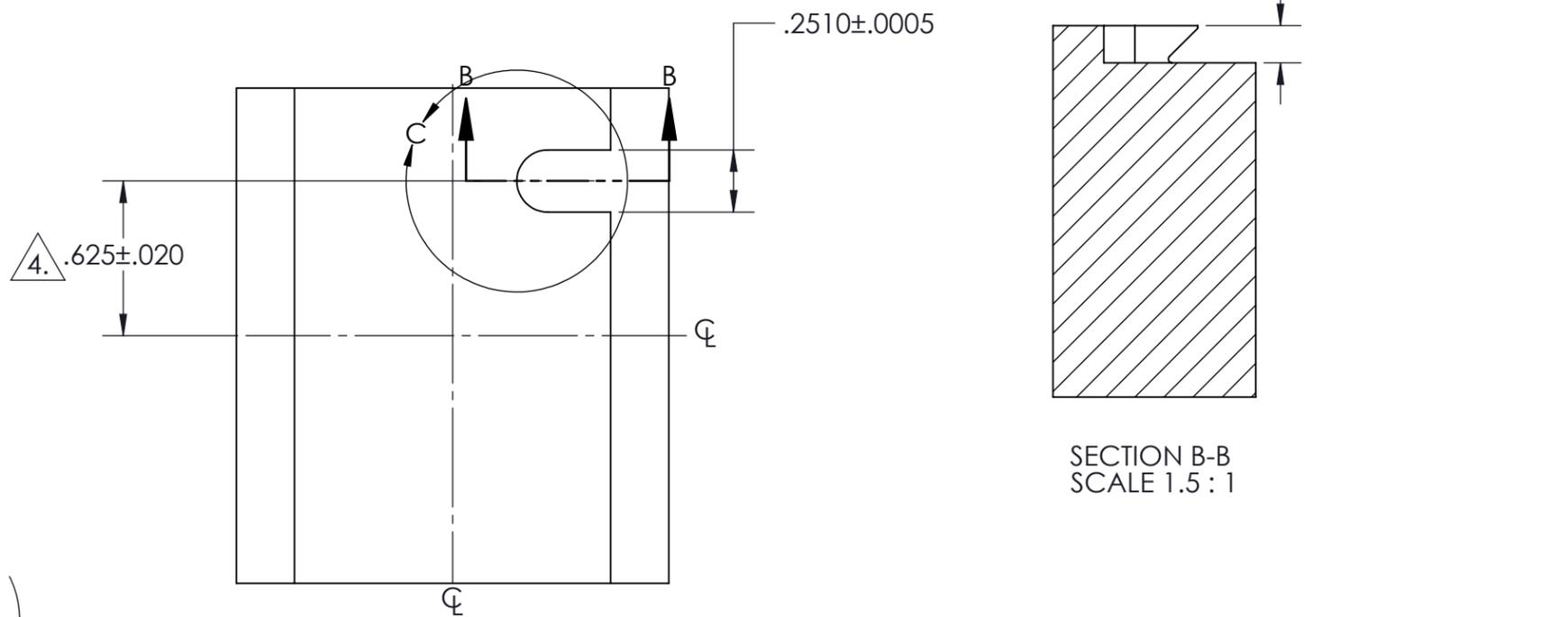
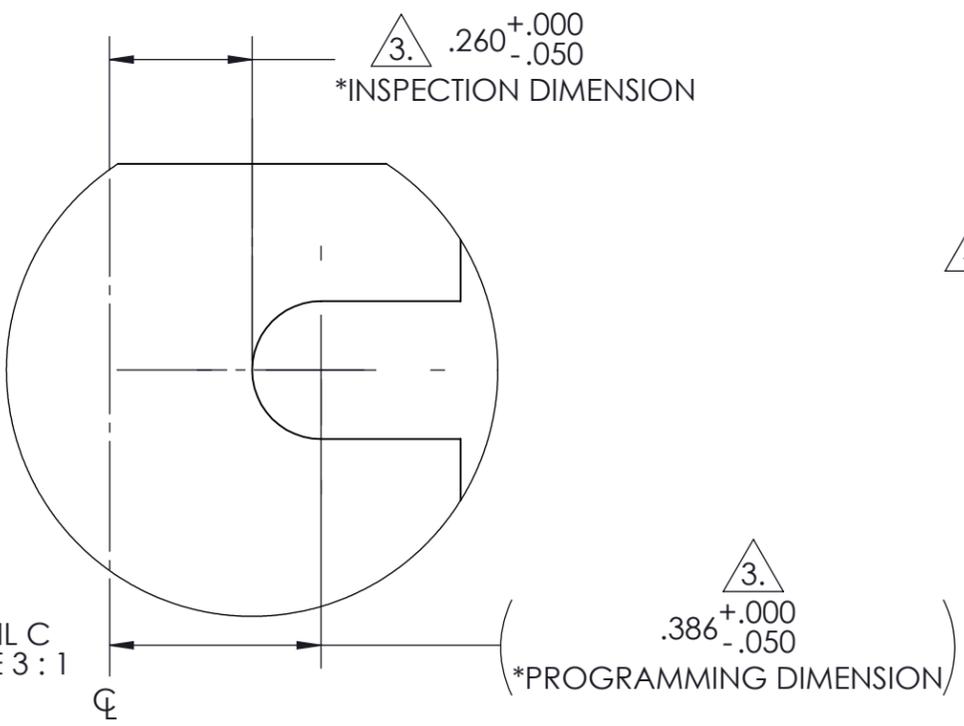
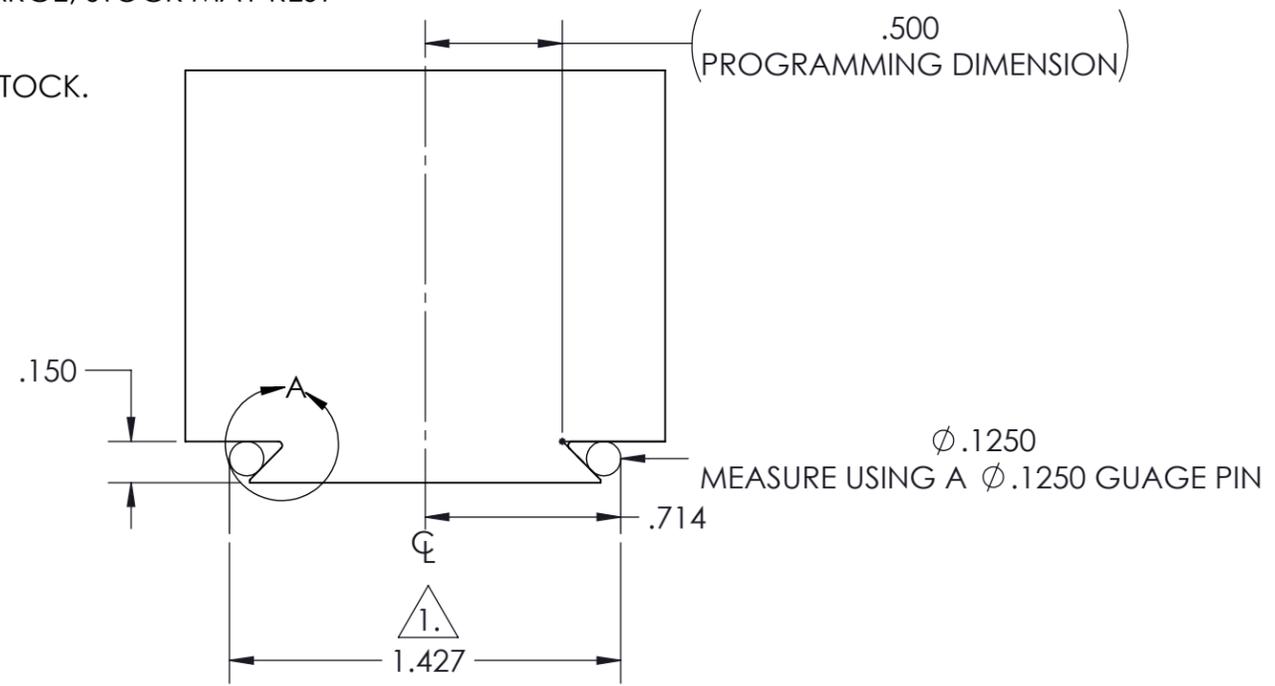
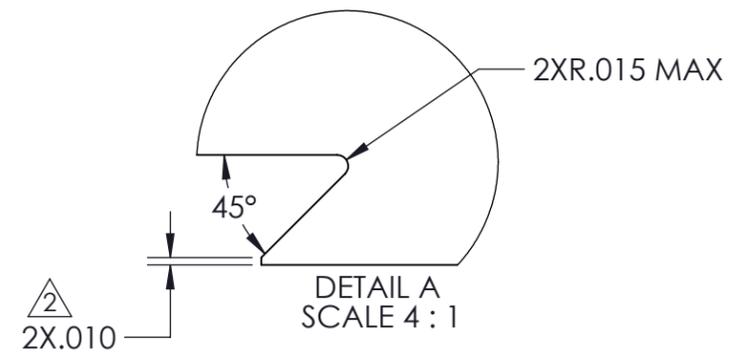


NOTES:

- 1. DOVETAIL WIDTH WILL NOT CHANGE WITH VARYING DOVETAIL DEPTH.
- 2. MACHINE EDGE BREAK ON DOVETAIL POINT.
- 3. SLOT DIMENSION TO THE CENTERLINE IS **CRITICAL**, IF DIMENSION IS TOO LARGE, STOCK MAY REST AGAINST LOCATING PIN INSTEAD OF DOVETAIL CUT SURFACES.
- 4. IF STOCK IS OVERSIZE, THIS TOLERANCE INCREASES BY HALF OF THE EXTRA STOCK.

