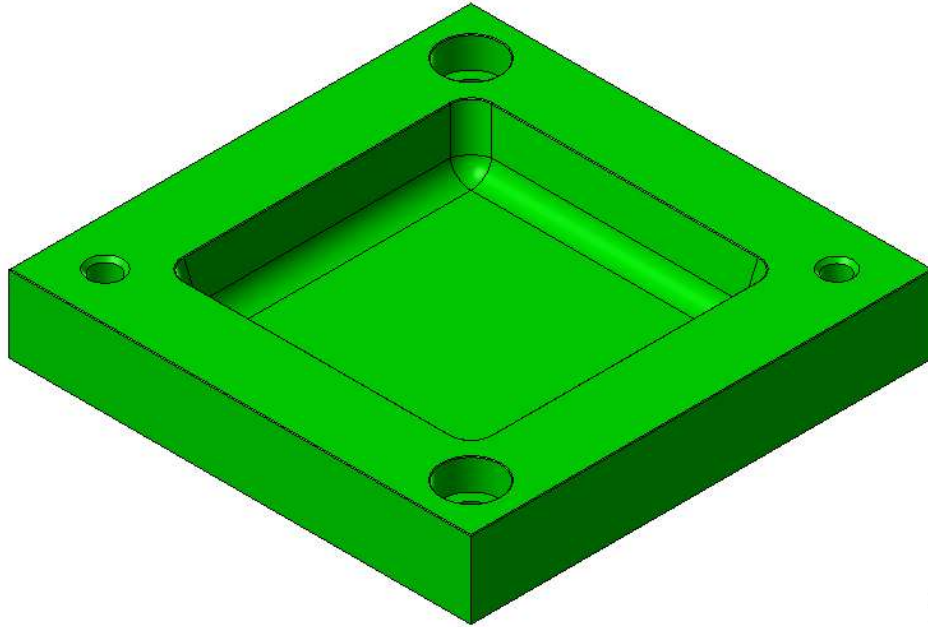


Setup Sheet for Mill Default

General Information

Date & Time: Tuesday, November 3, 2015 12:41 PM	Machine Group: Machine Group-1	Units: Inch
Project: Mill Setup Sheet Demo	Customer: Varco Reporting	
Programmer: Jim Varco	Note 1: N/A	
Drawing: N/A	Note 2:	
Revision:	Test:	
Mastercam File: C:\USERS\ADMINISTRATOR\DESKTOP\VARCO REPORTS\MILL SETUP SHEET DEMO\VARCO REPORTS MILL SETUP SHEET DEMO.MCX-9		



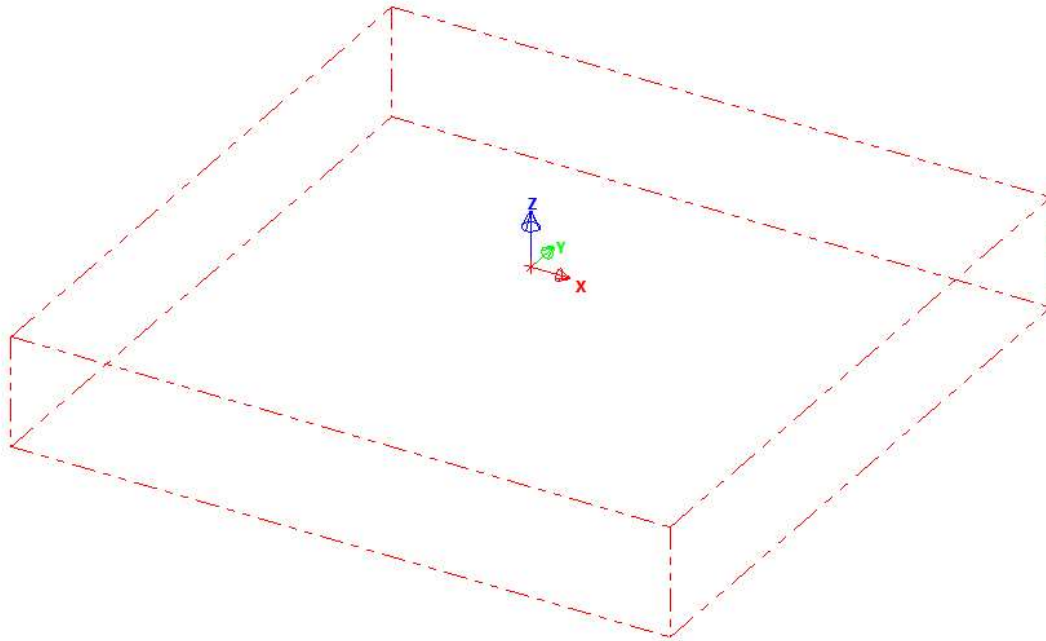
Iso

1.1206 in
Inch

Stock

Shape: Box
Size: X6.0000", Y6.0000", Z1.0000"

