



INSTITUTO DO EMPREGO E FORMAÇÃO PROFISSIONAL, IP

CENTRO DE FORMAÇÃO PROFISSIONAL DE ÉVORA

Técnico de Maquinação CNC

Teste de avaliação do Módulo de Introdução ao CAD/CAM/CAE/CIM

Data: 02/03/2016

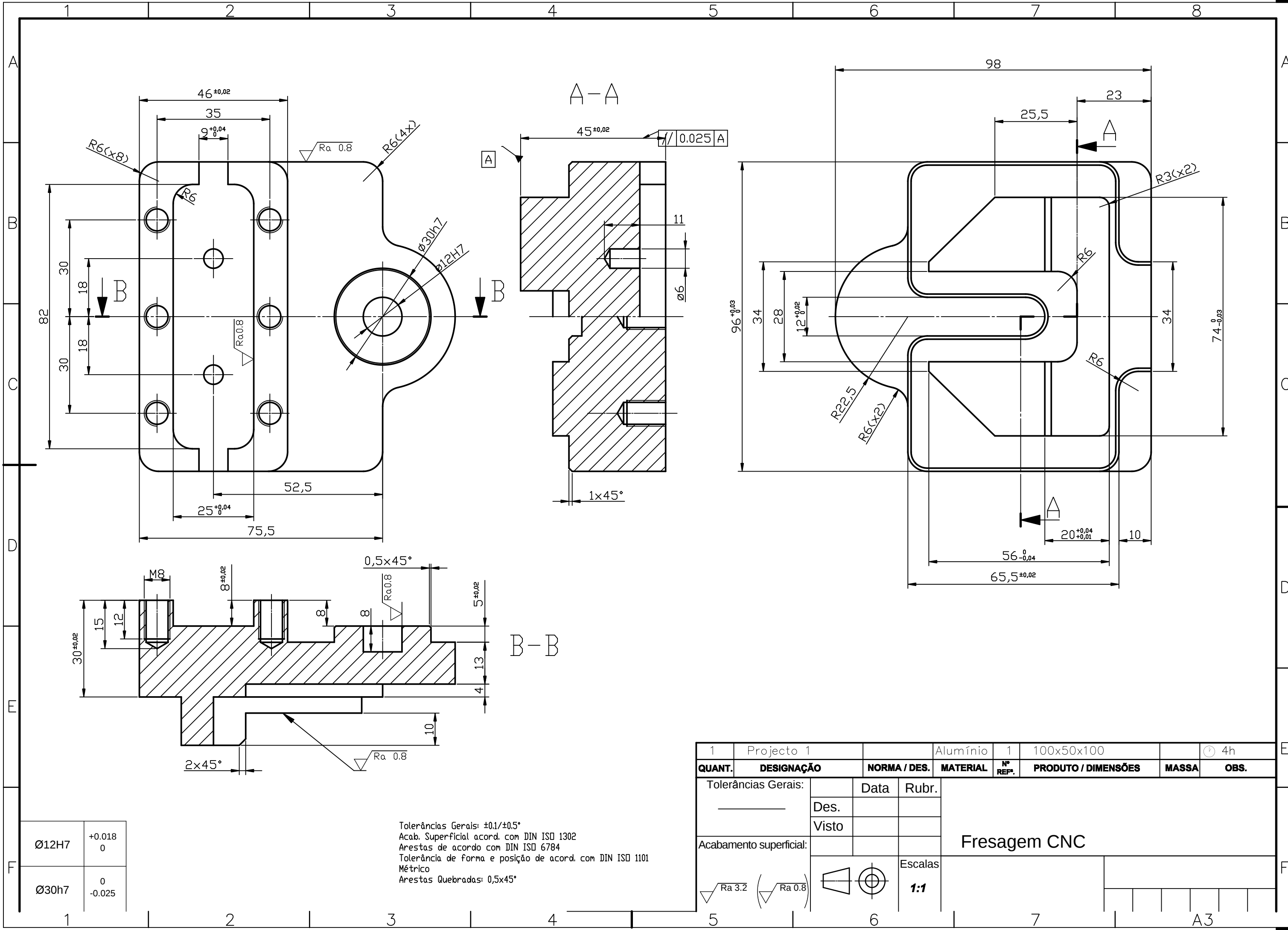
Nome: Rui Miguel dos Santos Dias

Avaliação: 17

ATENÇÃO: TODOS OS FICHEROS CRIADOS DEVERÃO SER GRAVADOS NA PEN QUE O FORMADOR ENTREGAR NO FINAL.

1 - Exercício de programação de peça fresada:

- a) Programa a maquinação das peças (desbastes + acabamentos) com as ferramentas criadas na biblioteca, se necessário podem ser criadas mais ferramentas;
- b) Exporta relatório automático;
- c) Cria código G



Ø12H7	$+0.018$ 0
Ø30h7	0 -0.025

Tolerâncias Gerais: $\pm 0.1 / \pm 0.5^\circ$
Acab. Superficial acord. com DIN ISO 1302
Arestas de acordo com DIN ISO 6784
Tolerância de forma e posição de acord. com DIN ISO 1101
Métrico
Arestas Quebradas: $0.5 \times 45^\circ$

1	Projecto 1		Alumínio	1	100x50x100		4h
QUANT.	DESIGNAÇÃO	NORMA / DES.	MATERIAL	Nº REP.	PRODUTO / DIMENSÕES	MASSA	OBS.
Tolerâncias Gerais:		Data	Rubr.	Fresagem CNC			
		Des.					
		Visto					
Acabamento superficial:							
$\sqrt{Ra\ 3.2}$ ($\sqrt{Ra\ 0.8}$)		Escalas					
				1:1			
				A3			



