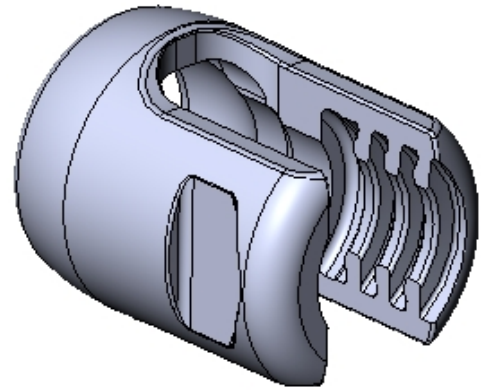


MACHINING REPORT

Turning report generated by surfsup on 1/18/2010 10:15 AM.

Part Name:	ECAS 12-20 Bone Screw Housing		
ESPRIT File Path:	C:\VYTAS\ESPRIT\DemoGallery\Turning_Production\StarCNC\ECAS 12-20 Bone Screw Housing.esp		
NC Program Number:	1234.0000	Stock Type:	0
Name:	BONE_SCREW_HOUSING	Diameter:	0.5000
Unit:	Inch	Length (Part/Total):	0.6100/12.0000
Overall Cycle Time:	00:02:21	Machine Name:	Star ECAS 12-20
Material Class:			
Condition:			
Comment:			



OP #	OPERATION	SPINDLE# TURRET# HEAD#	STATION# TOOL# ORIENT.	TOOL	SPEED RPM/SPM	FEED UNIT PM/PR (XY/Z)	NC COMP	CYCLE TIME	COMMENT
1	FACE	1.0000 - 1.0000	S 2.0000 T 2.0000 2V	55DEG .015RAD	1910.0000 250.0000	11.4600 0.0060	No	00:00:02	-
7	MILL SIDE	1.0000 - 1.0000	S 5.0000 T 5.0000 X -	3/16 END MILL	4000.0000 196.0000	20.0000 50.0000	Left 0.0000	00:00:02	-
8	MILL SIDE	1.0000 - 1.0000	S 5.0000 T 5.0000 X -	3/16 END MILL	4000.0000 196.0000	20.0000 50.0000	Left 0.0000	00:00:02	-
10	MILL WRENCH FLAT	1.0000 - 1.0000	S 6.0000 T 6.0000 X -	3/32 BULL NOSE	4000.0000 98.0000	20.0000 50.0000	Left 0.0000	00:00:01	-
11	MILL WRENCH FLAT	1.0000 - 1.0000	S 6.0000 T 6.0000 X -	3/32 BULL NOSE	4000.0000 98.0000	20.0000 50.0000	Left 0.0000	00:00:01	-
13	MILL WRENCH FLAT	1.0000 - 1.0000	S 6.0000 T 6.0000 X -	3/32 BULL NOSE	4000.0000 98.0000	20.0000 50.0000	Left 0.0000	00:00:01	-
14	MILL WRENCH FLAT	1.0000 - 1.0000	S 6.0000 T 6.0000 X -	3/32 BULL NOSE	4000.0000 98.0000	20.0000 50.0000	Left 0.0000	00:00:01	-
15	MILL RADIUS	1.0000 - 1.0000	S 7.0000 T 7.0000 X -	1/8 BALL END MILL X	4000.0000 131.0000	10.0000 10.0000	- -	00:00:30	-
16	MILL RADIUS	1.0000 - 1.0000	S 7.0000 T 7.0000 X -	1/8 BALL END MILL X	4000.0000 131.0000	10.0000 10.0000	- -	00:00:30	-
17	MILL CENTER	1.0000 - 1.0000	S 5.0000 T 5.0000 X -	3/16 END MILL	4000.0000 196.0000	20.0000 50.0000	Left 0.0000	00:00:03	-

23	CUTOFF	1.0000 - 1.0000	S 1.0000 T 1.0000 2V	.088 CUTOFF	3000.0000 393.0000	3.0000 0.0010	-	00:00:07	-
24	SPOT	2.0000 - 2.0000	S 1.0000 T 21.0000 -	3/8 SPOT DRILL	2500.0000 245.0000	2.5000 0.0010	-	00:00:05	-
25	EJECT	2.0000 - 2.0000	S - T - -	-	0.0000 -	0.0000 -	-	00:00:01	-
22	PICKUP	2.0000 - 2.0000	S - T - -	-	300.0000 -	50.0000 -	-	00:00:01	-
2	DRILL	1.0000 - 3.0000	S 6.0000 T 16.0000 -	1/4 DRILL	3000.0000 196.0000	3.0000 0.0010	-	00:00:27	-
3	BORE	1.0000 - 3.0000	S 7.0000 T 17.0000 2H	BORING BAR	3820.0000 250.0000	7.6400 0.0020	No	00:00:14	-
4	THREAD RELIEF GROOVE	1.0000 - 3.0000	S 8.0000 T 18.0000 2H	1MM GROOVE	3820.0000 250.0000	3.8200 0.0010	No	00:00:03	-
5	THREAD	1.0000 - 3.0000	S 9.0000 T 19.0000 2H	THREAD	1000.0000 131.0000	66.0000 0.0660	-	00:00:00	-
6	FINISH FACE AND TURN OD	1.0000 - 3.0000	S 2.0000 T 12.0000 3V	35DEG .008RAD	1910.0000 250.0000	5.7300 0.0030	No	00:00:10	-
19	MILL NOTCH	1.0000 - 3.0000	S 4.0000 T 14.0000 Z +	1/8 BALL END MILL Z	4000.0000 131.0000	20.0000 50.0000	Left 0.0000	00:00:01	-
20	MILL NOTCH	1.0000 - 3.0000	S 4.0000 T 14.0000 Z +	1/8 BALL END MILL Z	4000.0000 131.0000	20.0000 50.0000	Left 0.0000	00:00:01	-