D22 DOVETAIL STOCK PREPARATION

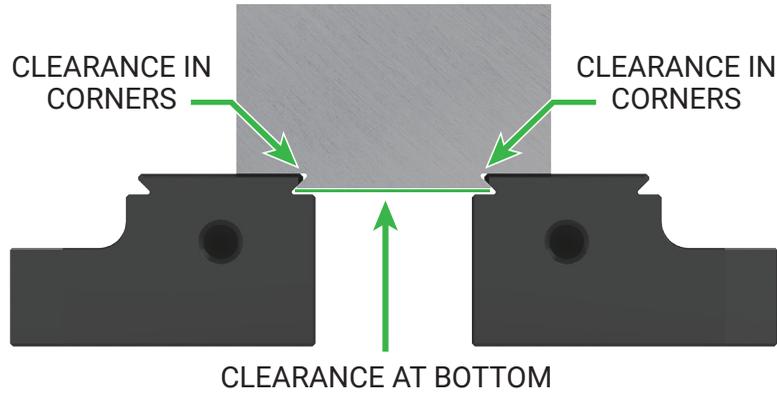


INCH <small>DRAWN IN ACCORDANCE WITH ASME Y14.5-2009</small> PROPRIETARY AND CONFIDENTIAL <small>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIFTH AXIS, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIFTH AXIS, INC. IS PROHIBITED.</small>	TOLERANCES <small>UNLESS OTHERWISE SPECIFIED</small> X ± 0.1 .XX ± 0.01 .X ± 0.05 .XXX ± 0.005 ANGULAR ± 0.5°	WWW.FIFTHAXIS.COM 7140 ENGINEER ROAD SAN DIEGO, CA 92111 P (858) 505-0432 F (858) 505-9344		
	<small>THIRD ANGLE PROJECTION</small> 		DESCRIPTION D22 DOVETAIL STOCK PREP	
SIZE B	PART NO. DSP-D22	REV A		
<small>DO NOT SCALE DRAWING</small>		<small>SCALE 1:2</small>	<small>WEIGHT:</small>	<small>SHEET 1 OF 1</small>

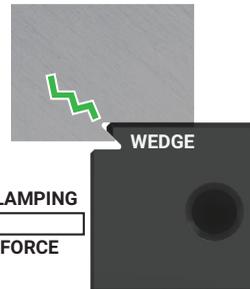


PROPER DOVETAIL

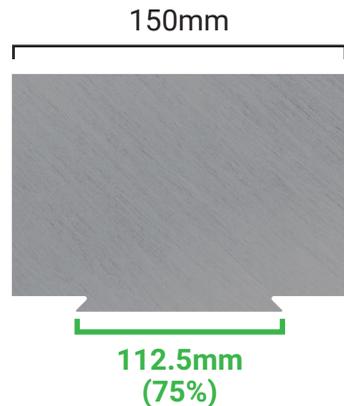
MATERIAL SHOULD REST ON TOP OF THE JAW / FIXTURE AND ON THE 45° FACE.



When a **proper** dovetail is used, jaw/dovetail fixture **acts as a wedge** trying to split the material in the corner.

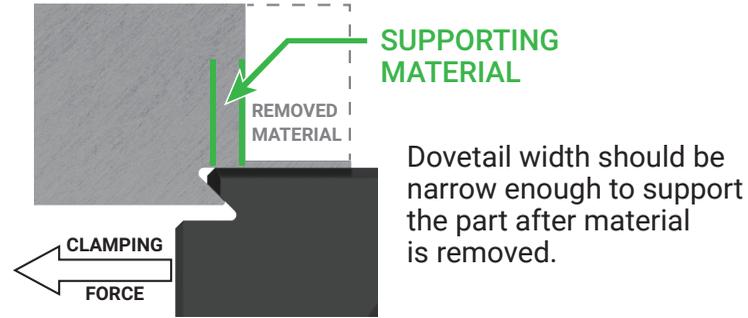


Material is clamped only once or twice and is therefore resistant to fracturing.



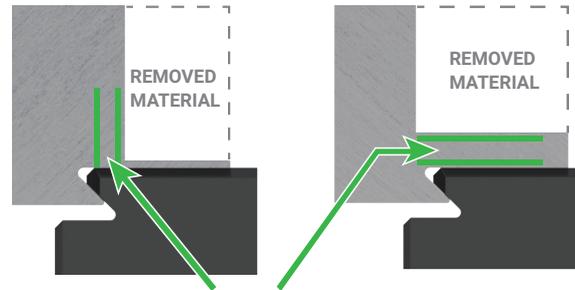
We recommend dovetail width should not be **less than** 75% of the width of the stock.

This is a **general ratio, not a rule.** If in doubt, stick to 75%.



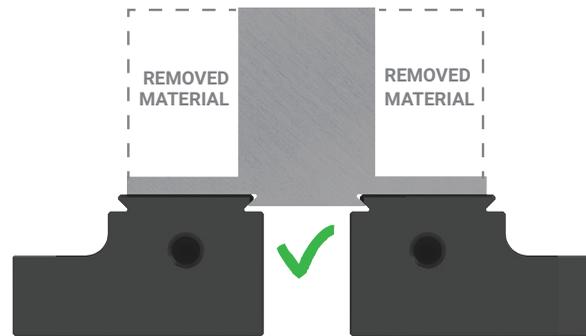
Dovetail width should be narrow enough to support the part after material is removed.

THERE IS NO SIMPLE ANSWER TO HOW MUCH SUPPORT IS NEEDED.



SUPPORTING MATERIAL

If more support is needed, **Decrease dovetail width or increase tab thickness**



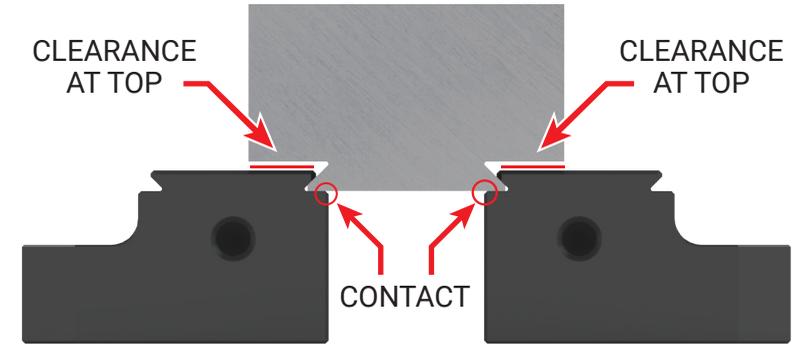
For narrow parts, position the dovetail as close as possible to the **finished part's** center of mass.



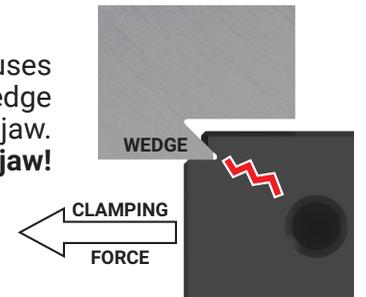
COMMON MISTAKES

1. DOVETAIL TOO DEEP

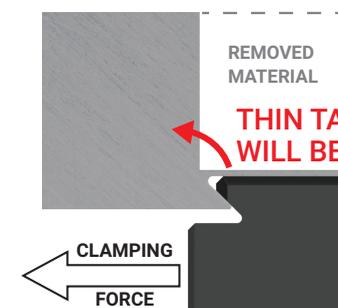
Clamping with a dovetail should **never** cause the material to locate on the bottom step of the jaw.



Locating on bottom step causes material to become a wedge trying to split the jaw. **This can break the jaw!**

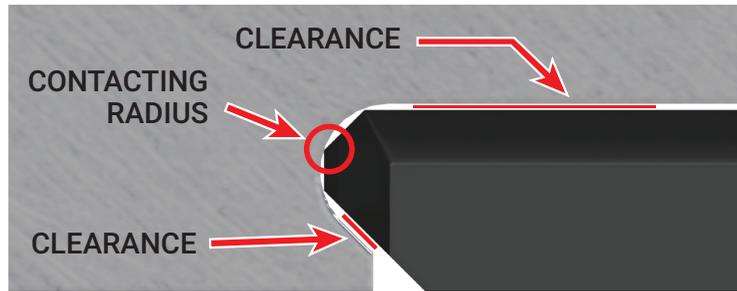


2. FINISHED PART UNSUPPORTED



A thin tab and/or insufficient material on the top locating surface will allow the part to move during machining.

✘ 3. OVERSIZED CORNER RADIUS



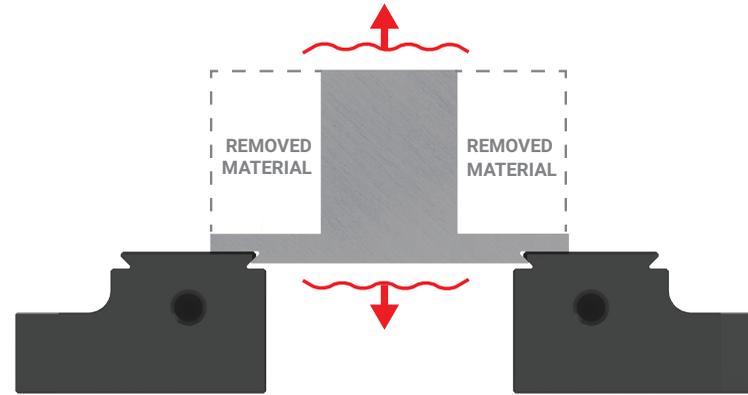
An overly wide inside corner radius allows material to contact the corner of the jaw, preventing it from locating correctly.