Material: ALUMINUM inch - 2024



Operations List for "T.NC"**OP# 1:**

Name: Surface High Speed (Dynamic OptiRough)

Cycle Time: 00h, 02m, 10s

Prg. No.: 0

WCS Plane Name: Top

% of Prg. Cycle: 8.95%

Stk. to Leave XY: 0.025"

T-Plane Name: Top

Top of Stock: 0.0"

Stk. to Leave Z: 0.025"

Work Offset Code: G54

Min. Z Depth: -0.725"

Coolant: Flood

Tool:

Mfg. Code: 5680943

RPM: 15000

Comment: ALL-IN-ONE_EFPI-E5CF 375-938C375R07

SFM: 1472.5131

Asm. Name:

Feedrate: 300.0

Tool Type: Bull Endmill

Number: 1

Feed/Tooth: 0.0040

Aggregate: No

Diameter: 0.375"

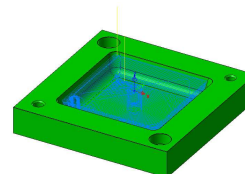
Plunge Feed: 162.98

Lng. Offset: 1

Flute Lng.: 0.938"

Retract Feed: 162.98 inch/min

Flutes: 5



Tool- Spindle speed 15000 exceeds allowed range of 1 to 10000

OP# 2:

Name: Surface High Speed (Waterline)

Cycle Time: 00h, 05m, 35s

Prg. No.: 0

WCS Plane Name: Top

% of Prg. Cycle: 23.07%

Stk. to Leave XY: 0.0"

T-Plane Name: Top

Top of Stock: 0.0"

Stk. to Leave Z: 0.0"

Work Offset Code: G54

Min. Z Depth: -0.727"

Coolant: Flood

Tool:

Mfg. Code:

RPM: 24448

Comment: 1/4 BALL ENDMILL

SFM: 1600.0

Asm. Name:

Feedrate: 78.2336

Tool Type: Ball Endmill

Number: 2

Feed/Tooth: 0.0008

Aggregate: No

Diameter: 0.25"

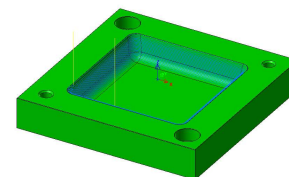
Plunge Feed: 39.1168

Lng. Offset: 2

Flute Lng.: 0.5"

Retract Feed: 39.1168 inch/min

Flutes: 4



Operation- Coolant difference, operation set for "Flood", tool set for "Off"

Tool- Spindle speed 24448 exceeds allowed range of 1 to 10000

OP# 3:

Name: Surface High Speed (Horizontal)

Cycle Time: 00h, 06m, 43s

Prg. No.: 0

WCS Plane Name: Top

% of Prg. Cycle: 27.75%

Stk. to Leave XY: 0.0"

T-Plane Name: Top

Top of Stock: 0.0"

Stk. to Leave Z: 0.0"

Work Offset Code: G54

Min. Z Depth: -0.75"

Coolant: Flood

Tool:

Mfg. Code:

RPM: 24448

Comment: 1/4 BALL ENDMILL

SFM: 1600.0

Asm. Name:

Feedrate: 78.2336

Tool Type: Ball Endmill

Number: 2

Feed/Tooth: 0.0008

Aggregate: No

Diameter: 0.25"

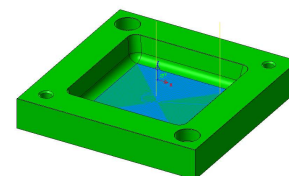
Plunge Feed: 39.1168

Lng. Offset: 2

Flute Lng.: 0.5"

Retract Feed: 39.1168 inch/min

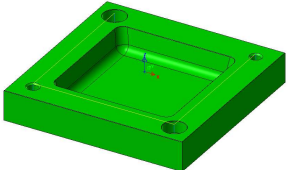
Flutes: 4



Operation- Coolant difference, operation set for "Flood", tool set for "Off"

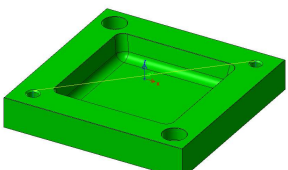
Tool- Spindle speed 24448 exceeds allowed range of 1 to 10000

