

Cadify tutorials Adding formulas in Excel

GOAL OF THIS TUTORIAL

Add formulas in Excel to create rules for the 3D models.

This tutorial uses the same document used in the previous tutorial. Examples of 3D model and excel file can be found in this links: Excel file ; SW zip folder

EXAMPLES OF UNDESIRED GEOMETRY IN A PART

The user may select combinations of dimensions that can lead to undesired geometry of the part. Images below are examples of this situation.



DEFAULT DIMENSIONS OF THE PART - CORRECT MORPHOLOGY OF THE PART





APPLYING FORMULAS IN EXCEL

Formulas in Excel

Marked cells have formulas. Cell R15 has an auxiliary parameter for the part: the minimum allowable gap between holes; and between hole and sides.

	А.	В	С	D	E	F	G	н	I	J	к	L	М	N	0	Р	Q	R
12		Advanced Parameter Settings							E	Basic Parameter	Setti	ngs					Extra calculati	ons
13																		
14	Display Name ; Description	List values	CT Settings	Condition	Control Type	Name	Value	Unit I	Min	Min message	Max	Max message	Decimal	Increment	Туре	References		
15	PlateThickness@MainPlate;	5;Min. is 5 mm;20;Max. is 20 mm;1	On;10;Optional;EDT;first		Spinbox Slider	PlateThickness@MainPlate	10	mm _	5	Min. is 5 mm	20	Max. is 20 mm	0	1	Input		Min.HoleGap	10
16	Length@Sketch1;	135;Min. is 135 mm;280;Max. is 280 mm;1	On;20;Optional;EDT;first		Spinbox Slider	Length@Sketch1	140	mm	135	Min. is 135 mm	280	Max. is 280 mm	0	1	Input			
17	Heigth@Sketch1;	40;Min. is 40 mm;140;Max. is 140 mm;1	On;30;Optional;EDT;first		Spinbox Slider	Heigth@Sketch1	70	mm	40	Min. is 40 mm	140	Max. is 140 mm	0	1	Input			
18	HoleDistance@Sketch2;	30;Min. is 30 mm;150;Max. is 150 mm;1	On;40;Optional;EDT;first		Spinbox Slider	HoleDistance@Sketch2	75	mm	30	Min. is 30 mm	150	Max. is 150 mm	0	1	Input			
19	HoleDiameter@Sketch2;	5;Min. is 5 mm;40;Max. is 40 mm;1	On;50;Optional;EDT;first		Spinbox Slider	HoleDiameter@Sketch2	20	mm	5	Min. is 5 mm	40	Max. is 40 mm	0	1	Input			
		1							:					1		1	:	

Formula in cell 116: minimum length of the part. This formula ensures that the total length of the part always will have a minimum gap of 10mm between the holes and the sides.

SUM	- : ×	<i>√ fx</i> =G19+G18+2*R15												
	E	F	G	Н		J	к	L	М	N	Ο	Р	Q	R
12			÷	•		Basic Parameter	r Setti	ings	•	· · ·		•	Extra calculation	ons
13														
14	Control Type	Name	Value	Unit	Min	Min message	Max	Max message	Decimal	Increment	Туре	References		
15	Spinbox Slider	PlateThickness@MainPlate	10	mm	5	Min. is 5 mm	20	Max. is 20 mm	0	1	Input		Min.HoleGap	10
16	Spinbox Slider	Length@Sketch1	=G19+	G18+	2*R1	5 mm	280	Max. is 280 mm	0	1	Input			
17	Spinbox Slider	Heigth@Sketch1	70	mm	40	Min. is 40 mm	140	Max. is 140 mm	0	1	Input			
18	Spinbox Slider	HoleDistance@Sketch2	75	mm	30	Min. is 30 mm	150	Max. is 150 mm	0	1	Input			
19	Spinbox Slider	HoleDiameter@Sketch2	20	mm	5	Min. is 5 mm	40	Max. is 40 mm	0	1	Input			



Formula in cell 117: minimum height of the part. This formula ensures that the heigth of the part always will have a minimum gap of 10mm between the holes and the sides.

SUM	· :	× ✓ <i>fx</i> =G19+2*R15												
	E	F	G	Н	T	J	К	L	М	N	0	Р	Q	R
12						Basic Parameter	Setti	ings		· ·		•	Extra calculation	ons
13														
14	Control Type	Name	Value	Unit	Min	Min message	Max	Max message	Decimal	Increment	Туре	References		
15	Spinbox Slider	PlateThickness@MainPlate	10	mm	5	Min. is 5 mm	20	Max. is 20 mm	0	1	Input		Min.HoleGap	10
16	Spinbox Slider	Length@Sketch1	140	mm	115	Min. is 115 mm	280	Max. is 280 mm	0	1	Input			
17	Spinbox Slider	Heigth@Sketch1	70	=G19	+2* <mark>R</mark>	. is 40 mm	140	Max. is 140 mm	0	1	Input			
18	Spinbox Slider	HoleDistance@Sketch2	75	mm	30	Min. is 30 mm	150	Max. is 150 mm	0	1	Input			
19	Spinbox Slider	HoleDiameter@Sketch2	20	mm	5	Min. is 5 mm	40	Max. is 40 mm	0	1	Input			



Formula in cell 118: minimum distance between holes of the part. This formula ensures that the distance between of the part always will have a minimum gap of 10mm between both holes.

SUN	· · · · : :	× ✓ <i>fx</i> =G19+R15												
	E	F	G	Н	1	J	К	L	М	N	0	Р	Q	R
12			:	:	1	Basic Parameter	r Setti	ings	:			:	Extra calculation	ons
13														
14	Control Type	Name	Value	Unit	Min	Min message	Max	Max message	Decimal	Increment	Туре	References		
15	Spinbox Slider	PlateThickness@MainPlate	10	mm	5	Min. is 5 mm	20	Max. is 20 mm	0	1	Input		Min.HoleGap	10
16	Spinbox Slider	Length@Sketch1	140	mm	115	Min. is 115 mm	280	Max. is 280 mm	0	1	Input			
17	Spinbox Slider	Heigth@Sketch1	70	mm	40	Min. is 40 mm	140	Max. is 140 mm	0	1	Input			
18	Spinbox Slider	HoleDistance@Sketch2	75	=G19	+R15	. is 30 mm	150	Max. is 150 mm	0	1	Input			
19	Spinbox Slider	HoleDiameter@Sketch2	20	mm	5	Min. is 5 mm	40	Max. is 40 mm	0	1	Input			





TEST APPLIED RULES

Change HoleDiameter (from 20 mm to 30 mm) and click on Update button. Check that minimum values for Length, Height and HoleDistance are automatically modified.

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Length@Sketch1 115 mm 2 140 140 140	280 mm			Length@Sketch1 125 mm 280 m 140 mm
Height@Sketch1 40 mm 1 70 70 mm	140 mm		[Height@Sketch1 140 m 50 mm 140 m 70 70
HoleDistance@Sketch2 30 mm 1 75 75 mm	150 mm			HoleDistance@Sketch2 40 mm 150 m 75 mm
HoleDiameter@Sketch2 10 mm 30 30	40 mm			HoleDiameter@Sketch2 10 mm 40 m 30 30
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TEST APPLIED RULES IN THE WEB BROWSER

Change HoleDiameter (from 20 mm to 30 mm) and click on Calculate button. Check that minimum values for Length, Height and HoleDistance are automatically modified.

