

MDTools® 970

What's New

The 20th generation manifold design app



MDTools® 970 What's New

Improved Offset Connection

Preview Angular Connection

Stretch and Incline a Setting Option

Improved Locate Cavity

Improved Create Block Interface

Create Block Using Plate as a Material Type

Precise Reference Point Selection in Custom Envelope

Create Views UI Improved

Auto Scale Drawing Views

Dimension only Selected Cavity Types

Drawing Dimensions automatically updated

Create all Miscellaneous Charts in Single Sheet

Miscellaneous Lists automatically updated

Machining Chart automatically updated

Balloons/Annotations automatically updated

MDTools Library Manager 2019

Manage Materials Bars

Manage Materials Plates

Add/Modify Materials and Allowances

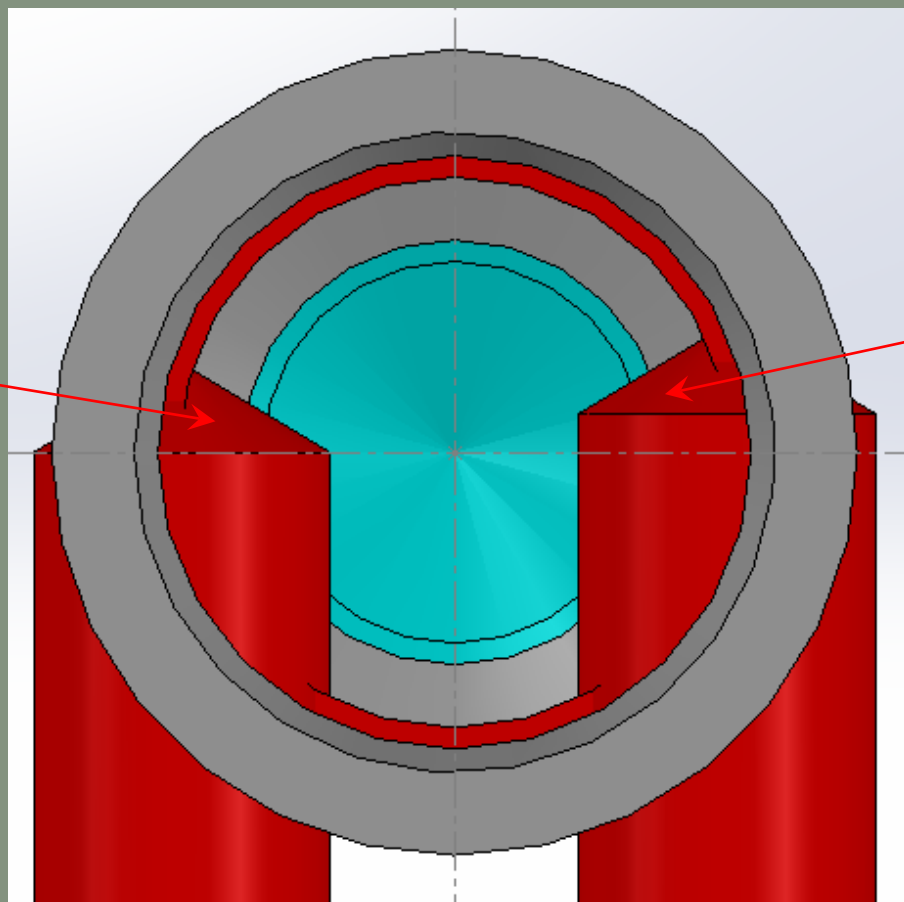
Contact VEST



Improved Offset Connection

Improved offset connections create a better flow path with reduced pressure drop

Offset connection
in MDTools 965



Improved
Offset connection
in MDTools 970

[Learn more...](#)
(Research Paper)



Preview Angular Connection

Modify ports and dimensions while watching the Angular Drill preview for easy visualization

Angular Connection [X]

Connect

	Port	Flow (gpm)	Type
<input type="checkbox"/> Cavity1	1	12	Pressure
<input type="checkbox"/> Cavity2	3	12	Pressure