OP# 4: Spot Drill Holes

	Name: Drill/Counterbore Prg. No.: 0	WCS Plane Name: Top T-Plane Name: Top Work Offset Code: G54	Cycle Time: 00h, 01m, 08s % of Prg. Cycle: 4.68% Top of Stock: 0.0" Min. Z Depth: -0.2062" Coolant: Off	
Tool: _____				
Mfg. Code:		RPM: 534		
Comment: 1/2 SPOTDRILL		SFM: 69.8953		
Asm. Name:		Feedrate: 1.0696		
Tool Type: Spot Drill		Number: 10	Feed/Tooth: 0.0010	
Aggregate: No		Diameter: 0.5"	Plunge Feed: 1.0696	
Lng. Offset: 10		Flute Lng.: 0.5"	Retract Feed: 1.0696 inch/min	
		Flutes: 2		

Operation- Coolant is Off

OP# 5: Tap Drill for 3/8-16 Tap

	Name: Chip Break Prg. No.: 0	WCS Plane Name: Top T-Plane Name: Top Work Offset Code: G54	Cycle Time: 00h, 01m, 09s % of Prg. Cycle: 4.75% Top of Stock: 0.0" Min. Z Depth: -1.1439" Coolant: Off	
Tool: _____				
Mfg. Code:		RPM: 855		
Comment: 5/16 DRILL		SFM: 69.9444		
Asm. Name:		Feedrate: 4.2442		
Tool Type: Drill		Number: 137	Feed/Tooth: 0.0025	
Aggregate: No		Diameter: 0.3125"	Plunge Feed: 4.2442	
Lng. Offset: 137		Flute Lng.: 2.0"	Retract Feed: 4.2442 inch/min	
		Flutes: 2		

Operation- Coolant is Off

Operation- Coolant difference, operation set for "Off", tool set for "Flood"

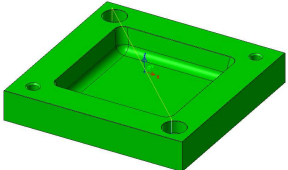
OP# 6: Drill 29/64" Thru

	Name: Chip Break Prg. No.: 0	WCS Plane Name: Top T-Plane Name: Top Work Offset Code: G54	Cycle Time: 00h, 01m, 10s % of Prg. Cycle: 4.82% Top of Stock: 0.0" Min. Z Depth: -1.1861" Coolant: Off	
Tool: _____				
Mfg. Code:		RPM: 590		
Comment: 29/64 DRILL		SFM: 69.9853		
Asm. Name:		Feedrate: 4.2489		
Tool Type: Drill		Number: 159	Feed/Tooth: 0.0036	
Aggregate: No		Diameter: 0.4531"	Plunge Feed: 4.2489	
Lng. Offset: 159		Flute Lng.: 2.0"	Retract Feed: 4.2489 inch/min	
		Flutes: 2		

Operation- Coolant is Off

Operation- Coolant difference, operation set for "Off", tool set for "Flood"

OP# 7:

 Name: Contour (2D)		Cycle Time: 00h, 00m, 54s	
Prg. No.: 0	WCS Plane Name: Top	% of Prg. Cycle: 3.72%	
Stk. to Leave XY: 0.0"	Comp. Type: Wear	Top of Stock: 0.0"	
Stk. to Leave Z: 0.0"	Comp. Dir.: Left	Min. Z Depth: -0.4"	
		Coolant: Off	

Tool: _____

Mfg. Code:		RPM: 1426
Comment: 3/8 FLAT ENDMILL		SFM: 139.9869
Asm. Name:		Feedrate: 6.332
Tool Type: Flat Endmill	Number: 287	Feed/Tooth: 0.0011
Aggregate: No	Diameter: 0.375"	Plunge Feed: 6.332
Lng. Offset: 0	Flute Lng.: 0.75"	Retract Feed: 6.332 inch/min
Dia. Offset: 0	Flutes: 4	

Operation- Coolant is Off

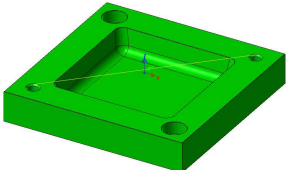
Tool- Length offset 0 exceeds allowed range of 1 to 999

Tool- Length offset add to tool mis-match, length offset is 0, should be 287

Tool- Diameter offset 0 exceeds allowed range of 1 to 999

Tool- Diameter offset add to tool mis-match, diameter offset is 0, should be 287

OP# 8: Tap Drill for 3/8-16 Tap

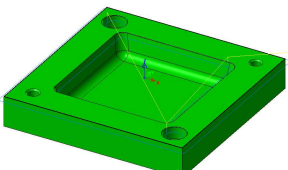
 Name: Rigid Tapping Cycle		Cycle Time: 00h, 00m, 03s	
Prg. No.: 0	WCS Plane Name: Top	% of Prg. Cycle: 0.21%	
	T-Plane Name: Top	Top of Stock: 0.0"	
	Work Offset Code: G54	Min. Z Depth: -1.2"	
		Coolant: Off	

