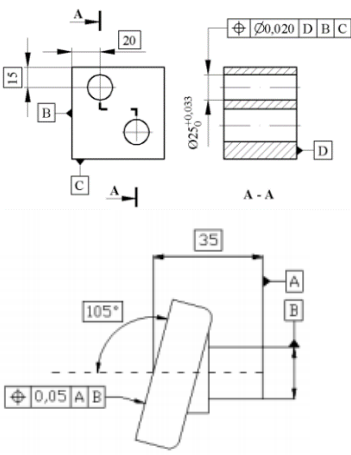
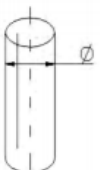

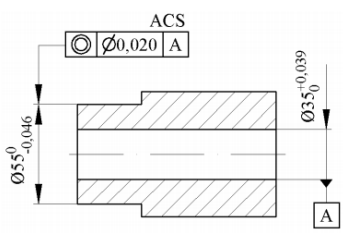
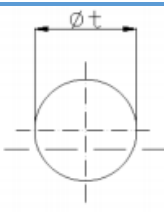

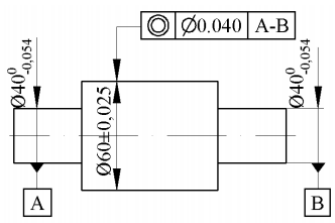
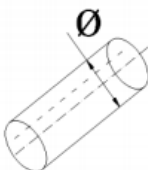


Angularity



The hole's centerline must lie within a cylinder of diameter $t=0,03$ mm and is parallel to plane B, inclined at an angle of $\alpha=60^\circ$

Tolerances of location


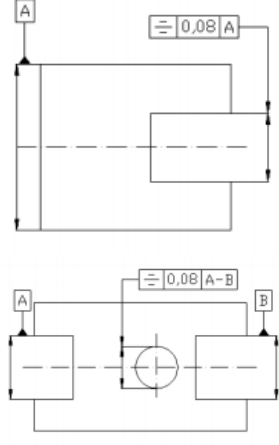
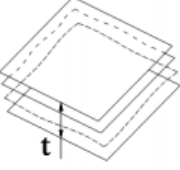
	<p>Position</p>		
	<p>Concentricity</p>		
	<p>Coaxiality</p>		

The hole's centerline must lie within a cylinder of diameter $t=0,02$ mm. The cylinder's centerline must coincide with the theoretically exact location of the hole's centerline in regard to the planes D,B,C.


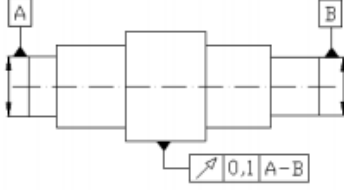
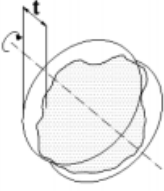
The surface must lie between two parallel planes spaced at $t=0,05$ mm that are symmetrical to the theoretically exact location of the tolerance surface in regard to the planes A,B.


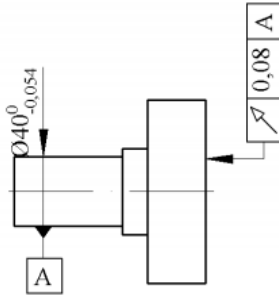
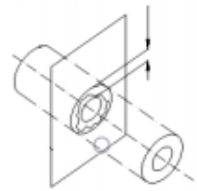
The center of the hole must lie in a circle of diameter $t=0,02$ mm that is concentric to the datum point A

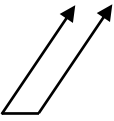
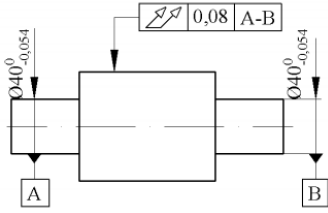
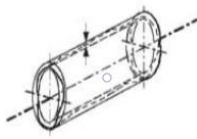
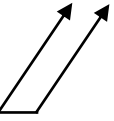
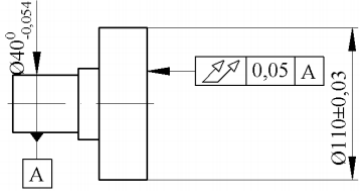
The centerline of all diameters must lie within a cylinder of diameter $t=0,04$ mm. The centerline must coincide with the common datum axis A-B

	<p>Symmetry</p>		
<p>The midplane of the slot must lie between two parallel planes spaced apart at a distance of $t=0,08$ mm that are located symmetrical to datum plane A</p>			

Runout tolerances

	<p>Radial circular runout</p>		
<p>In every cross section the circumferential line must be perpendicular to the common datum line A-B between two concentric circles in the same plane having a distance $t=0,1$ mm</p>			

	<p>Axial circular runout</p>		
<p>In every diameter the circumferential line must lie in the plane surface between two circles that have a radial distance of $t=0.08$ mm. The centerline of each diameter must coincide with datum line A</p>			

	<p>Total radial runout</p>	 <p>The shell surface must lie between two coaxial cylinders having a radial distance $t=0,03$ mm. The centerlines of these cylinders must coincide with the common datum line A-B</p>	
	<p>Total axial runout</p>	 <p>The plane surface must lie between two parallel planes spaced apart at a distance of $t=0,05$ mm that are perpendicular to datum line A</p>	