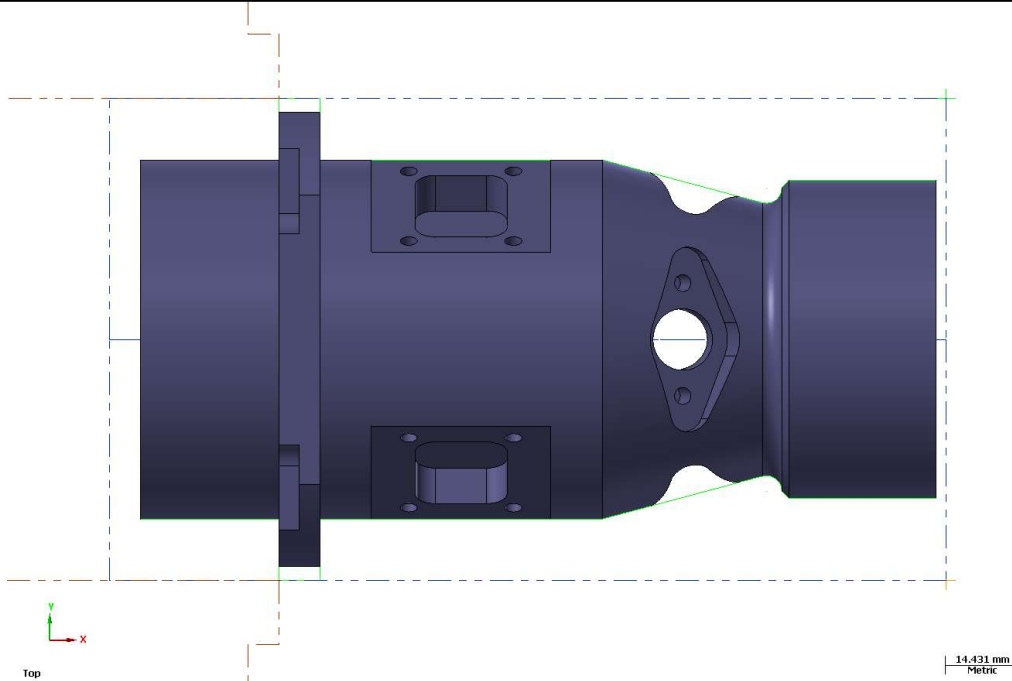


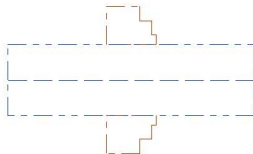
**General Information**

Date & Time: Tuesday, October 20, 2015 7:10 PM	Machine Group: Machine Group-1	Units: Metric
Project: Sample Varco Setup Sheet	Customer: Varco Reporting	
Programmer: Jim Varco	Note 1:	
Drawing:	Note 2:	
Revision:	Note 3:	
Mastercam File: V:\VARCO REPORTING\MASTERCAM PART FILES\MILL-TURN SETUP SHEET DEMO.MCX-9		




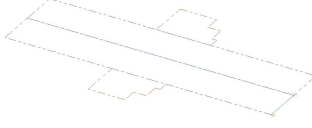
<b>Chuck:</b>	Left	Right
Grip Length:	0.0 mm	0.0 mm
Height:	50.0 mm	50.0 mm
Width:	37.0 mm	37.0 mm
Thickness:	31.75 mm	31.75 mm
Reference:	X-62.9998 mm, Z47.0	X725.07604 mm, Z47.0
H. Step:	6.0 mm	6.0 mm
V. Step:	12.5 mm	12.5 mm

<b>Stock:</b>	Left	Right
Shape:	Solid	Solid
Outside Dia:	94.0 mm	94.0 mm
Inside Dia.:	N/A	N/A
Length:	322.0 mm	157.0 mm
Z Reference:	65.0 mm	0.0 mm
Material:	ALUMINUM mm - 2024	
Mtl. Comment		