Tool: _____

Mfg. Code:		RPM: 713
Comment: 3/8-16 TAPRH		SFM: 69.9935
Asm. Name:		Feedrate: 44.5667
Tool Type: RH Tap	Number: 224	Feed/Tooth: 0.0625
Aggregate: No	Diameter: 0.375"	Plunge Feed: 44.5667
Lng. Offset: 224	Flute Lng.: 2.0"	Retract Feed: 44.5667 inch/min
	Flutes: 1	

Operation- Coolant is Off

OP# 9: Break Edges .01"

 Name: Contour (2D chamfer)		Cycle Time: 00h, 05m, 14s	
Prg. No.: 0	WCS Plane Name: Top	% of Prg. Cycle: 21.63%	
Stk. to Leave XY: 0.0"	Comp. Type: Computer	Top of Stock: 0.0"	
Stk. to Leave Z: 0.0"	Comp. Dir.: Left	Min. Z Depth: -0.1001"	
		Coolant: Off	

Tool: _____

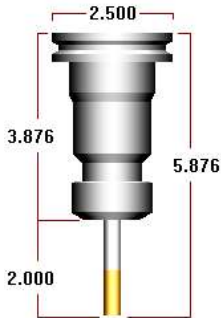
Mfg. Code:		RPM: 1069
Comment: 1/2 CHAMFER MILL		SFM: 139.9215
Asm. Name:		Feedrate: 8.5568
Tool Type: Chamfer Mill	Number: 319	Feed/Tooth: 0.0020
Aggregate: No	Diameter: 0.5"	Plunge Feed: 8.5568
Lng. Offset: 319	Flute Lng.: 0.75"	Retract Feed: 8.5568 inch/min
Dia. Offset: 319	Flutes: 4	

Operation- Coolant is Off

Operation- Coolant difference, operation set for "Off", tool set for "Flood"

Tool List for "T.NC" (Sorted Ascending)

T1: ALL-IN-ONE_EFPI-E5CF 375-938C375R07

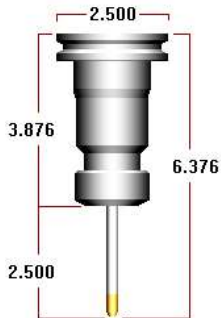
	Tool Type: Bull Endmill	Cycle Time: 00h, 02m, 10s	
	Mfg. Code: 5680943	% of Prg. Cycle: 8.95%	
	Name: ALL-IN-ONE_EFPI-E5CF 375-938C375R07	Max. Stock Top: 0"	
	Asm. Name:	Min. Z Depth: -0.725"	
	Aggregate: No	Coolant: Flood	
	Units: Inch	Spindle Dir.: CW	
	Holder Name: C4C4-0025	RPM: 15000	
	Holder Lng.: 3.876"	SFM: 1473	
	Lng. Offset: 1	Feedrate: 300.0	
	Dia. Offset: 1	Feed/Tooth: 0.0040	
		Plunge Feed: 162.98	
		Retract Feed: 162.98 inch/min	

Tool- Spindle speed 15000 exceeds allowed range of 1 to 10000

Operations using tool "T1: ALL-IN-ONE_EFPI-E5CF 375-938C375R07"

No.	Type	Comment
1	Surface High Speed (Dynamic OptiRough)	

T2: 1/4 BALL ENDMILL

	Tool Type: Ball Endmill	Cycle Time: 00h, 12m, 18s	
	Mfg. Code:	% of Prg. Cycle: 50.83%	
	Name: 1/4 BALL ENDMILL	Max. Stock Top: 0"	
	Asm. Name:	Min. Z Depth: -0.75"	
	Aggregate: No	Coolant: Off	
	Units: Inch	Spindle Dir.: CW	
	Holder Name: C4C4-0025	RPM: 24448	
	Holder Lng.: 3.876"	SFM: 1600	
	Lng. Offset: 2	Feedrate: 78.2336	
	Dia. Offset: 2	Feed/Tooth: 0.0008	
		Plunge Feed: 39.1168	
		Retract Feed: 39.1168 inch/min	

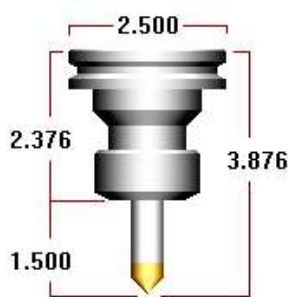
Tool- Coolant is Off

Tool- Spindle speed 24448 exceeds allowed range of 1 to 10000

Operations using tool "T2: 1/4 BALL ENDMILL"