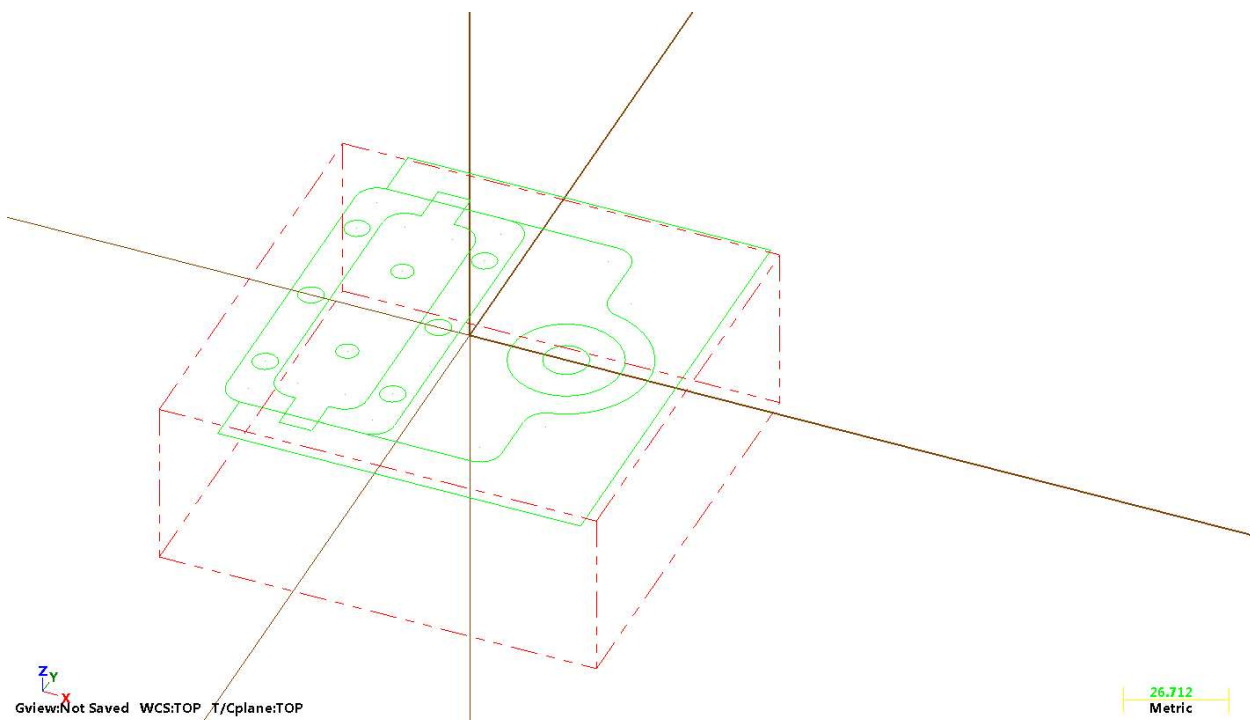
Setup Sheet Report

Haas VF - TR Series 5 Axis Trunnion Mill MM

GENERAL INFORMATION

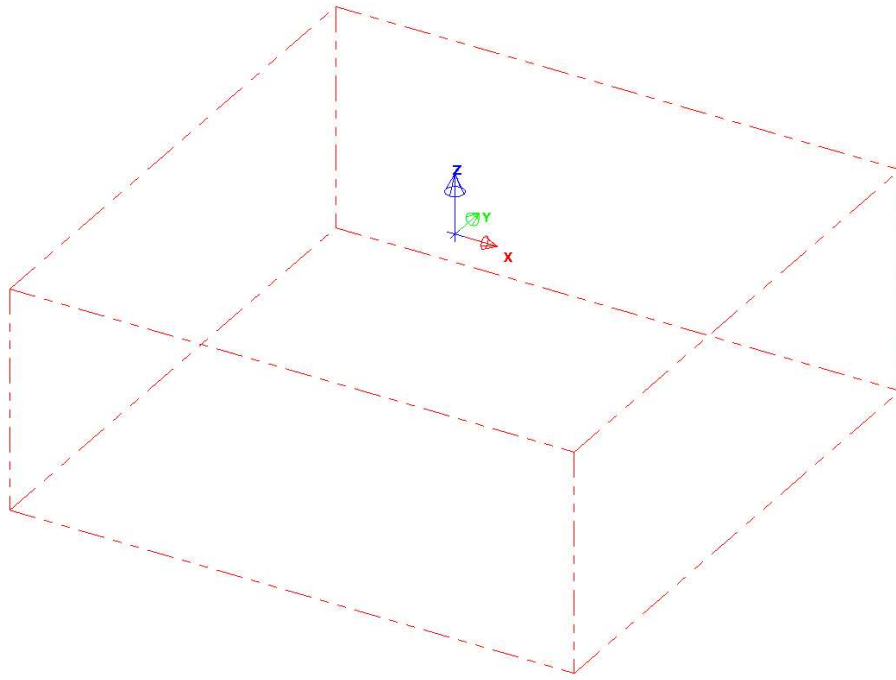
PROJECT NAME:	Teste - 1º Aperto	REVISION: _
CUSTOMER NAME:	Rui Dias	
PROGRAMMER:	Rui Dias	
DRAWING:	Helder Nunes	
DATE:	quarta-feira, 2 de Março de 2016	
TIME:	16:41	

E:\MASTERCAM\TESTE\TESTE RUI DIAS.EMCX-5



COMMENTS

STOCK / SAFEZONE INFO



STOCK:	YES
SHAPE:	Box
SIZE:	120.0, 120.0, 47.0
RADIUS:	NA
LENGTH:	NA
AXIS:	NA
FILE:	NA
IDN:	NA

SAFEZONE:	NO
SHAPE:	NA
SIZE:	NA
RADIUS:	NA
LENGTH:	NA
AXIS:	NA

C:\USERS\USER\DOCUMENTS\MY MCAMX5\MILL\NCI\O0003.NCI

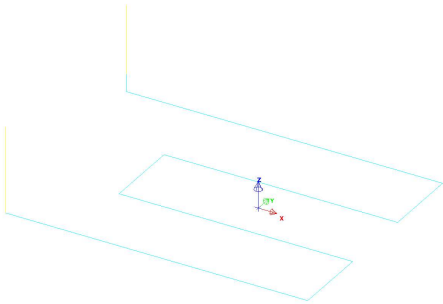
CYCLE TIME:	0 HOURS, 53 MINUTES, 19 SECONDS
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OPERATION LIST

OPERATION INFO	Facing
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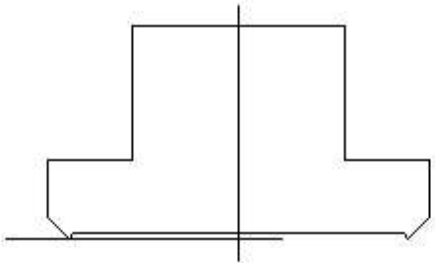
CYCLE TIME:	0 HOURS, 0 MINUTES, 31 SECONDS
COMMENT:	FACEJAR

PROGRAM NUMBER:	0
SPINDLE SPEED:	3000 RPM
FEEDRATE:	1500.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	0.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO	#1 - M80.00 FACE MILL - ROCA FACEJAR D80
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TYPE:	Face mill
NUMBER:	1
DIAMETER:	80.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	1
DIAMETER OFFSET:	1
MATERIAL:	Carbide
NUMBER OF FLUTES:	6
FPT:	0.083
SFM:	754.006
MFG CODE:	-
HOLDER:	
TIME:	00:00:31

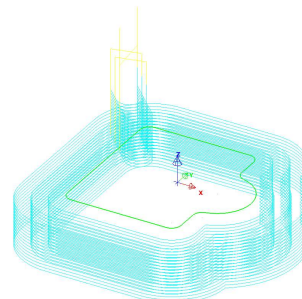


OPERATION INFO

Contour (2D)

CYCLE TIME:	0 HOURS, 14 MINUTES, 4 SECONDS
COMMENT:	DESBASTE EXTERIOR LATERAL

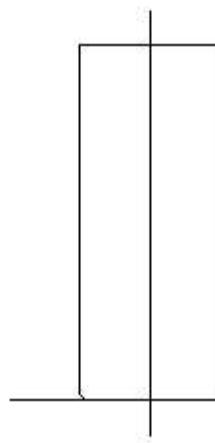
PROGRAM NUMBER:	0
SPINDLE SPEED:	5000 RPM
FEEDRATE:	2000.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-32.0
STOCK TO LEAVE:	0.2
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#4 - M20.00 ENDMILL3 BULL - FRESA PASTILHAS D20 R0.8

TYPE:	Endmill3 Bull
NUMBER:	4
DIAMETER:	20.0
CORNER RADIUS:	0.8
LENGTH OFFSET:	4
DIAMETER OFFSET:	4
MATERIAL:	Carbide
NUMBER OF FLUTES:	2
FPT:	0.2
SFM:	314.169
MFG CODE:	—
HOLDER:	
TIME:	00:14:04

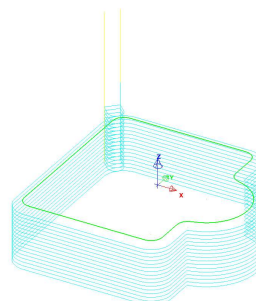


OPERATION INFO

Contour (2D)

CYCLE TIME:	0 HOURS, 6 MINUTES, 46 SECONDS
COMMENT:	ACABAMENTO EXTERIOR LATERAL

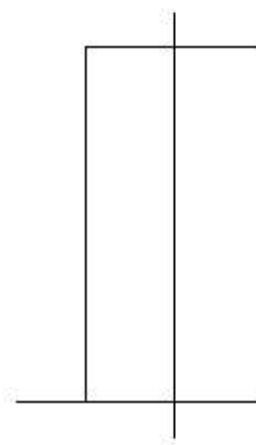
PROGRAM NUMBER:	0
SPINDLE SPEED:	4000 RPM
FEEDRATE:	1000.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-32.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M10.00 ENDMILL1 FLAT - FRESA NAVALHAS D10

TYPE:	Endmill1 Flat
NUMBER:	5
DIAMETER:	10.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	2
FPT:	0.125
SFM:	125.668
MFG CODE:	—
HOLDER:	
TIME:	00:06:46