Energy Efficiency

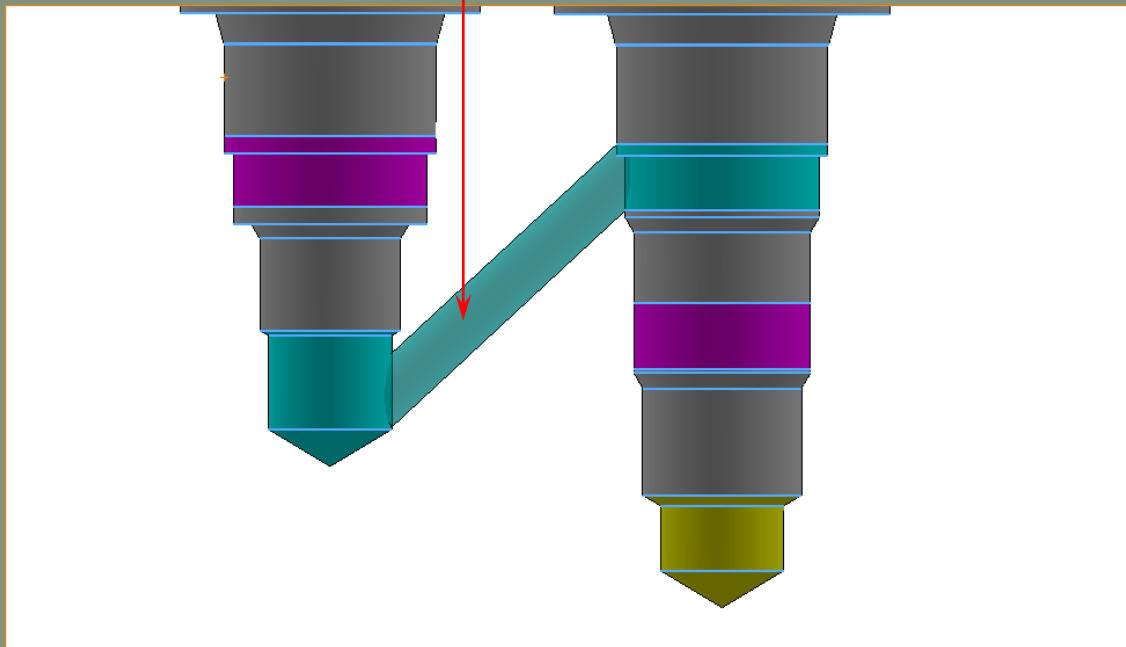
Optimize Diameter

Angle Hole

Expected Diameter in

Cavity ID

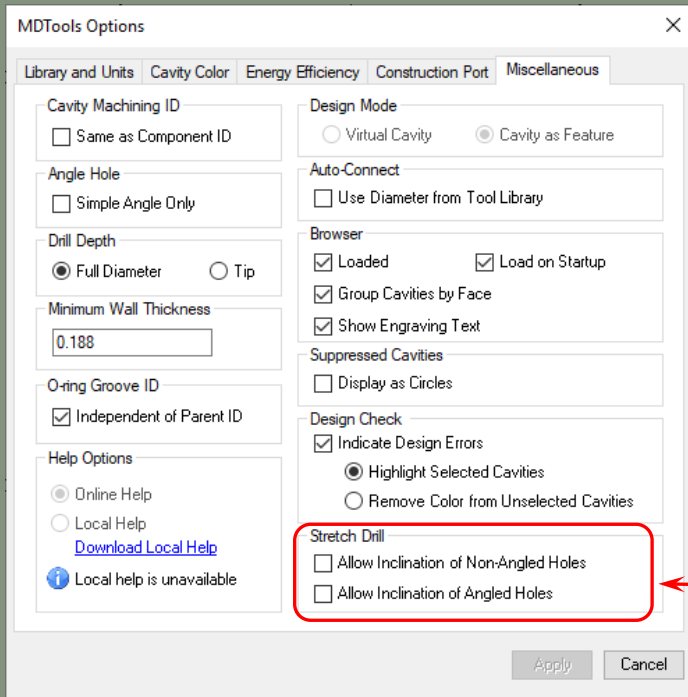
Simple Angle Only



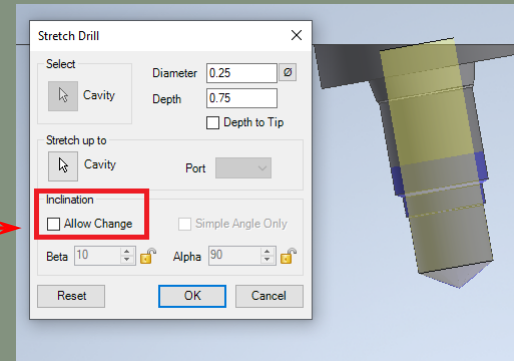


Stretch and Incline a Setting Option

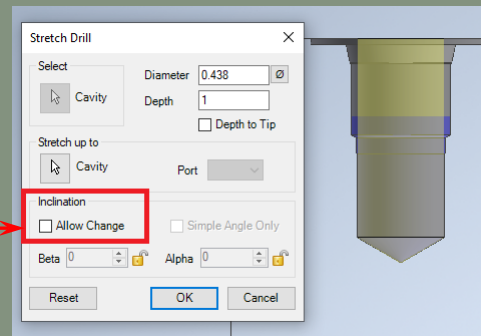
The Stretch Drill defaults control whether Allow Change of Inclination is active when the Stretch Drill command starts



Stretch Drill for an Inclined Drill



Stretch Drill for a non-Inclined Drill





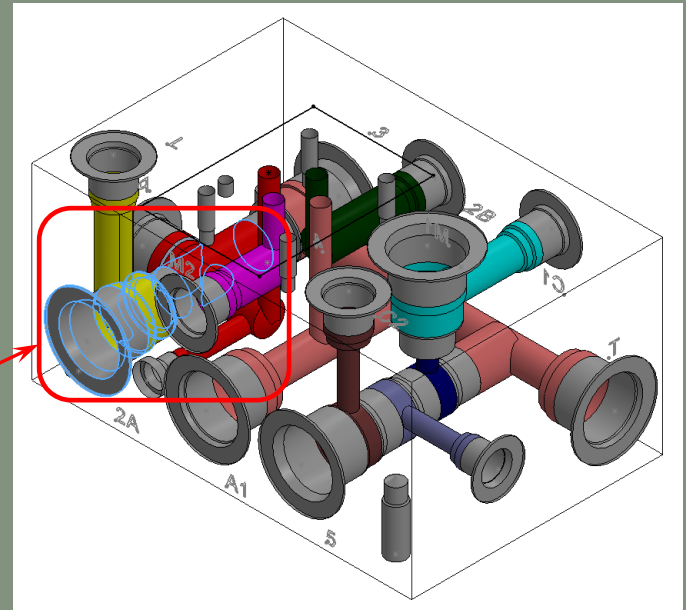
Improved Locate Cavity

Component ID	Machining ID
2A	BE
2B	AF
3-A	AC1
3-B	AC2
3-BH1	AA1
3-BH2	AA2
3-BH3	AA3
3-BH4	AA4
3-LP	AB
3-P	AE

Clear Highlight

OK Cancel

Machining ID of Cavities is also displayed along with the respective Component ID

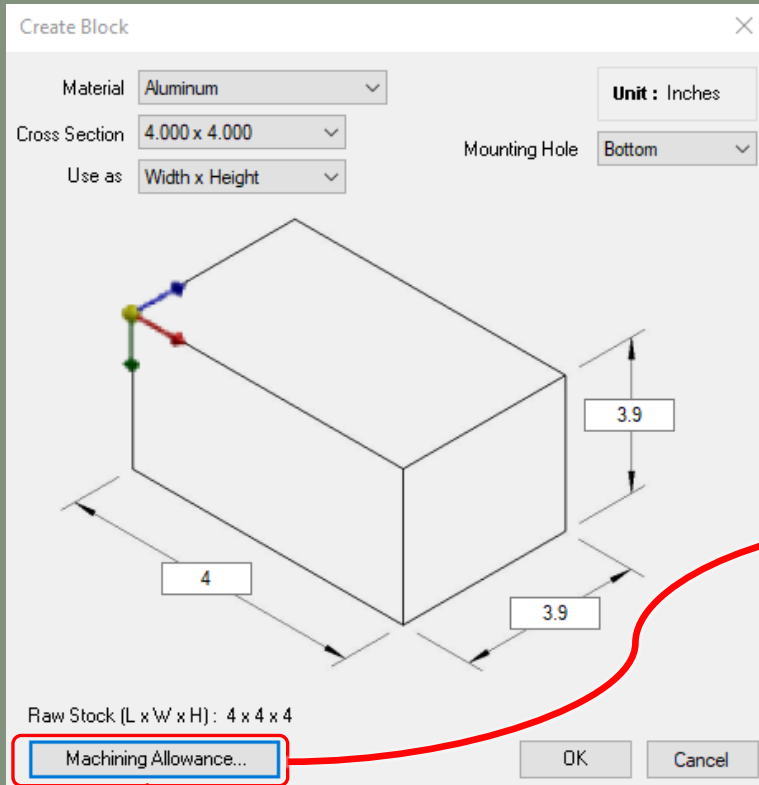


Selected Cavity gets highlighted in Part (Block)

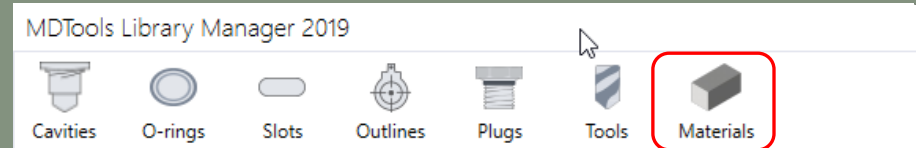


Improved Create Block Interface

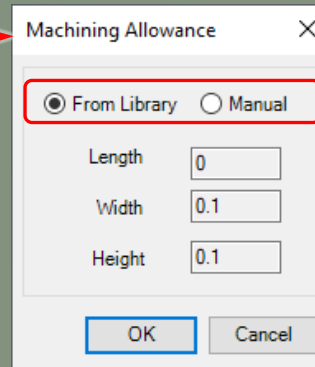
Define Machining Allowance for the material either manually or in MDTTools Library Manager