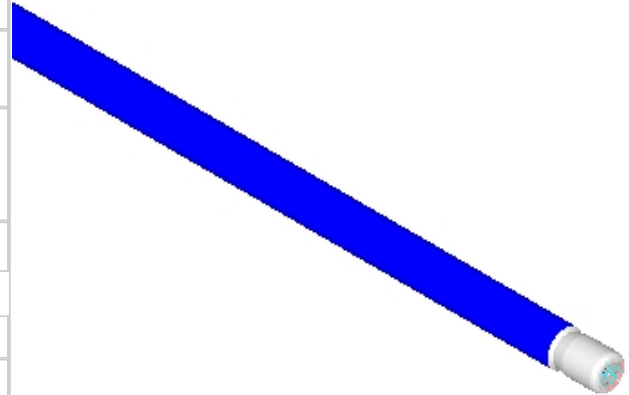
OPERATION DETAILS

OP 1 : FACE

Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:02
Rapid length	0.0470
Feed Length	0.2900

T 2.0000 : 55DEG .015RAD

Tool Style	
Orientation	2V
Tool Material	Carbide, Indexable, Coated
Spindle Direction	CW
Coolant	On
Length Comp Register	2.0000



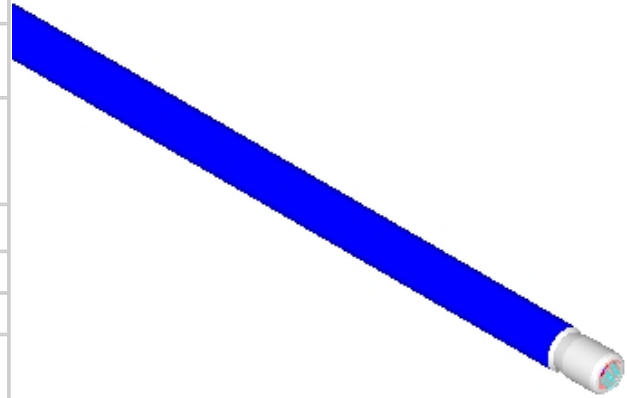
OPERATION DETAILS

OP 7 : MILL SIDE

Op Type	-
Work Coordinate	XYZ
Primary Angle	180.0000
Secondary Angle	0.0000
Cycle Time	00:00:02
Rapid length	0.9400
Feed Length	0.5204

T 5.0000 : 3/16 END MILL

Tool Style	End Mill
Orientation	X -
Tool Material	High Speed Steel, Solid, Uncoated
Spindle Direction	CW
Coolant	On
Length Comp Register	5.0000



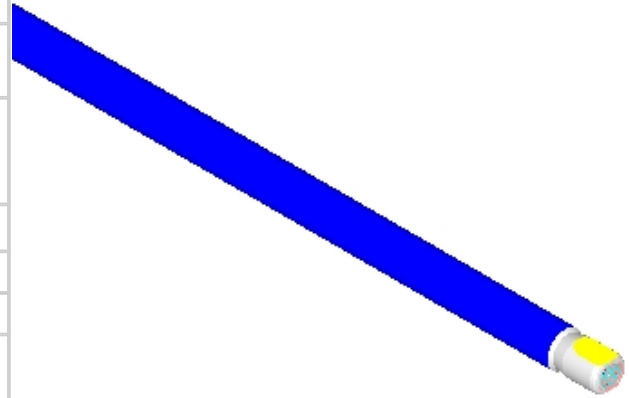
OPERATION DETAILS

OP 8 : MILL SIDE

Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:02
Rapid length	0.9400
Feed Length	0.5204

T 5.0000 : 3/16 END MILL

Tool Style	End Mill
Orientation	X -
Tool Material	High Speed Steel, Solid, Uncoated
Spindle Direction	CW
Coolant	On
Length Comp Register	5.0000



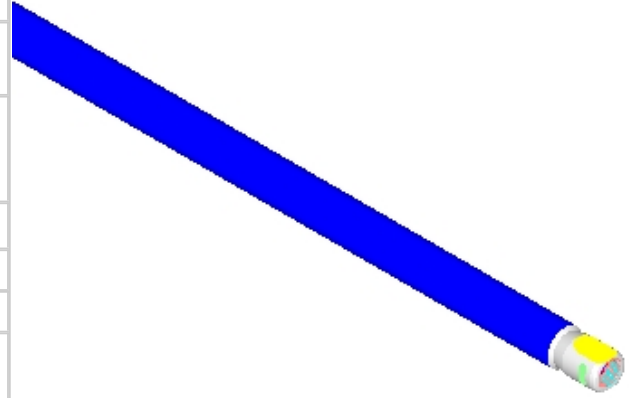
OPERATION DETAILS

OP 10 : MILL WRENCH FLAT

Op Type	-
Work Coordinate	XYZ
Primary Angle	180.0000
Secondary Angle	0.0000
Cycle Time	00:00:01
Rapid length	0.2040
Feed Length	0.4082

T 6.0000 : 3/32 BULL NOSE

Tool Style	Bull Nose End Mill
Orientation	X -
Tool Material	High Speed Steel, Solid, Uncoated
Spindle Direction	CW
Coolant	On
Length Comp Register	6.0000



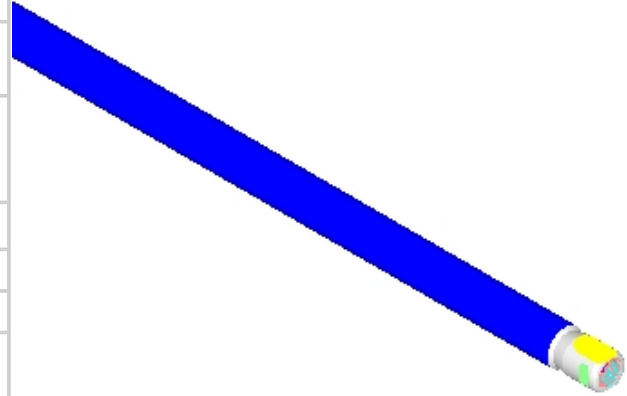
OPERATION DETAILS

OP 11 : MILL WRENCH FLAT

Op Type	-
Work Coordinate	XYZ
Primary Angle	180.0000
Secondary Angle	0.0000
Cycle Time	00:00:01
Rapid length	0.2040
Feed Length	0.4720

