

Colours of machining					Execution tolerance
Surface type	NX colour number	RGB Palette (CATIA V5)			
		R	G	B	
Fine machining	14	153	255	202	+/-0,02* Ra=3,2
Normal machining	75	255	153	153	acc. to 2D drawing Ra=3,2
Rough turning	204	102	0	0	acc. to 2D drawing Ra=<25
Precision machining	3	255	245	167	Ra=0,4
Sliding surfaces - guidings	88	196	191	165	+0,1* Ra=0,8
Cutting edge	15	242	242	242	+/-0,01* Ra =0,1 for punches
Fit H7	211	0	0	255	H7
Other fit (acc. to 2D drawing)	214	18	40	109	acc. to 2D drawing
Holes to be made in assembly	164	102	51	204	
Metric threads acc. to DIN336	6	255	255	0	-
Fine metric threads acc. to DIN 336	42	255	202	0	-
Inch threads acc. to DIN-ISO 228	130	102	102	102	-
Holes for screws	181	255	0	255	-
Special threads - secured	114	255	102	0	-
Composite holes (cooling channels)	152	204	51	204	position, diameter, depth +/-0,1
Check milling	77	255	153	51	+/-0,3
Raw casting	108	0	153	0	-
Raw surface (does not require machining)	49	207	215	232	
Fit K7	13	189	255	255	K7 Ra=0,4
*if the 2D documentation does not impose tolerance					

TABLE 1:

Remarks:							
Machining tolerance acc. to the table of colors of deviations / 3D model.							
Surface roughness – forming and cutting $R_a=0,8 \text{ um}$							
– tolerated and cooperating $R_a=1,6 \text{ um}$							
– other $R_a=25 \text{ um}$							
sharp edges to be bent $1 \times 45^\circ$, excluding the cutting edges							
position deviation of fitted holes $\pm 0,02$							
position deviation of circular holes and shaped surfaces $\pm 0,3$							
Deviations of not tolerated dimensions							
Denomination	0,5–3	3–6	6–30	30–120	120–315	315–1000	1000–2000
External dimension	–0.1	–0.1	–0.2	–0.3	–0.4	–0.6	–2.4
Internal dimension	+0.1	+0.1	+0.2	+0.3	+0.4	+0.6	+2.4
Mixed dimension	± 0.05	± 0.05	± 0.1	± 0.15	± 0.2	± 0.3	± 1.2
Internal dimension – actual dimension of the object can only be equal to or higher than the nominal dimension.							
External dimension – actual dimension of the object can only be equal to or lower than the nominal dimension.							
Mixed and indirect dimensions are to be regarded as if they were tolerated symmetrically.							

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Type of machining		Ra in μm by machining:*			Ra in μm by machining:**		
		of fine min.	of normal from...to	of rough max	of fine min.	of normal from...to	of rough max
Erosion	wire eroding	0,1	0,4...1	3,2	0,08	0,32...0,63	2,5
	deep eroding	0,2	0,45	6,3	0,16	0,32	5
Drilling	in full material	1,6	6,3...12,5	25	0,32	5...10	20
	boring, reaming	0,05	0,4...3,2	12,5	0,04	0,32...2,5	10
	countersinking	0,8	1,6...6,3	12,5	0,63	1,25...5	10
	precise boring	0,2	0,8...2	6,3	0,16	0,63...1,25	5
Turning	longitudinal turning	0,2	0,8...12,5	50	0,16	0,63...10	40
	transverse turning	0,4	1,6...12,5	50	0,63	5...10	40
Frezowanie	obwodowe i czółowe	0,4	1,6...12,5	25	0,32	1,25...10	20
Milling	peripheral and frontal	0,4	1,6...12,5	25	0,32	1,25...10	20
Grinding		0,012	0,2...1,6	6,3	0,01	0,16...1,25	5
*New Ra designation, **Old Ra designation							