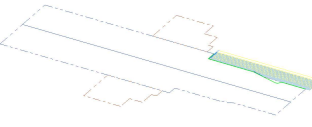


**Operations List for "EXERCISE 1 RAW METRIC MODEL.NC"**


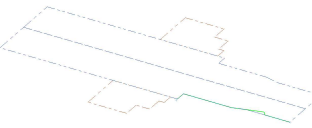
**Lathe- OP# 1:**

	Name: Lathe Face	Cycle Time: 00h, 00m, 01s	
	Prg. No.: 0	% of Prg. Cycle: 0.09%	
	Stk. to Leave Z: 0.0 mm	Coolant: Off	
Tool:			
	Mfg. Code:	Spindle Speed: 550 CSS	
	Comment:	Use CSS: Yes	
	Dia. Offset: 0	Tool Type: General Turning Tool Spindle Max: 6000 RPM	
	Turret: Lower	Number: 1 Fast Feed: 0.5 mm/rev	
	Station: 1	Alias: T0101	
	Spindle: Left	Nose Radius: 0.8 mm	
	Lng. Offset: 1		
Operation- Coolant is Off			



**Lathe- OP# 2:**

	Name: Lathe Rough	Cycle Time: 00h, 18m, 53s	
	Prg. No.: 0	% of Prg. Cycle: 99.30%	
	Stk. to Leave X: 0.5 mm	Coolant: Off	
	Stk. to Leave Z: 0.5 mm		
Tool:			
	Mfg. Code:	Spindle Speed: 275 RPM	
	Comment:	Use CSS: No	
	Dia. Offset: 0	Tool Type: General Turning Tool Spindle Max: 6000 RPM	
	Turret: Upper	Number: 1 Fast Feed: 0.25 mm/rev	
	Station: 1	Nose Radius: 0.8 mm	
	Spindle: Left		
	Lng. Offset: 1		
Operation- Coolant is Off			


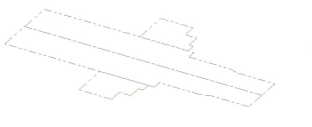
**Lathe- OP# 3:**

	Name: Lathe Finish	Cycle Time: 00h, 00m, 06s	
	Prg. No.: 0	% of Prg. Cycle: 0.53%	
	Stk. to Leave X: 0.0 mm	Coolant: Off	
	Stk. to Leave Z: 0.0 mm		
Tool:			
	Mfg. Code:	Spindle Speed: 550 CSS	
	Comment:	Use CSS: Yes	
	Dia. Offset: 0	Tool Type: General Turning Tool Spindle Max: 6000 RPM	
	Turret: Lower	Number: 3 Fast Feed: 0.5 mm/rev	
	Station: 3	Nose Radius: 0.8 mm	
	Spindle: Left		
	Lng. Offset: 3		
Operation- Coolant is Off			

**Lathe- OP# 4: Park Lower Turret Under Left Spindle**

	Name: Turret Park		
	Prg. No.: 0		

**Lathe- OP# 5: Pre-position cutoff tool**

	Name: Lathe Point	Cycle Time: 00h, 00m, 00s	
	Prg. No.: 0	% of Prg. Cycle: 0.00%	
		Coolant: Flood	
Tool:			
	Mfg. Code:	Spindle Speed: 197 RPM	
	Comment: Pre-position cutoff tool	Use CSS: No	
	Dia. Offset: 0	Tool Type: Grooving Tool Spindle Max: 6000 RPM	
	Turret: Upper	Number: 7 Fast Feed: 492.5 mm/min	
	Station: 7	Alias: T0707	
	Spindle: Left		
	Offset- Front: 7		