T 6.0000 : 3/32 BULL NOSE

Tool Style	Bull Nose End Mill
Orientation	X -
Tool Material	High Speed Steel, Solid, Uncoated
Spindle Direction	CW
Coolant	On
Length Comp Register	6.0000



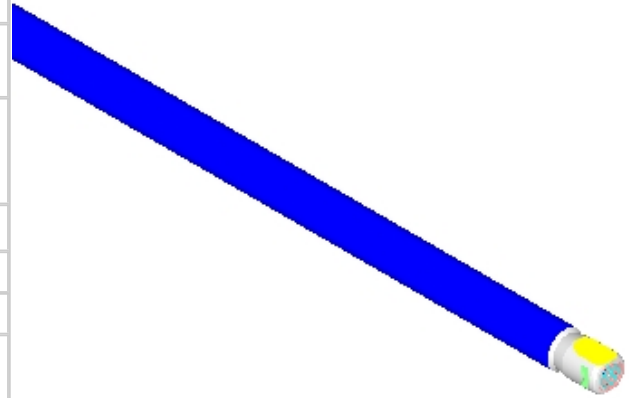
OPERATION DETAILS

OP 13 : MILL WRENCH FLAT

Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:01
Rapid length	0.2040
Feed Length	0.4720

T 6.0000 : 3/32 BULL NOSE

Tool Style	Bull Nose End Mill
Orientation	X -
Tool Material	High Speed Steel, Solid, Uncoated
Spindle Direction	CW
Coolant	On
Length Comp Register	6.0000



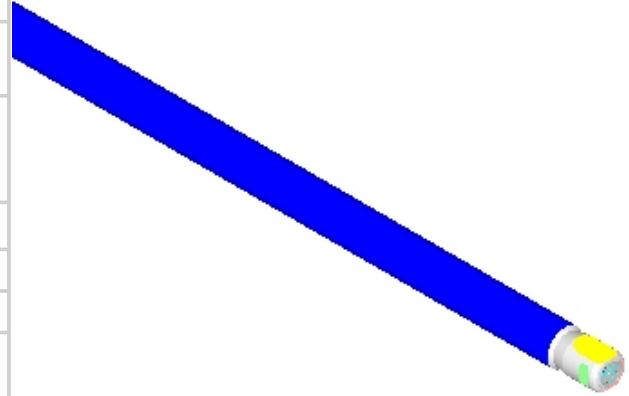
OPERATION DETAILS

OP 14 : MILL WRENCH FLAT

Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:01
Rapid length	0.2040
Feed Length	0.4082

T 6.0000 : 3/32 BULL NOSE

Tool Style	Bull Nose End Mill
Orientation	X -
Tool Material	High Speed Steel, Solid, Uncoated
Spindle Direction	CW
Coolant	On
Length Comp Register	6.0000



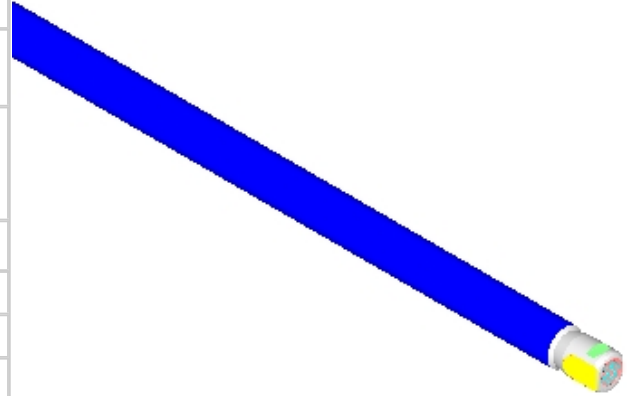
OPERATION DETAILS

OP 15 : MILL RADIUS

Op Type	-
Work Coordinate	XYZ
Primary Angle	90.0000
Secondary Angle	0.0000
Cycle Time	00:00:30
Rapid length	0.2623
Feed Length	5.0267

T 7.0000 : 1/8 BALL END MILL X

Tool Style	Ball End Mill
Orientation	X -
Tool Material	High Speed Steel, Solid, Coated
Spindle Direction	CW
Coolant	On
Length Comp Register	7.0000



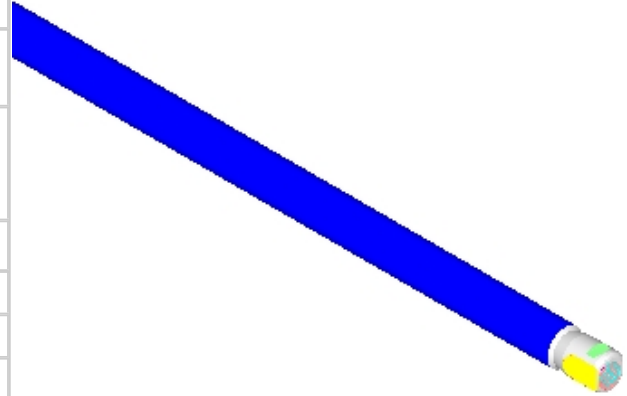
OPERATION DETAILS

OP 16 : MILL RADIUS

Op Type	-
Work Coordinate	XYZ
Primary Angle	(90.0000)
Secondary Angle	0.0000
Cycle Time	00:00:30
Rapid length	0.2623
Feed Length	5.0267

T 7.0000 : 1/8 BALL END MILL X

Tool Style	Ball End Mill
Orientation	X -
Tool Material	High Speed Steel, Solid, Coated
Spindle Direction	CW
Coolant	On
Length Comp Register	7.0000



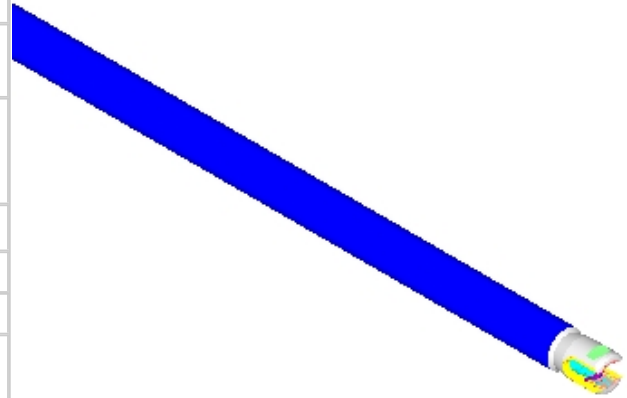
OPERATION DETAILS

OP 17 : MILL CENTER

Op Type	-
Work Coordinate	XYZ
Primary Angle	90.0000
Secondary Angle	0.0000
Cycle Time	00:00:03
Rapid length	1.1000
Feed Length	0.9870

