



Library Fabs and Door \ Door Frame Fabrication Guide

Contents

.....	1
FAB RULES LIBRARY	3
Door Frame – Library Fab – BUTT HINGE.....	6
Door Stile (Extrusion) – Library Fab – BUTT HINGE.....	9
Door Stile (Assembled) – Library Fab – BUTT HINGE	11
Automate – Library Fab – Hinge	13
Door Frame – Library Fab – MS 1850 Lock.....	16
Door Stile (Extrusion) – Library Fab – MS 1850 Lock	18
Door Stile (Assembled) – Library Fab – MS 1850 Lock	20
Automate – Library Fab - Lock	22
New formula guide for doors and door frames	25
Rhinofab Master Drill List	26

FAB RULES LIBRARY

Fab Rules Library Database – This database allows you to create a pattern of fabrications to fabricate a piece of hardware onto an extrusion or door. We need a fab for each condition that you would need for that hardware. Example: Butt Hinge – we would need a fabrication for the door frame, the door style (individual extrusion) or for a welded door.

NOTE: If you have a newer 5000 door fab center you can use the same on the door as the exploded door. The exploded door parts just need the FAB Leg Offest checked and then can run outside up like an assembled door

Fab Rules Library Details	
▼ FAB RULES LIBRARY	
NAME	4 1/2" BUTT HINGE - FRAME
DESCRIPTION:	Frame
OPERATIONS	
USE X LOC REFERENCE	☐
USE Y LOC REFERENCE	☒
VENDOR	
FAB TYPE	HINGE

Library fabrication for a 4.5 inch Butt Hinge on a Door Frame

FAB RULES LIBRARY

- **NAME** – What you want to call the Fabrication so that you can find it later. Should define the hardware and weather it is for the FRAME, for a Door stile (stick) or for a Welded Door so you know what to pick.
- **DESCRIPTION** – Larger field to allow you to put details on what this fab was designed to do.
- **OPERATIONS** – This allows you to define the different operations needed to fabricate this hardware onto a door or door frame. See next section.
- **USE X LOC REFERENCE** – If you check this box, it will allow you to adjust the location of the fab from front to back.
- **USE Y LOC REFERENCE** – If you check this box, it will allow you to define the location that this fab centers off of. Unchecked, you define operation locations with formulas, or a fixed number from the finish floor or bottom of the door.
- **VENDOR** – Who makes the hardware. This allows you to sort the list to find a specific vendor's hardware fabrications.
- **FAB TYPE** – This is another sort option. The list can be edited or changed in the List Manager under Fab List.

FAB OPERATION	X LOC	Y LOC	Z LOC	RX	RY	DEPTH	LIMIT	DIRECTION	TOOL	DRILL	WIDTH	HEIGHT	DIAMETER	PATTERN	FAB TYPE	ACTIVE LEAF	NO OF STEPS	POCKET	GROUP NO	PRIORITY
RECTANGLE	.765	0	1.75			.14	.5	TOP	EM11-A	0.25	4.53125	1.6875	0							
DRILL	.625	-3.5	1.75			.25	.5	TOP	EM11-A	0.25	0	0	0							
DRILL	.625	3.5	1.75			.25	.5	TOP	EM11-A	0.25	0	0	0							
DRILL	1.25	-2.75	1.75			.25	.5	TOP	EM11-A	0.25	0	0	0							
DRILL	1.25	2.75	1.75			.25	.5	TOP	EM11-A	0.25	0	0	0							

Operations screen in Fab Rules Library

FAB RULES LIBRARY OPERATIONS

This screen allows you to lay out the fabrications required.

- **FAB OPERATION** – What do you want to do – Rectangle, Drill, Slot, Countersink, Circle etc.
- **X LOC** – Position from back fence forward to fabrication location. (fixed positions will place this exactly there each time. You can use other designators such as SFW which is style frame width or FD frame depth to make this fabrication look up the part to apply based on extrusion or depth.
- **Y LOC** – Position down the length of the part – Either fixed from finish floor / Bottom of Door or from a designated number based on a formula. i.e placing a hinge at 12 inches would center the rectangle at 12 and all the other fab operations would be off of that number.
- **Z LOC** – Position from fab table up – Defines the starting position up and down. To make the above example more flexible, we can put in FW instead of 1.75. That way if I use a 2” or bigger mullion it will adjust to that mullion instead of me having to change it manually or make a different fab for the different door jamb.
- **RX** – Rotation angle Left to Right that allows you to drill off of 0 degrees – max +/- 45 degree.
- **RY** – Rotation angle Front to Back that allows you to drill off of 0 degrees. – max +/- 45 degree.
- **DEPTH** – How deep should we drill, rout etc.
- **LIMIT** – What is the max depth before I damage the part (drill through another wall or hit an object) if I am drilling into a cavity, at what point in the depth would I go into the other side. The depth can never be larger than the limit or we will skip the fabrication.
- **DIRECTION** – What Direction is the fabrication coming from – Top Front Back or Bottom or XTop, XBottom, XBack or XFront. X(value) will push these fabrications to a second pass. This is used when you need multiple drills, end mills or countersink fabs but you don’t have a tool changer.
- **TOOL** – What are we using to drill, rout or fabricate that operation.
- **DRILL** – Diameter of the tool selected (this is auto populated)
- **WIDTH** – Fab on the length or Y axis for slot or rectangle. (left to right)
- **HEIGHT** – Fab on the Depth or X (top or bottom fabrication – Front to Back)\ Z axis (front or back fabrication Moves Up and Down) for slot or rectangle
- **RADIUS** – Diameter of circle or radius of rounding on rectangles.
- **PATTERN** – If operation of PATTERN was chosen, this will tell us the file name for the pattern you are calling out.
- **FAB TYPE** – What door operation is this fab for – Hinge, Lock, Header, Threshold, bottom rail, top rail or other.
- **ACTIVE LEAF** – Allows you to only use this operation when it is either an ACTIVE or INACTIVE LEAF.

- NO OF STEPS – Allows you to control how many step downs we take during that operation. If a Rectangle needed to go through a ¼ wall thickness, we wouldn't want to take the rout all at once, we would want to step down and do 1/8" at a time. So 2 or 3 steps to prevent breaking the bit.
- POCKET – Allows you to clear everything from an operation. Would mostly be used for alternative fabrications where I need to rout a rectangle but I am not going all the way through and I need to score the same depth throughout the whole rectangle area.
- GROUP NO – Allows you to group fabrications together within a fab window.
- PRIORITY – Allows you to define the order of operations within a group

Fab Rules Library allows us to create patterns of fabrications that we can apply to parts to fabricate a piece of hardware on individual extrusions and even on assembled doors if you have the equipment to load and process assembled doors.

Individual Extrusions

Individual extrusions are processed through METAL FABRICATION in PartnerPak Studio or Glazier Studio. Go to the product you want the fabrication to be on and click the add operation to continue.
Individual extrusions could be door frame material and even door leaf material that is unassembled.

Assembled Doors

To add library fabrications to assembled doors we use DOOR FABRICATION in PartnerPak Studio or Glazier Studio. Go to the door and press the add operations to add library fabs. If you are specifying locations, you can use finish floor by checking the box so it calculates the position minus the bottom gap.

Library Fabrications

If fabrications for different surfaces require a different library pattern we need to make a library fabrication for that configuration. We will deal with door frames as extrusions and doors as either extrusion or assembled door. Frame Fabrication will require a unique library fab pattern to call out the appropriate surface we are fabricating. We have to create a library fab pattern for the door frame and the door style separately. Door frame material fabricate typically from the top. Door style fabrication can require 2 different library fabs based on how it is being run. We would have a library fab for running the door style as an individual stick (if you are eligible for buying the stock length material for doors) or a library fab for an assembled door.

We will go through 2 different types of library fabrications to show you how they are created, applied and how you can automate the application of library fabrications on a door \ frame.