**Lathe- OP# 6: Align spindles**

 Name: Spindle Sync  
Prg. No.: 0 

**Lathe- OP# 7: Pickoff spindle - Unclamp and eject part**

 Name: Spindle Clamping  
Prg. No.: 0 

**Lathe- OP# 8: Pickoff spindle - Move to clearance distance**

 Name: Spindle Move  
Prg. No.: 0 


**Lathe- OP# 9: Pickoff spindle - Move to grip position**

 Name: Spindle Move  
Prg. No.: 0 

**Lathe- OP# 10: Pickoff spindle - Clamp and transfer stock**

 Name: Spindle Clamping  
Prg. No.: 0 



**Lathe- OP# 11: Stock spindle - Unclamp**

 Name: Spindle Clamping  
Prg. No.: 0 

**Lathe- OP# 12: Pickoff spindle - Pull stock**

 Name: Spindle Move  
Prg. No.: 0 

**Lathe- OP# 13: Stock spindle - Clamp and transfer stock**


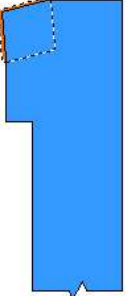
 Name: Spindle Clamping  
Prg. No.: 0 

**Lathe- OP# 14: Synchronize spindles**

 Name: Spindle Sync  
Prg. No.: 0 

**Tool List for "EXERCISE 1 RAW METRIC MODEL.NC" (Not Sorted)**

**Lathe- T0101: ROUGH FACE LEFT - 80 DEG.**


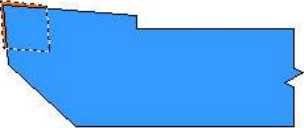
	Tool Type: General Turning Tool	Cycle Time: 00h, 00m, 01s	
	Mfg. Code:	% of Prg. Cycle: 0.09%	
	Turret: Lower	Coolant: <b>Off</b>	
	Spindle: Left	Spindle Dir.: CW	
	Units: Metric	Spindle Speed: 550 CSS	
	<u>Holder</u>	Spindle Max: 6000 RPM	
	<u>Insert</u>	Fast Feed: 0.5 mm/rev	
	Name: CNMG 12 04 08	Slow Feed: 0.1 mm/rev	
	Length:		
	Width: 27.5 mm		
	Orientation: Vertical		
	Hand: Left		
	Angle: 0.0°		

Tool- Coolant is Off

**Operations using tool "Lathe- T0101: ROUGH FACE LEFT - 80 DEG."**

No.	Type	Comment
1	1 - Lathe Face	

**Lathe- T0101: Upper Stream OD ROUGH RIGHT - 80 DEG.**



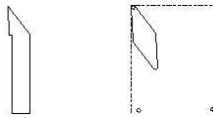
	Tool Type: General Turning Tool	Cycle Time: 00h, 18m, 53s	
	Mfg. Code:	% of Prg. Cycle: 99.30%	
	Turret: Upper	Coolant: <b>Off</b>	
	Spindle: Left	Spindle Dir.: CCW	
	Units: Metric	Spindle Speed: 275 RPM	
	<u>Holder</u>	Spindle Max: 6000 RPM	
	<u>Insert</u>	Fast Feed: 0.25 mm/rev	
	Name: MWLNR 2525M 08	Slow Feed: 0.1 mm/rev	
	Length:		
	Width: 32.0 mm		
	Orientation: Horizontal		
	Hand: Right		
	Angle: 0.0°		

Tool- Coolant is Off

**Operations using tool "Lathe- T0101: Upper Stream OD ROUGH RIGHT - 80 DEG."**

No.	Type	Comment
2	2 - Lathe Rough	

**Lathe- T0303: OD FINISH LEFT - 35 DEG.**


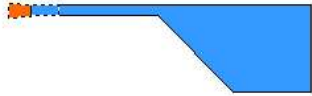

 <p>Tool Type: General Turning Tool Mfg. Code:</p> <p>Turret: Lower Spindle: Left Units: Metric</p> <p><u>Holder</u> Name: MVJNL 2525M 16 Length: Width: 32.0 mm Orientation: Vertical Hand: Left Angle: 0.0°</p>	<p>Lng. Offset: 3 Insert Up: No</p> <p><u>Insert</u> Name: VNMG 16 04 08 Shape: V (35 deg.) Radius: 0.8 mm Material: Carbide</p>	<p>Cycle Time: 00h, 00m, 06s % of Prg. Cycle: 0.53%</p> <p>Coolant: <b>Off</b> Spindle Dir.: CW Spindle Speed: 550 CSS Spindle Max: 6000 RPM Fast Feed: 0.5 mm/rev Slow Feed: 0.1 mm/rev</p>		
				<p><u>Holder</u> Name: VNMG 16 04 08 Shape: V (35 deg.) Radius: 0.8 mm Material: Carbide</p>
				<p>Spindle Speed: 550 CSS Spindle Max: 6000 RPM Fast Feed: 0.5 mm/rev Slow Feed: 0.1 mm/rev</p>
				