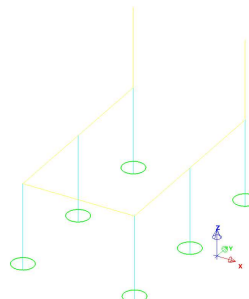


OPERATION INFO

Drill/Counterbore

CYCLE TIME: 0 HOURS, 0 MINUTES, 25 SECONDS
COMMENT: PONTEAR FUROS SUPERIORES

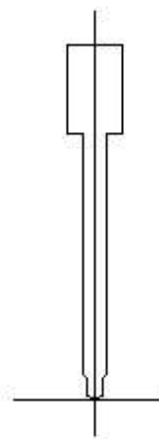
PROGRAM NUMBER: 0
SPINDLE SPEED: 3000 RPM
FEEDRATE: 400.0 mm/min
CLEARANCE PLANE: 50.0
RETRACT PLANE: 25.0
FEED PLANE: 25.0
DEPTH: -2.0
STOCK TO LEAVE: 0.0
COMP TO TIP: NO
WORK OFFSET: 0



TOOL INFO

#2 - M3.15 CENTER DRILL - BROCA PONTO 3.15

TYPE: Center Drill
NUMBER: 2
DIAMETER: 3.15
CORNER RADIUS: 0.0
LENGTH OFFSET: 2
DIAMETER OFFSET: 2
MATERIAL: —
NUMBER OF FLUTES: 2
FPT: 0.067
SFM: 29.689
MFG CODE: —
HOLDER:
TIME: 00:00:25

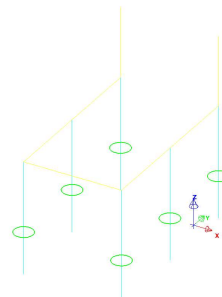


OPERATION INFO

Peck Drill

CYCLE TIME:	0 HOURS, 1 MINUTES, 1 SECONDS
COMMENT:	FUROS D6.8 SUPERIORES

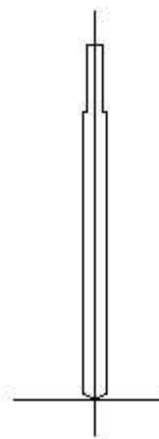
PROGRAM NUMBER:	0
SPINDLE SPEED:	1800 RPM
FEEDRATE:	240.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	25.0
DEPTH:	-15.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	NO
WORK OFFSET:	0



TOOL INFO

#3 - M6.80 DRILL - BROCA D6.8

TYPE:	Drill
NUMBER:	3
DIAMETER:	6.8
CORNER RADIUS:	0.0
LENGTH OFFSET:	3
DIAMETER OFFSET:	3
MATERIAL:	—
NUMBER OF FLUTES:	2
FPT:	0.067
SFM:	38.454
MFG CODE:	—
HOLDER:	—
TIME:	00:01:01

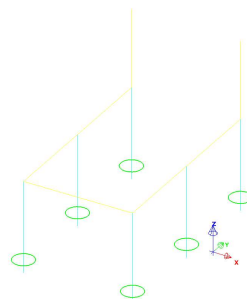


OPERATION INFO

Drill/Counterbore

CYCLE TIME:	0 HOURS, 0 MINUTES, 11 SECONDS
COMMENT:	ESCAREAMENTO FUROS

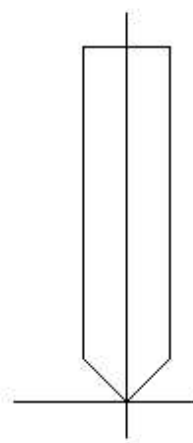
PROGRAM NUMBER:	0
SPINDLE SPEED:	5000 RPM
FEEDRATE:	1000.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	25.0
DEPTH:	-4.25
STOCK TO LEAVE:	0.0
COMP TO TIP:	NO
WORK OFFSET:	0



TOOL INFO

#6 - M12.00 CHAMFER MILL - ESCAREADOR D12

TYPE:	Chamfer mill
NUMBER:	6
DIAMETER:	12.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	6
DIAMETER OFFSET:	6
MATERIAL:	Carbide
NUMBER OF FLUTES:	5
FPT:	0.04
SFM:	188.501
MFG CODE:	-
HOLDER:	
TIME:	00:00:11

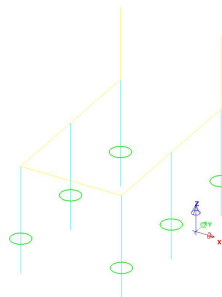


OPERATION INFO

Drill/Counterbore

CYCLE TIME: 0 HOURS, 0 MINUTES, 17 SECONDS
COMMENT: ROSCAR M8 FUROS SUPERIORES

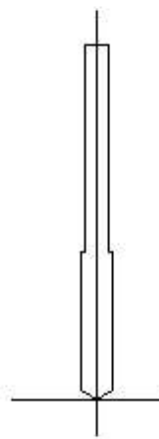
PROGRAM NUMBER: 0
SPINDLE SPEED: 640 RPM
FEEDRATE: 800.0 mm/min
CLEARANCE PLANE: 50.0
RETRACT PLANE: 25.0
FEED PLANE: 25.0
DEPTH: -12.0
STOCK TO LEAVE: 0.0
COMP TO TIP: NO
WORK OFFSET: 0



TOOL INFO

#8 - M8.00 X 1.25 TAP RH - MACHO M8

TYPE: Tap RH
NUMBER: 8
DIAMETER: 8.0
CORNER RADIUS: 0.0
LENGTH OFFSET: 8
DIAMETER OFFSET: 8
MATERIAL: -
NUMBER OF FLUTES: 2
FPT: 1.25
SFM: 16.085
MFG CODE: -
HOLDER:
TIME: 00:00:17

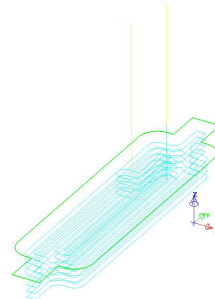


OPERATION INFO

Pocket (Standard)

CYCLE TIME:	0 HOURS, 7 MINUTES, 5 SECONDS
COMMENT:	DESBASTE CAIXA SUPERIOR AO LADO DOS 6 FUROS

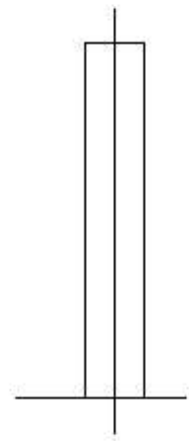
PROGRAM NUMBER:	0
SPINDLE SPEED:	4000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-8.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#7 - M6.00 ENDMILL1 FLAT - FRESA NAVALHAS D6

TYPE:	Endmill1 Flat
NUMBER:	7
DIAMETER:	6.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	7
DIAMETER OFFSET:	7
MATERIAL:	—
NUMBER OF FLUTES:	4
FPT:	0.025
SFM:	75.401
MFG CODE:	—
HOLDER:	—
TIME:	00:07:05

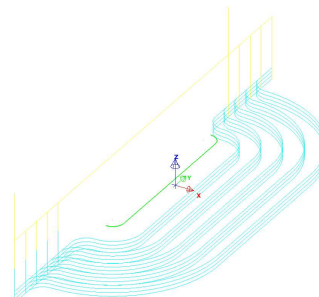


OPERATION INFO

Contour (2D)

CYCLE TIME:	0 HOURS, 2 MINUTES, 57 SECONDS
COMMENT:	DESBASTE DOS 8MM SUPERIORES DO LADO DIREITO

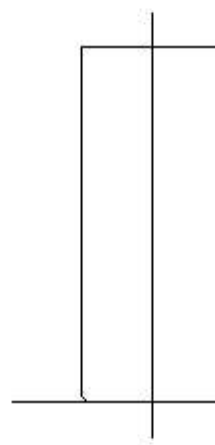
PROGRAM NUMBER:	0
SPINDLE SPEED:	5000 RPM
FEEDRATE:	2000.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-8.0
STOCK TO LEAVE:	0.2
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#4 - M20.00 ENDMILL3 BULL - FRESA PASTILHAS D20 R0.8

TYPE:	Endmill3 Bull
NUMBER:	4
DIAMETER:	20.0
CORNER RADIUS:	0.8
LENGTH OFFSET:	4
DIAMETER OFFSET:	4
MATERIAL:	Carbide
NUMBER OF FLUTES:	2
FPT:	0.2
SFM:	314.169
MFG CODE:	-
HOLDER:	
TIME:	00:02:57