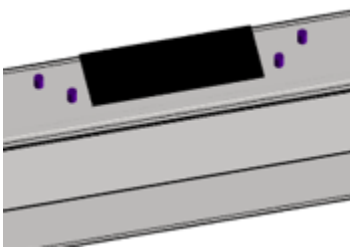
DOOR FRAME - LIBRARY FAB - BUTT HINGE

Fab Rules Library Details

▼ **FAB RULES LIBRARY**

NAME	4 1/2" BUTT HINGE - FRAME
DESCRIPTION:	Frame
OPERATIONS	
USE X LOC REFERENCE	☐
USE Y LOC REFERENCE	☒
VENDOR	
FAB TYPE	HINGE

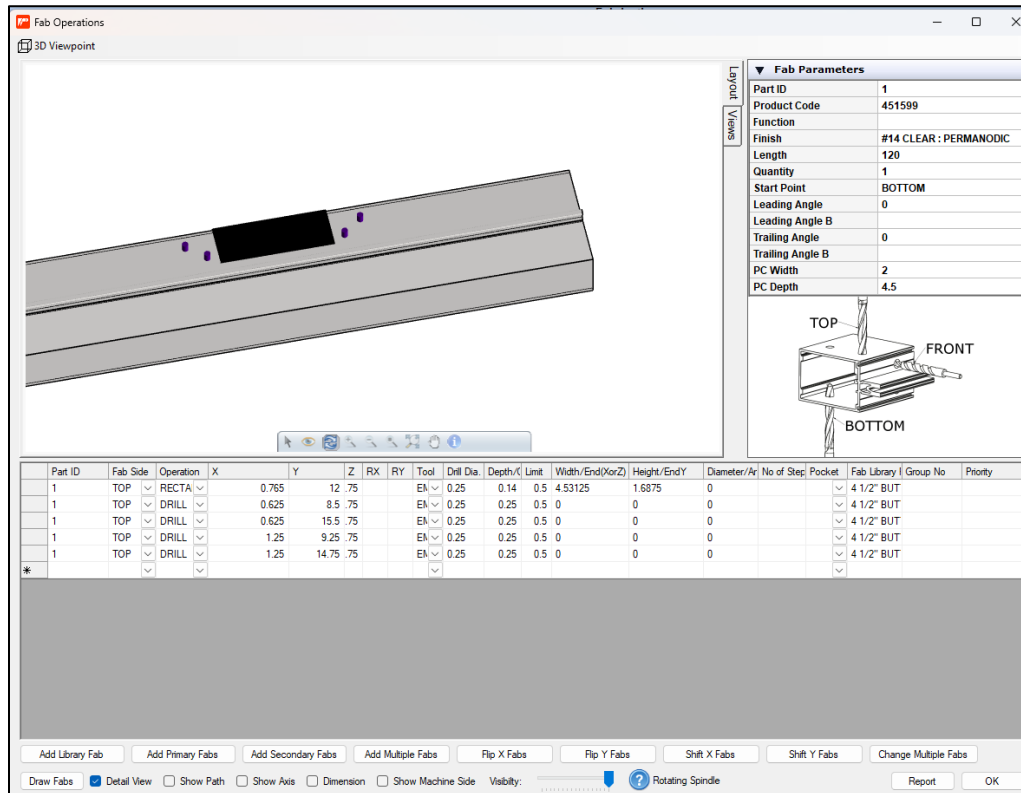
OPERATIONS																					
FAB OPERATION	X LOC	Y LOC	Z LOC	RX	RY	DEPTH	LIMIT	DIRECTION	TOOL	DRILL	WIDTH	HEIGHT	DIAMETER	PATTERN	FAB TYPE	ACTIVE LEAF	NO OF STEPS	POCKET	GROUP NO	PRIORITY	
RECTANGLE	765	0	1.75			14	5	TOP	EM11-A	0.25	4.53125	1.6875	0								
DRILL	625	-3.5	1.75			25	5	TOP	EM11-A	0.25	0	0	0								
DRILL	625	3.5	1.75			25	5	TOP	EM11-A	0.25	0	0	0								
DRILL	1.25	-2.75	1.75			25	5	TOP	EM11-A	0.25	0	0	0								
DRILL	1.25	2.75	1.75			25	5	TOP	EM11-A	0.25	0	0	0								
*																					
																				OK	Cancel



This library fabrication creates a pattern of holes based on the center of the pattern defined which is the rectangle with the holes being plus or minus from center of rectangle. Then all we need to do is define location to the center of the pattern when using. The example of the library fab you see above is not flexible because they defined exact positions and didn't incorporate formulas to make them more flexible.

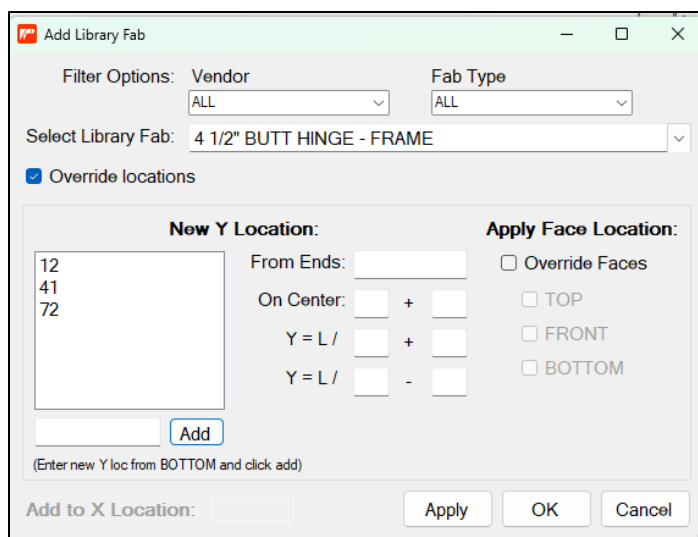
By changing the Z LOC to FW this would work for any height of part. Door frame parts can be 1.75, 2, 2.25 and even taller so using the formula here would allow you to use the same library fabrication on all those parts instead of just working for the 1.75 tall parts.

Once the Library fabrication is created, we can then add it to the door frame by going to METAL FABRICATION importing the job and selecting the Hinge Jamb line item and going to the ADD OPERATIONS to add the fabrications to the door frame.



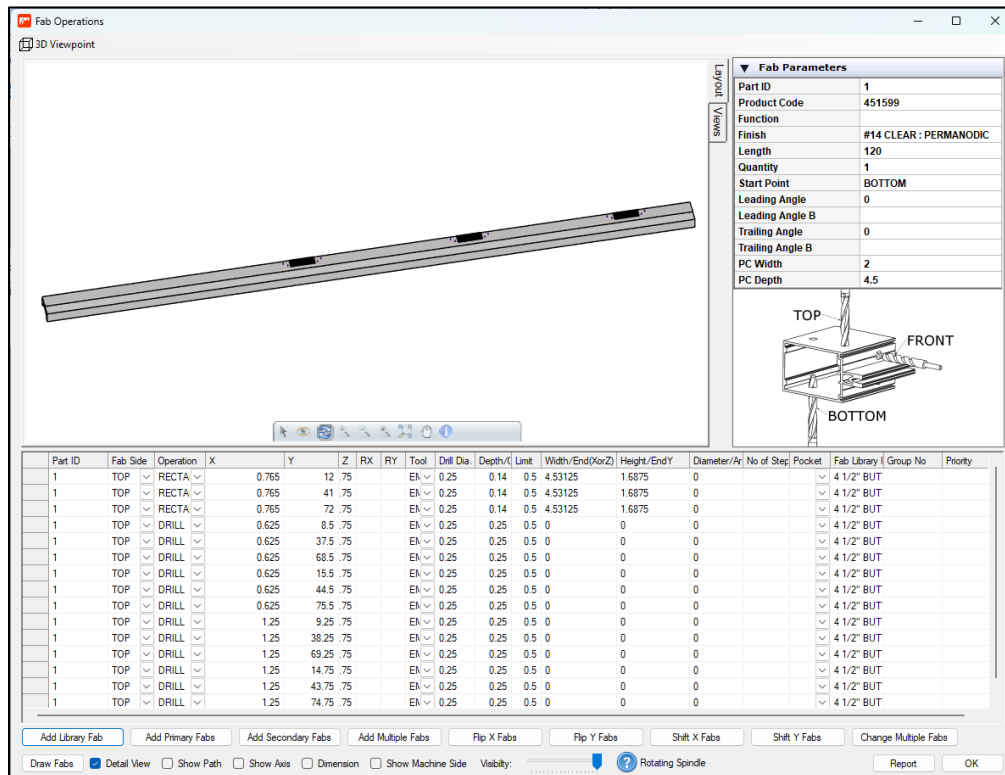
Here is an example of applying the library fab to a door frame at 12 inches from the bottom or floor.

We click on the Add Library Fab to apply a library fabrication to a door frame.



Add library fab screen

In the above example we are adding 3 hinge preps to the door frame centering the hinges at 12, 41 and 72 inches. When using library fabs we always give the value from the bottom or floor.



Fab Operations screen with 3 butt hinges added to door jamb.