Tool- Coolant is Off

**Operations using tool "Lathe- T0303: OD FINISH LEFT - 35 DEG."**

No.	Type	Comment
3	3 - Lathe Finish	

**Lathe- T0707: OD CUTOFF RIGHT**

 <p>Tool Type: Grooving Tool Mfg. Code:</p> <p>Turret: Upper Spindle: Left Units: Metric</p> <p><u>Holder</u> Name: Length: Width: 12.5 mm Orientation: Horizontal Hand: Right Angle: 0.0°</p>	<p>Offset- Front: 7 Offset- Back: 7 Insert Up: No</p> <p><u>Insert</u> Name: Shape: M (86 deg.) Radius: 0.4 mm Material: Carbide</p>	<p>Cycle Time: 00h, 00m, 00s % of Prg. Cycle: Unavailable</p> <p>Coolant: Flood Spindle Dir.: CCW Spindle Speed: 197 RPM Spindle Max: 6000 RPM Fast Feed: 492.5 mm/min Slow Feed: 0.0 mm/min</p>		
				<p>Offset- Front: 7 Offset- Back: 7 Insert Up: No</p>
				<p>Spindle Speed: 197 RPM Spindle Max: 6000 RPM Fast Feed: 492.5 mm/min Slow Feed: 0.0 mm/min</p>
				

**Operations using tool "Lathe- T0707: OD CUTOFF RIGHT"**

No.	Type	Comment
5	5 - Lathe Point	Pre-position cutoff tool


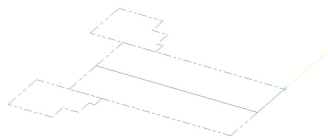
**Work Offset List for "EXERCISE 1 RAW METRIC MODEL.NC"**

CNC Code	Mastercam No.	View
G54	0	MACHINE GROUP-1.FACE MILL.180.LEFT
	-1	MACHINE GROUP-1.FACE MILL.180.LEFT

<b>CNC Code File: "C:\USERS\JIM.VARCO\DOCUMENTS\MY MCAMX9\MILL TURN\NC\EXERCISE 1 AFTER LEFT SPINDLE OPS.NC"</b>	<u>Cycle Time</u> 00h, 03m, 27s
------------------------------------------------------------------------------------------------------------------	------------------------------------

**Operations List for "EXERCISE 1 AFTER LEFT SPINDLE OPS.NC"**

**Lathe- OP# 15: Cut off the part**

 <p>Name: Lathe Cutoff Prg. No.: 0 Stk. to Leave X: NA mm Stk. to Leave Z: NA mm Tool:</p> <p>Mfg. Code: Comment: Cut off the part Dia. Offset: 0 Turret: Upper Station: 7 Offset- Back: 7 Offset- Front: 7</p>	<p>Tool Type: Grooving Tool Number: 7 Alias: T0707</p>	<p>Cycle Time: 00h, 00m, 06s % of Prg. Cycle: 2.90%</p> <p>Coolant: Flood Spindle Speed: 197 RPM Use CSS: No Spindle Max: 6000 RPM Fast Feed: 492.5 mm/min</p>		
				<p>Spindle Speed: 197 RPM Use CSS: No Spindle Max: 6000 RPM Fast Feed: 492.5 mm/min</p>

**Lathe- OP# 16: Cancel Spindle Sync**

	Name: Spindle Sync Prg. No.: 0	
-----------------------------------------------------------------------------------	-----------------------------------	-------------------------------------------------------------------------------------



**Lathe- OP# 17: Pickoff spindle - Retract**

	Name: Spindle Move Prg. No.: 0	
-----------------------------------------------------------------------------------	-----------------------------------	-------------------------------------------------------------------------------------


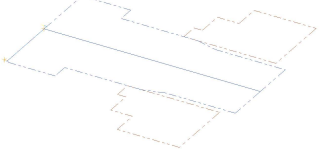
**Lathe- OP# 18: Send Upper Turret Home**