View both Raw Stock and machined dimensions of the block



Materials standardized in MDTTools Library Manager

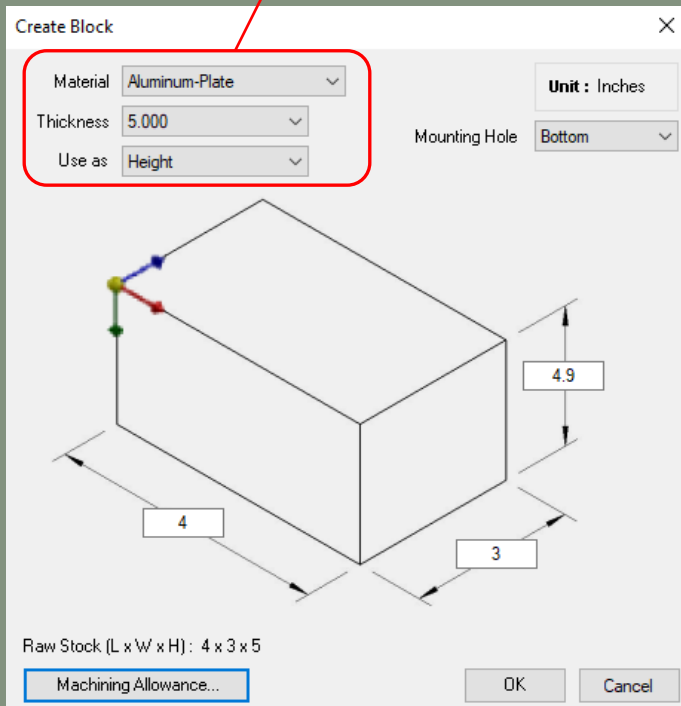




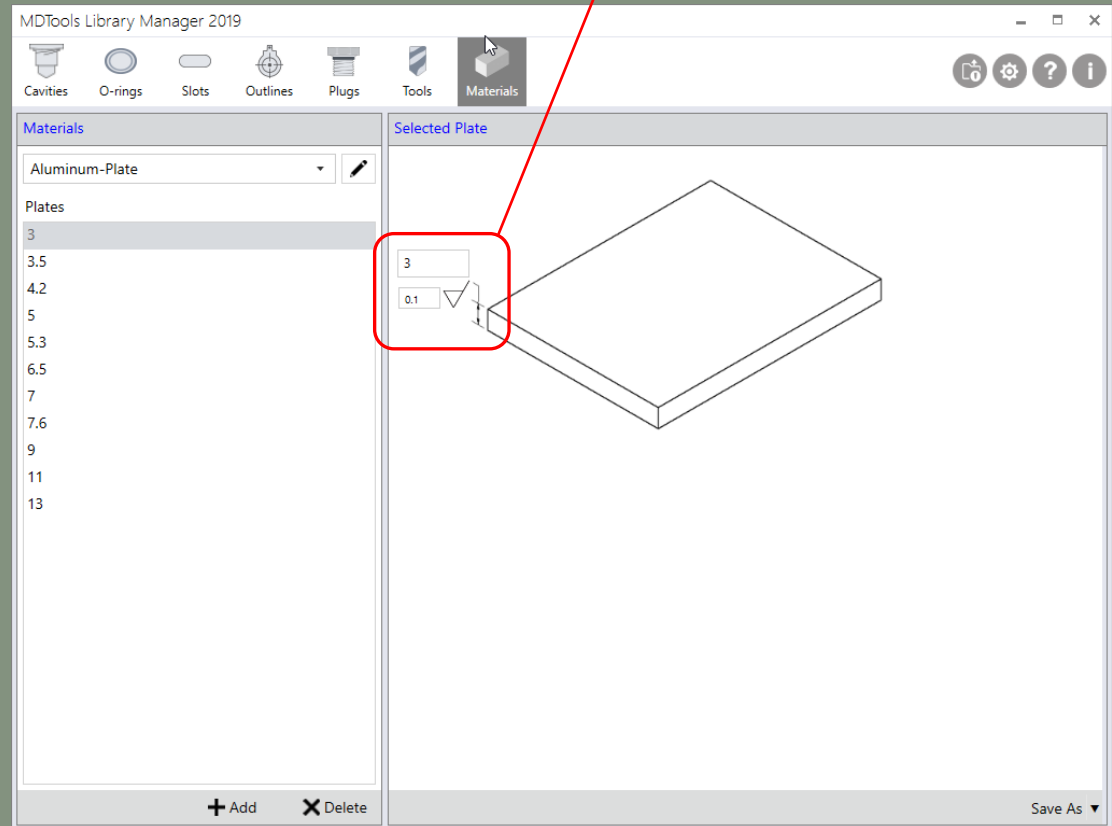
Create Block Using Plate as a Material Type