DOOR STILE (EXTRUSION) - LIBRARY FAB - BUTT HINGE

Fab Rules Library Details

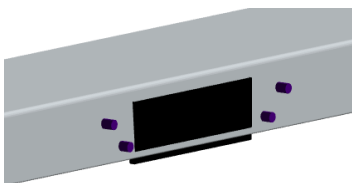
FAB RULES LIBRARY

NAME	TUB Std.-Butt Hinge-Door
DESCRIPTION:	DOOR PREP
OPERATIONS	
USE X LOC REFERENCE	☐
USE Y LOC REFERENCE	☒
VEDNOR	
FAB TYPE	HINGE

OPERATIONS

FAB OPERATION	X LOC	Y LOC	Z LOC	RX	RY	DEPTH	LIMIT	DIRECTION	TOOL	DRILL	WIDTH	HEIGHT	DIAMETER	PATTERN	FAB TYPE	ACTIVE LEAF	NO OF STEPS	POCKET	GROUP NO	PRIORITY
RECTANGLE	SFW-.01	0	.1101			.165	.25	FRONT	EM11-A	0.25	4.516	.47	0		HINGE					
DRILL	SFW	2.75	.375			.35	.50	FRONT	EM11-A	0.25	0	0	0		HINGE					
DRILL	SFW	-2.75	.375			.35	.50	FRONT	EM11-A	0.25	0	0	0		HINGE					
DRILL	SFW	3.375	1			.35	.50	FRONT	EM11-A	0.25	0	0	0		HINGE					
DRILL	SFW	-3.375	1			.35	.50	FRONT	EM11-A	0.25	0	0	0		HINGE					
RECTANGLE	SFW+.01	0	.7781			.35	.50	FRONT	EM11-A	0.25	4.51	1.1938	0		HINGE					

OK Cancel



This library fabrication applies a pattern centered on the defined positions to apply the fabrications needed for attaching a hinge to the door. The example of the library fab you see above is very flexible because they defined SFW so it would work on narrow, medium or wide stile doors.

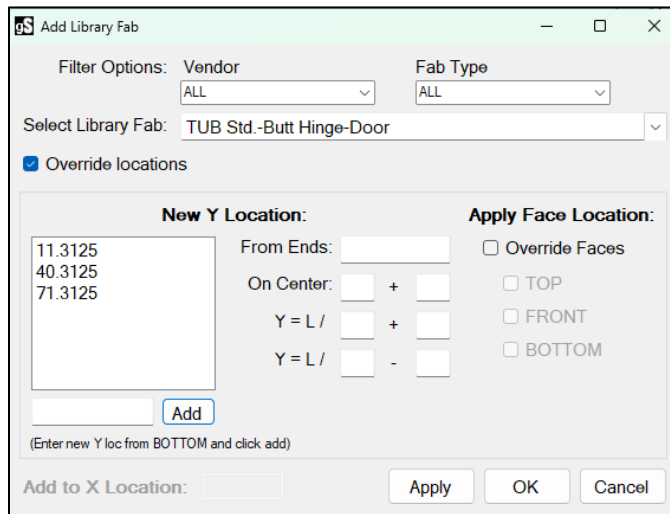


Once the Library fabrication is created, we can then add it to the door stile by going to METAL FABRICATION importing the job and selecting the Hinge Stile line item and going to the ADD OPERATIONS to add the fabrications to the door stile.

This fabrication required us to use 2 rectangles. One smaller one to rout the face to the depth required and a second one to rout the remainder of the rectangle. The part is at a bevel so we cannot just do this in one rectangle with out making too much of a reveal on the face of the door at the hinge.

This fabrication assumes that you put the extrusion in so long point of the beveled extrusion is at the bottom. We would have to change the fabrications if you wanted to do this with long point at top, you would be changing the Z LOC to DT- the value in the field. So no matter how thick the door is, it goes to the top of the door and comes down to position.

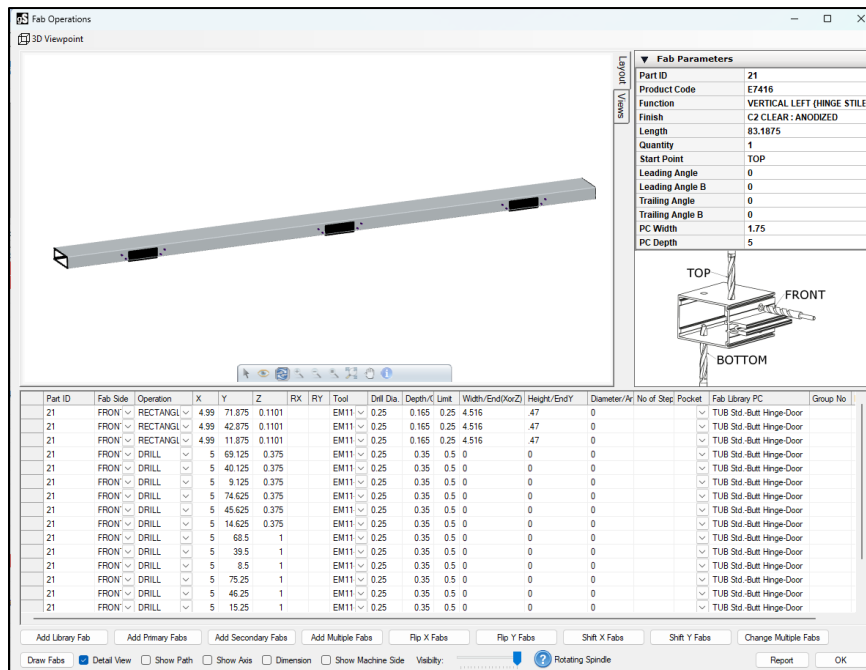
We click on the Add Library Fab to apply a library fabrication to a door stile.



The 'Add Library Fab' dialog box is shown. It has a title bar with a close button. Inside, there are 'Filter Options' for 'Vendor' (set to 'ALL') and 'Fab Type' (set to 'ALL'). Below this is a 'Select Library Fab' dropdown menu showing 'TUB Std.-Butt Hinge-Door'. A checkbox for 'Override locations' is checked. The 'New Y Location' section contains a list box with '11.3125', '40.3125', and '71.3125', and an 'Add' button. To the right of the list box are input fields for 'From Ends:', 'On Center:', and 'Y = L /' with '+' and '-' operators. The 'Apply Face Location' section has checkboxes for 'Override Faces', 'TOP', 'FRONT', and 'BOTTOM'. At the bottom, there is an 'Add to X Location:' field and 'Apply', 'OK', and 'Cancel' buttons. A small note at the bottom left says '(Enter new Y loc from BOTTOM and click add)'.

Add library fab screen

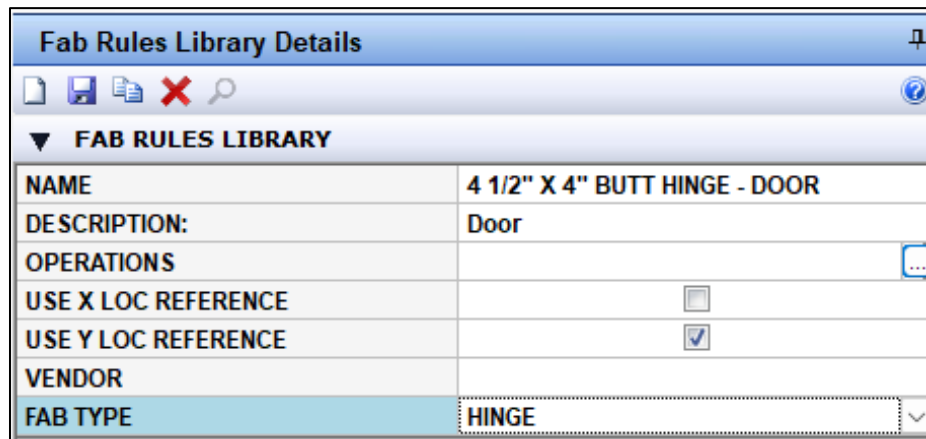
In the above example we are adding 3 hinge preps to the door style centering the hinges at the location from the bottom of the door which we would deduct the bottom gap from the numbers we used at the frame. If bottom gap is .6875 then hinges would need to be at 11.3125, 40.3125 and 71.3125 inches. When using library fabs we always give the value from the bottom of extrusion.