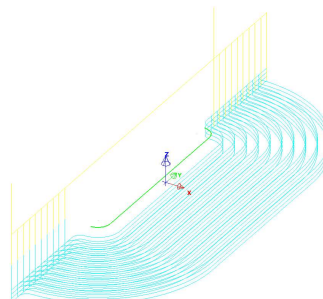


OPERATION INFO

Contour (2D)

CYCLE TIME: 0 HOURS, 10 MINUTES, 5 SECONDS
 COMMENT: ACABAMENTO DOS 8MM SUPERIORES DO LADO DIREITO

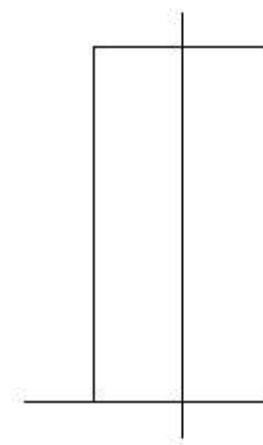
PROGRAM NUMBER: 0
 SPINDLE SPEED: 4000 RPM
 FEEDRATE: 1000.0 mm/min
 CLEARANCE PLANE: 50.0
 RETRACT PLANE: 25.0
 FEED PLANE: 10.0
 DEPTH: -8.0
 STOCK TO LEAVE: 0.0
 COMP TO TIP: YES
 WORK OFFSET: 0



TOOL INFO

#5 - M10.00 ENDMILL1 FLAT - FRESA NAVALHAS D10

TYPE: Endmill1 Flat
 NUMBER: 5
 DIAMETER: 10.0
 CORNER RADIUS: 0.0
 LENGTH OFFSET: 5
 DIAMETER OFFSET: 5
 MATERIAL: Carbide
 NUMBER OF FLUTES: 2
 FPT: 0.125
 SFM: 125.668
 MFG CODE: -
 HOLDER:
 TIME: 00:10:05

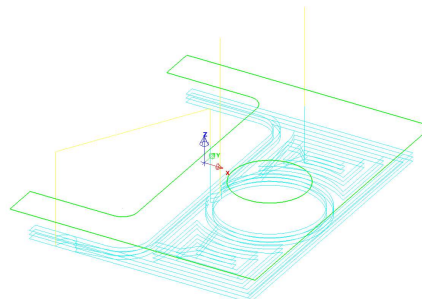


OPERATION INFO

Pocket (Standard)

CYCLE TIME: 0 HOURS, 5 MINUTES, 34 SECONDS
 COMMENT: DESBASTE PARA FICAR CASTELO CIRCULAR

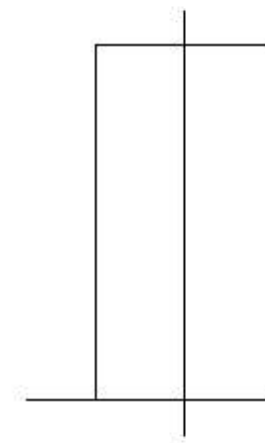
PROGRAM NUMBER: 0
 SPINDLE SPEED: 4000 RPM
 FEEDRATE: 1000.0 mm/min
 CLEARANCE PLANE: 50.0
 RETRACT PLANE: 25.0
 FEED PLANE: 10.0
 DEPTH: -13.0
 STOCK TO LEAVE: 0.0
 COMP TO TIP: YES
 WORK OFFSET: 0



TOOL INFO

#5 - M10.00 ENDMILL1 FLAT - FRESA NAVALHAS D10

TYPE: Endmill1 Flat
 NUMBER: 5
 DIAMETER: 10.0
 CORNER RADIUS: 0.0
 LENGTH OFFSET: 5
 DIAMETER OFFSET: 5
 MATERIAL: Carbide
 NUMBER OF FLUTES: 2
 FPT: 0.125
 SFM: 125.668
 MFG CODE: -
 HOLDER:
 TIME: 00:05:34

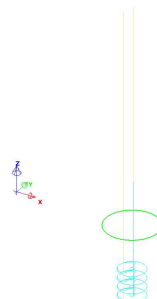


OPERATION INFO

Pocket (Standard)

CYCLE TIME:	0 HOURS, 0 MINUTES, 28 SECONDS
COMMENT:	CAIXA CIRCULAR INTERIOR DE 12 MM

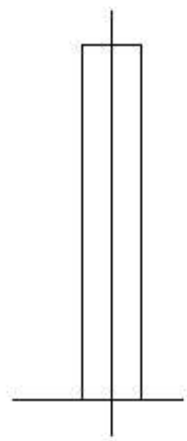
PROGRAM NUMBER:	0
SPINDLE SPEED:	4000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-16.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#7 - M6.00 ENDMILL1 FLAT - FRESA NAVALHAS D6

TYPE:	Endmill1 Flat
NUMBER:	7
DIAMETER:	6.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	7
DIAMETER OFFSET:	7
MATERIAL:	—
NUMBER OF FLUTES:	4
FPT:	0.025
SFM:	75.401
MFG CODE:	—
HOLDER:	
TIME:	00:00:28

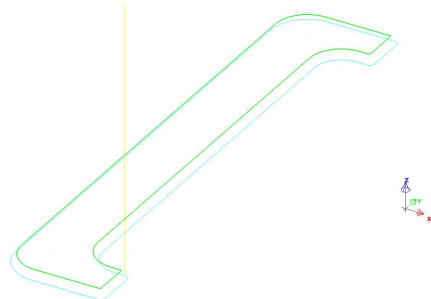


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME:	0 HOURS, 0 MINUTES, 39 SECONDS
COMMENT:	ESCAREAMENTO PARTE SUPERIOR ESQUERDA

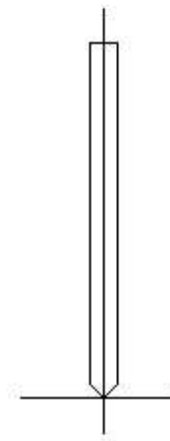
PROGRAM NUMBER:	0
SPINDLE SPEED:	3000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	0.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M4.00 CHAMFER MILL - ESCAREADOR D4

TYPE:	Chamfer mill
NUMBER:	5
DIAMETER:	4.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	4
FPT:	0.033
SFM:	37.7
MFG CODE:	—
HOLDER:	
TIME:	00:00:39

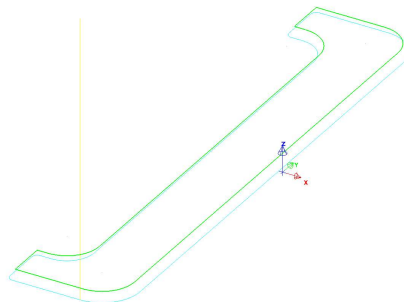


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME:	0 HOURS, 0 MINUTES, 39 SECONDS
COMMENT:	ESCAREAMENTO PARTE SUPERIOR DIREITA

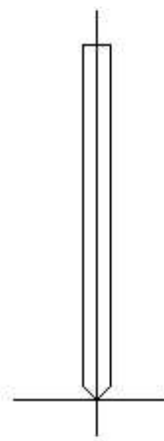
PROGRAM NUMBER:	0
SPINDLE SPEED:	3000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	0.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M4.00 CHAMFER MILL - ESCAREADOR D4

TYPE:	Chamfer mill
NUMBER:	5
DIAMETER:	4.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	4
FPT:	0.033
SFM:	37.7
MFG CODE:	—
HOLDER:	
TIME:	00:00:39

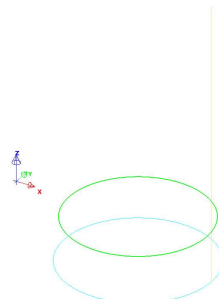


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME: 0 HOURS, 0 MINUTES, 21 SECONDS
COMMENT: ESCAREAMENTO CIRCULO EXTERIOR