	Name: Turret Park Prg. No.: 0	
-----------------------------------------------------------------------------------	----------------------------------	-------------------------------------------------------------------------------------

**Lathe- OP# 19: Send Lower Turret Home**


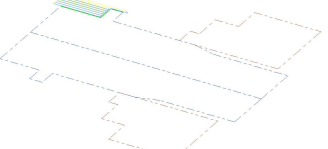
	Name: Turret Park Prg. No.: 0	
-----------------------------------------------------------------------------------	----------------------------------	-------------------------------------------------------------------------------------

**Lathe- OP# 20:**

	Name: Lathe Face Prg. No.: 0 Stk. to Leave Z: 0.0 mm Tool:	Cycle Time: 00h, 00m, 01s % of Prg. Cycle: 0.48% Coolant: <b>Off</b>	
Mfg. Code:	Spindle Speed: 550 CSS		
Comment:	Use CSS: Yes		
Dia. Offset: 0	Tool Type: General Turning Tool Spindle Max: 6000 RPM		
Turret: Lower	Number: 1 Fast Feed: 0.5 mm/rev		
Station: 1	Alias: T0101		
Spindle: Right Lng. Offset: 1	Nose Radius: 0.8 mm		


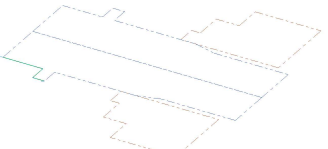
Operation- Coolant is Off

**Lathe- OP# 21:**

	Name: Lathe Rough Prg. No.: 0 Stk. to Leave X: 0.5 mm Stk. to Leave Z: 0.5 mm Tool:	Cycle Time: 00h, 03m, 16s % of Prg. Cycle: 94.69% Coolant: <b>Off</b>	
Mfg. Code:	Spindle Speed: 275 RPM		
Comment:	Use CSS: No		
Dia. Offset: 0	Tool Type: General Turning Tool Spindle Max: 6000 RPM		
Turret: Upper	Number: 1 Fast Feed: 0.25 mm/rev		
Station: 1	Nose Radius: 0.8 mm		
Spindle: Right Lng. Offset: 1			

Operation- Coolant is Off


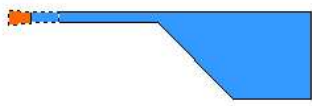
**Lathe- OP# 22:**

	Name: Lathe Finish Prg. No.: 0 Stk. to Leave X: 0.0 mm Stk. to Leave Z: 0.0 mm Tool:	Cycle Time: 00h, 00m, 02s % of Prg. Cycle: 0.97% Coolant: <b>Off</b>	
Mfg. Code:	Spindle Speed: 550 CSS		
Comment:	Use CSS: Yes		
Dia. Offset: 0	Tool Type: General Turning Tool Spindle Max: 6000 RPM		
Turret: Lower	Number: 3 Fast Feed: 0.5 mm/rev		
Station: 3	Nose Radius: 0.8 mm		
Spindle: Right Lng. Offset: 3			

Operation- Coolant is Off

**Tool List for "EXERCISE 1 AFTER LEFT SPINDLE OPS.NC" (Not Sorted)**


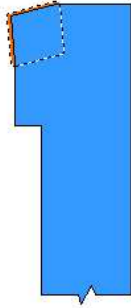
**Lathe- T0707: OD CUTOFF RIGHT**

 Tool Type: Grooving Tool		Cycle Time: 00h, 00m, 06s	
Mfg. Code:		% of Prg. Cycle: 2.90%	
Turret: Upper	Offset- Front: 7	Coolant: Flood	
Spindle: Left	Offset- Back: 7	Spindle Dir.: CCW	
Units: Metric	Insert Up: No	Spindle Speed: 197 RPM	
<u>Holder</u>	<u>Insert</u>	Spindle Max: 6000 RPM	
Name:	Name:	Fast Feed: 492.5 mm/min	
Length:	Shape: M (86 deg.	Slow Feed: 0.0 mm/min	
Width: 12.5 mm	Radius: 0.4 mm		
Orientation: Horizontal	Material: Carbide		
Hand: Right			
Angle: 0.0°			