The 'Fab Operations' screen is shown. It has a title bar and a '3D Viewpoint' button. The main area displays a 3D model of a door hinge stile with three butt hinges. To the right is a 'Fab Parameters' panel with fields for 'Part ID' (21), 'Product Code' (E7416), 'Function' (VERTICAL LEFT (HINGE STILE)), 'Finish' (CZ CLEAR: ANODIZED), 'Length' (83.1875), 'Quantity' (1), 'Start Point' (TOP), 'Leading Angle' (0), 'Leading Angle B' (0), 'Trailing Angle' (0), 'Trailing Angle B' (0), 'PC Width' (1.75), and 'PC Depth' (5). Below the parameters is a small 3D diagram showing 'TOP', 'FRONT', and 'BOTTOM' views. At the bottom is a table with columns: Part ID, Fab Side, Operation, X, Y, Z, RX, RY, Tool, Drill Dia., Depth/C, Limit, Width/End/ForZ, Height/EndY, Diameter/R, No of Steps, Pocket, Fab Library PC, and Group No. The table contains 21 rows of data for various operations like RECTANG and DRILL. At the bottom of the screen are buttons for 'Add Library Fab', 'Add Primary Fabs', 'Add Secondary Fabs', 'Add Multiple Fabs', 'Rip X Fabs', 'Rip Y Fabs', 'Shift X Fabs', 'Shift Y Fabs', 'Change Multiple Fabs', 'Draw Fabs', 'Detail View', 'Show Path', 'Show Axis', 'Dimension', 'Show Machine Side', 'Visibility', 'Rotating Spindle', 'Report', and 'OK'.

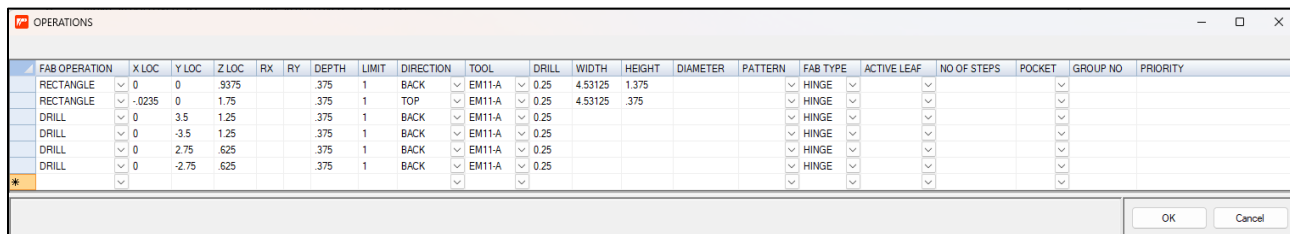
Fab Operations screen with 3 butt hinges added to door hinge stile.

DOOR STILE (ASSEMBLED) - LIBRARY FAB - BUTT HINGE



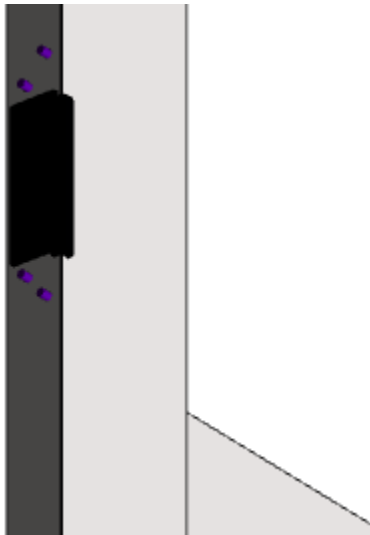
FAB RULES LIBRARY					
NAME	4 1/2" X 4" BUTT HINGE - DOOR				
DESCRIPTION:	Door				
OPERATIONS					
USE X LOC REFERENCE	☐				
USE Y LOC REFERENCE	☒				
VENDOR					
FAB TYPE	HINGE				

Library Fabrications – Butt Hinge – Assembled Door



FAB OPERATION	X LOC	Y LOC	Z LOC	RX	RY	DEPTH	LIMIT	DIRECTION	TOOL	DRILL	WIDTH	HEIGHT	DIAMETER	PATTERN	FAB TYPE	ACTIVE LEAF	NO OF STEPS	POCKET	GROUP NO	PRIORITY
RECTANGLE	0	0	9375			375	1	BACK	EM11-A	0.25	4.53125	1.375			HINGE					
RECTANGLE		-0.0235	0			375	1	TOP	EM11-A	0.25	4.53125	375			HINGE					
DRILL	0	3.5	1.25			375	1	BACK	EM11-A	0.25					HINGE					
DRILL	0	-3.5	1.25			375	1	BACK	EM11-A	0.25					HINGE					
DRILL	0	2.75	625			375	1	BACK	EM11-A	0.25					HINGE					
DRILL	0	-2.75	625			375	1	BACK	EM11-A	0.25					HINGE					

Add Operations – Butt Hinge – Assembled Door



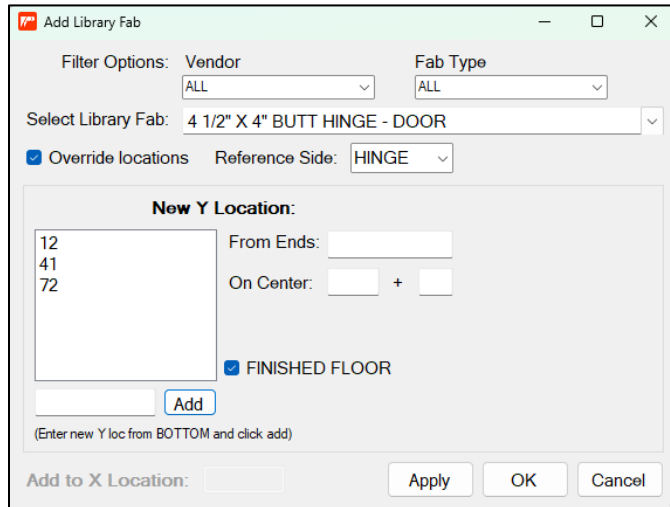
This library fabrication creates a pattern of holes based on the center of the pattern defined which is the rectangle with the holes being plus or minus from center of rectangle. Then all we need to do is define the center of the pattern when using. Assembled doors can reference the finish floor so it will take the deduction for the bottom gap.

Once the Library fabrication is created, we can then add it to the door by going to DOOR FABRICATION importing the job and selecting the door line item and going to the ADD OPERATIONS to add the fabrications to the door.

This fabrication required us to use 2 rectangles. One smaller one to rout the face to the depth required and a second one to rout the remainder of the rectangle. The part is at a bevel so we cannot just do this in one rectangle with out making too much of a reveal on the face of the door at the hinge.

This fabrication assumes that you put the door in the machine outside up and top in first, so long point is at the top.

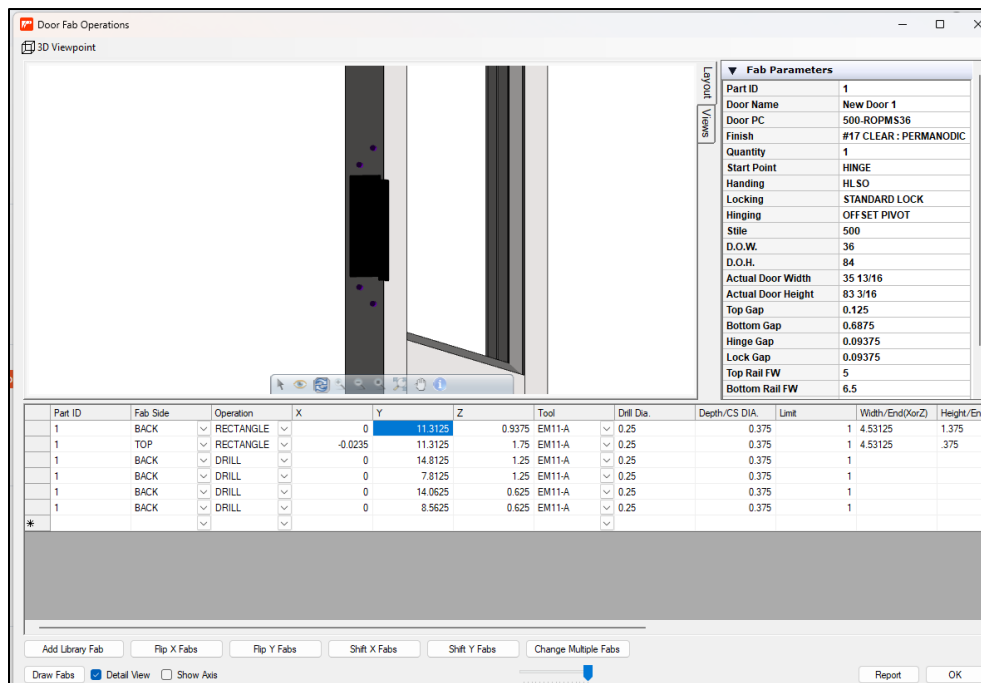
We click on the Add Library Fab to apply a library fabrication to a door.