This will call excessive vibration during machining.



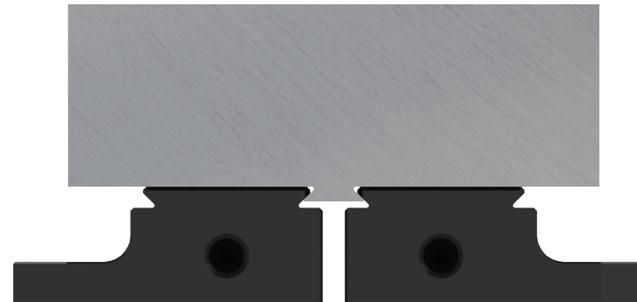
This issue is caused when dovetail cutter inserts / flutes are worn or broken.

✘ 4. EXCESSIVELY WIDE DOVETAIL



Even though this part has tabs thick enough to prevent breaking, the dovetail is not properly positioned under the part. This may result in excessive vertical vibration.

✘ 5. EXCESSIVELY NARROW DOVETAIL



Excessively narrow dovetail will concentrate support at the center of the stock and potentially cause chatter.

Keep in mind how and where force is applied to stock during machining.



DOVETAIL TROUBLESHOOTING GUIDE



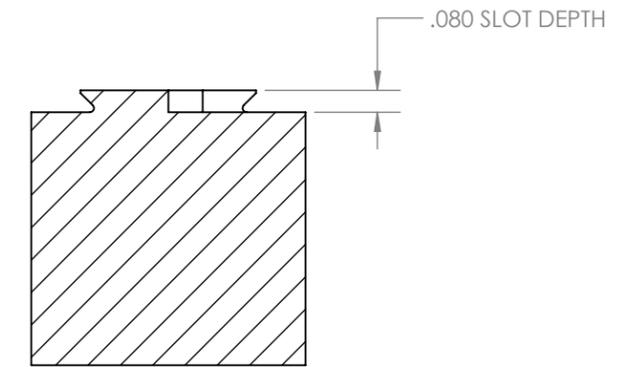
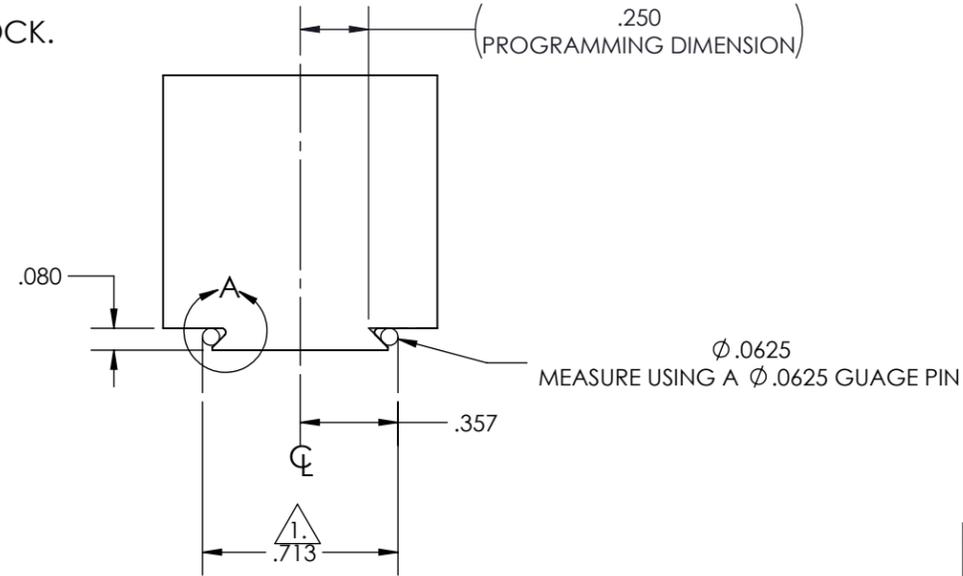
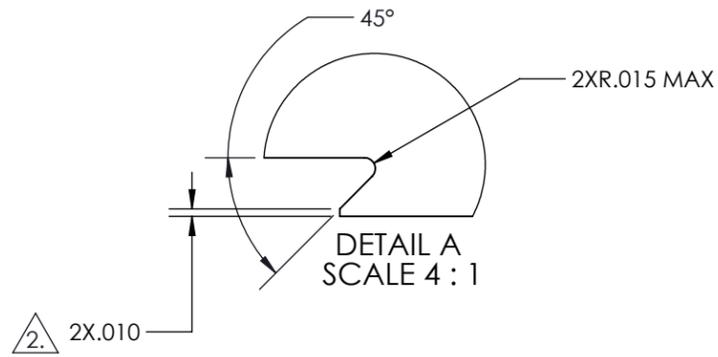
The information in this document is applicable to ALL 5th Axis™ products with a dovetail feature.

Both vises AND dovetail fixtures should follow these rules.

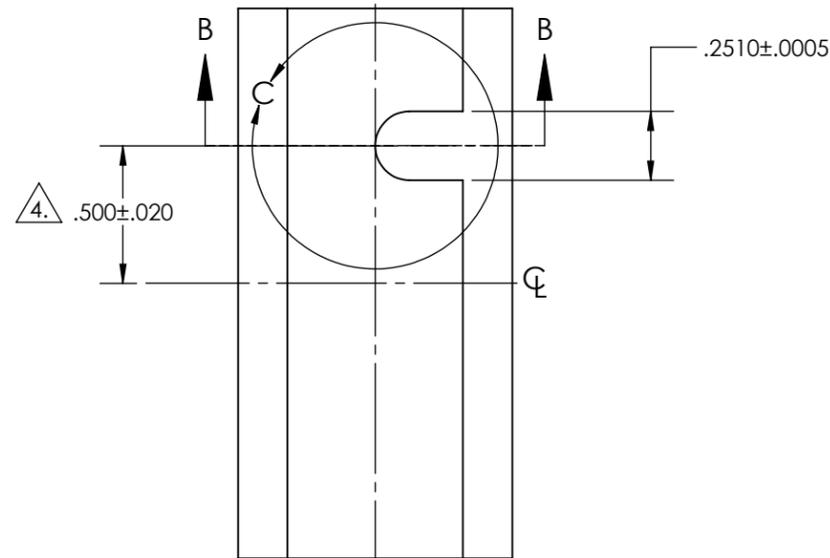
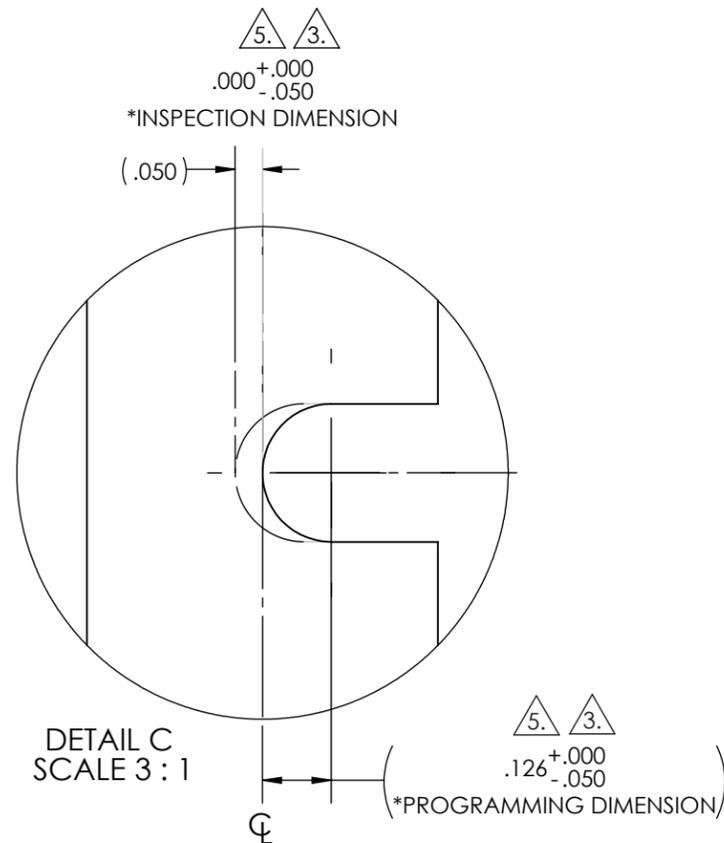
NOTES:

1. DOVETAIL WIDTH WILL NOT CHANGE WITH VARYING DOVETAIL DEPTH.
2. MACHINE EDGE BREAK ON DOVETAIL POINT.
3. SLOT DIMENSION TO THE CENTERLINE IS **CRITICAL**, IF DIMENSION IS TOO LARGE, STOCK MAY REST AGAINST LOCATING PIN INSTEAD OF DOVETAIL CUT SURFACES.
4. IF STOCK IS OVERSIZE, THIS TOLERANCE INCREASES BY HALF OF THE EXTRA STOCK.
5. PIN SLOT RADIUS SHOULD BE TANGENT TO CENTERLINE OR PAST CENTERLINE.

