

At aluminium die casting, the procedural tolerances result from the mold shape, the used aluminium alloys and the applied die casting techniques. For the formed parts made by G.W.P., you can apply the following tolerances as reference.

Tolerances for aluminium die casting

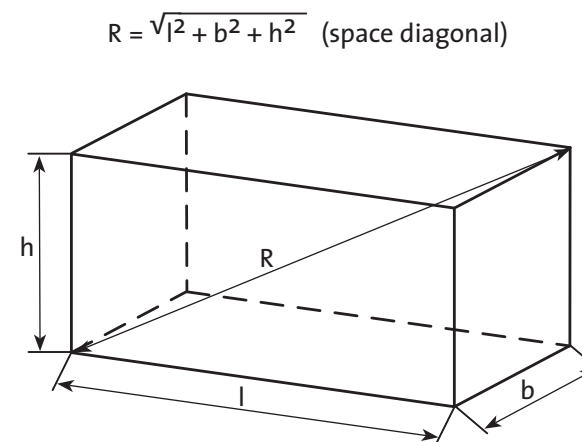
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Dimensional deviations at die casting parts made of light alloys mainly depend on:

- the dimensional and functional accuracy of the die casting mold;
- the position of the mold parting line, defined by the division of the dimensions into bound to the mold and not bound to the mold;
- the form and the size of the formed part, marked by the space diagonal, and
- the nominal dimensions

Specification of the space diagonal:

- The space diagonal R is specified by the biggest dimensions of the formed part.
- It is calculated by the nominal dimensions of the prismatic surrounding body which defines any formed part.



Tolerances for die casting
**Table 1. Die casting tolerances for linear dimensions without tolerance indication
 (length, width, height, distance from center to center, diameter, curves)**

Range of the dimension of the space diagonal	Class of accuracy	Function of mold	Nominal dimension range													
			up to 18	over 18 up to 30	over 30 up to 50	over 50 up to 80	over 80 up to 120	over 120 up to 180	over 180 up to 250	over 250 up to 315	over 315 up to 400	over 400 up to 500	over 500 up to 630	over 630 up to 800	over 800 up to 1000	over 1000 up to 1250
up to 50	GTA 13	bound to the mold	± 0,14	± 0,17	± 0,2											
		not bound to the mold	± 0,24	± 0,27	± 0,3											
over 50 up to 180	GTA 13/5	bound to the mold	± 0,17	± 0,2	± 0,25	± 0,3	± 0,35	± 0,4								
		not bound to the mold	± 0,32	± 0,35	± 0,4	± 0,45	± 0,5	± 0,55								
over 180 up to 500	GTA 14	bound to the mold	± 0,22	± 0,26	± 0,31	± 0,37	± 0,41	± 0,5	± 0,6	± 0,65	± 0,7	± 0,8				
		not bound to the mold	± 0,42	± 0,46	± 0,51	± 0,57	± 0,64	± 0,7	± 0,8	± 0,85	± 0,9	± 1				
over 500	GTA 14/5	bound to the mold	± 0,25	± 0,35	± 0,4	± 0,45	± 0,55	± 0,65	± 0,75	± 0,8	± 0,85	± 0,95	± 1,1	± 1,2	± 1,4	± 1,6
		not bound to the mold	± 0,55	± 0,65	± 0,7	± 0,75	± 0,85	± 0,95	± 1	± 1,1	± 1,1	± 1,2	± 1,4	± 1,5	± 1,7	± 1,9

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Table 2. Die casting tolerances for thickness dimensions without tolerance indication (wall thickness,

Range of the dimension of the space diagonal	Class of accuracy	Function of mold	Nominal dimension range		
			up to 3	over 3 up to 6	over 6 up to 10
up to 50	GTA 13	bound to the mold	± 0,15	± 0,2	± 0,2
		not bound to the mold	± 0,25	± 0,3	± 0,3
over 50 up to 180	GTA 13/5	bound to the mold	± 0,2	± 0,25	± 0,3
		not bound to the mold	± 0,35	± 0,4	± 0,45
over 180 up to 500	GTA 14	bound to the mold	± 0,25	± 0,3	± 0,35
		not bound to the mold	± 0,45	± 0,5	± 0,55
over 500	GTA 14/5	bound to the mold	± 0,3	± 0,4	± 0,45
		not bound to the mold	± 0,55	± 0,65	± 0,7

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Dimensions bound to the mold are dimensions in the same part of the mold.

Dimensions not bound to the mold are dimensions formed by the interaction of movable mold parts such as wall thickness and bottom thickness dimensions or dimensions influenced by inserts or sliders.