The 'Add Library Fab' dialog box is shown. It has a title bar with a red 'X' icon. The 'Filter Options' section includes 'Vendor' and 'Fab Type' dropdown menus, both set to 'ALL'. The 'Select Library Fab' dropdown is set to '4 1/2" X 4" BUTT HINGE - DOOR'. The 'Override locations' checkbox is checked. The 'Reference Side' dropdown is set to 'HINGE'. The 'New Y Location' section has a list box containing '12', '41', and '72'. To the right of the list box are 'From Ends' and 'On Center' input fields, with a '+' sign between them. Below the list box is a checked checkbox labeled 'FINISHED FLOOR'. An 'Add' button is to the right of the list box. At the bottom, there is an 'Add to X Location' input field and 'Apply', 'OK', and 'Cancel' buttons.

Add library fab screen

In the above example we are adding 3 hinge preps to the door hinge side centering the hinges at the location from the bottom of the finish floor which automatically will deduct the bottom gap from the numbers we used at the frame. If bottom gap is .6875 and you set the hinge height to 12, 41 and 72 like we did with the frame, then hinges would adjust the location to be at 11.3125, 40.3125 and 71.3125 inches.



The 'Door Fab Operations' screen is shown. It has a title bar with a red 'X' icon. The main area is a 3D Viewport showing a door stile with three hinge preps. To the right is a 'Fab Parameters' panel with a list of parameters and their values. At the bottom is a table with columns: Part ID, Fab Side, Operation, X, Y, Z, Tool, Drill Dia., Depth/CS DIA., Limit, Width/End(XorZ), and Height/End. The table contains 10 rows of data. Below the table are buttons for 'Add Library Fab', 'Flip X Fabs', 'Flip Y Fabs', 'Shift X Fabs', 'Shift Y Fabs', and 'Change Multiple Fabs'. At the very bottom are 'Draw Fabs', 'Detail View', 'Show Axis', 'Report', and 'OK' buttons.

Part ID	Fab Side	Operation	X	Y	Z	Tool	Drill Dia.	Depth/CS DIA.	Limit	Width/End(XorZ)	Height/End
1	BACK	RECTANGLE	0	11.3125	0.9375	EM11-A	0.25	0.375	1	4.53125	1.375
1	TOP	RECTANGLE	-0.0235	11.3125	1.75	EM11-A	0.25	0.375	1	4.53125	.375
1	BACK	DRILL	0	14.8125	1.25	EM11-A	0.25	0.375	1		
1	BACK	DRILL	0	7.8125	1.25	EM11-A	0.25	0.375	1		
1	BACK	DRILL	0	14.0625	0.625	EM11-A	0.25	0.375	1		
1	BACK	DRILL	0	8.5625	0.625	EM11-A	0.25	0.375	1		

Fab Operations screen with 3 butt hinges added to assembled hinge door stile.

AUTOMATE - LIBRARY FAB - HINGE

When you want to have the program add the library fabs for you onto doors and frames, you can add the library fabs with or without Y LOC info onto catalog parts and then when you add this part to your door, it will add the fabrication preps to the door and frame as specified by the hardware information.

For example, I want to automate the butt hinge on a Kawneer Door and Frame, I would go to CATALOG PARTS first, then bring up the product code for the hinge you are adding to the door.

Catalog Parts Details	
▼ CATALOG PARTS	
NAME	138408
DESCRIPTION:	4 1/2" X 4" 304 STAINLESS STEEL BUTT H
FUNCTION:	HARDWARE
MATERIAL:	OTHER
UNIT OF MEASURE:	EACH
KEY WORDS:	4 1/2"X4"IBUTT HINGEIEACHIHARDWAR...
VENDOR:	KAWNEER COMPANY INC.
PRIMARY CATALOG SECTION:	SECTION A2
FAB ORIENTATION:	TOP
FAB OFF SET:	
FAB I PLANE FRONT:	
FAB I PLANE TOP:	
FAB I PLANE BOTTOM:	
FAB I PLANE BACK:	
FAB LEG OFF SET:	☐
CUSTOM PART:	☐
FAB-OPT PART	
▼ Hardware Options	
PART PARAMETERS	...
PART PRICING	...
PART INVENTORY	...
ASSEMBLY DATA	...
HARDWARE PREP	...
FABRICATION PREP	...

Catalog Parts – 138408 Butt Hinge

Go to FABRICATION PREP under Hardware Options.

FRAME FAB PC	X LOC	Y LOC	DOOR FAB PC	X LOC	Y LOC
4 1/2" BUTT HINGE - FRAME		10, DOH-14.5	4 1/2" X 4" BUTT HINGE - DOOR		10FF, DOH-14.5

OK Cancel

Fabrication Prep Screen

This adds a specific library fab prep to the frame and one for the door setting the Y LOC for 2 hinges, one at 10" and one at 14.5" from Door Opening Height DOH. So if door is 84" tall, on the frame the hinge centers at 10" and 69.5 from floor and door locations will be 10" – bottom gap and will be at 9.3125 from bottom of door, and top hinge will be 84 minus 14.5 minus bottom gap would place the top hinge center at 68.8215 from bottom of door.

Since we edited the hinge, we have to add that hardware to the door for it to pick up the prep charges.

Door Configurator

Doors

View

39 1/2

36

84

81

DOOR GROUP DESIGN

▼ Properties

Name: New Door 1

DESCRIPTION: CUSTOM A2

TYPE: DOOR & FRAME

GROUP TYPE: S

SINGLE OR PAIR (SIP): S

DOOR WIDTH: 36

DOOR HEIGHT: 84

HANDING: HL SO

LOCK TYPE: STANDARD LOCK

HINGE TYPE: BUTT HINGE

STILE: 190 BEVELED

FRAME TYPE: TF450 - C1A

HOW COLOR: DEFAULT

DOORLITE PC: SOFT DOORLITE

LABOR: []

REMARKS/SPEC S: []

DOOR COLOR: #17 CLEAR : PERMANODIC

DOOR FRAME COLOR: #17 CLEAR : PERMANODIC

▼ Door / Frame Choices

DOOR NO: 190-SBVBK

FRAME NO: NULL

SPECIAL SIZE DOOR: NULL

► Hardware Options

► Modify Framing

▼ Other Door Options

TRANSOM (Y/N): []

CUSTOMER FABRICATE (Y/N): []

DOOR SETUP: []

FABRICATION HARDWARE: []

OK Cancel Save to Database

Project Door Configurator Screen

When inserting a door, configure your door and under Hardware Options add the hardware to the door, in this case a 138408 Butt Hinges to the door.

 BUTT HINGE

Butt Hinge Options			
Item Name	Quantity	Product Code	Finish
4 1/2 X 4 ELECTRIC	0	138430	DEFAULT
FRAME PREP	0	138418	#00 UNDEFINED
4 1/2 X 4 N.R.P. S.S. BALL BEARING	0	31219A2	#46 SS US32D
4 1/2 X 4 304 N.R.P. S.S.	2	138408	DEFAULT

Add Hardware – Butt Hinge

Insert the door into a frame and save. Now when you go to door fabrication, it will automatically bring in the 2 hinge fabrications to the door. You can manually add a third if desired, or update the catalog part if you always put 3 hinges.

Next we will look at MS 1850 Locks.

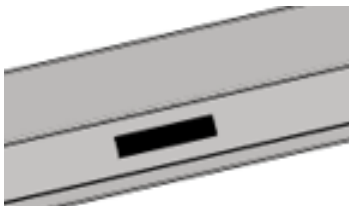
DOOR FRAME - LIBRARY FAB - MS 1850 LOCK

Fab Rules Library Details	
▼ FAB RULES LIBRARY	
NAME	KAW MS 1850 LOCK - FF - FRAME
DESCRIPTION:	40.5"FF (KAWNEER STD) - Frame
OPERATIONS	
USE X LOC REFERENCE	☐
USE Y LOC REFERENCE	☐
VENDOR	
FAB TYPE	LOCK

Library Fabrications – MS 1850 Lock - Frame

OPERATIONS																				
FAB OPERATION	X LOC	Y LOC	Z LOC	RX	RY	DEPTH	LIMIT	DIRECTION	TOOL	DRILL	WIDTH	HEIGHT	DIAMETER	PATTERN	FAB TYPE	ACTIVE LEAF	NO OF STEPS	POCKET	GROUP NO	PRIORITY
RECTANGLE	FD-1	38.43	FW			.375	1	TOP	EM11-A	0.25	3.38	.68			LOCK					