**Operations using tool "Lathe- T0707: OD CUTOFF RIGHT"**

No.	Type	Comment
15	15 - Lathe Cutoff	Cut off the part

**Lathe- T0101: ROUGH FACE LEFT - 80 DEG.**


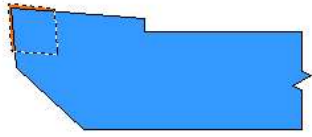
 Tool Type: General Turning Tool		Cycle Time: 00h, 00m, 01s	
Mfg. Code:		% of Prg. Cycle: 0.48%	
Turret: Lower	Lng. Offset: 1	Coolant: <b>Off</b>	
Spindle: Right	Insert Up: No	Spindle Dir.: CW	
Units: Metric		Spindle Speed: 550 CSS	
<u>Holder</u>	<u>Insert</u>	Spindle Max: 6000 RPM	
Name:	Name: CNMG 12 04 08	Fast Feed: 0.5 mm/rev	
Length:	Shape: C (80 deg.	Slow Feed: 0.1 mm/rev	
Width: 27.5 mm	Radius: 0.8 mm		
Orientation: Vertical	Material: Carbide		
Hand: Left			
Angle: 0.0°			

Tool- Coolant is Off

**Operations using tool "Lathe- T0101: ROUGH FACE LEFT - 80 DEG."**

No.	Type	Comment
20	20 - Lathe Face	

**Lathe- T0101: Upper Stream OD ROUGH RIGHT - 80 DEG.**



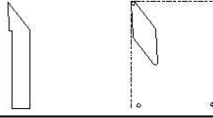
 Tool Type: General Turning Tool		Cycle Time: 00h, 03m, 16s	
Mfg. Code:		% of Prg. Cycle: 94.69%	
Turret: Upper	Lng. Offset: 1	Coolant: <b>Off</b>	
Spindle: Right	Insert Up: No	Spindle Dir.: CCW	
Units: Metric		Spindle Speed: 275 RPM	
<u>Holder</u>	<u>Insert</u>	Spindle Max: 6000 RPM	
Name: MWLNR 2525M 08	Name: CNMG 12 04 08	Fast Feed: 0.25 mm/rev	
Length:	Shape: C (80 deg.	Slow Feed: 0.1 mm/rev	
Width: 32.0 mm	Radius: 0.8 mm		
Orientation: Horizontal	Material: Carbide		
Hand: Right			
Angle: 0.0°			

Tool- Coolant is Off

**Operations using tool "Lathe- T0101: Upper Stream OD ROUGH RIGHT - 80 DEG."**

No.	Type	Comment
21	21 - Lathe Rough	

**Lathe- T0303: OD FINISH LEFT - 35 DEG.**

	Tool Type: General Turning Tool	Cycle Time: 00h, 00m, 02s	
Mfg. Code:		% of Prg. Cycle: 0.97%	
Turret: Lower	Lng. Offset: 3	Coolant: <b>Off</b>	
Spindle: Right	Insert Up: No	Spindle Dir.: CW	
Units: Metric		Spindle Speed: 550 CSS	
<u>Holder</u>	<u>Insert</u>	Spindle Max: 6000 RPM	
Name: MVJNL 2525M 16	Name: VNMG 16 04 08	Fast Feed: 0.5 mm/rev	
Length:	Shape: V (35 deg.)	Slow Feed: 0.1 mm/rev	
Width: 32.0 mm	Radius: 0.8 mm		
Orientation: Vertical	Material: Carbide		
Hand: Left			
Angle: 0.0°			

Tool- Coolant is Off

**Operations using tool "Lathe- T0303: OD FINISH LEFT - 35 DEG."**

<u>No.</u>	<u>Type</u>	<u>Comment</u>
22	22 - Lathe Finish	

**Work Offset List for "EXERCISE 1 AFTER LEFT SPINDLE OPS.NC"**

<u>CNC Code</u>	<u>Mastercam No.</u>	<u>View</u>
	-1	Right side
G54	0	MACHINE GROUP-1.TURNING.RIGHT.LOWER