Manage Plate Thickness and Machining Allowance in MDTools Library Manager

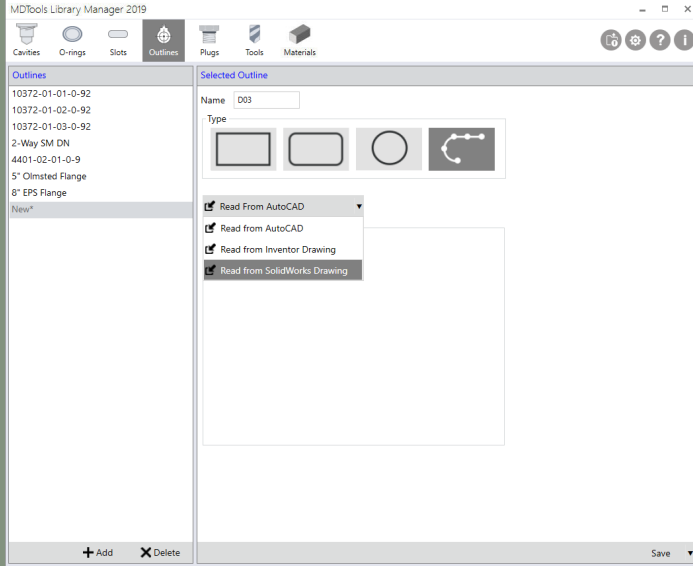
Use Plate as a Material type



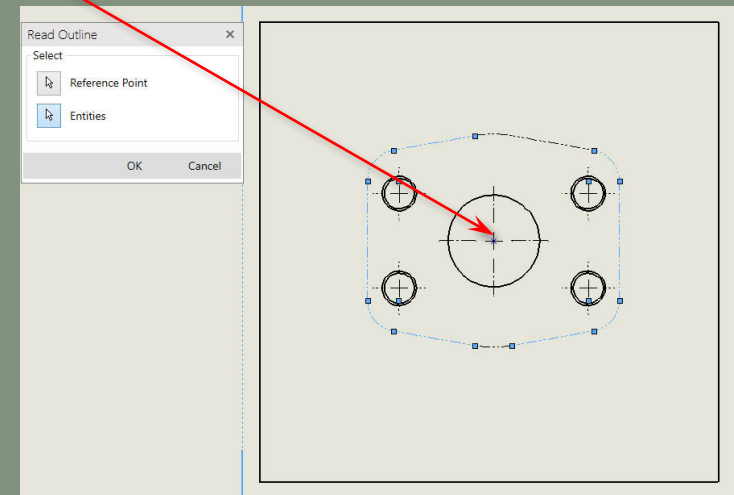
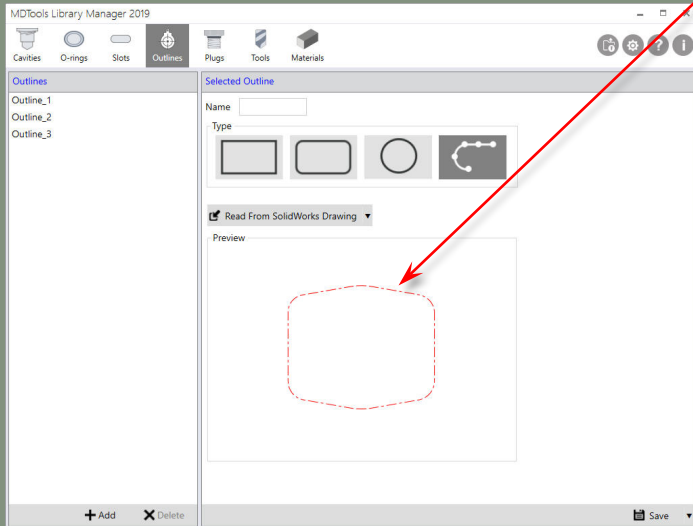
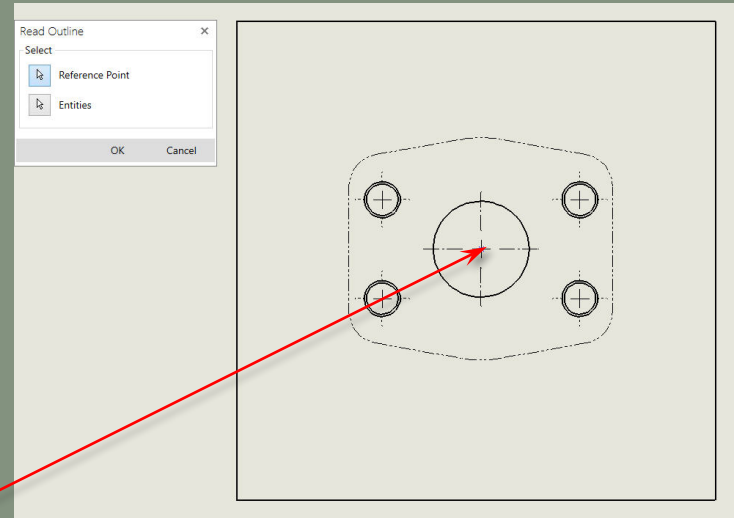
Manage thickness of plates and machining allowance



NEW Precise Reference Point Selection in Custom Envelope

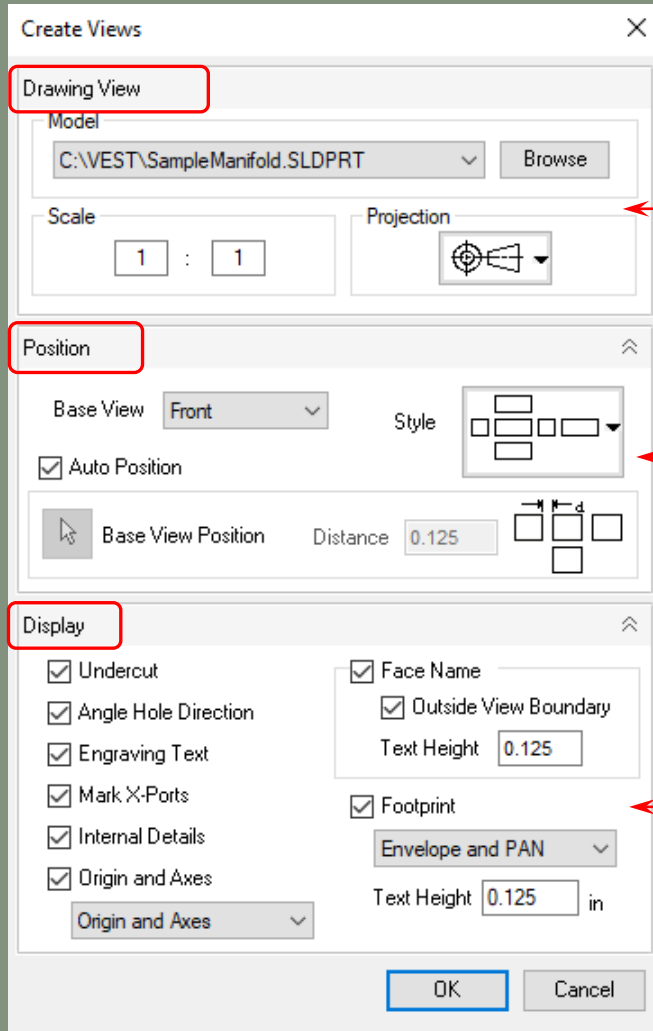


Precisely select the Reference Sketch Point





Create Views UI Improved



Drawing View settings

Views Position settings

Views Annotation Display settings

Note: All settings related to Views are organized in 'Create Views'.