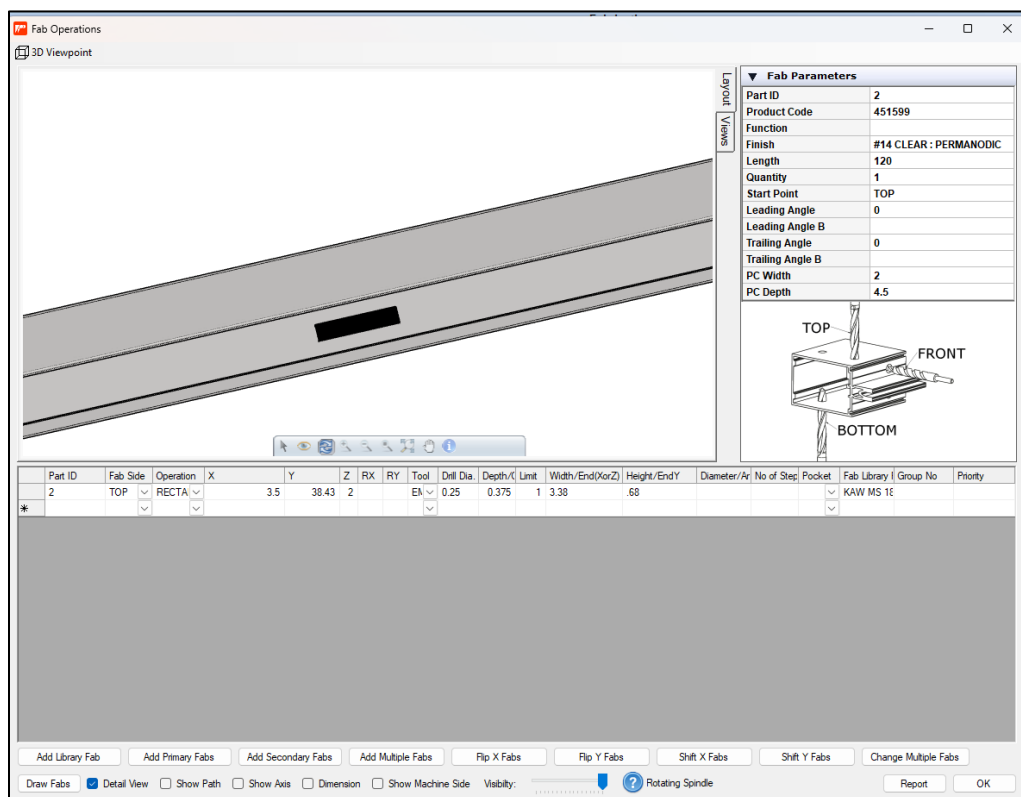
Operations – MS 1850 Lock - Frame



This library fabrication creates a rectangle for the lock to go into the frame. This particular fab is at a fixed distance from the floor so Y LOC is not selected. If the lock position can be adjusted, then we would create the pattern and have Y LOC checked to allow me to place the lock at a specific position.

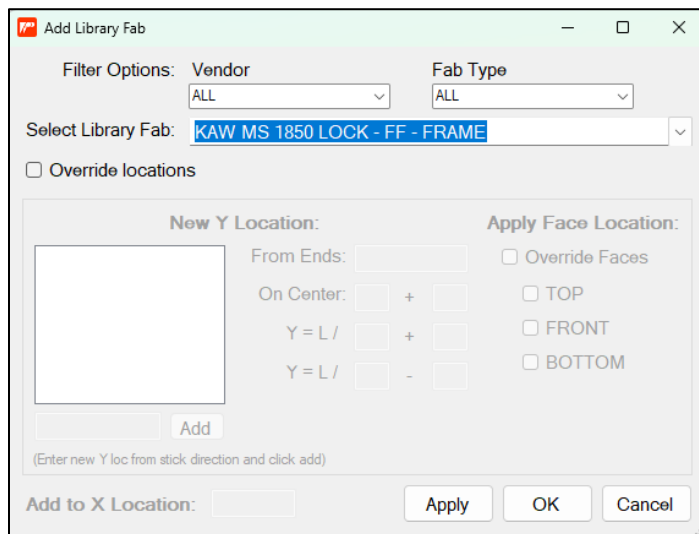
The formulas in this part allow us to position this no matter the door frame. X LOC says FD-1 so if the frame depth is 4.5 it places the center of the rectangle at 3.5 inches from the back fence. If the frame depth is 6 inches then the rectangle would be centered 5 inches from the back fence. Also using FW in the Z LOC allows us to have different height door jambs.

Once the Library fabrication is created, we can then add it to the door frame by going to METAL FABRICATION importing the job and selecting the Lock Jamb line item and going to the ADD OPERATIONS to add the fabrications to the door frame.



Here is an example of applying the library fab to a door frame.

We click on the Add Library Fab to apply a library fabrication to a door frame.



Add library fab screen

In the above example we are adding the lock strike plate fabrication to the door frame lock stile.

DOOR STILE (EXTRUSION) - LIBRARY FAB - MS 1850 LOCK

Fab Rules Library Details

FAB RULES LIBRARY

NAME	KAW MS 1850 LOCK - FF - DOOR
DESCRIPTION:	40.5" FF (KAWNEER STD) - Door
OPERATIONS	...
USE X LOC REFERENCE	☐
USE Y LOC REFERENCE	☐
VENDOR	
FAB TYPE	LOCK

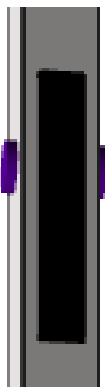
Library Fabrication – MS 1850 Lock – Door – (extrusion)

OPERATIONS

FAB OPERATION	X LOC	Y LOC	Z LOC	RX	RY	DEPTH	LIMIT	DIRECTION	TOOL	DRILL	WIDTH	HEIGHT	DIAMETER	PATTERN	FAB TYPE	ACTIVE LEAF	NO OF STEPS	POCKET	GROUP NO	PRIORITY
RECTANGLE	0	39.6515	DT/2			.625	1	FRONT	EM11-A	0.25	6.885	1.025	1.25		LOCK					
CIRCLE	1.5	41.5	DT			.375	1	TOP	EM11-A	0.25			1.25		LOCK					
CIRCLE	1.5	41.5	0			.375	1	BOTTOM	EM11-A	0.25			1.25		LOCK					

OK Cancel

Operations – MS 1850 Lock – Door – (extrusion)

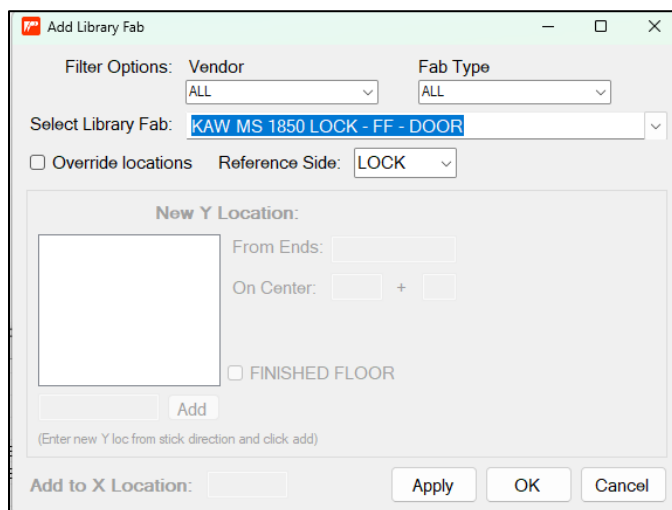


This library fabrication creates a pattern to add an MS 1850 lock to the door stile. It consists of 2 circles - one from top and one from bottom and one rectangle from front.

Once the Library fabrication is created, we can then add it to the door stile by going to METAL FABRICATION importing the job and selecting the Lock Stile line item and going to the ADD OPERATIONS to add the fabrications to the door stile.