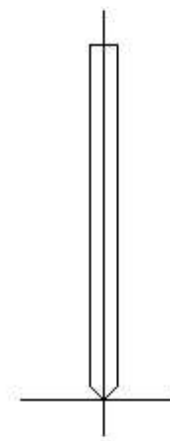
PROGRAM NUMBER: 0
SPINDLE SPEED: 3000 RPM
FEEDRATE: 400.0 mm/min
CLEARANCE PLANE: 50.0
RETRACT PLANE: 25.0
FEED PLANE: 10.0
DEPTH: -8.0
STOCK TO LEAVE: 0.0
COMP TO TIP: YES
WORK OFFSET: 0



TOOL INFO

#5 - M4.00 CHAMFER MILL - ESCAREADOR D4

TYPE: Chamfer mill
NUMBER: 5
DIAMETER: 4.0
CORNER RADIUS: 0.0
LENGTH OFFSET: 5
DIAMETER OFFSET: 5
MATERIAL: Carbide
NUMBER OF FLUTES: 4
FPT: 0.033
SFM: 37.7
MFG CODE: -
HOLDER:
TIME: 00:00:21

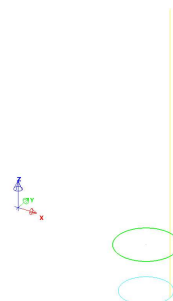


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME:	0 HOURS, 0 MINUTES, 10 SECONDS
COMMENT:	ESCAREAMENTO CIRCULO INTERIOR

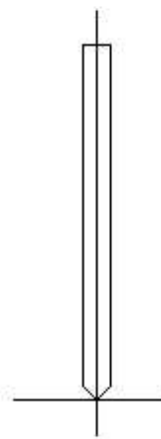
PROGRAM NUMBER:	0
SPINDLE SPEED:	3000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-8.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M4.00 CHAMFER MILL - ESCAREADOR D4

TYPE:	Chamfer mill
NUMBER:	5
DIAMETER:	4.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	4
FPT:	0.033
SFM:	37.7
MFG CODE:	—
HOLDER:	
TIME:	00:00:10

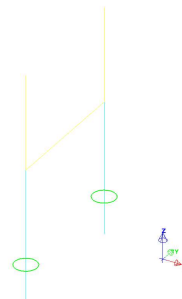


OPERATION INFO

Drill/Counterbore

CYCLE TIME:	0 HOURS, 0 MINUTES, 10 SECONDS
COMMENT:	PONTEAR 2 FUROS DA CAIXA

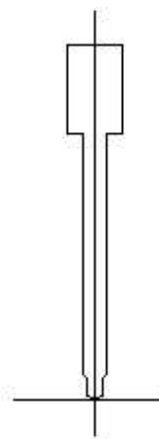
PROGRAM NUMBER:	0
SPINDLE SPEED:	3000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	25.0
DEPTH:	-10.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	NO
WORK OFFSET:	0



TOOL INFO

#2 - M3.15 CENTER DRILL - BROCA PONTO 3.15

TYPE:	Center Drill
NUMBER:	2
DIAMETER:	3.15
CORNER RADIUS:	0.0
LENGTH OFFSET:	2
DIAMETER OFFSET:	2
MATERIAL:	—
NUMBER OF FLUTES:	2
FPT:	0.067
SFM:	29.689
MFG CODE:	—
HOLDER:	—
TIME:	00:00:10



OPERATION INFO

Peck Drill

CYCLE TIME:	0 HOURS, 0 MINUTES, 19 SECONDS
COMMENT:	FUROS DA CAIXA

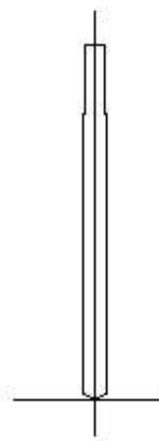
PROGRAM NUMBER:	0
SPINDLE SPEED:	2100 RPM
FEEDRATE:	275.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	25.0
DEPTH:	-19.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	NO
WORK OFFSET:	0



TOOL INFO

#3 - M6.00 DRILL - BROCA D6

TYPE:	Drill
NUMBER:	3
DIAMETER:	6.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	3
DIAMETER OFFSET:	3
MATERIAL:	—
NUMBER OF FLUTES:	2
FPT:	0.065
SFM:	39.585
MFG CODE:	—
HOLDER:	—
TIME:	00:00:19

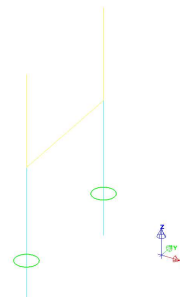


OPERATION INFO

Drill/Counterbore

CYCLE TIME:	0 HOURS, 0 MINUTES, 4 SECONDS
COMMENT:	ESCAREAMENTO DE FUROS DA CAIXA

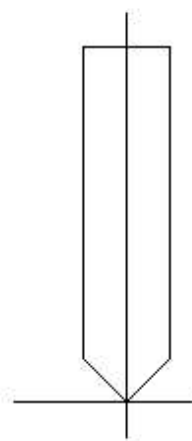
PROGRAM NUMBER:	0
SPINDLE SPEED:	5000 RPM
FEEDRATE:	1000.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	25.0
DEPTH:	-11.25
STOCK TO LEAVE:	0.0
COMP TO TIP:	NO
WORK OFFSET:	0



TOOL INFO

#6 - M12.00 CHAMFER MILL - ESCAREADOR D12

TYPE:	Chamfer mill
NUMBER:	6
DIAMETER:	12.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	6
DIAMETER OFFSET:	6
MATERIAL:	Carbide
NUMBER OF FLUTES:	5
FPT:	0.04
SFM:	188.501
MFG CODE:	—
HOLDER:	
TIME:	00:00:04

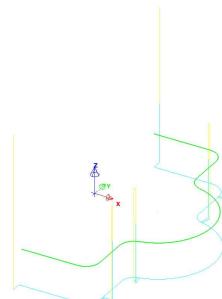


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME:	0 HOURS, 1 MINUTES, 10 SECONDS
COMMENT:	ESCAREAMENTO CONTORNO EXTERIOR DIREITO

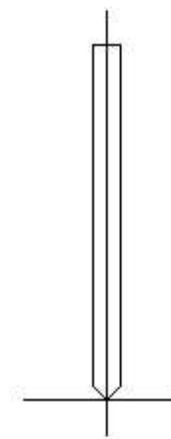
PROGRAM NUMBER:	0
SPINDLE SPEED:	3000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-13.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M4.00 CHAMFER MILL - ESCAREADOR D4

TYPE:	Chamfer mill
NUMBER:	5
DIAMETER:	4.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	4
FPT:	0.033
SFM:	37.7
MFG CODE:	—
HOLDER:	
TIME:	00:01:10

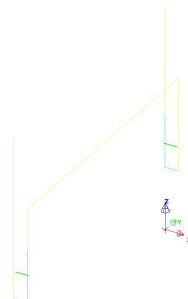


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME:	0 HOURS, 0 MINUTES, 13 SECONDS
COMMENT:	ESCAREAMENTO CAIXA PARTE PEQUENA

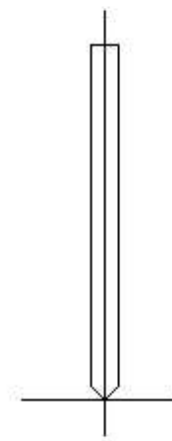
PROGRAM NUMBER:	0
SPINDLE SPEED:	3000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-8.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M4.00 CHAMFER MILL - ESCAREADOR D4

TYPE:	Chamfer mill
NUMBER:	5
DIAMETER:	4.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	4
FPT:	0.033
SFM:	37.7
MFG CODE:	—
HOLDER:	
TIME:	00:00:13