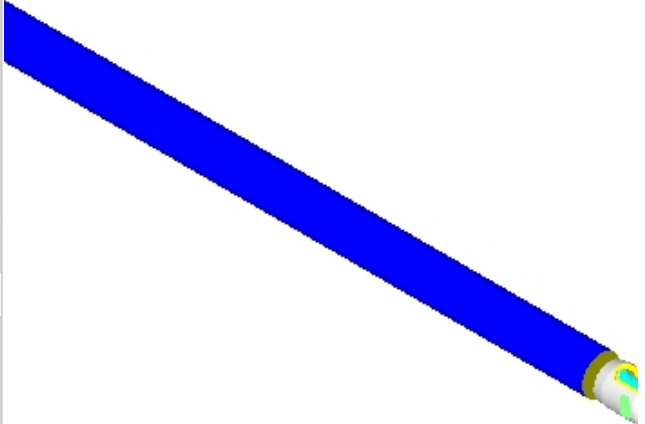
T 5.0000 : 3/16 END MILL

Tool Style	End Mill
Orientation	X -
Tool Material	High Speed Steel, Solid, Uncoated
Spindle Direction	CW
Coolant	On
Length Comp Register	5.0000



OPERATION DETAILS

OP 23 : CUTOFF	
Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:07
Rapid length	0.0883
Feed Length	0.3653
T 1.0000 : .088 CUTOFF	
Tool Style	
Orientation	2V
Tool Material	Carbide, Indexable, Coated
Spindle Direction	CW
Coolant	On
Length Comp Register	1.0000



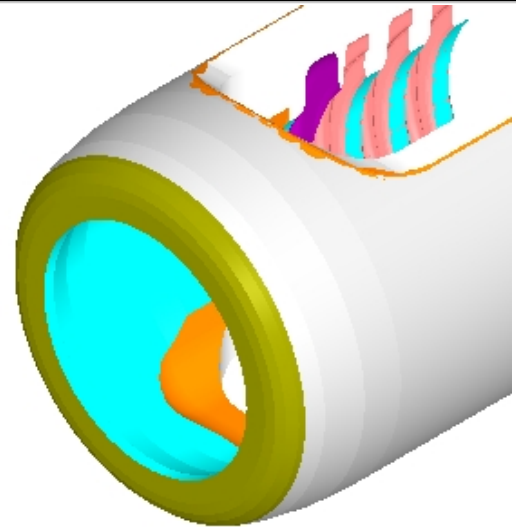
OPERATION DETAILS

OP 24 : SPOT

Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:05
Rapid length	0.2085
Feed Length	0.2085

T 21.0000 : 3/8 SPOT DRILL

Tool Style	Drill
Orientation	CLT1402V
Tool Material	High Speed Steel, Solid, Uncoated
Spindle Direction	CW
Coolant	On
Length Comp Register	21.0000



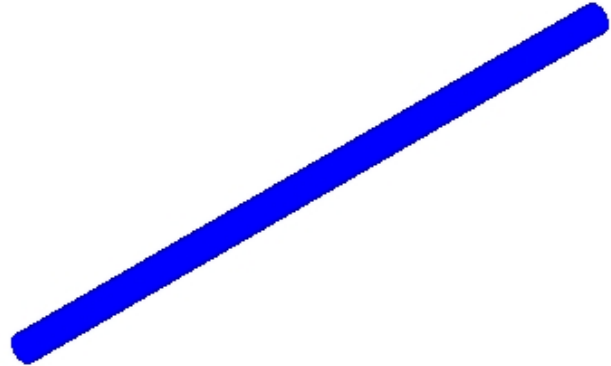
OPERATION DETAILS

OP 25 : EJECT

Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:01
Rapid length	11.1532
Feed Length	0.0000

T CLT1101V : CL498V

Tool Style	CLT1110V
Orientation	CLT1402V
Tool Material	CLT1420V
Spindle Direction	CLT1195V
Coolant	CLT1214V
Length Comp Register	CLT1121V



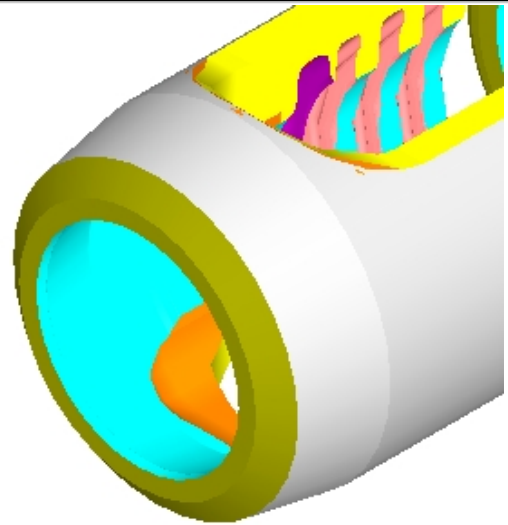
OPERATION DETAILS

OP 22 : PICKUP

Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:01
Rapid length	9.7425
Feed Length	0.5600

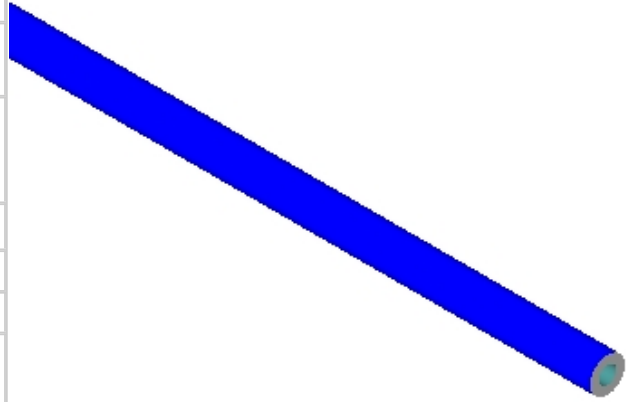
T CLT1101V : CL498V

Tool Style	CLT1110V
Orientation	CLT1402V
Tool Material	CLT1420V
Spindle Direction	CLT1195V
Coolant	CLT1214V
Length Comp Register	CLT1121V