No.	Type	Comment
2	Surface High Speed (Waterline)	
3	Surface High Speed (Horizontal)	

T10: 1/2 SPOTDRILL

	Tool Type: Spot Drill	Cycle Time: 00h, 01m, 08s	
	Mfg. Code:	% of Prg. Cycle: 4.68%	
	Name: 1/2 SPOTDRILL	Max. Stock Top: 0"	
	Asm. Name:	Min. Z Depth: -0.2062"	
	Aggregate: No	Coolant: Off	
	Units: Inch	Spindle Dir.: CW	
	Holder Name: C4C3-0025	RPM: 534	
	Holder Lng.: 2.376"	SFM: 70	
	Lng. Offset: 10	Feedrate: 1.0696	
		Feed/Tooth: 0.0010	
		Tip Angle: 90.0°	

Tool- Coolant is Off

Operations using tool "T10: 1/2 SPOTDRILL"

No.	Type	Comment
4	Drill/Counterbore	Spot Drill Holes

T137: 5/16 DRILL

Tool Type: Drill Mfg. Code: Name: 5/16 DRILL Asm. Name: Aggregate: No Units: Inch Holder Name: DEFAULT HOLDER Holder Lng.: 1.0" Lng. Offset: 137	Material: HSS Diameter: 0.3125" Overall Lng.: 3.0" Shoulder Lng.: 2.5" Flute Lng.: 2.0" Tip Angle: 118.0°	Cycle Time: 00h, 01m, 09s % of Prg. Cycle: 4.75% Max. Stock Top: 0" Min. Z Depth: -1.1439" Coolant: Flood Spindle Dir.: CW RPM: 855 SFM: 70 Feedrate: 4.2442 Feed/Tooth: 0.0025	Diagram of a drill bit with dimensions: 2.000 (flute length), 1.000 (tip length), 3.000 (total length), and 4.000 (total length including shank).
Operation- #5- Coolant difference, operation set for "Off", tool set for "Flood"			

Operations using tool "T137: 5/16 DRILL"

<u>No.</u>	<u>Type</u>	<u>Comment</u>
5	Chip Break	Tap Drill for 3/8-16 Tap

T159: 29/64 DRILL

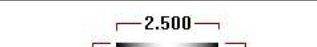
Tool Type: Drill		Cycle Time: 00h, 01m, 10s		
Mfg. Code:		% of Prg. Cycle: 4.82%		
Name: 29/64 DRILL		Max. Stock Top: 0"		
Asm. Name:		Min. Z Depth: -1.1861"		
Aggregate: No		Coolant: Flood		
Units: Inch		Spindle Dir.: CW		
Holder Name: DEFAULT HOLDER		RPM: 590		
Holder Lng.: 1.0"		SFM: 70		
Lng. Offset: 159		Feedrate: 4.2489		
Material: HSS		Feed/Tooth: 0.0036		
Diameter: 0.4531"				
Overall Lng.: 3.0"				
Shoulder Lng.: 2.5"				
Flute Lng.: 2.0"				
Tip Angle: 118.0°				

Operation- #6- Coolant difference, operation set for "Off", tool set for "Flood"

Operations using tool "T159: 29/64 DRILL"

<u>No.</u>	<u>Type</u>	<u>Comment</u>
6	Chip Break	Drill 29/64" Thru

T224: 3/8-16 TAPRH

 Tool Type: RH Tap Mfg. Code:	Name: 3/8-16 TAPRH	Cycle Time: 00h, 00m, 03s % of Prg. Cycle: 0.21% Max. Stock Top: 0" Min. Z Depth: -1.2"	
Asm. Name:	Aggregate: No	Coolant: Off	
Units: Inch	Material: Carbide	Spindle Dir.: CW	
Holder Name: C4C4-0032	Diameter: 0.375"	RPM: 713	
Holder Lng.: 3.8755"	Overall Lng.: 3.0"	SFM: 70	
Lng. Offset: 224	Shoulder Lng.: 2.5"	Feedrate: 44.5667	
	Flute Lng.: 2.0"	Feed/Tooth: 0.0625	
	Tip Angle: NA°		
	Threads: 16.0		
Tool- Coolant is Off			

Operations using tool "T224: 3/8-16 TAPRH"

<u>No.</u>	<u>Type</u>	<u>Comment</u>
8	Rigid Tapping Cycle	Tap Drill for 3/8-16 Tap

T287: 3/8 FLAT ENDMILL



Tool Type: Flat Endmill

Mfg. Code:

Name: 3/8 FLAT ENDMILL

Asm. Name:

Aggregate: No

Units: Inch

Holder Name: DEFAULT HOLDER

Holder Lng.: 1.0"