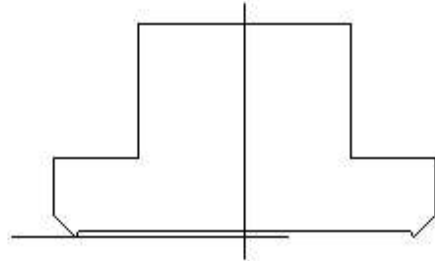


TOOL LIST

Sorted: NO

TOOL INFO**#1 - M80.00 FACE MILL - ROCA FACEJAR D80**

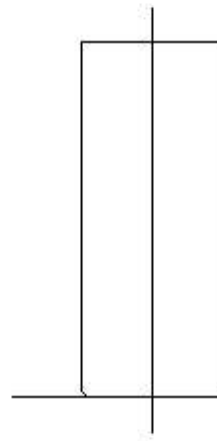
TYPE: Face mill
NUMBER: 1
DIAMETER: 80.0
CORNER RADIUS: 0.0
LENGTH OFFSET: 1
DIAMETER OFFSET: 1
MATERIAL: Carbide
NUMBER OF FLUTES: 6
FPT: 0.083
SFM: 754.006
MFG CODE: -
HOLDER:
TIME: 00:00:31



USED BY OPERATION: # 1 Facing

TOOL INFO**#4 - M20.00 ENDMILL3 BULL - FRESA PASTILHAS D20 R0.8**

TYPE: Endmill3 Bull
NUMBER: 4
DIAMETER: 20.0
CORNER RADIUS: 0.8
LENGTH OFFSET: 4
DIAMETER OFFSET: 4
MATERIAL: Carbide
NUMBER OF FLUTES: 2
FPT: 0.2
SFM: 314.169
MFG CODE: -
HOLDER:
TIME: 00:17:01

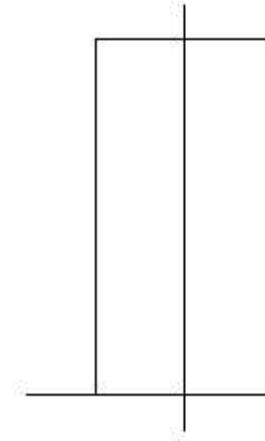


USED BY OPERATION: # 2 Contour (2D)

USED BY OPERATION: # 9 Contour (2D)

TOOL INFO**#5 - M10.00 ENDMILL 1 FLAT - FRESA NAVALHAS D10**

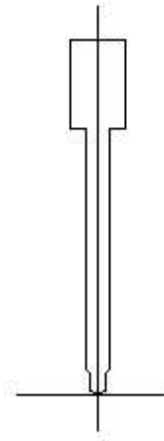
TYPE:	Endmill1 Flat
NUMBER:	5
DIAMETER:	10.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	2
FPT:	0.125
SFM:	125.668
MFG CODE:	—
HOLDER:	
TIME:	00:22:26



USED BY OPERATION:	# 3	Contour (2D)
USED BY OPERATION:	# 10	Contour (2D)
USED BY OPERATION:	# 11	Pocket (Standard)

TOOL INFO**#2 - M3.15 CENTER DRILL - BROCA PONTO 3.15**

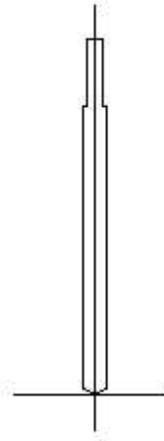
TYPE:	Center Drill
NUMBER:	2
DIAMETER:	3.15
CORNER RADIUS:	0.0
LENGTH OFFSET:	2
DIAMETER OFFSET:	2
MATERIAL:	—
NUMBER OF FLUTES:	2
FPT:	0.067
SFM:	29.689
MFG CODE:	—
HOLDER:	
TIME:	00:00:36



USED BY OPERATION:	# 4	Drill/Counterbore
USED BY OPERATION:	# 17	Drill/Counterbore

TOOL INFO**#3 - M6.80 DRILL - BROCA D6.8**

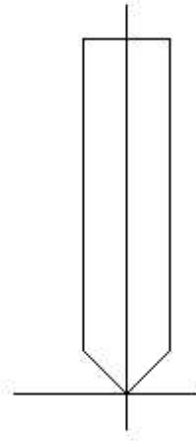
TYPE:	Drill
NUMBER:	3
DIAMETER:	6.8
CORNER RADIUS:	0.0
LENGTH OFFSET:	3
DIAMETER OFFSET:	3
MATERIAL:	—
NUMBER OF FLUTES:	2
FPT:	0.067
SFM:	38.454
MFG CODE:	—
HOLDER:	
TIME:	00:01:01



USED BY OPERATION:	# 5	Peck Drill
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TOOL INFO**#6 - M12.00 CHAMFER MILL - ESCAREADOR D12**

TYPE:	Chamfer mill
NUMBER:	6
DIAMETER:	12.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	6
DIAMETER OFFSET:	6
MATERIAL:	Carbide
NUMBER OF FLUTES:	5
FPT:	0.04
SFM:	188.501
MFG CODE:	—
HOLDER:	
TIME:	00:00:16

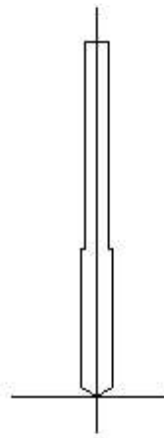


USED BY OPERATION:	# 6	Drill/Counterbore
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USED BY OPERATION:	# 19	Drill/Counterbore
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TOOL INFO**#8 - M8.00 X 1.25 TAP RH - MACHO M8**

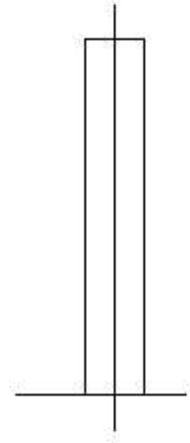
TYPE:	Tap RH
NUMBER:	8
DIAMETER:	8.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	8
DIAMETER OFFSET:	8
MATERIAL:	—
NUMBER OF FLUTES:	2
FPT:	1.25
SFM:	16.085
MFG CODE:	—
HOLDER:	
TIME:	00:00:17



USED BY OPERATION:	# 7	Drill/Counterbore
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TOOL INFO**#7 - M6.00 ENDMILL1 FLAT - FRESA NAVALHAS D6**

TYPE:	Endmill1 Flat
NUMBER:	7
DIAMETER:	6.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	7
DIAMETER OFFSET:	7
MATERIAL:	—
NUMBER OF FLUTES:	4
FPT:	0.025
SFM:	75.401
MFG CODE:	—
HOLDER:	
TIME:	00:07:34

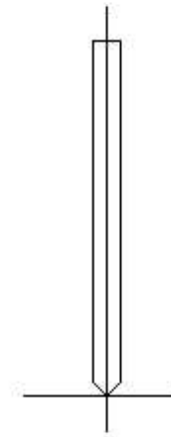


USED BY OPERATION: # 8 Pocket (Standard)

USED BY OPERATION: # 12 Pocket (Standard)

TOOL INFO**#5 - M4.00 CHAMFER MILL - ESCAREADOR D4**

TYPE:	Chamfer mill
NUMBER:	5
DIAMETER:	4.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	4
FPT:	0.033
SFM:	37.7
MFG CODE:	—
HOLDER:	
TIME:	00:03:15



USED BY OPERATION: # 13 Contour (2D chamfer)

USED BY OPERATION: # 14 Contour (2D chamfer)

USED BY OPERATION: # 15 Contour (2D chamfer)

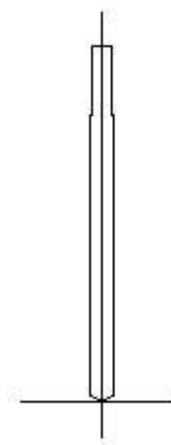
USED BY OPERATION: # 16 Contour (2D chamfer)

USED BY OPERATION: # 20 Contour (2D chamfer)

USED BY OPERATION: # 21 Contour (2D chamfer)

TOOL INFO**#3 - M6.00 DRILL - BROCA D6**

TYPE:	Drill
NUMBER:	3
DIAMETER:	6.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	3
DIAMETER OFFSET:	3
MATERIAL:	—
NUMBER OF FLUTES:	2
FPT:	0.065
SFM:	39.585
MFG CODE:	—
HOLDER:	
TIME:	00:00:19



USED BY OPERATION:	# 18	Peck Drill
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WORK OFFSETS**OFFSET INFO**