OPERATION DETAILS

OP 2 : DRILL	
Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:27
Rapid length	9.2251
Feed Length	1.3051
T 16.0000 : 1/4 DRILL	
Tool Style	Drill
Orientation	CLT1402V
Tool Material	High Speed Steel, Solid, Uncoated
Spindle Direction	CW
Coolant	On
Length Comp Register	16.0000



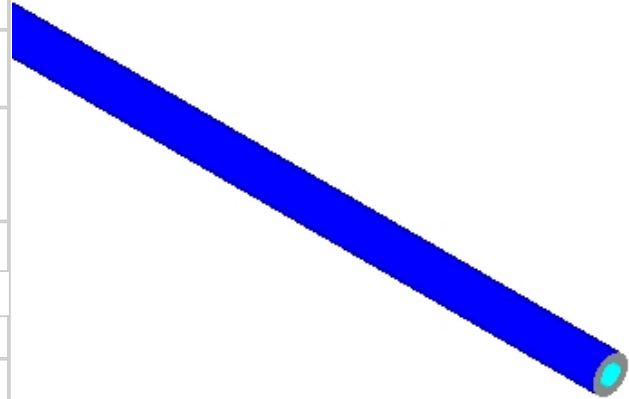
OPERATION DETAILS

OP 3 : BORE

Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:14
Rapid length	1.8125
Feed Length	1.8287

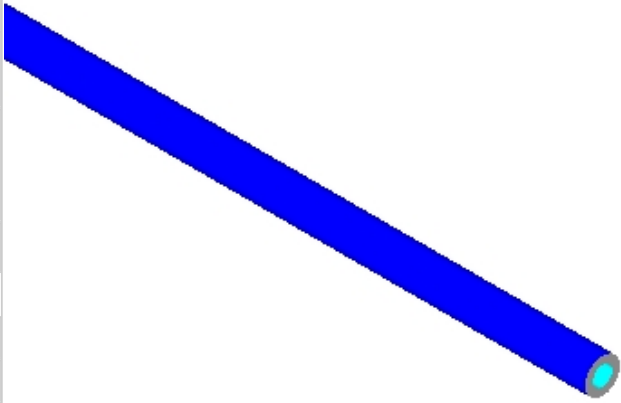
T 17.0000 : BORING BAR

Tool Style	
Orientation	2H
Tool Material	Carbide, Indexable, Coated
Spindle Direction	CW
Coolant	On
Length Comp Register	17.0000



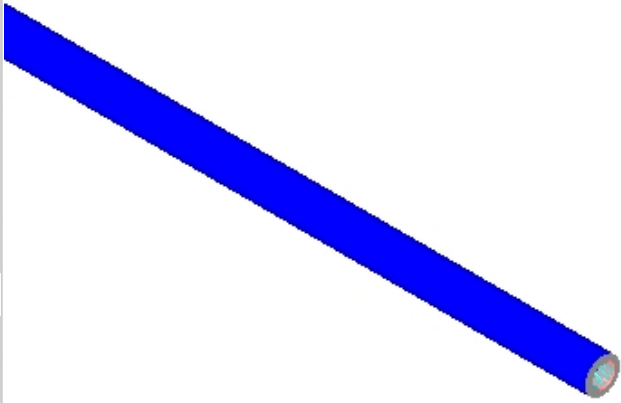
OPERATION DETAILS

OP 4 : THREAD RELIEF GROOVE	
Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:03
Rapid length	0.8190
Feed Length	0.2035
T 18.0000 : 1MM GROOVE	
Tool Style	
Orientation	2H
Tool Material	Carbide, Indexable, Coated
Spindle Direction	CW
Coolant	On
Length Comp Register	18.0000



OPERATION DETAILS

OP 5 : THREAD	
Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:00
Rapid length	4.9939
Feed Length	4.0040
T 19.0000 : THREAD	
Tool Style	
Orientation	2H
Tool Material	Carbide, Indexable, Coated
Spindle Direction	CW
Coolant	On
Length Comp Register	19.0000



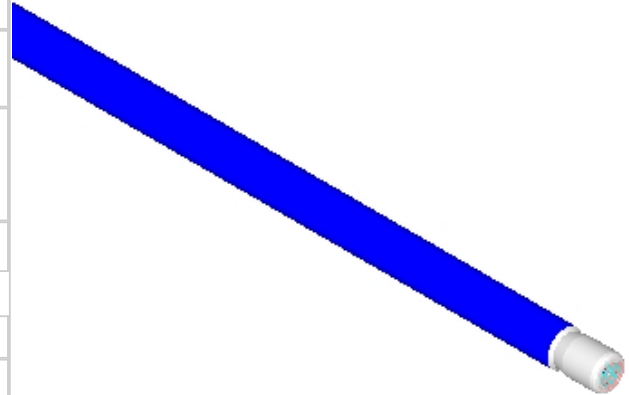
OPERATION DETAILS

OP 6 : FINISH FACE AND TURN OD

Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:10
Rapid length	0.7157
Feed Length	0.9112

T 12.0000 : 35DEG .008RAD

Tool Style	
Orientation	3V
Tool Material	Carbide, Indexable, Coated
Spindle Direction	CW
Coolant	On
Length Comp Register	12.0000