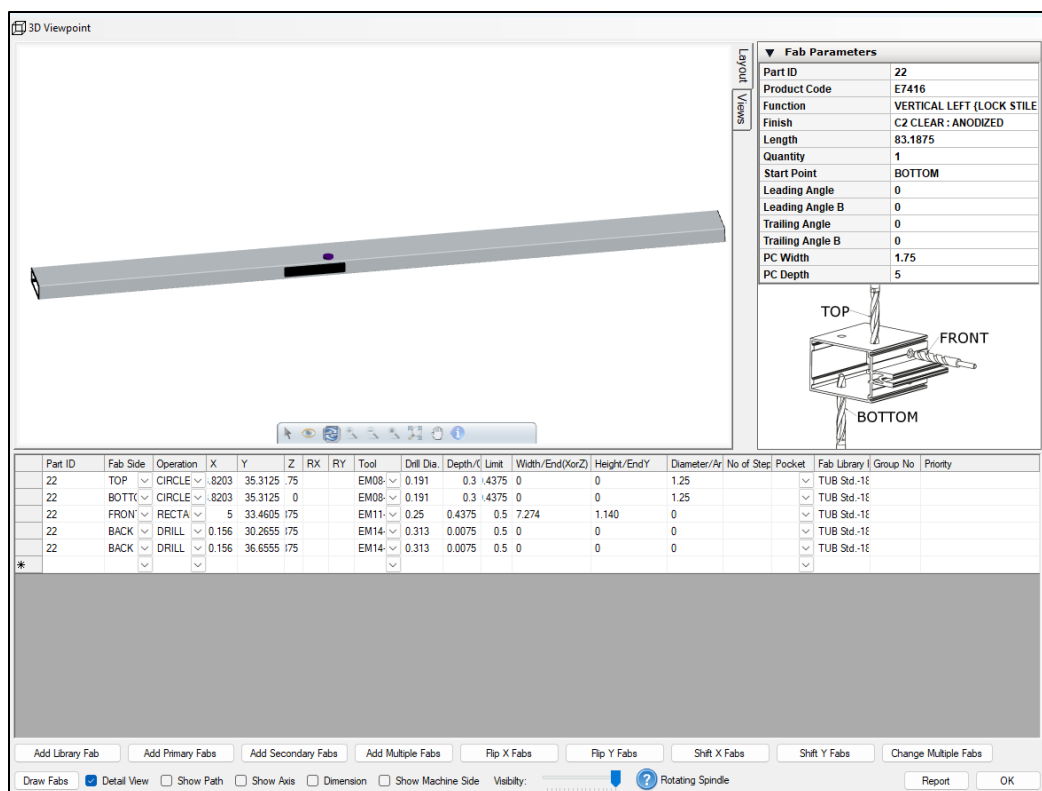
This fabrication is set to a fixed position from the bottom of the door stile

We click on the Add Library Fab to apply a library fabrication to a door stile.



Add library fab screen

This will add the library fab preps for the door stile extrusion.



Fab Operations screen with MS 1850 Lock preps

DOOR STILE (ASSEMBLED) - LIBRARY FAB - MS 1850 LOCK

Fab Rules Library Details

FAB RULES LIBRARY

NAME	KAW MS 1850 LOCK - FF - DOOR
DESCRIPTION:	40.5" FF (KAWNEER STD) - Door
OPERATIONS	...
USE X LOC REFERENCE	☐
USE Y LOC REFERENCE	☐
VENDOR	
FAB TYPE	LOCK

Library Fabrication – MS 1850 Lock – Door – (Assembled)

OPERATIONS

FAB OPERATION	X LOC	Y LOC	Z LOC	RX	RY	DEPTH	LIMIT	DIRECTION	TOOL	DRILL	WIDTH	HEIGHT	DIAMETER	PATTERN	FAB TYPE	ACTIVE LEAF	NO OF STEPS	POCKET	GROUP NO	PRIORITY
RECTANGLE	0	39.6515	DT/2			.625	1	FRONT	EM11-A	0.25	6.885	1.025			LOCK					
CIRCLE	1.5	41.5	DT			.375	1	TOP	EM11-A	0.25			1.25		LOCK					
CIRCLE	1.5	41.5	0			.375	1	BOTTOM	EM11-A	0.25			1.25		LOCK					
*																				

OK

Cancel

Library Fabrication – MS 1850 Lock – Door – (Assembled)



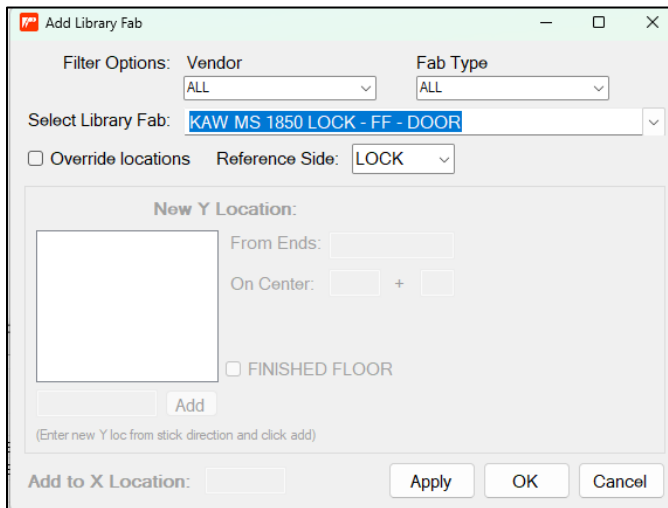
This library fabrication creates a pattern to add an MS 1850 lock to the door stile. It consists of 2 circles - one from top and one from bottom and one rectangle from front.

Once the Library fabrication is created, we can then add it to the door stile by going to DOOR FABRICATION importing the job and selecting the door line item and going to the ADD OPERATIONS to add the fabrications to the door.

This fabrication is set to a fixed position from the bottom of the door

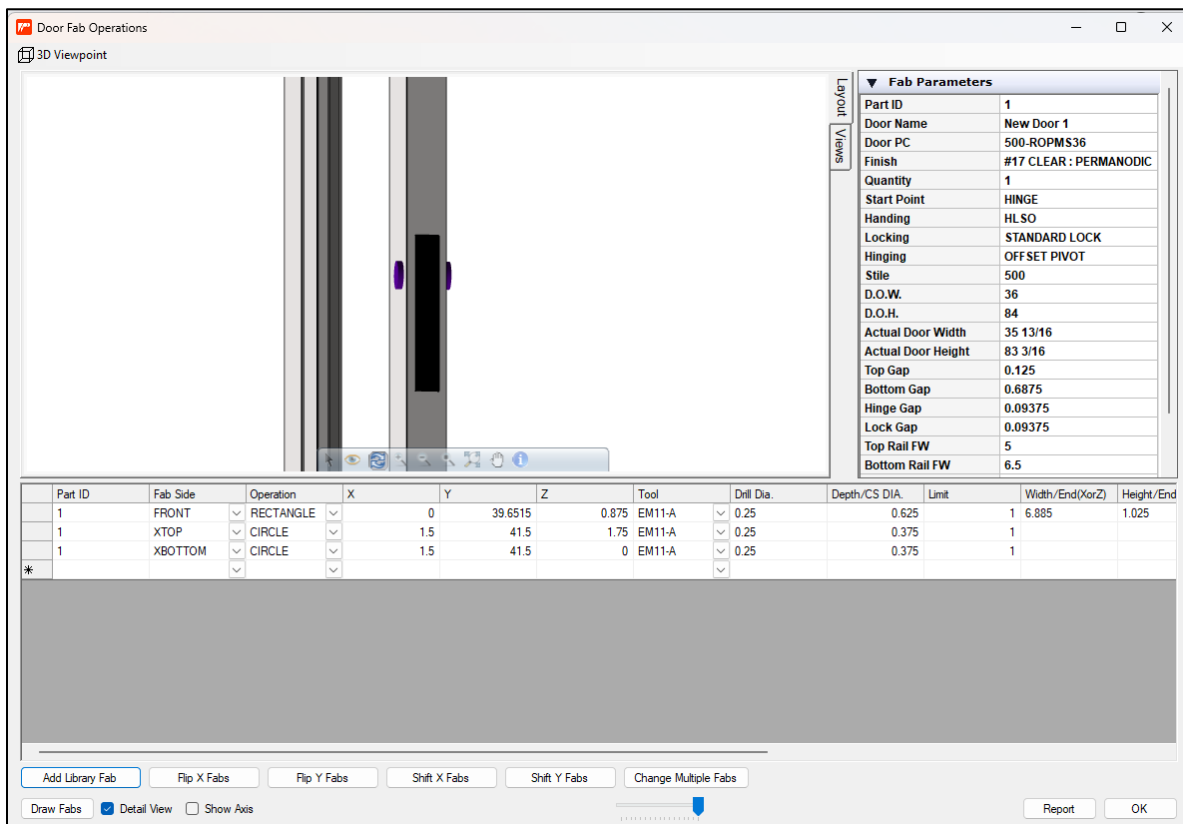
This fabrication assumes that you put the door in the machine outside up and top in first, so long point is at the bottom.

We click on the Add Library Fab to apply a library fabrication to a door.



Add library fab screen

This will add the library fab preps for the door lock onto the lock side of the door leaf.



Fab Operations screen with MS 1850 Lock preps on door leaf

AUTOMATE - LIBRARY FAB - LOCK

When you want to have the program add the library fabs for you onto doors and frames, you can add the library fabs onto catalog parts and then when you add this part to your door, it will add the fabrication preps to the door and frame as specified by the hardware information.

For example, I want to automate the MS Lock on a Kawneer Door and Frame, I would go to CATALOG PARTS first, then bring up the product code for the hinge you are adding to the door.