D115 DOVETAIL STOCK PREPARATION



SECTION B-B
SCALE 1.5 : 1



TOLERANCES	
METRIC	INCH
X ± 1.0	X ± 0.1
.X ± 0.3	.X ± 0.05
.XX ± 0.13	.XX ± 0.01
	.XXX ± 0.005
UNLESS OTHERWISE NOTED	
ANGULAR DIMENSIONS ± 0.5°	

INCH
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APPROVALS
DRAWN BY: C BANKS 5/3/2018
MFG. ENG.
QA ENG.
ENG. MGR.
MATERIAL:
FINISH:
WEIGHT:
THIRD ANGLE PROJECTION

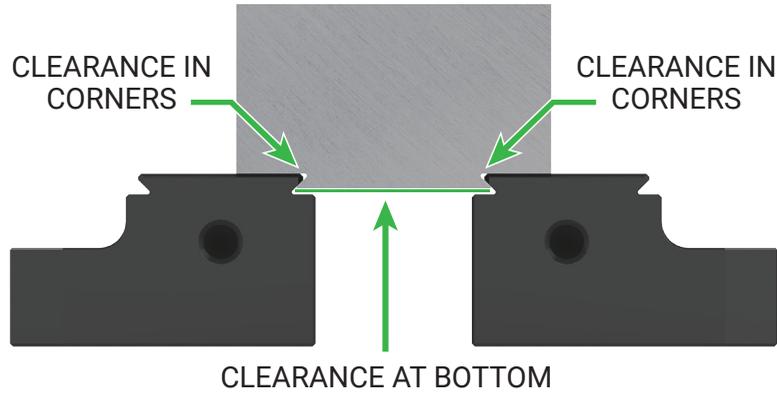


CUSTOMER		
DESCRIPTION	D115 DOVETAIL STOCK PREP	
SIZE	PART NO.	REV
B	DSP-D115	A
DO NOT SCALE DRAWING	SCALE 1:1	SHEET 1 OF 1

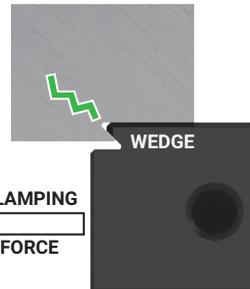


PROPER DOVETAIL

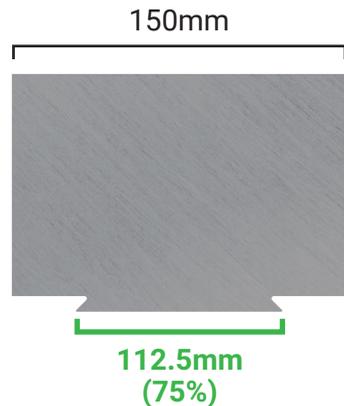
MATERIAL SHOULD REST ON TOP OF THE JAW / FIXTURE AND ON THE 45° FACE.



When a **proper** dovetail is used, jaw/dovetail fixture **acts as a wedge** trying to split the material in the corner.

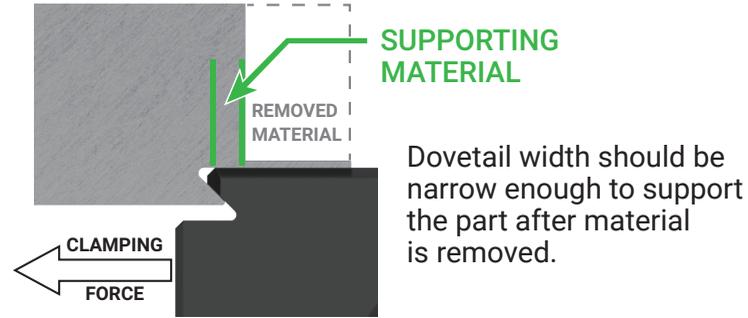


Material is clamped only once or twice and is therefore resistant to fracturing.



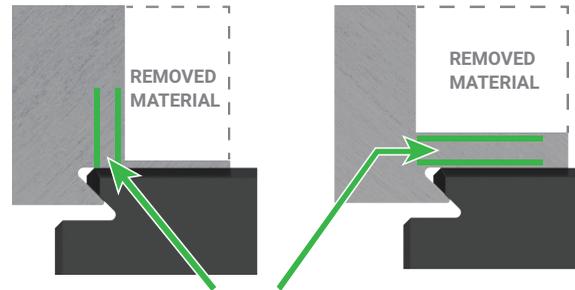
We recommend dovetail width should not be **less than** 75% of the width of the stock.

This is a **general ratio, not a rule.** If in doubt, stick to 75%.



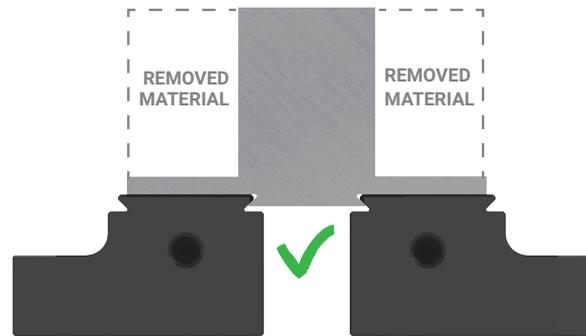
Dovetail width should be narrow enough to support the part after material is removed.

THERE IS NO SIMPLE ANSWER TO HOW MUCH SUPPORT IS NEEDED.



SUPPORTING MATERIAL

If more support is needed, **Decrease dovetail width or increase tab thickness**



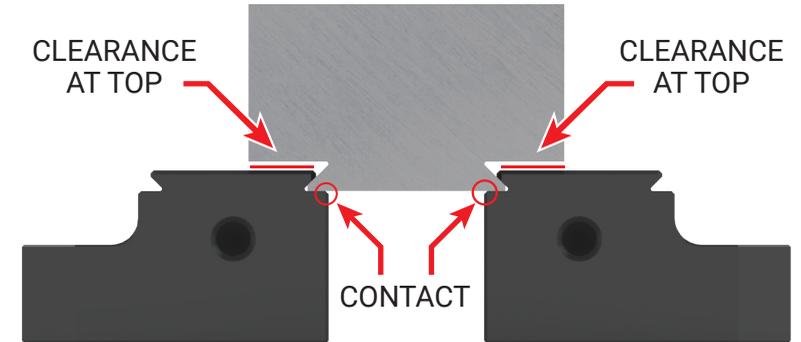
For narrow parts, position the dovetail as close as possible to the **finished part's** center of mass.



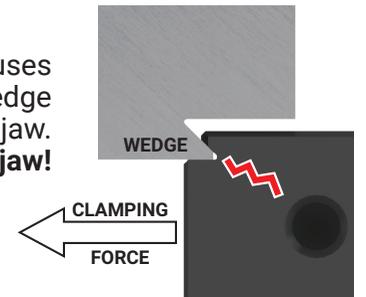
COMMON MISTAKES

1. DOVETAIL TOO DEEP

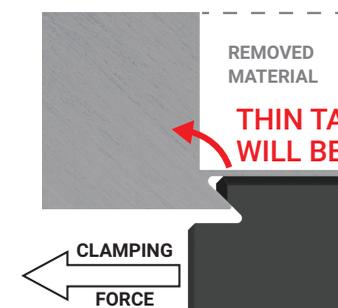
Clamping with a dovetail should **never** cause the material to locate on the bottom step of the jaw.



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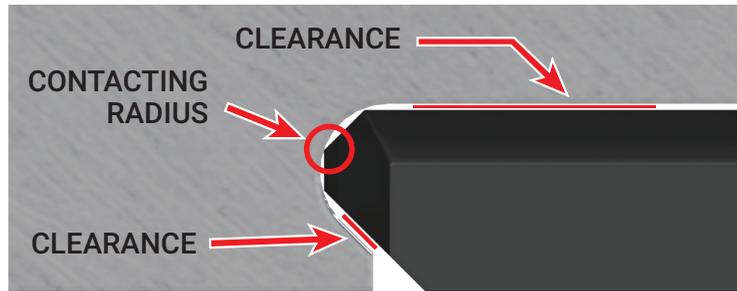


2. FINISHED PART UNSUPPORTED



A thin tab and/or insufficient material on the top locating surface will allow the part to move during machining.

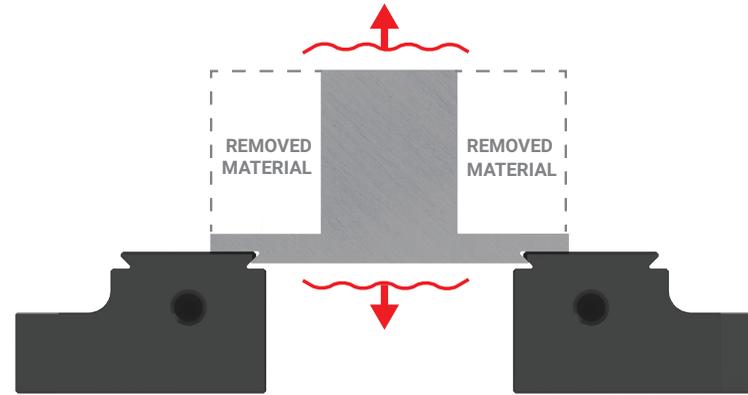
✘ 3. OVERSIZED CORNER RADIUS



An overly wide inside corner radius allows material to contact the corner of the jaw, preventing it from locating correctly.

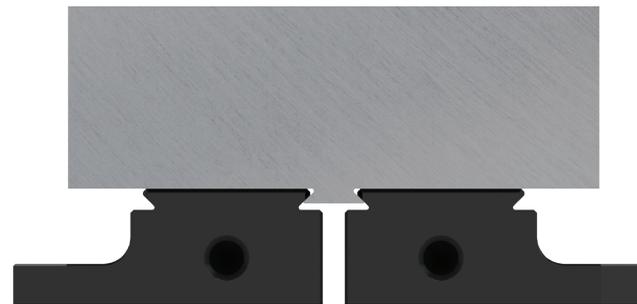
This will call excessive vibration during machining.

