MARIAN

Tolerance Guidelines

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Marian	Marian, Inc.					
	Class 1 Closed Steel Rule Die	Class 2 Closed Rotary Die	Class 3 Laser	RMA Class 1 BL 1	RMA Class 2 BL 2	RMA Class 3 BL 3
For thickness up to .125" (Inches)	*For thickness up to .125"*					
Dimensions under 0.50"	0.015	0.010	0.010	0.025	0.032	0.040
0.50" to 0.99"	0.020	0.015	0.015	0.025	0.032	0.040
1.0" to 6.3"	0.025	0.025	0.025	0.032	0.040	0.050
over 6.3" multiply by:	0.40%	0.40%	0.40%	0.63%	1.00%	1.60%
For thickness from .125" to 0.25" (Inches)	*For thickness from .125" to 0.25"*					
Dimensions under 0.50"	0.020	TBA	TBA	0.025	0.032	0.040
0.50" to 0.99"	0.025	TBA	TBA	0.025	0.032	0.040
1.0" to 6.3"	0.032	TBA	TBA	0.032	0.040	0.050
over 6.3" multiply by:	0.50%	TBA	TBA	0.63%	1.00%	1.60%
For thickness from .25" to 0.50" (Inches)	*For thickness from .25" to 0.50"*					
Dimensions under 0.50"	0.020	TBA	TBA	0.032	0.040	0.050
0.50" to 0.99"	0.025	TBA	TBA	0.032	0.040	0.063
1.0" to 6.3"	0.032	TBA	TBA	0.04	0.050	0.063
over 6.3" multiply by:	0.50%	TBA	TBA	0.63%	1.00%	1.60%

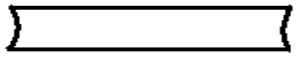
Marian	Marian, Inc.			RMA Table 35		
	Class 1 Closed Steel Rule Die	Class 2 Closed Rotary Die	Class 3 Laser	RMA Class 1 BL 1	RMA Class 2 BL 2	RMA Class 3 BL 3
For thickness up to 3.2 mm	*For thickness up to 3.2 mm*					
Dimensions under 12.7 mm	0.38	0.254	0.254	0.63	0.80	1.00
12.7 mm to 25.3 mm	0.51	0.381	0.381	0.80	1.00	1.25
25.4 mm to 160 mm	0.64	0.635	0.635	0.80	1.00	1.25
over 160 mm multiply by:	0.40%	0.40%	0.40%	1.0%	1.0%	1.6%
For thickness from 3.2 mm to 6.3 mm	*For thickness from 3.2 to 6.3 mm*					
Dimensions under 12.7 mm	0.51	TBA	TBA	0.63	0.80	1.00
12.7 mm to 25.3 mm	0.64	TBA	TBA	0.80	1.00	1.25
25.4 mm to 160 mm	0.81	TBA	TBA	0.80	1.00	1.25
over 160 mm multiply by:	0.50%	TBA	TBA	1.0%	1.0%	1.6%
For thickness from 6.3 to 12.7 mm	For thickness from 6.3 mm to 12.7 mm					
Dimensions under 12.7 mm	0.51	TBA	TBA	0.63	0.80	1.00
12.7 mm to 25.3 mm	0.64	TBA	TBA	0.80	1.00	1.25
25.4 mm to 160 mm	0.81	TBA	TBA	0.80	1.00	1.25
over 160 mm multiply by:	0.50%	TBA	TBA	1.0%	1.0%	1.6%

See page 2 for more details.

The tolerances above are offered as a guideline for design engineering. Specific part tolerance may vary with the tool design, the material being cut, and the part's geometry.

It is recommended that the gap between two cutting blades is not less than .062".
In general, it is good design if the gap between two cutting blades is not less than the thickness of the material being cut.

"Apple Core" (or sometimes called "dish effect"): This is the name given to the concavity of the die cut edges of the part. This phenomenon will be more pronounced as the thickness of the material increases and the density of the material decreases.



RMA Table 35 Tolerances are from the Rubber Manufactures Association Handbook, Fourth Edition, page 48.

Tolerances for laser cut parts vary widely with the material being cut and part geometry. In many cases, precisions tolerances are possible. Let us help recommend tolerances and materials.

Tolerances for rotary cut parts may vary for dimensions perpendicular to the flow of the material as opposed to dimensions that are cut parallel to the flow of the material. They will also vary with the material being cut and the geometry of the part. Let us help recommend tool design and materials for your parts.

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