NUMBER:	0	VNUM:	1	ORIGIN:	0.0, 0.0, 0.0
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USED BY OPERATION:	#	All operations
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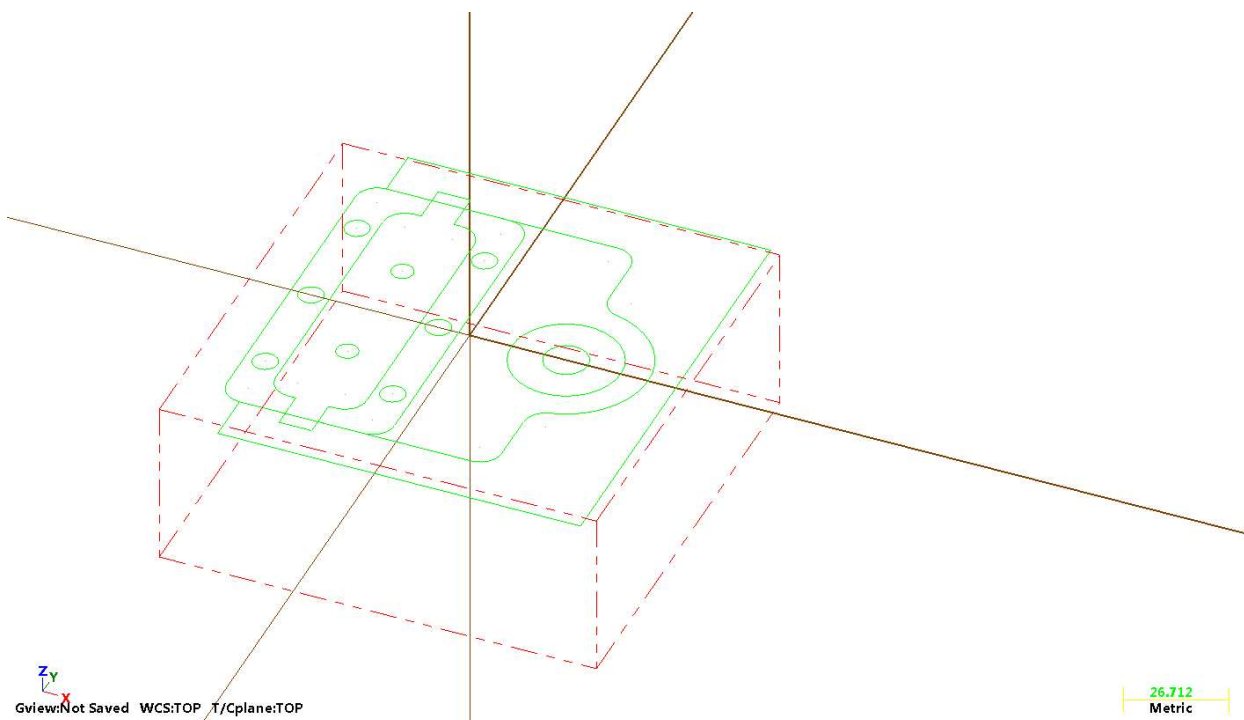
Setup Sheet Report

Haas VF - TR Series 5 Axis Trunnion Mill MM

GENERAL INFORMATION

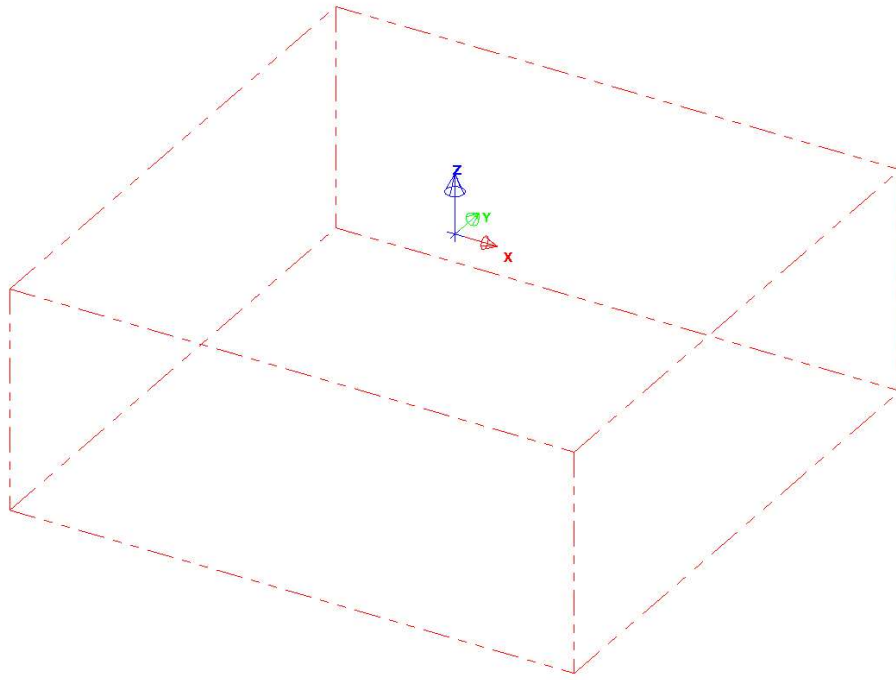
PROJECT NAME:	Teste - 2º Aperto	REVISION: _
CUSTOMER NAME:	Rui Dias	
PROGRAMMER:	Rui Dias	
DRAWING:	Helder Nunes	
DATE:	quarta-feira, 2 de Março de 2016	
TIME:	16:44	

E:\MASTERCAM\TESTE\TESTE RUI DIAS.EMCX-5



COMMENTS

STOCK / SAFEZONE INFO



STOCK:	YES
SHAPE:	Box
SIZE:	120.0, 120.0, 47.0
RADIUS:	NA
LENGTH:	NA
AXIS:	NA
FILE:	NA
IDN:	NA

SAFEZONE:	NO
SHAPE:	NA
SIZE:	NA
RADIUS:	NA
LENGTH:	NA
AXIS:	NA

C:\USERS\USER\DOCUMENTS\MY MCAMX5\MILL\NCI\O0003.NCI

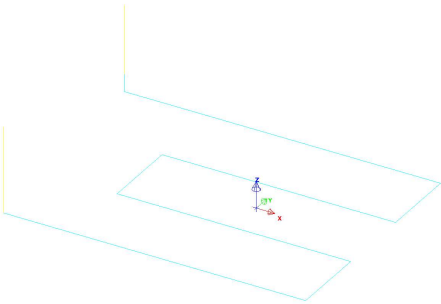
CYCLE TIME: 1 HOURS, 9 MINUTES, 17 SECONDS

OPERATION LIST

OPERATION INFO Facing

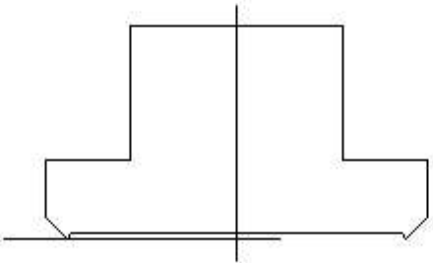
CYCLE TIME: 0 HOURS, 0 MINUTES, 31 SECONDS
COMMENT: FACEJAR

PROGRAM NUMBER: 0
SPINDLE SPEED: 3000 RPM
FEEDRATE: 1500.0 mm/min
CLEARANCE PLANE: 50.0
RETRACT PLANE: 25.0
FEED PLANE: 10.0
DEPTH: 0.0
STOCK TO LEAVE: 0.0
COMP TO TIP: YES
WORK OFFSET: 0



TOOL INFO #1 - M80.00 FACE MILL - ROCA FACEJAR D80

TYPE: Face mill
NUMBER: 1
DIAMETER: 80.0
CORNER RADIUS: 0.0
LENGTH OFFSET: 1
DIAMETER OFFSET: 1
MATERIAL: Carbide
NUMBER OF FLUTES: 6
FPT: 0.083
SFM: 754.006
MFG CODE: -
HOLDER:
TIME: 00:00:31

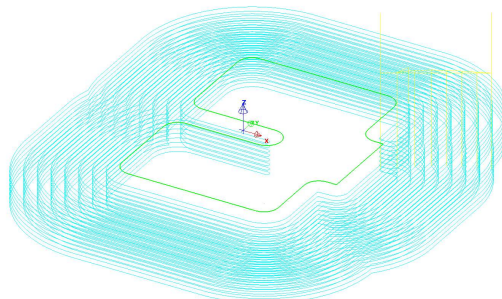


OPERATION INFO

Contour (2D)