✘ 4. EXCESSIVELY WIDE DOVETAIL



Even though this part has tabs thick enough to prevent breaking, the dovetail is not properly positioned under the part. This may result in excessive vertical vibration.

✘ 5. EXCESSIVELY NARROW DOVETAIL



Excessively narrow dovetail will concentrate support at the center of the stock and potentially cause chatter.

Keep in mind how and where force is applied to stock during machining.



DOVETAIL TROUBLESHOOTING GUIDE



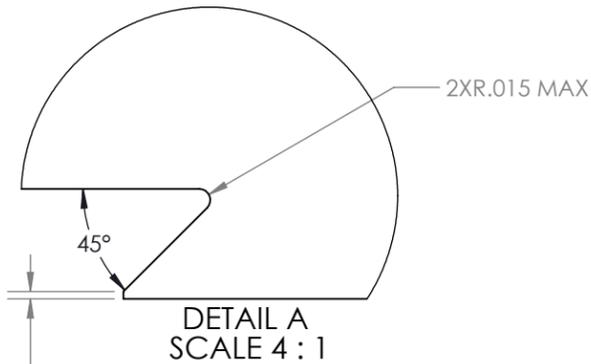
The information in this document is applicable to ALL 5th Axis™ products with a dovetail feature.

Both vises **AND** dovetail fixtures should follow these rules.

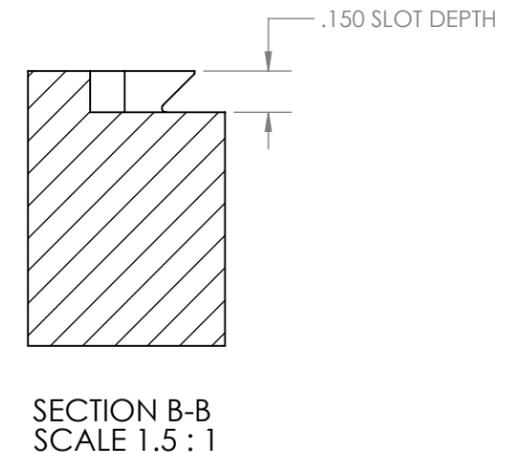
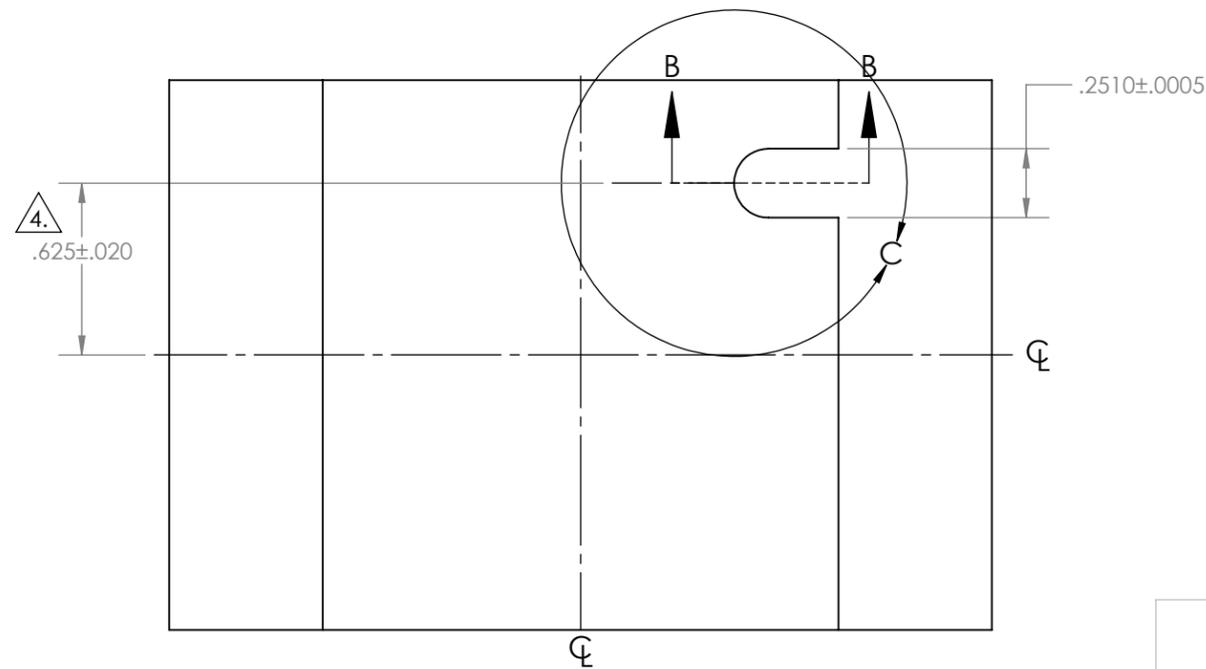
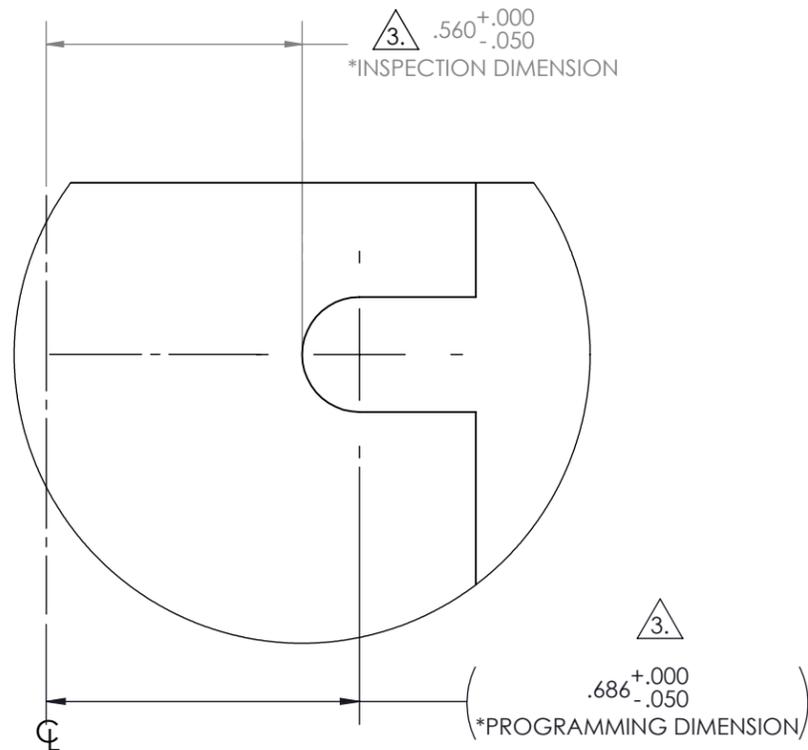
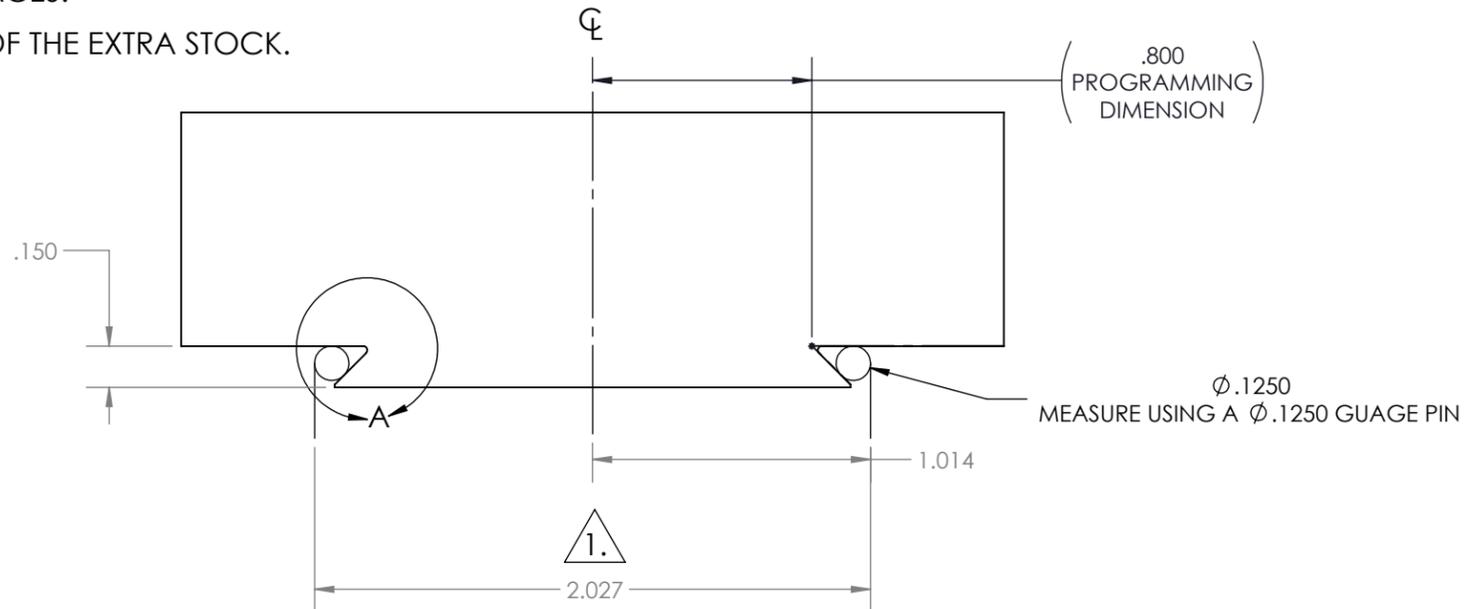
NOTES:

1. DOVETAIL WIDTH WILL NOT WILL NOT CHANGE WITH VARYING DOVETAIL DEPTH.
2. USE .010" EDGE BREAK ON DOVETAIL POINT.
3. SLOT DIMENSION TO THE CENTERLINE IS **CRITICAL**, IF DIMENSION IS TOO LARGE, STOCK MAY REST AGAINST LOCATING PIN INSTEAD OF DOVETAIL CUT SURFACES.
4. IF STOCK IS OVERSIZE, THIS TOLERANCE INCREASES BY HALF OF THE EXTRA STOCK.