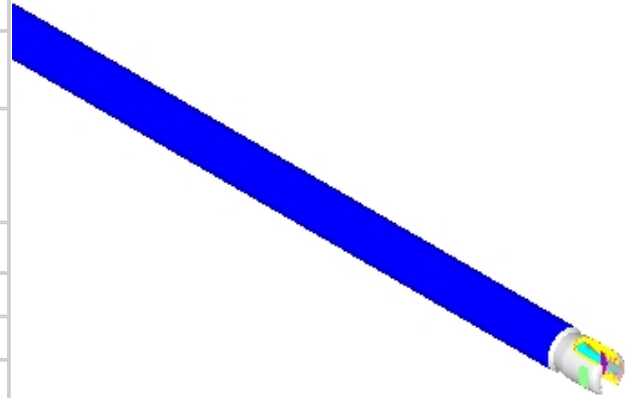
OPERATION DETAILS

OP 19 : MILL NOTCH

Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:01
Rapid length	1.1646
Feed Length	0.2801

T 14.0000 : 1/8 BALL END MILL Z

Tool Style	Ball End Mill
Orientation	Z +
Tool Material	High Speed Steel, Solid, Coated
Spindle Direction	CW
Coolant	On
Length Comp Register	14.0000



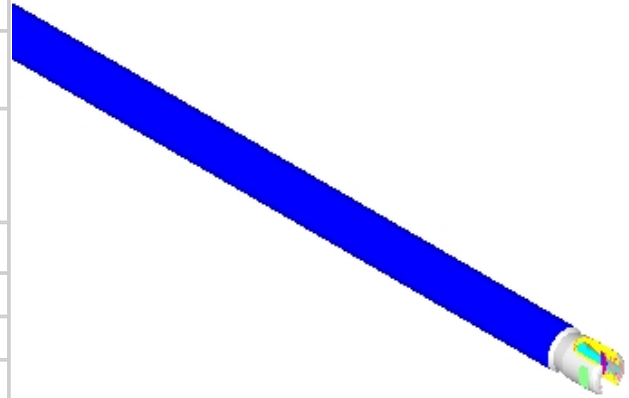
OPERATION DETAILS

OP 20 : MILL NOTCH

Op Type	-
Work Coordinate	XYZ
Primary Angle	0.0000
Secondary Angle	0.0000
Cycle Time	00:00:01
Rapid length	1.1646
Feed Length	0.2801

T 14.0000 : 1/8 BALL END MILL Z

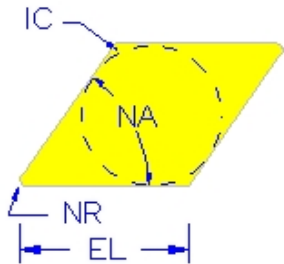
Tool Style	Ball End Mill
Orientation	Z +
Tool Material	High Speed Steel, Solid, Coated
Spindle Direction	CW
Coolant	On
Length Comp Register	14.0000



TOOL LIST

T 2.0000 : 55DEG .015RAD

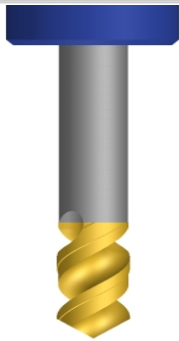
Comment : -



Insert ID	-	Insert Material	Carbide, Indexable, Coated
Holder ID	-	Coolant	On
Turret Name	1.0000	Spindle Direction	CW
Station Name	2.0000	Length Register	2.0000
Compensation	Corner	-	-
-	-	Orientation	2V
-	-	-	-

T 16.0000 : 1/4 DRILL

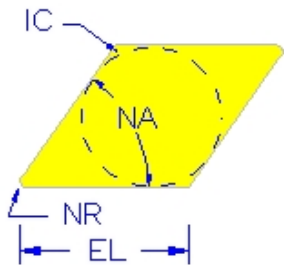
Comment : -



Tool Diameter	0.2500	Tool Material	High Speed Steel, Solid, Uncoated
Holder Diameter	0.6250	Coolant	On
Overall Length	2.0000	Spindle Direction	CW
Tool Length	1.0000	Length Comp Register	16.0000
Shank Diameter	0.2500	Axis Orientation	Z +
Cutting Length	0.5000	-	-
Number of Flutes	2.0000	-	-

T 17.0000 : BORING BAR

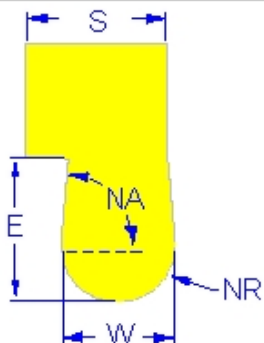
Comment : -



Insert ID	-	Insert Material	Carbide, Indexable, Coated
Holder ID	-	Coolant	On
Turret Name	2.0000	Spindle Direction	CW
Station Name	7.0000	Length Register	17.0000
Compensation	Corner	-	-
-	-	Orientation	2H
-	-	-	-

T 18.0000 : 1MM GROOVE

Comment : -



Insert ID	-	Insert Material	Carbide, Indexable, Coated
Holder ID	-	Coolant	On
Turret Name	2.0000	Spindle Direction	CW
Station Name	8.0000	Length Register	18.0000
Compensation	Edge	Edge Shift Register	0.0000
-	-	Orientation	2H
-	-	-	-

T 19.0000 : THREAD

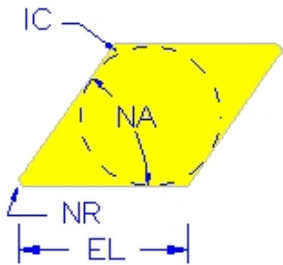
Comment : -



Insert ID	-	Insert Material	Carbide, Indexable, Coated
-	-	Coolant	On
Turret Name	2.0000	Spindle Direction	CW
Station Name	9.0000	Length Register	19.0000
Compensation	1.0000	Edge Shift Register	0.0000
-	-	Orientation	2H
-	-	-	-

T 12.0000 : 35DEG .008RAD

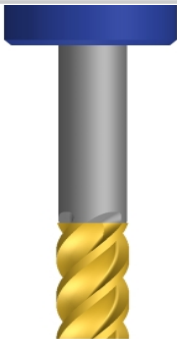
Comment : -



Insert ID	-	Insert Material	Carbide, Indexable, Coated
Holder ID	-	Coolant	On
Turret Name	2.0000	Spindle Direction	CW
Station Name	2.0000	Length Register	12.0000
Compensation	Corner	-	-
-	-	Orientation	3V
-	-	-	-