Auto Scale Drawing Views

Set Sheet Scale to change size of views in a drawing

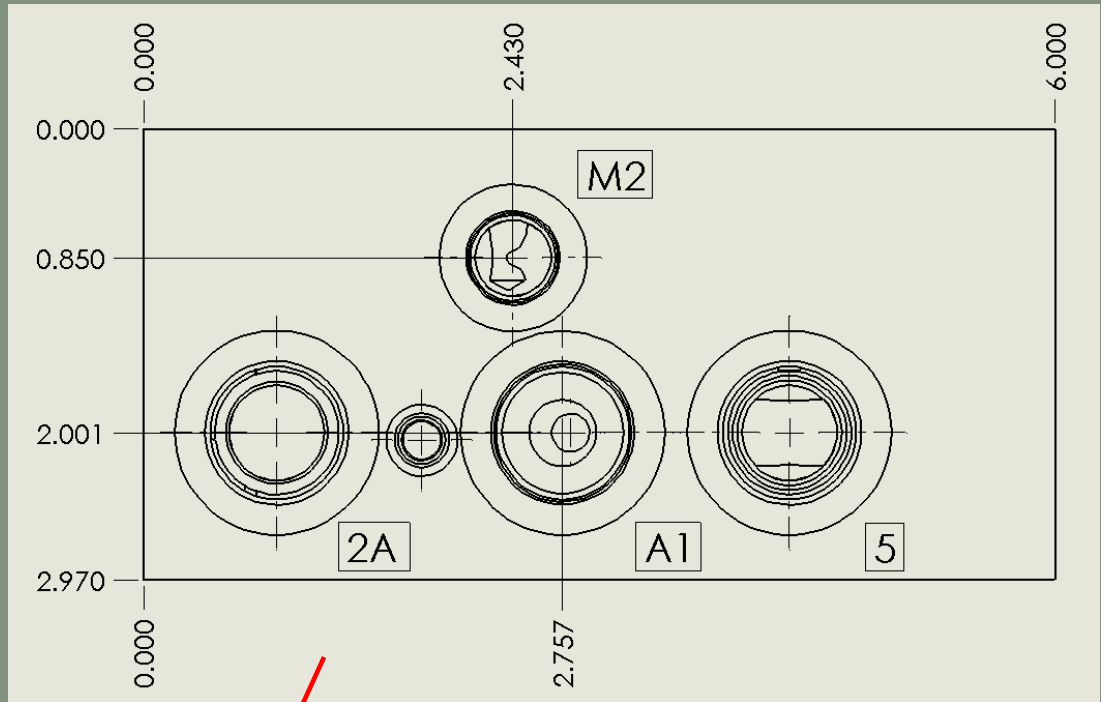
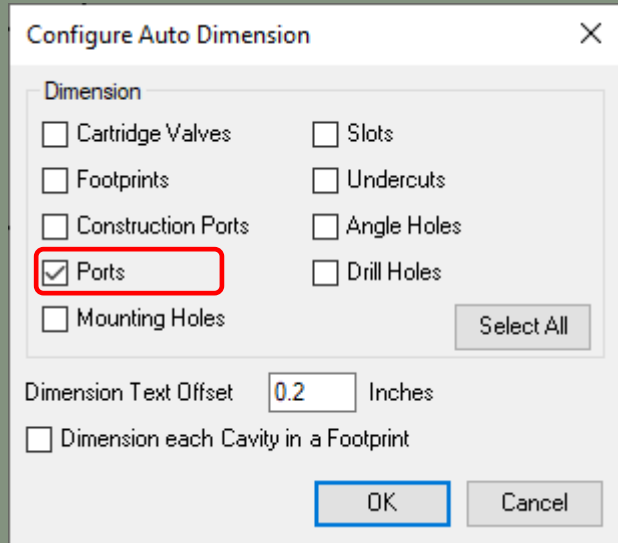
The screenshot shows the MDTools Drawing Options dialog box with the following settings:

- Projection Type:** Third Angle (selected)
- Base View:** Front
- View Style:** (Standard view style selected)
- Scale:** Auto Scale, Sheet Scale 1 : 1
- Display:**
 - Face Name, Text Height 0.125 in
 - Outside View Boundary
 - Origin and Axes
 - Footprint, Envelope and PAN, Text Height 0.125 in
 - Angle Hole Direction
 - Engraving Text
 - Mark X-Ports
 - Internal Details
 - Undercut
- View:** Min. Distance (d) 0.125

Buttons: Apply, Cancel



Dimension only Selected Cavity Types

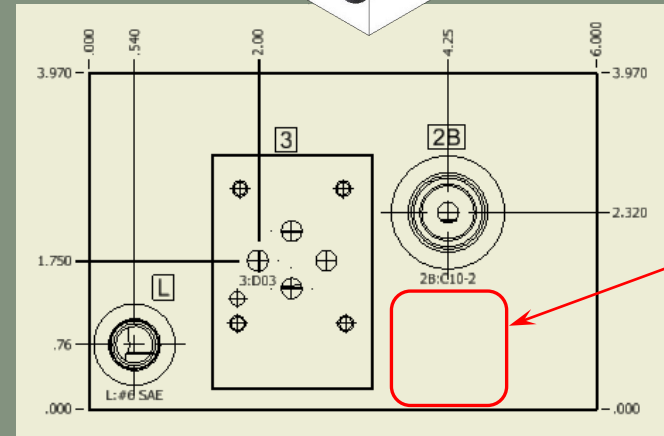
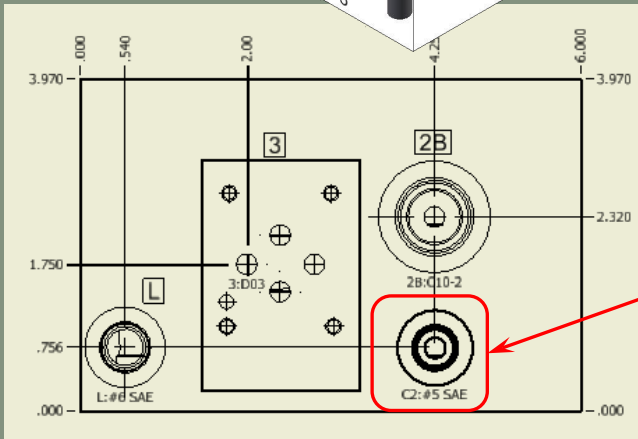
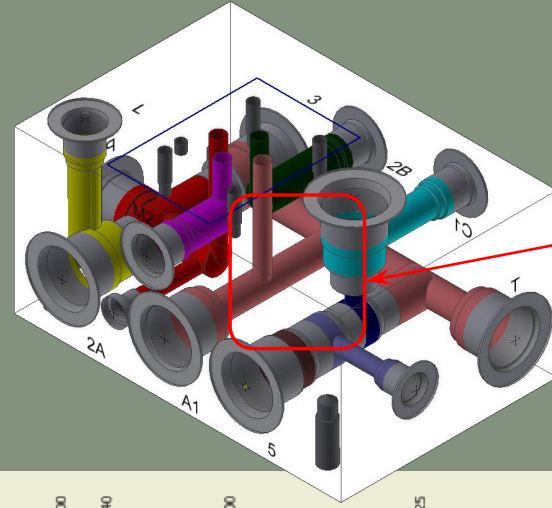
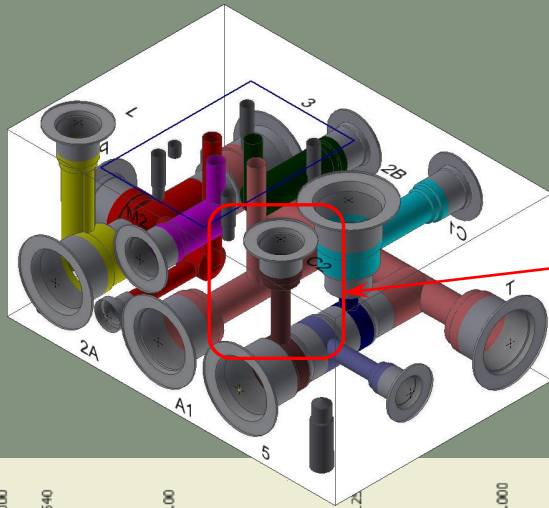


Selected cavity types dimensioned (Ports), while others left un-dimensioned



Drawing Dimensions Automatically Updated

MDTools automatically updates the dimensioning of the drawing when the Part (Block) is modified





Create all Miscellaneous Charts in Single Sheet

Machining Drawing command creates all miscellaneous charts in a single sheet

Item ID	Machining ID	Cavity/Footprint Name	Face Name
2A	204	C10-2	2
3	109	D03	1
4	604	C10-2	6
5	205	C10-4	2
A1	202	#10 SAE	2
C1	602	#6 SAE	6
M1	603	#6 SAE	6
M2	203	#6 SAE	2
T	502	#10 SAE	5