D362 DOVETAIL STOCK PREPARATION



2. 2X.010 MAX



TOLERANCES	
METRIC	INCH
X ± 1.0	X ± 0.1
.X ± 0.3	.X ± 0.05
.XX ± 0.13	.XX ± 0.01
	.XXX ± 0.005
UNLESS OTHERWISE NOTED	
ANGULAR DIMENSIONS ± 0.5°	

INCH

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APPROVALS

DRAWN BY: C BANKS 2/1/2018

MFG. ENG.

QA ENG.

ENG. MGR.

MATERIAL:

FINISH:

WEIGHT:

THIRD ANGLE PROJECTION

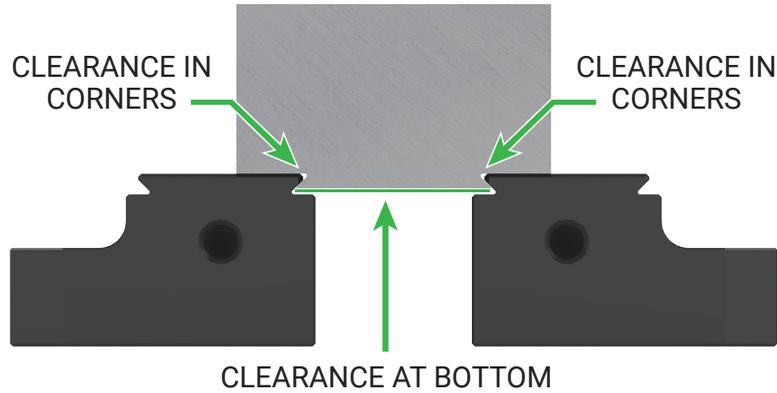


CUSTOMER	
DESCRIPTION	D362 DOVETAIL STOCK PREP
SIZE	B
PART NO.	DSP-D362
DO NOT SCALE DRAWING	SCALE 1:1
SHEET 1 OF 1	REV A

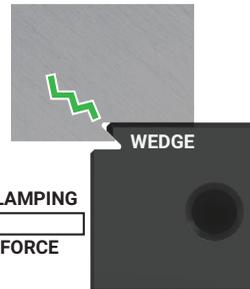


PROPER DOVETAIL

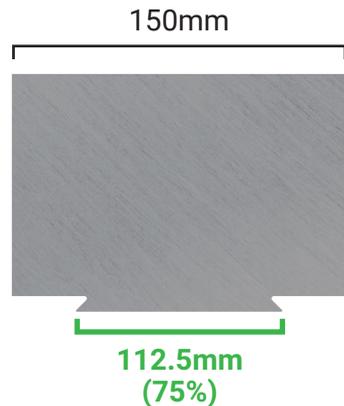
MATERIAL SHOULD REST ON TOP OF THE JAW / FIXTURE AND ON THE 45° FACE.



When a **proper** dovetail is used, jaw/dovetail fixture **acts as a wedge** trying to split the material in the corner.

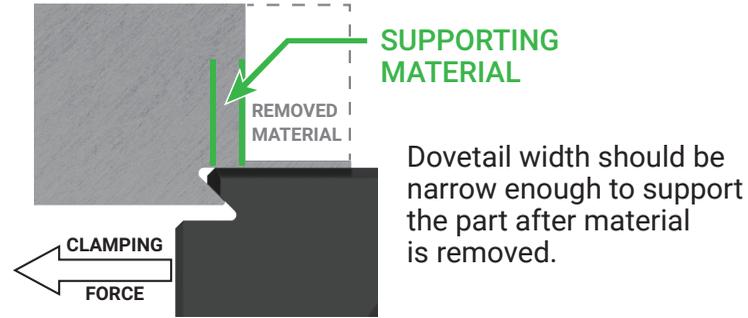


Material is clamped only once or twice and is therefore resistant to fracturing.



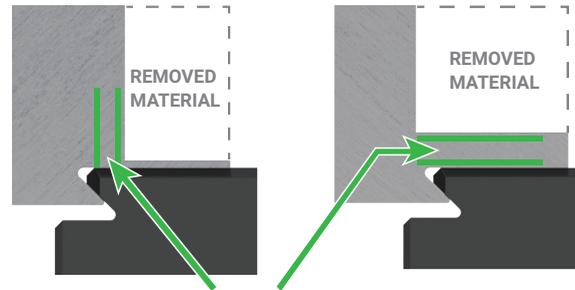
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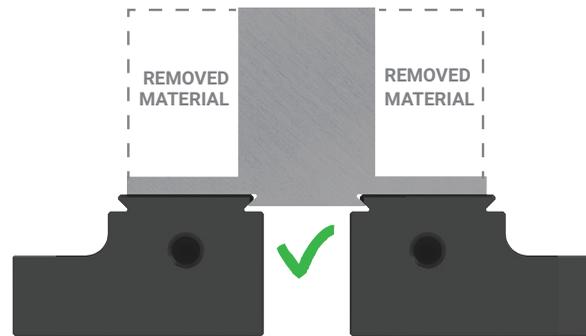
Dovetail width should be narrow enough to support the part after material is removed.

THERE IS NO SIMPLE ANSWER TO HOW MUCH SUPPORT IS NEEDED.



SUPPORTING MATERIAL

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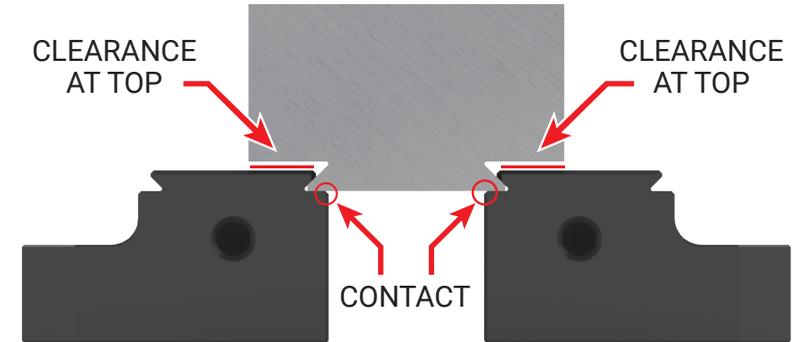
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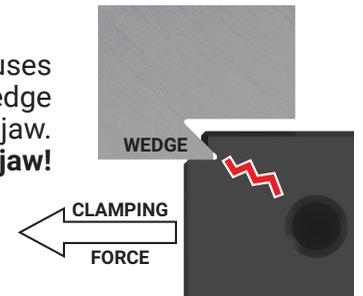
COMMON MISTAKES

1. DOVETAIL TOO DEEP

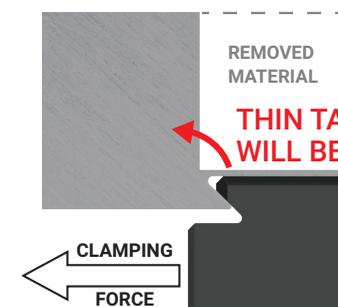
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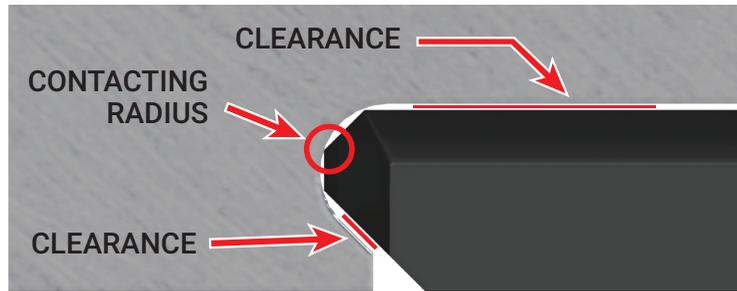


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A thin tab and/or insufficient material on the top locating surface will allow the part to move during machining.

✘ 3. OVERSIZED CORNER RADIUS



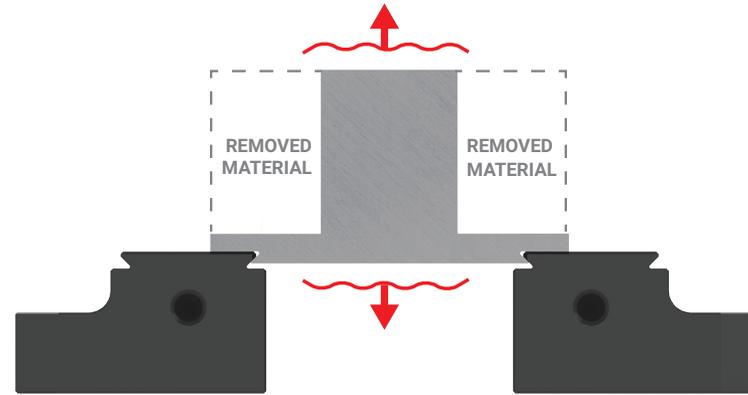
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This will call excessive vibration during machining.