T 5.0000 : 3/16 END MILL

Comment : -



Tool Diameter	0.1875	Tool Material	High Speed Steel, Solid, Uncoated
Holder Diameter	0.6250	Coolant	On
Overall Length	2.0000	Spindle Direction	CW
Tool Length	1.0000	Length Comp Register	5.0000
Shank Diameter	0.1875	Axis Orientation	X -
Cutting Length	0.5000	-	-
Number of Flutes	4.0000	-	-

T 6.0000 : 3/32 BULL NOSE

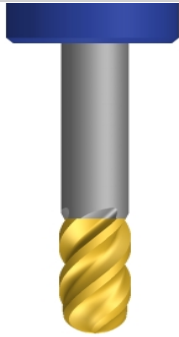
Comment : -



Tool Diameter	0.0938	Tool Material	High Speed Steel, Solid, Uncoated
Holder Diameter	0.6250	Coolant	On
Overall Length	2.0000	Spindle Direction	CW
Tool Length	0.5000	Length Comp Register	6.0000
Shank Diameter	0.0938	Axis Orientation	X -
Cutting Length	0.3750	-	-
Number of Flutes	4.0000	-	-

T 7.0000 : 1/8 BALL END MILL X

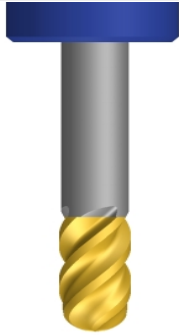
Comment : -



Tool Diameter	0.1250	Tool Material	High Speed Steel, Solid, Coated
Holder Diameter	0.6250	Coolant	On
Overall Length	2.0000	Spindle Direction	CW
Tool Length	0.5000	Length Comp Register	7.0000
Shank Diameter	0.1250	Axis Orientation	X -
Cutting Length	0.2500	-	-
Number of Flutes	4.0000	-	-

T 14.0000 : 1/8 BALL END MILL Z

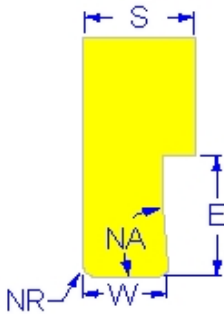
Comment : -



Tool Diameter	0.1250	Tool Material	High Speed Steel, Solid, Coated
Holder Diameter	0.6250	Coolant	On
Overall Length	2.0000	Spindle Direction	CW
Tool Length	0.5000	Length Comp Register	14.0000
Shank Diameter	0.1250	Axis Orientation	Z +
Cutting Length	0.2500	-	-
Number of Flutes	4.0000	-	-

T 1.0000 : .088 CUTOFF

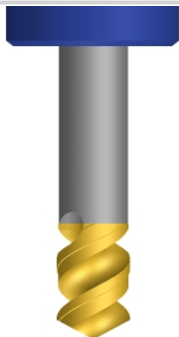
Comment : -



Insert ID	-	Insert Material	Carbide, Indexable, Coated
Holder ID	-	Coolant	On
Turret Name	1.0000	Spindle Direction	CW
Station Name	1.0000	Length Register	1.0000
Compensation	Edge	Edge Shift Register	0.0000
-	-	Orientation	2V
-	-	-	-

T 21.0000 : 3/8 SPOT DRILL

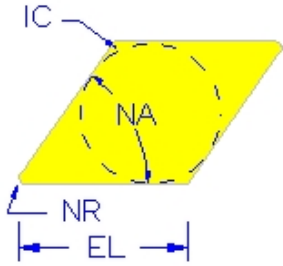
Comment : -



Tool Diameter	0.3750	Tool Material	High Speed Steel, Solid, Uncoated
Holder Diameter	0.6250	Coolant	On
Overall Length	2.0000	Spindle Direction	CW
Tool Length	1.0000	Length Comp Register	21.0000
Shank Diameter	0.3750	Axis Orientation	Z -
Cutting Length	0.5000	-	-
Number of Flutes	2.0000	-	-

TOOL DETAILS

T 2.0000 : 55DEG .015RAD

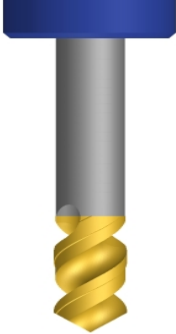
 Comment : **CL7V**


Insert ID	CL811V	Insert Material	Carbide, Indexable, Coated
Holder ID	CL820V	Coolant	On
Turret Name	1.0000	Spindle Direction	CW
Station Name	2.0000	Length Register	2.0000
Compensation	Corner	CL700C	CL700V
-	-	Orientation	2V
-	-	CL403C	CL403V



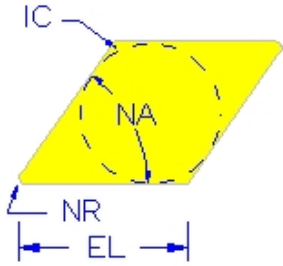
The Right Choice

TOOL DETAILS

T 16.0000 : 1/4 DRILL		Comment : CL7V		
	Tool Diameter	0.2500	Tool Material	High Speed Steel, Solid, Uncoated
	Holder Diameter	0.6250	Coolant	On
	Overall Length	2.0000	Spindle Direction	CW
	Tool Length	1.0000	Length Comp Register	16.0000
	Shank Diameter	0.2500	Axis Orientation	Z +
	Cutting Length	0.5000	-	-
	Number of Flutes	2.0000	-	-

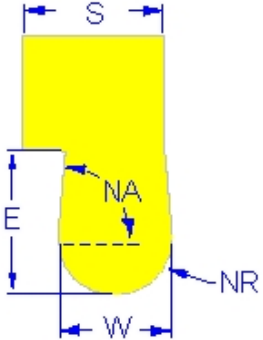
TOOL DETAILS

T 17.0000 : BORING BAR


 Comment : **CL7V**


Insert ID	CL811V	Insert Material	Carbide, Indexable, Coated
Holder ID	CL820V	Coolant	On
Turret Name	2.0000	Spindle Direction	CW
Station Name	7.0000	Length Register	17.0000
Compensation	Corner	CL700C	CL700V
-	-	Orientation	2H
-	-	CL403C	CL403V