Catalog Parts Details	
▼ CATALOG PARTS	
NAME	138101
DESCRIPTION:	STANDARD ADAMS RITE MS1850A LOCK
FUNCTION:	HARDWARE
MATERIAL:	OTHER
UNIT OF MEASURE:	EACH
KEY WORDS:	ADAMS-RITE\HARDWARE\OTHER\SING
VENDOR:	KAWNEER COMPANY INC.
PRIMARY CATALOG SECTION:	SECTION A2
FAB ORIENTATION:	TOP
FAB OFFSET:	
FAB I PLANE FRONT:	
FAB I PLANE TOP:	
FAB I PLANE BOTTOM:	
FAB I PLANE BACK:	
FAB LEG OFFSET:	☐
CUSTOM PART:	☐
FAB-OPT PART	
▼ Hardware Options	
PART PARAMETERS	
PART PRICING	
PART INVENTORY	
ASSEMBLY DATA	
HARDWARE PREP	
FABRICATION PREP	

Catalog Parts – 138101 - MS 1850 Lock

Open FABRICATION PREP under Hardware Options.

Fabrication Prep – 138101 -MS 1850 Lock

This adds a specific library fab prep to the frame and one for the door. This lock has a fixed position so no Y LOC is needed. Press OK and save the part.

We have to add that hardware to the door for it to pick up the prep charges.

Door Configurator

Configure your door and under Hardware Options add the hardware to the door, in this case a 138101 MS 1850 Lock to the door.

 STANDARD LOCK OPTIONS

Standard Lock Options				
Item Name	Quantity	Product Code	Finish	
STD ADM RITE MS1850 LOCK	1	138101	DEFAULT	▼
ADM MS1850-020 SHORT THROW	0	138104	DEFAULT	▼
ADM MS1850-050 HOOKBOLT	0	138106	DEFAULT	▼
ADM 4510 LATCH LOCK	0	138120	DEFAULT	▼
ADM MS+1890 DEADBOLT LATCH	0	138124	DEFAULT	▼
FRAME PREP	0	138102	▼ #00 UNDEFINED	▼
FLUSH BOLTS	0	138134	▼ DEFAULT	▼
CONTROLLER 3-POINT LOCKING	0	138116	DEFAULT	▼
ADAMS RITE 4015 TWO POINT	0	138130	DEFAULT	▼
ADAMS RITE 3-POINT LOCKS	0	138132	▼ DEFAULT	▼
FRAME PREP	0	138135	▼ #00 UNDEFINED	▼

Lock Accessories				
Item Name	Quantity	Product Code	Finish	
ADM RITE 4560 LEVER HANDLE	0	138239	DEFAULT	▼
ADM RITE 4565 EMERGENCY HANDLE	0	138240	DEFAULT	▼
ADM RITE 4590 LATCH PADDLE	0	138241	DEFAULT	▼
ADM RITE 7130 ELECTRIC STRIKE	0	138242	DEFAULT	▼
FRAME PREP	0	138243	#00 UNDEFINED	▼
BBW 725 EXIT INDICATOR	0	138222	DEFAULT	▼
MS CYLINDER GUARD	0	138224	DEFAULT	▼
CYLINDER (KEYED INDIVIDUALLY)	0	138670	DEFAULT	▼
CYLINDER (KEYED IN PAIRS)	0	138671	▼ DEFAULT	▼
CYLINDER (KEYED ALIKE INDIVIDUALLY)	0	138672	DEFAULT	▼
THUMB TURN FOR MS LOCKS	0	138225	DEFAULT	▼
AR 7130 ELEC STRIKE CONT DUTY	0	138249	DEFAULT	▼

OK

Cancel

Door Configurator – Hardware – Locking

Now when you go to door fabrication, it will automatically bring in the lock fabrications to the door.

NEW FORMULA GUIDE FOR DOORS AND DOOR FRAMES

Xloc and Zloc Primary & Secondary Fabs & Fab Library Operations (Frame or Door Frame Components)

FD or FD-# Note: Stile Framing Depth Use for XLOC

FW or FW-# Note: Framing Width Use for ZLOC

Xloc and Zloc Fab Library Operations Formula (Assembled or Exploded DOORS Only)

SFW or SFW-# Note: Stile Framing Width Use for XLOC

DT or DT-# Note: Door Thickness Use for ZLOC

Assemble Door Leaf:

With Use Y Loc Un-Checked for Fab Library YLOC Formulas in Fab Library Operations	With Use Y Loc Checked for Fab Library Y Loc Formulas in Fabrication Prep on Hardware
# OC+#	#FF Note: Finished Floor
# OC	DW-# Note: DW = Door Width
L=W/#	DH-# Note: DH = Door Height
L=DH/#	DOW-# Note: DOW = Door Opening Width
L=DH-#	DOH-# Note: DOW = Door Opening Height
L=W-#	DH/2
L=# Note: Both Ends	DOH/2
L=#T Note: Top Down	
L=#B Note: Bottom Up	

Explode Door Leaf / Door Frames:

With Use Y Loc Un-Checked for Fab Library YLOC Formulas in Fab Library Operations	With Use Y Loc Checked for Fab Library Y Loc Formulas in Fabrication Prep on Hardware
# OC	#FF Note: Finished Floor
L=W/#	DW-# Note: DW = Door Width
L=W-#	DH-# Note: DH = Door Height
L=# Note: Both Ends	DOW-# Note: DOW = Door Opening Width
L=#T Note: Top Down	DOH-# Note: DOW = Door Opening Height
L=#B Note: Bottom Up	DH/2
	DOH/2

RHINOFAB MASTER DRILL LIST

RhinoFab Master Drill List						
Part#	Type	Size	DIA	Collet	Length	CS-Angle
D01-A	Drill	26	0.147	5/32	2.66	-
D02-A	Drill	25	0.149	5/32	2.66	-
D03-A	Drill	23	0.154	5/32	2.66	-
D04-A	Drill	21	0.159	3/16	2.66	-
D05-A	Drill	17	0.173	3/16	2.66	-
D06-A	Drill	16	0.177	3/16	2.66	-
D07-A	Drill	14	0.182	3/16	2.66	-
D08-A	Drill	11	0.191	7/32	2.66	-
D08-B	Drill	11	0.191	7/32	3.5	-
D09-A	Drill	7	0.201	7/32	2.66	-
D09-B	Drill	7	0.201	7/32	3 5/8	-
D10-A	Drill	1	0.228	1/4	2.66	-
D11-A	Drill	E	0.250	1/4	2.66	-
D12-A	Drill	F	0.257	9/32	2.66	-
D13-A	Drill	H	0.266	9/32	2.66	-
D13-B	Drill	17/64	0.2656	9/32	4.125	-
D14-A	Drill	5/16	0.313	5/16	2.66	-
D15-A	Drill	2	0.221	1/4	2.66	-
D16-A	Drill	9	0.196	7/32	2.66	-
D17-A	Drill	9/16	0.652	9/16	4	-
D18-A	Drill	30	0.1285	5/32	2.5	-
D19-A	Drill	29	0.136	5/32	2.5	-
D20-A	Drill	18	0.1695	11/64	2.5	-
D20-B	Drill	18	0.1695	11/64	4.5	-
D21-B	Drill	3/8	0.375	3/8	5	-
D22-A	Drill	Q	0.332	11/32	2.5	-
CSD01-A	Countersink Drill	-	0.177	3/8	3.5	82
CSD02-A	Countersink Drill	-	0.201	29/64	3.5	82
CSD02-B	Countersink Drill	-	0.201	29/64	5	82
CSD03-A	Countersink Drill	-	0.218	29/64	3.5	82
CSD04-A	Countersink Drill	-	0.228	29/64	3.5	82
CSD05-A	Countersink Drill	-	0.250	29/64	3.5	82
CSD06-A	Countersink Drill	-	0.250	9/16	3.5	82
CSD07-A	Countersink Drill	-	0.250	29/64	3.5	90
CSR04-A	Countersink End Mill	-	0.228	1/2	2.5	82
EM01-A	Rout	1/8	.125	1/8	2.5	-
EM08-A	Rout	11	0.191	1/4	2.5	-
EM11-A	Rout	E	0.250	1/4	2.5	-
EM11-B	Rout	E	.25	1/4	3	-
EM14-A	Rout	5/16	0.313	5/16	2.5	-
EM14-B	Rout	5/16	0.313	1/2	3	-
EM14-C	Rout	5/16	0.313	5/16	3	-
EM17-B	Rout	3/8	0.375	3/8	3.5	-
Number	Name	Size	Inch	Size	Inch	Degree

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