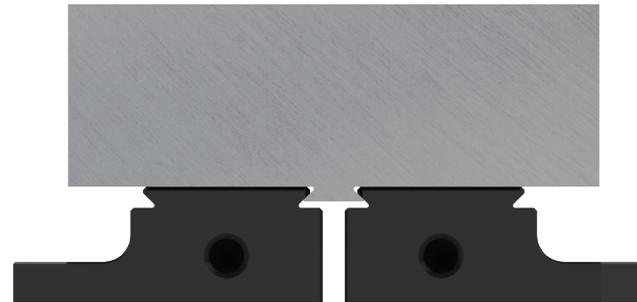
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DOVETAIL TROUBLESHOOTING GUIDE



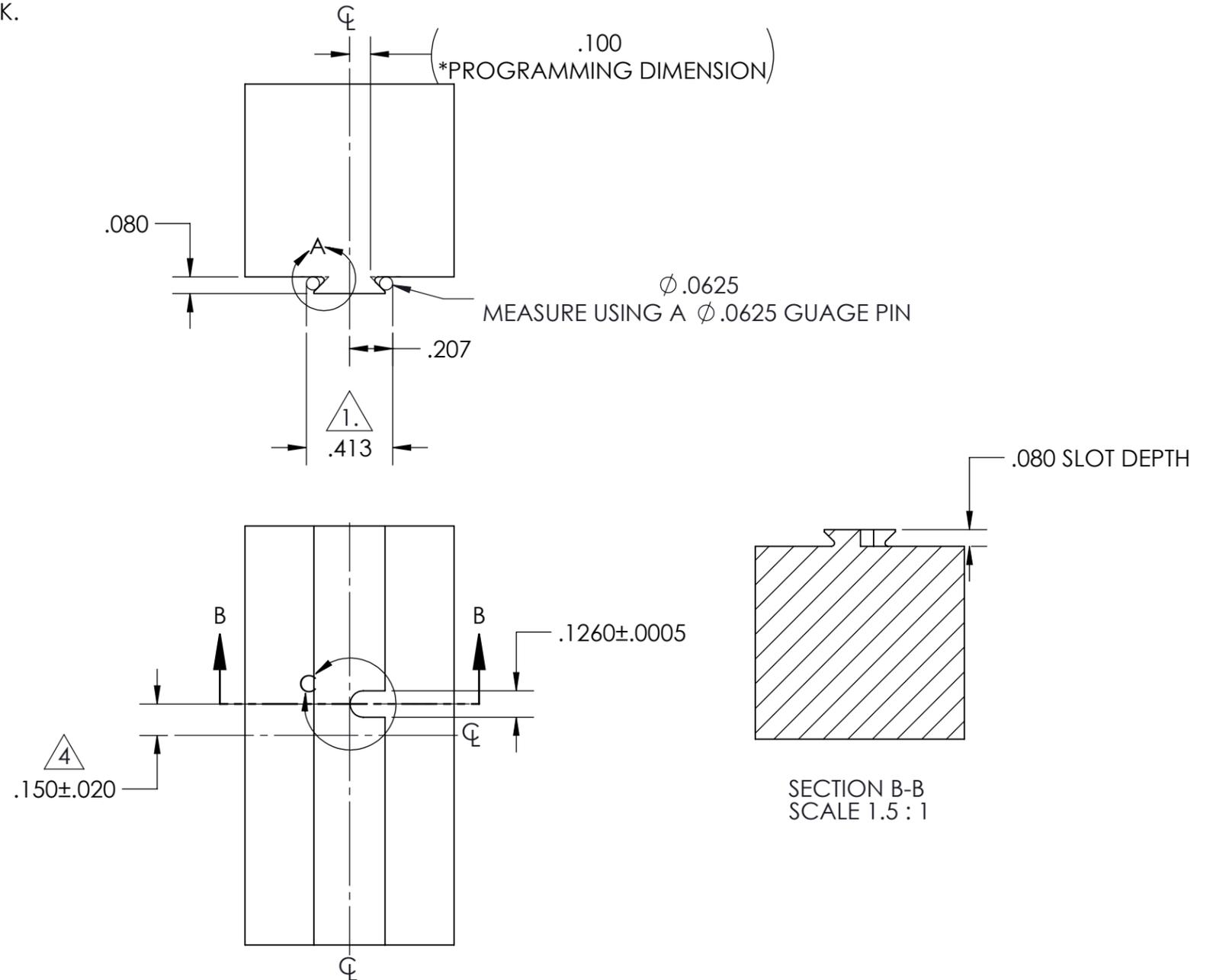
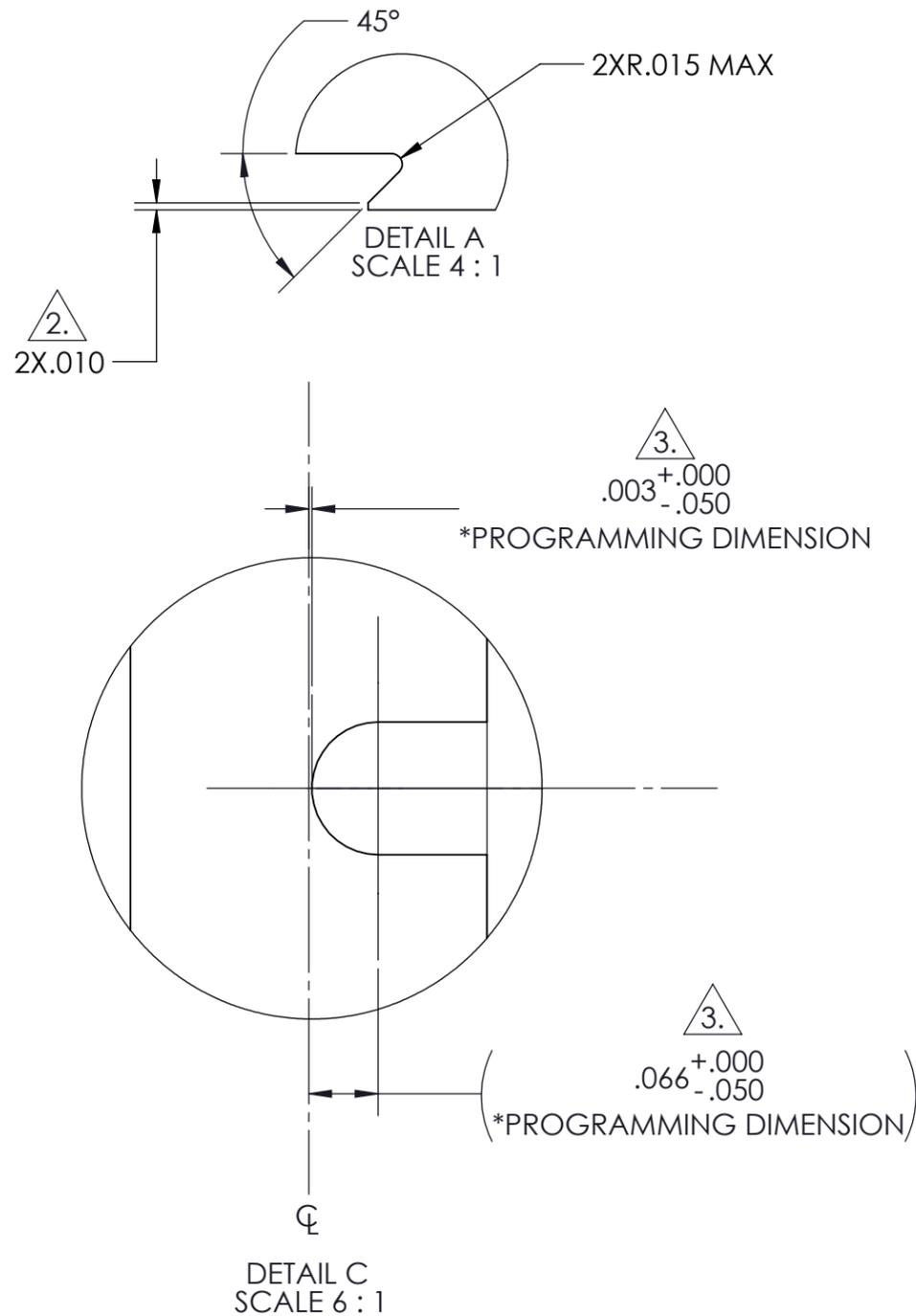
The information in this document is applicable to ALL 5th Axis™ products with a dovetail feature.

Both vises **AND** dovetail fixtures should follow these rules.

NOTES:

1. DOVETAIL WIDTH WILL NOT WILL NOT CHANGE WITH VARYING DOVETAIL DEPTH.
2. MACHINE EDGE BREAK ON DOVETAIL POINT.
3. SLOT DIMENSION TO THE CENTERLINE IS **CRITICAL**, IF DIMENSION IS TOO LARGE, STOCK MAY REST AGAINST LOCATING PIN INSTEAD OF DOVETAIL CUT SURFACES.
4. IF STOCK IS OVERSIZE, THIS TOLERANCE INCREASES BY HALF OF THE EXTRA STOCK.