TOOL DETAILS

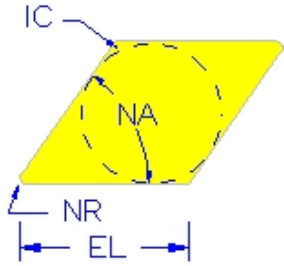
T 18.0000 : 1MM GROOVE		Comment : CL7V		
	Insert ID	CL811V	Insert Material	Carbide, Indexable, Coated
	Holder ID	CL820V	Coolant	On
	Turret Name	2.0000	Spindle Direction	CW
	Station Name	8.0000	Length Register	18.0000
	Compensation	Edge	Edge Shift Register	0.0000
	-	-	Orientation	2H
	-	-	CL403C	CL403V

TOOL DETAILS

T 19.0000 : THREAD		Comment : CL7V		
	Insert ID	CL811V	Insert Material	Carbide, Indexable, Coated
	CL820C	CL820V	Coolant	On
	Turret Name	2.0000	Spindle Direction	CW
	Station Name	9.0000	Length Register	19.0000
	Compensation	1.0000	Edge Shift Register	0.0000
	-	-	Orientation	2H
	-	-	CL403C	CL403V

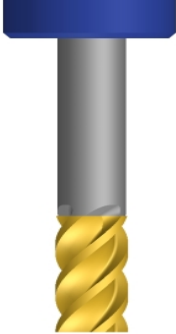
TOOL DETAILS

T 12.0000 : 35DEG .008RAD

 Comment : **CL7V**


Insert ID	CL811V	Insert Material	Carbide, Indexable, Coated
Holder ID	CL820V	Coolant	On
Turret Name	2.0000	Spindle Direction	CW
Station Name	2.0000	Length Register	12.0000
Compensation	Corner	CL700C	CL700V
-	-	Orientation	3V
-	-	CL403C	CL403V

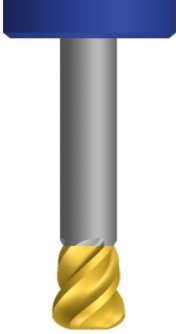
TOOL DETAILS

T 5.0000 : 3/16 END MILL		Comment : CL7V		
	Tool Diameter	0.1875	Tool Material	High Speed Steel, Solid, Uncoated
	Holder Diameter	0.6250	Coolant	On
	Overall Length	2.0000	Spindle Direction	CW
	Tool Length	1.0000	Length Comp Register	5.0000
	Shank Diameter	0.1875	Axis Orientation	X -
	Cutting Length	0.5000	-	-
	Number of Flutes	4.0000	-	-

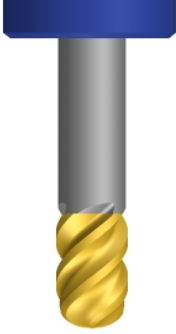


The Right Choice

TOOL DETAILS

T 6.0000 : 3/32 BULL NOSE		Comment : CL7V		
	Tool Diameter	0.0938	Tool Material	High Speed Steel, Solid, Uncoated
	Holder Diameter	0.6250	Coolant	On
	Overall Length	2.0000	Spindle Direction	CW
	Tool Length	0.5000	Length Comp Register	6.0000
	Shank Diameter	0.0938	Axis Orientation	X -
	Cutting Length	0.3750	-	-
	Number of Flutes	4.0000	-	-

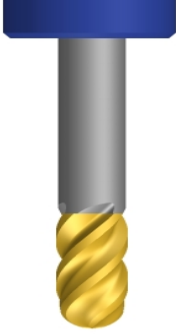
TOOL DETAILS

T 7.0000 : 1/8 BALL END MILL X		Comment : CL7V		
	Tool Diameter	0.1250	Tool Material	High Speed Steel, Solid, Coated
	Holder Diameter	0.6250	Coolant	On
	Overall Length	2.0000	Spindle Direction	CW
	Tool Length	0.5000	Length Comp Register	7.0000
	Shank Diameter	0.1250	Axis Orientation	X -
	Cutting Length	0.2500	-	-
	Number of Flutes	4.0000	-	-



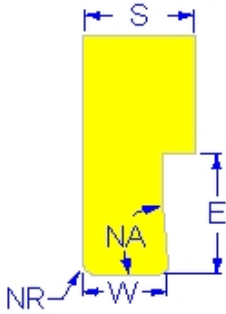
The Right Choice

TOOL DETAILS

T 14.0000 : 1/8 BALL END MILL Z		Comment : CL7V		
	Tool Diameter	0.1250	Tool Material	High Speed Steel, Solid, Coated
	Holder Diameter	0.6250	Coolant	On
	Overall Length	2.0000	Spindle Direction	CW
	Tool Length	0.5000	Length Comp Register	14.0000
	Shank Diameter	0.1250	Axis Orientation	Z +
	Cutting Length	0.2500	-	-
	Number of Flutes	4.0000	-	-

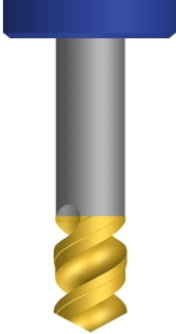
TOOL DETAILS

T 1.0000 : .088 CUTOFF

 Comment : **CL7V**


Insert ID	CL811V	Insert Material	Carbide, Indexable, Coated
Holder ID	CL820V	Coolant	On
Turret Name	1.0000	Spindle Direction	CW
Station Name	1.0000	Length Register	1.0000
Compensation	Edge	Edge Shift Register	0.0000
-	-	Orientation	2V
-	-	CL403C	CL403V

TOOL DETAILS

T 21.0000 : 3/8 SPOT DRILL		Comment : CL7V		
	Tool Diameter	0.3750	Tool Material	High Speed Steel, Solid, Uncoated
	Holder Diameter	0.6250	Coolant	On
	Overall Length	2.0000	Spindle Direction	CW
	Tool Length	1.0000	Length Comp Register	21.0000
	Shank Diameter	0.3750	Axis Orientation	Z -
	Cutting Length	0.5000	-	-
	Number of Flutes	2.0000	-	-