S. No.	Cavity/Footprint Name	Feature Type	Quantity
1	D03	Footprint	1
2	C10-2	Cartridge Valve	2
3	C10-4	Cartridge Valve	1
4	#10 SAE	Port	2
5	#6 SAE	Port	3
6	SP-02	X-Port	3
7	5/16"-18 UNC, Dia-0.266	Mounting Bolt Hole	3

Face Name	Text	Font	Text Height	Location X	Location Y	Text Rotation
1	2B	Arial Unicode MS	0.2	4.048	2.770	90
1	L	Arial Unicode MS	0.2	0.806	1.332	
1	C2	Arial Unicode MS	0.2	4.807	0.611	180
1	3	Arial Unicode MS	0.2	2.260	3.077	
2	2A	Arial Unicode MS	0.2	1.332	2.850	270
2	A1	Arial Unicode MS	0.2	3.072	2.885	
2	M2	Arial Unicode MS	0.2	2.176	0.310	90
2	5	Arial Unicode MS	0.2	4.652	2.869	
4	P	Arial Unicode MS	0.2	1.860	1.307	180
5	T	Arial Unicode MS	0.2	3.118	1.228	



Miscellaneous Lists Automatically Updated

MDTools automatically updates the Charts on the Miscellaneous lists Sheet when the Part (Block) is modified

Engraving Text Chart						
Face Name	Text	Font	Text Height	Location X	Location Y	Text Rotation
1	2B	Arial Unicode MS	0.2	4.048	2.770	90
1	L	Arial Unicode MS	0.2	0.806	1.332	
1	C2	Arial Unicode MS	0.2	4.807	0.611	180
1	3	Arial Unicode MS	0.2	2.260	3.077	
2	2A	Arial Unicode MS	0.2	1.332	2.850	270
2	A1	Arial Unicode MS	0.2	3.072	2.885	
2	M2	Arial Unicode MS	0.2	2.176	0.310	90
2	5	Arial Unicode MS	0.2	4.652	2.869	
4	P	Arial Unicode MS	0.2	1.860	1.307	180
5	T	Arial Unicode MS	0.2	3.118	1.228	
6	C1	Arial Unicode MS	0.2	4.446	1.569	270
6	M1	Arial Unicode MS	0.2	2.621	1.800	
6	4	Arial Unicode MS	0.2	0.623	2.885	90



Engraving Text Chart						
Face Name	Text	Font	Text Height	Location X	Location Y	Text Rotation
1	2B	Arial Unicode MS	0.2	4.048	2.770	90
1	L	Arial Unicode MS	0.2	0.806	1.332	
1	3	Arial Unicode MS	0.2	2.260	3.077	
2	2A	Arial Unicode MS	0.2	1.332	2.850	270
2	A1	Arial Unicode MS	0.2	3.072	2.885	
2	M2	Arial Unicode MS	0.2	2.176	0.310	90
2	5	Arial Unicode MS	0.2	4.652	2.869	
4	P	Arial Unicode MS	0.2	1.860	1.307	180
5	T	Arial Unicode MS	0.2	3.118	1.228	
6	C1	Arial Unicode MS	0.2	4.446	1.569	270
6	M1	Arial Unicode MS	0.2	2.621	1.800	
6	4	Arial Unicode MS	0.2	0.623	2.885	90

Updated Engraving Chart

For example, when the cavity C2 is deleted from the block, then upon re-opening the drawing, the charts will be updated with C2 gone



Machining Chart Automatically Updated

MDTools automatically updates the Machining Chart when the Part (Block) is modified

Machining Chart				
Name	Operation	Diameter	Depth	Location
2B	DRILL	0.250	2.000	(4.250/ 1.999)
	C10-2	1.344	0.031	
3-A	DRILL	1/4	1.000	(2.400/ 2.100)
3-B	DRILL	1/4	1.000	(2.400/ 1.420)
3-BH1	TAP DRILL	5/32	0.700	(3.010/ 2.600)
	TAP	#10-24	0.500	
3-BH2	TAP DRILL	5/32	0.700	(3.040/ 1.006)
	TAP	#10-24	0.500	
3-BH3	TAP DRILL	5/32	0.700	(1.760/ 1.006)
	TAP	#10-24	0.500	
3-BH4	TAP DRILL	5/32	0.700	(1.790/ 2.600)
	TAP	#10-24	0.500	
3-LP	DRILL	11/64	0.175	(1.760/ 1.301)
3-P	DRILL	0.250	2.000	(2.000/ 1.750)
3-T	DRILL	1/4	2.025	(2.810/ 1.750)
C2	DRILL	0.250	1.592	(4.250/ 0.756)
	FORM PORT	#6 SAE	0.031	
	TAP	9/16-18	0.531	
L	DRILL	0.438	2.000	(0.540/ 0.756)
	FORM PORT	#6 SAE	0.031	
	TAP	9/16-18	0.531	
L_SL	SLOT	0.250	2.500	(0.540/ 0.756)

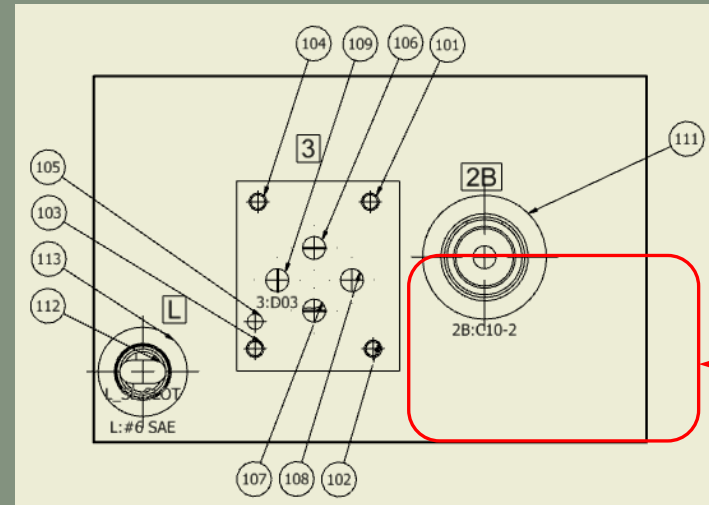
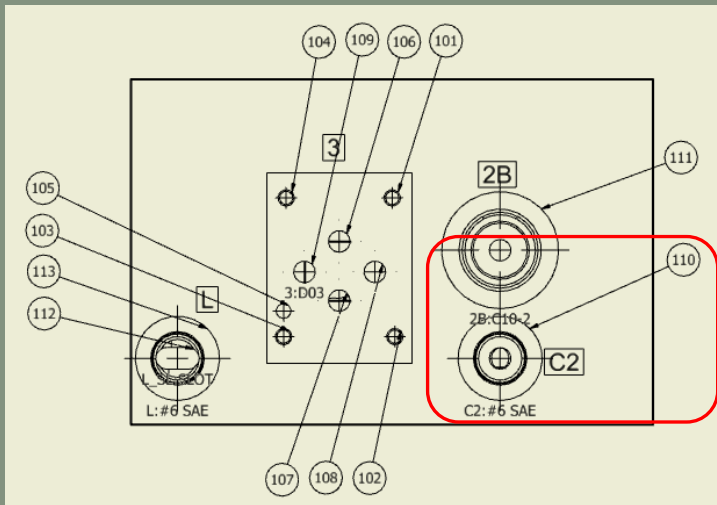
Machining Chart				
Name	Operation	Diameter	Depth	Location
2B	DRILL	0.250	2.000	(4.250/ 1.999)
	C10-2	1.344	0.031	
3-A	DRILL	1/4	1.000	(2.400/ 2.100)
3-B	DRILL	1/4	1.000	(2.400/ 1.420)
3-BH1	TAP DRILL	5/32	0.700	(3.010/ 2.600)
	TAP	#10-24	0.500	
3-BH2	TAP DRILL	5/32	0.700	(3.040/ 1.006)
	TAP	#10-24	0.500	
3-BH3	TAP DRILL	5/32	0.700	(1.760/ 1.006)
	TAP	#10-24	0.500	
3-BH4	TAP DRILL	5/32	0.700	(1.790/ 2.600)
	TAP	#10-24	0.500	
3-LP	DRILL	11/64	0.175	(1.760/ 1.301)
3-P	DRILL	0.250	2.000	(2.000/ 1.750)
3-T	DRILL	1/4	2.025	(2.810/ 1.750)
L	DRILL	0.438	2.000	(0.540/ 0.756)
	FORM PORT	#6 SAE	0.031	
	TAP	9/16-18	0.531	
L_SL	SLOT	0.250	2.500	(0.540/ 0.756)