D05125 DOVETAIL STOCK PREPARATION

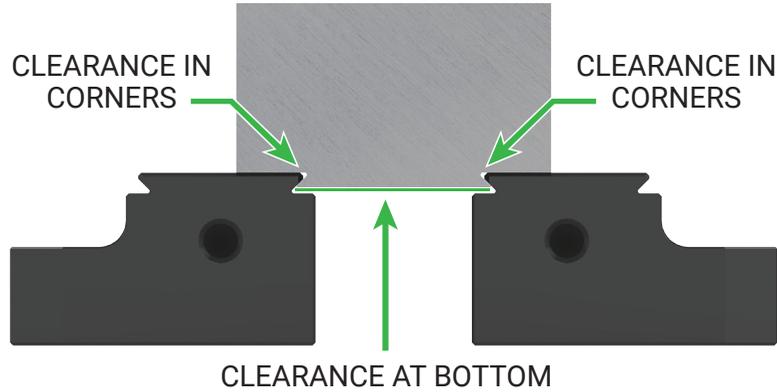


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	<small>THIRD ANGLE PROJECTION</small> 		DESCRIPTION D05125 DOVETAIL STOCK PREP
SIZE B	PART NO. DSP-D05125	REV A	<small>DO NOT SCALE DRAWING SCALE 1:2 WEIGHT: - SHEET 1 OF 1</small>



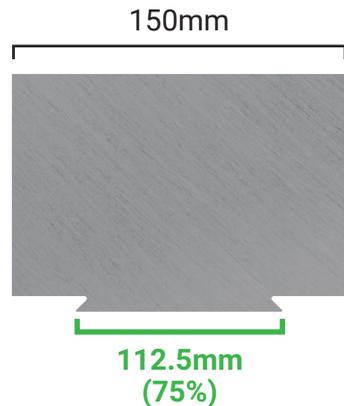
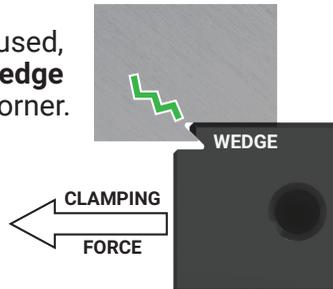
PROPER DOVETAIL

MATERIAL SHOULD REST ON TOP OF THE JAW / FIXTURE AND ON THE 45° FACE.



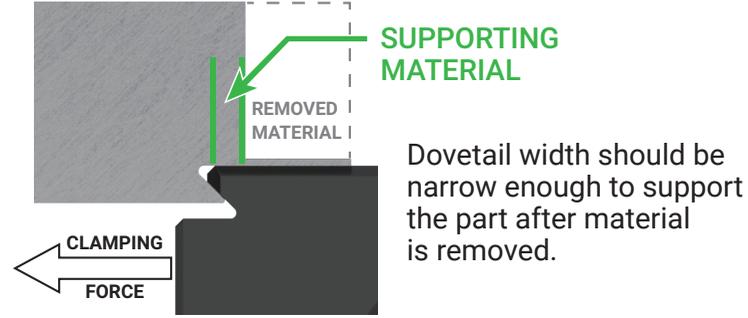
When a **proper** dovetail is used, jaw/dovetail fixture **acts as a wedge** trying to split the material in the corner.

Material is clamped only once or twice and is therefore resistant to fracturing.

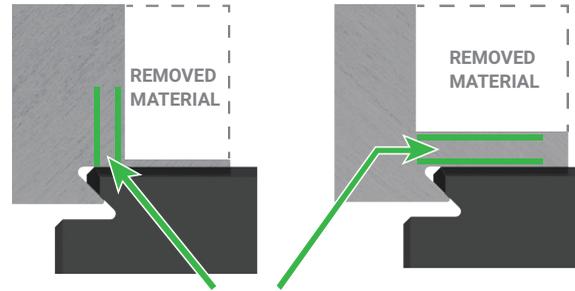


We recommend dovetail width should not be **less than** 75% of the width of the stock.

This is a **general ratio, not a rule.** If in doubt, stick to 75%.

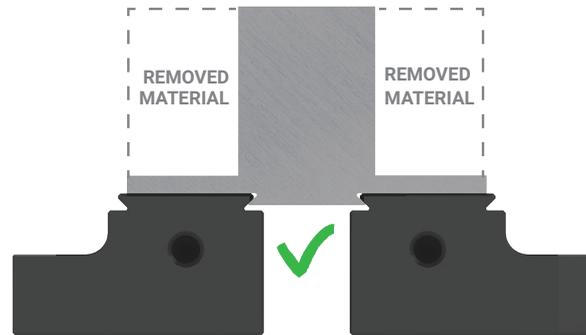


THERE IS NO SIMPLE ANSWER TO HOW MUCH SUPPORT IS NEEDED.



SUPPORTING MATERIAL

If more support is needed, **Decrease dovetail width or increase tab thickness**



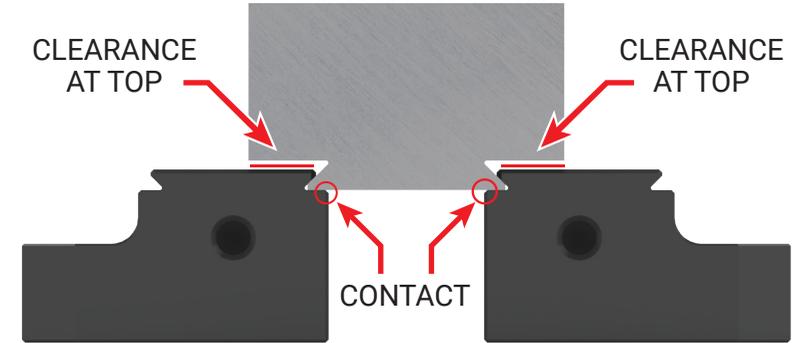
For narrow parts, position the dovetail as close as possible to the **finished part's** center of mass.



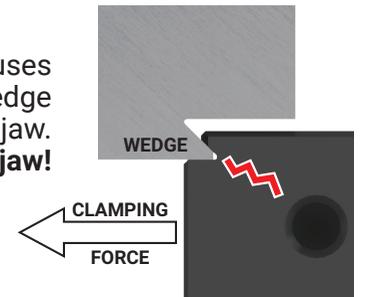
COMMON MISTAKES

1. DOVETAIL TOO DEEP

Clamping with a dovetail should **never** cause the material to locate on the bottom step of the jaw.



Locating on bottom step causes material to become a wedge trying to split the jaw. **This can break the jaw!**

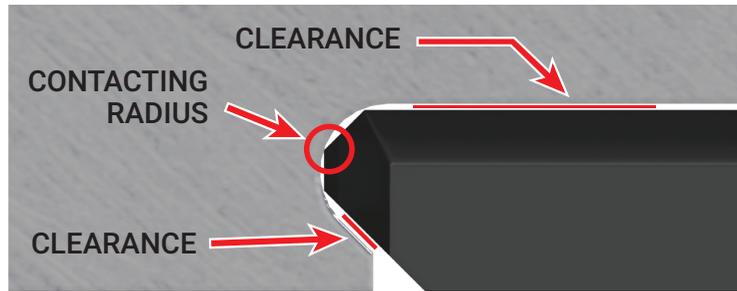


2. FINISHED PART UNSUPPORTED



A thin tab and/or insufficient material on the top locating surface will allow the part to move during machining.

✘ 3. OVERSIZED CORNER RADIUS



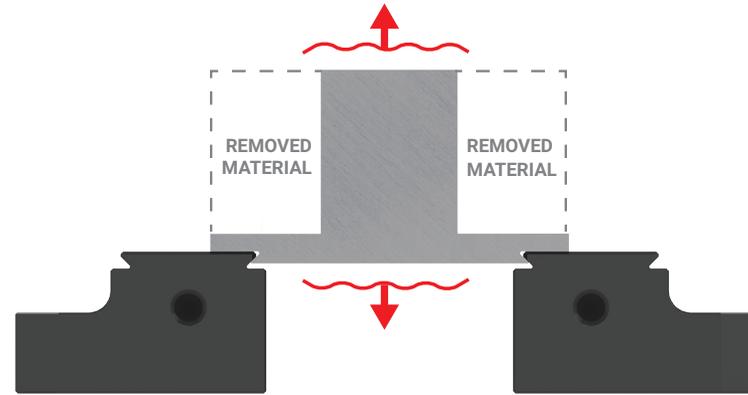
An overly wide inside corner radius allows material to contact the corner of the jaw, preventing it from locating correctly.

This will call excessive vibration during machining.



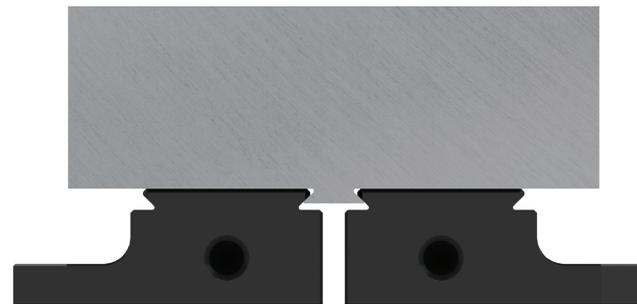
This issue is caused when dovetail cutter inserts / flutes are worn or broken.

✘ 4. EXCESSIVELY WIDE DOVETAIL



Even though this part has tabs thick enough to prevent breaking, the dovetail is not properly positioned under the part. This may result in excessive vertical vibration.

✘ 5. EXCESSIVELY NARROW DOVETAIL



Excessively narrow dovetail will concentrate support at the center of the stock and potentially cause chatter.

Keep in mind how and where force is applied to stock during machining.



DOVETAIL TROUBLESHOOTING GUIDE



The information in this document is applicable to ALL 5th Axis™ products with a dovetail feature.

Both vises AND dovetail fixtures should follow these rules.