Lng. Offset: 0

Dia. Offset: 0

Material: HSS

Diameter: 0.375"

Overall Lng.: 2.5"

Shoulder Lng.: 0.8"

Flute Lng.: 0.75"

Flutes: 4

Cycle Time: 00h, 00m, 54s

% of Prg. Cycle: 3.72%

Max. Stock Top: 0"

Min. Z Depth: -0.4"

Coolant: Off

Spindle Dir.: CW

RPM: 1426

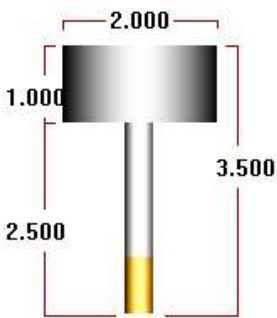
SFM: 140

Feedrate: 6.332

Feed/Tooth: 0.0011

Plunge Feed: 6.332

Retract Feed: 6.332 inch/min

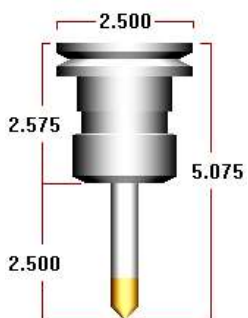


Tool- Length offset 0 exceeds allowed range of 1 to 999
Tool- Length offset add to tool mis-match, length offset is 0, should be 287
Tool- Diameter offset 0 exceeds allowed range of 1 to 999
Tool- Diameter offset add to tool mis-match, diameter offset is 0, should be 287
Tool- Coolant is Off
Operation- #7- Uses Wear Cutter Compensation, and the tool Diameter Offset is set to 0

Operations using tool "T287: 3/8 FLAT ENDMILL"

<u>No.</u>	<u>Type</u>	<u>Comment</u>
7	Contour (2D)	

T319: 1/2 CHAMFER MILL

	Tool Type: Chamfer Mill	Cycle Time: 00h, 05m, 14s	
	Mfg. Code:	% of Prg. Cycle: 21.63%	
	Name: 1/2 CHAMFER MILL	Max. Stock Top: 0"	
	Asm. Name:	Min. Z Depth: -0.1001"	
	Aggregate: No	Material: HSS	
	Units: Inch	Diameter: 0.5"	
	Holder Name: C4C3-0032	Overall Lng.: 2.5"	
	Holder Lng.: 2.575"	Shoulder Lng.: 1.0"	
	Lng. Offset: 319	Flute Lng.: 0.75"	
	Dia. Offset: 319	Corner Radius: 0.0"	
		Taper Angle: 45.0°	
		Coolant: Flood	
		Spindle Dir.: CW	
		RPM: 1069	
		SFM: 140	
		Feedrate: 8.5568	
		Feed/Tooth: 0.0020	
		Plunge Feed: 8.5568	
		Retract Feed: 8.5568 inch/min	

Operation- #9- Coolant difference, operation set for "Off", tool set for "Flood"

Operations using tool "T319: 1/2 CHAMFER MILL"

<u>No.</u>	<u>Type</u>	<u>Comment</u>
9	Contour (2D chamfer)	Break Edges .01"

Work Offset List for "T.NC"

<u>CNC Code</u>	<u>Mastercam No.</u>	<u>View</u>
G54	0	Top

Special Instructions

Fixturing:

Kurt Anglock vises with hard jaws, 1 1/2" parallels, and work stop set at left end below the top of the jaws.

Work Offsets:

G54

X0= C/L of stock

Y0= C/L of stock

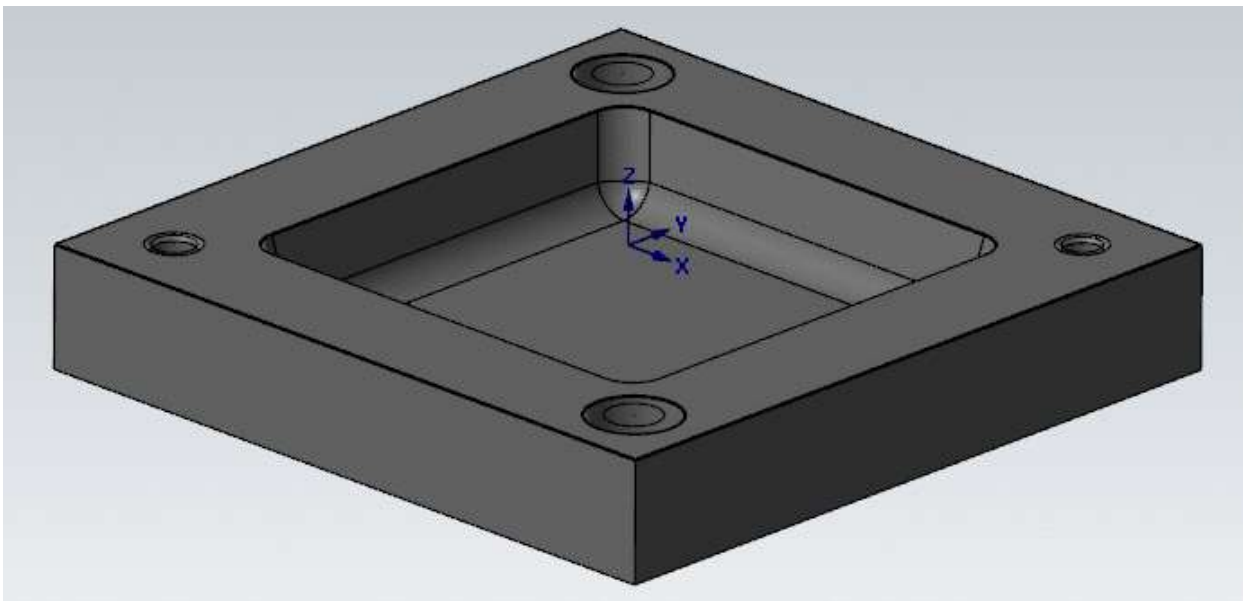
Z0= Top of stock

Notes:

This operation rough and finishes the pocket, drills, mills counterbores, taps holes, and breaks edges.

Do not over tighten the vises and spring the material.

Screenshot of finished part:

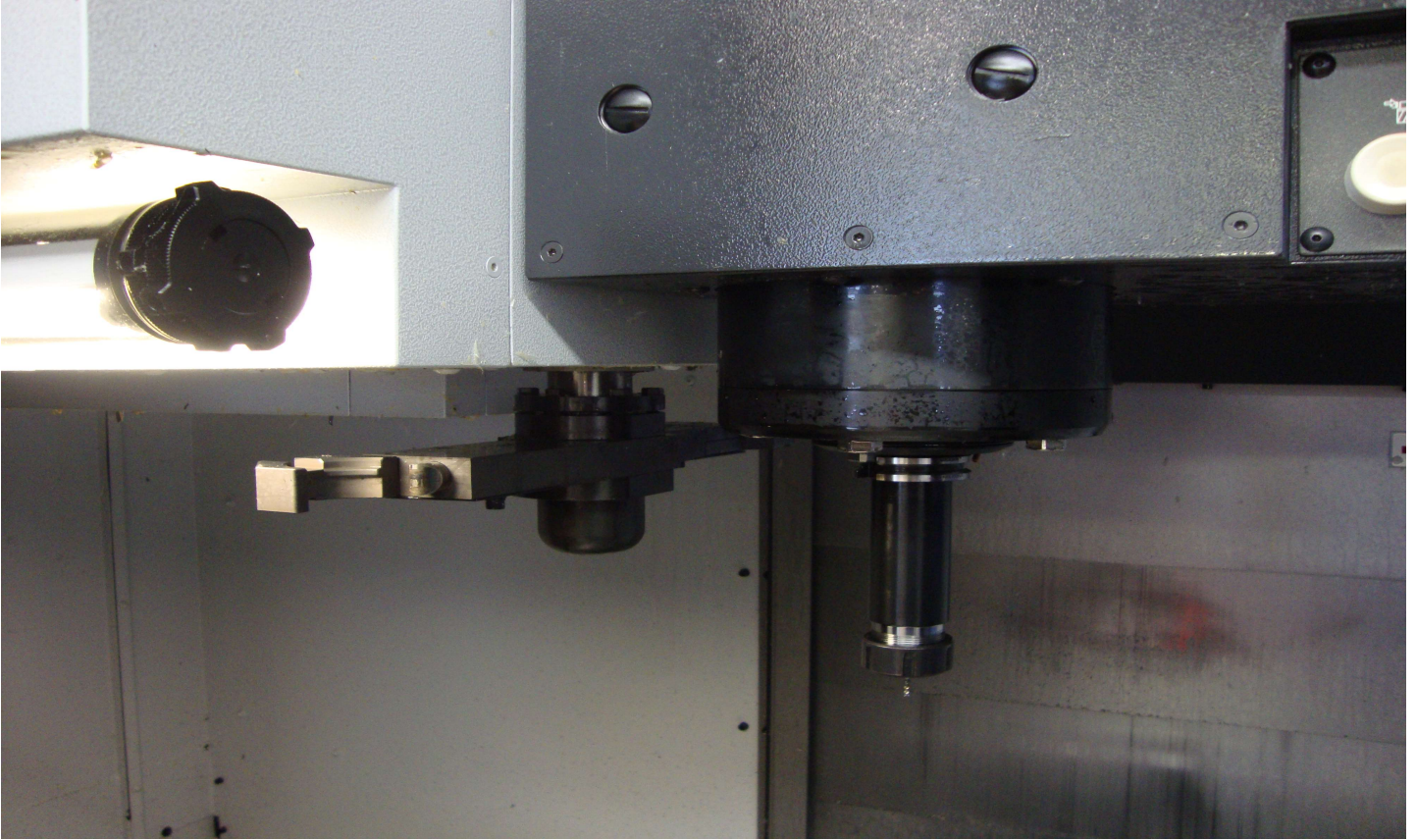


Critical Dimensions:

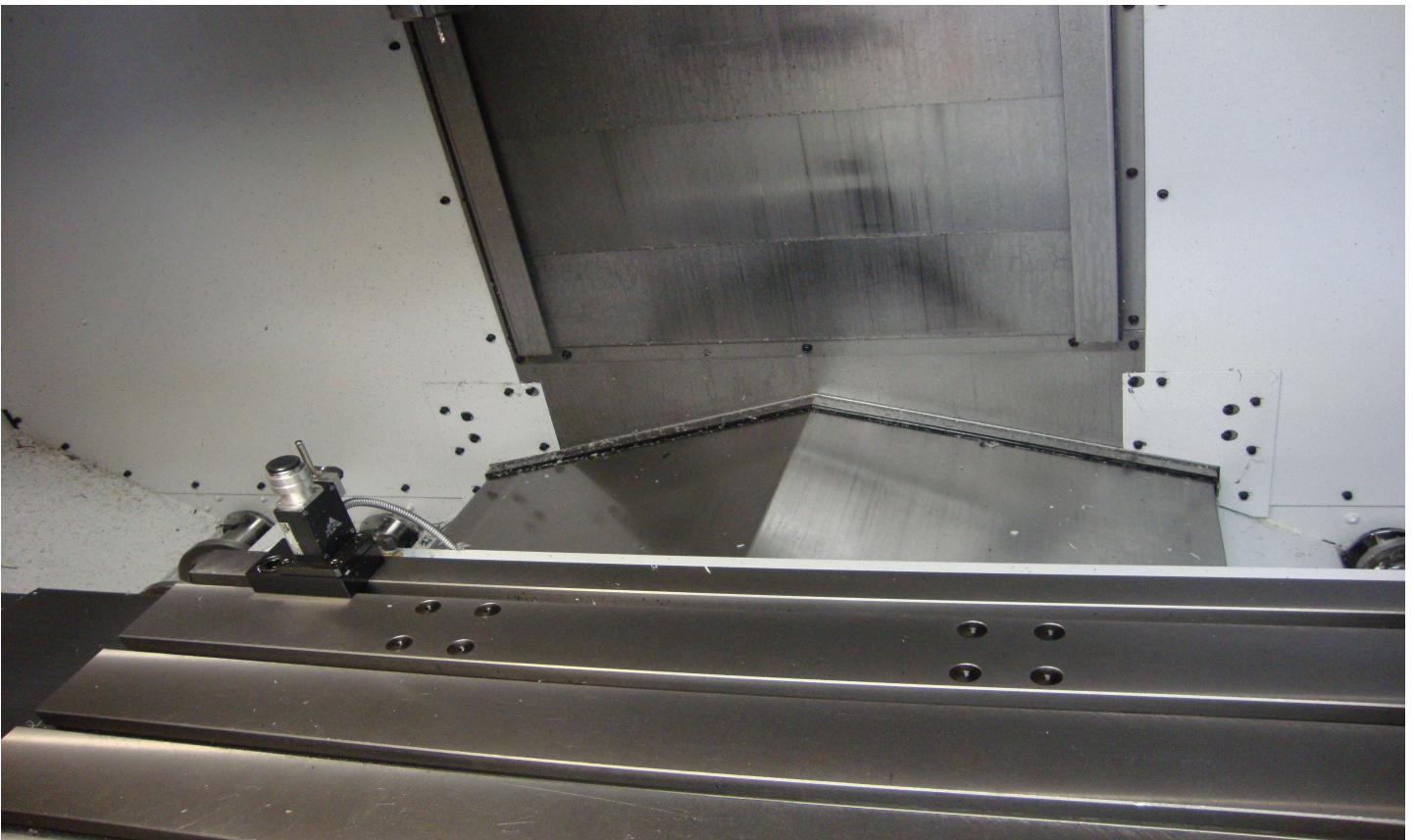
Check threads with Go-NoGo gage

Custom Images

#1: Spindle with toolholder



#2: Toolsetter & Table



#3: Tailstock