Updated Machining chart



Balloons/Annotations Automatically Updated

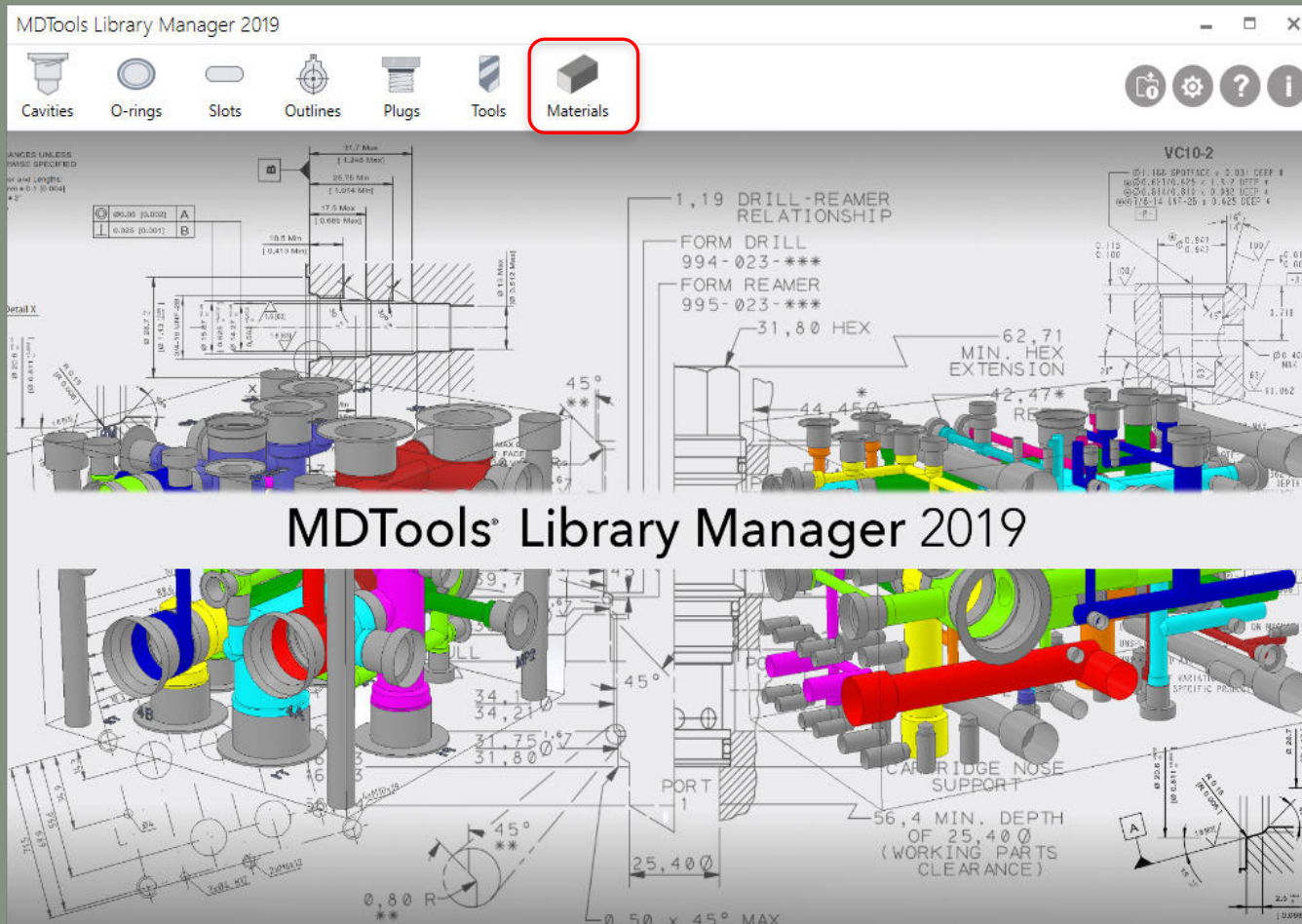
Balloons and all MDTTools drawing annotations updated when the Part (Block) is modified





MDTools Library Manager 2019

Materials section included in MDTools Library Manager 2019

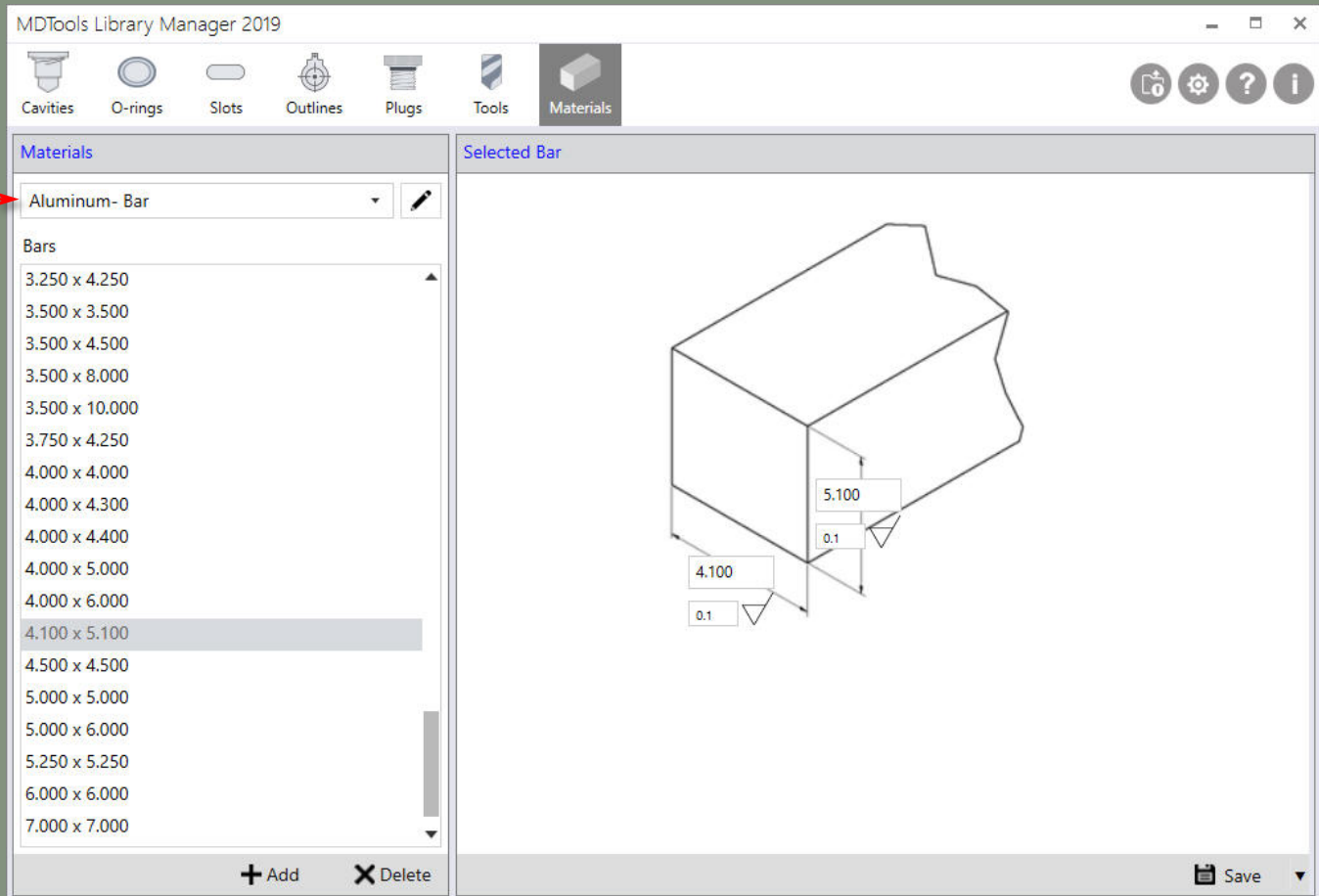


MDTools® Library Manager 2019



Manage Material Bars

Manage cross section and machining allowance of bars

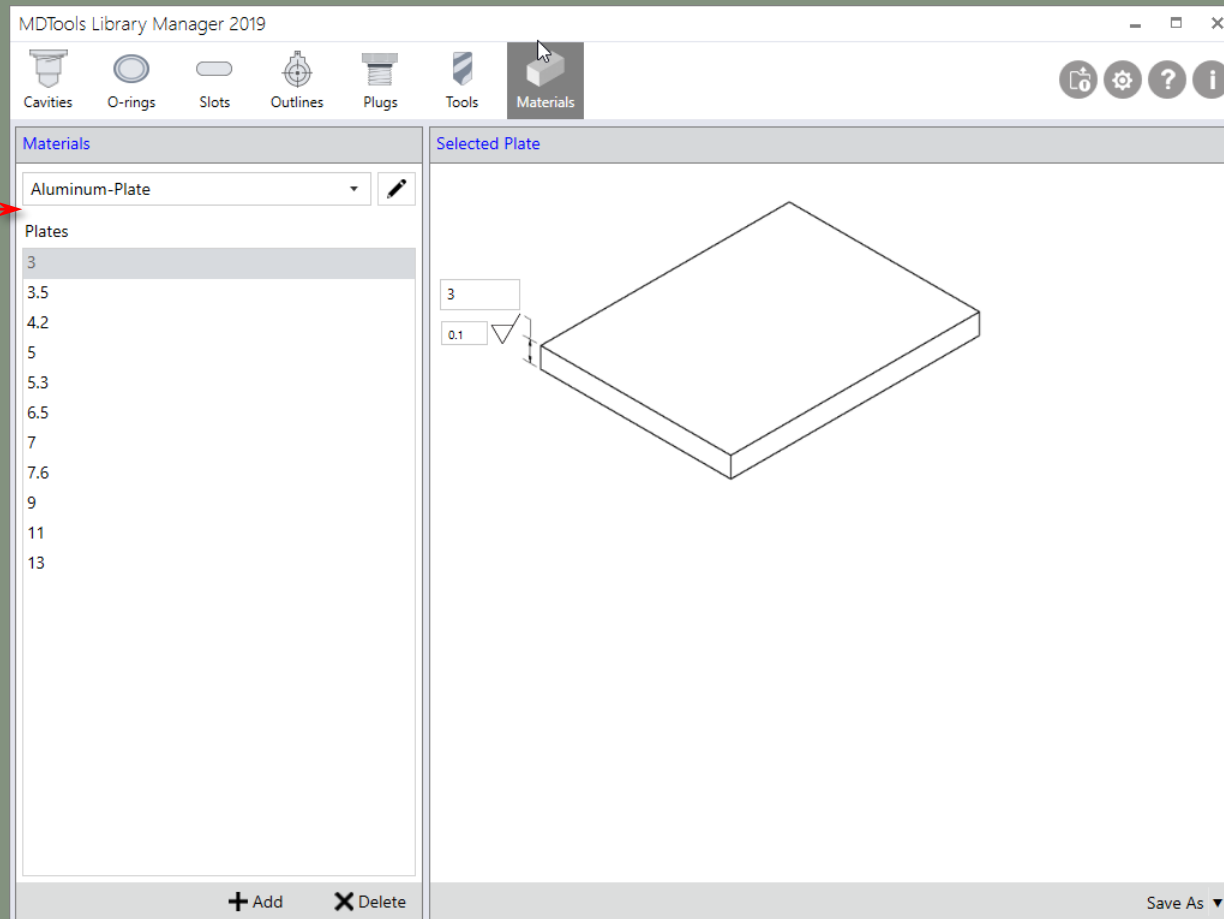




Manage Material Plates

Manage thickness and machining allowance of plates

Select Material for Plate





Add/Modify Materials and Allowances

Manage material cross section and machining allowance of bars and plates

The screenshot shows the MDTools Library Manager 2019 interface. On the left, the 'Materials' list includes 'Aluminum- Bar' and a list of bar dimensions. A red box highlights the edit icon (a pencil) next to 'Aluminum- Bar'. A red arrow points from this icon to the 'Manage Materials' dialog box on the right. The dialog box shows the selected material 'Aluminum- Bar' and its 'Type' as 'Bar'. The 'Machining Allowance' is set to '0.1'. The dialog also has 'Add', 'Update', and 'Delete' buttons at the bottom.

Material	Type	Machining Allowance
Aluminum- Bar	Bar	0.1
DuraBar		
Steel- Plate		

Do more...

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manifold design software

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