CYCLE TIME:	0 HOURS, 32 MINUTES, 51 SECONDS
COMMENT:	DESBASTE EXTERIOR

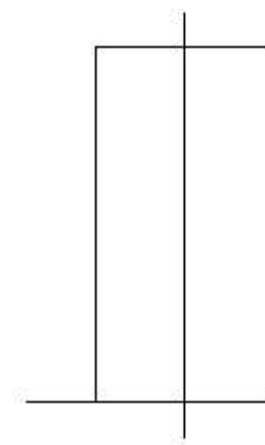
PROGRAM NUMBER:	0
SPINDLE SPEED:	4000 RPM
FEEDRATE:	1000.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-15.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M10.00 ENDMILL1 FLAT - FRESA NAVALHAS D10

TYPE:	Endmill1 Flat
NUMBER:	5
DIAMETER:	10.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	2
FPT:	0.125
SFM:	125.668
MFG CODE:	—
HOLDER:	
TIME:	00:32:51

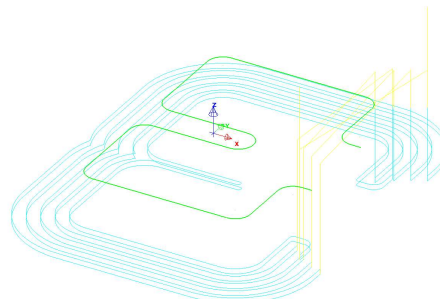


OPERATION INFO

Contour (2D)

CYCLE TIME:	0 HOURS, 4 MINUTES, 18 SECONDS
COMMENT:	DESBASTE PARA BAIXAR O LADO DIREITO

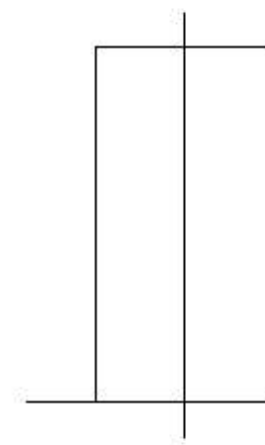
PROGRAM NUMBER:	0
SPINDLE SPEED:	4000 RPM
FEEDRATE:	1000.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-19.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M10.00 ENDMILL1 FLAT - FRESA NAVALHAS D10

TYPE:	Endmill1 Flat
NUMBER:	5
DIAMETER:	10.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	2
FPT:	0.125
SFM:	125.668
MFG CODE:	—
HOLDER:	
TIME:	00:04:18

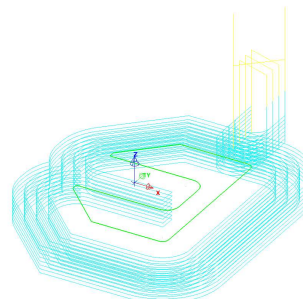


OPERATION INFO

Contour (2D)

CYCLE TIME:	0 HOURS, 7 MINUTES, 22 SECONDS
COMMENT:	DESBASTE PARA O IMAN

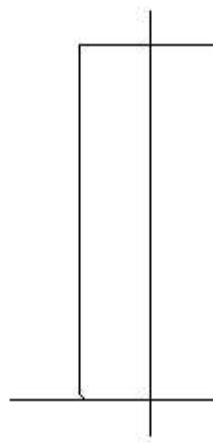
PROGRAM NUMBER:	0
SPINDLE SPEED:	5000 RPM
FEEDRATE:	2000.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-15.0
STOCK TO LEAVE:	0.2
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#4 - M20.00 ENDMILL3 BULL - FRESA PASTILHAS D20 R0.8

TYPE:	Endmill3 Bull
NUMBER:	4
DIAMETER:	20.0
CORNER RADIUS:	0.8
LENGTH OFFSET:	4
DIAMETER OFFSET:	4
MATERIAL:	Carbide
NUMBER OF FLUTES:	2
FPT:	0.2
SFM:	314.169
MFG CODE:	-
HOLDER:	
TIME:	00:07:22

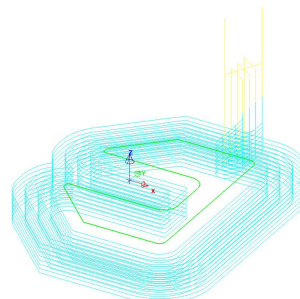


OPERATION INFO

Contour (2D)

CYCLE TIME:	0 HOURS, 13 MINUTES, 31 SECONDS
COMMENT:	ACABAMENTO PARA O IMAN

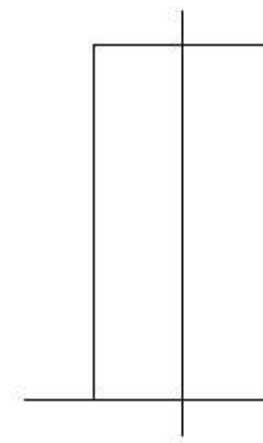
PROGRAM NUMBER:	0
SPINDLE SPEED:	4000 RPM
FEEDRATE:	1000.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-15.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M10.00 ENDMILL1 FLAT - FRESA NAVALHAS D10

TYPE:	Endmill1 Flat
NUMBER:	5
DIAMETER:	10.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	2
FPT:	0.125
SFM:	125.668
MFG CODE:	-
HOLDER:	
TIME:	00:13:31

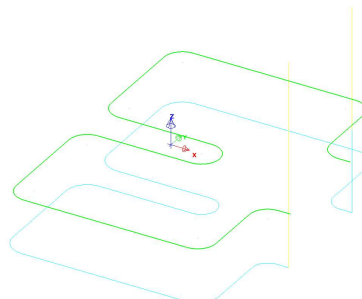


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME: 0 HOURS, 1 MINUTES, 4 SECONDS
COMMENT: ESCAREAMENTO 1º DEGRAU

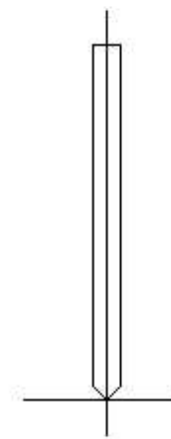
PROGRAM NUMBER: 0
SPINDLE SPEED: 3000 RPM
FEEDRATE: 400.0 mm/min
CLEARANCE PLANE: 50.0
RETRACT PLANE: 25.0
FEED PLANE: 10.0
DEPTH: -15.0
STOCK TO LEAVE: 0.0
COMP TO TIP: YES
WORK OFFSET: 0



TOOL INFO

#5 - M4.00 CHAMFER MILL - ESCAREADOR D4

TYPE: Chamfer mill
NUMBER: 5
DIAMETER: 4.0
CORNER RADIUS: 0.0
LENGTH OFFSET: 5
DIAMETER OFFSET: 5
MATERIAL: Carbide
NUMBER OF FLUTES: 4
FPT: 0.033
SFM: 37.7
MFG CODE: -
HOLDER:
TIME: 00:01:04

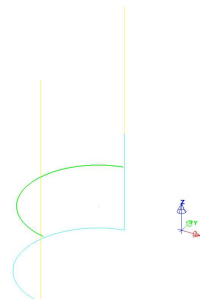


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME:	0 HOURS, 0 MINUTES, 18 SECONDS
COMMENT:	ESCAREAMENTO DO SEMI-CIRCULO

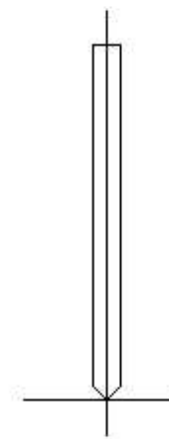
PROGRAM NUMBER:	0
SPINDLE SPEED:	3000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-19.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M4.00 CHAMFER MILL - ESCAREADOR D4

TYPE:	Chamfer mill
NUMBER:	5
DIAMETER:	4.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	4
FPT:	0.033
SFM:	37.7
MFG CODE:	—
HOLDER:	
TIME:	00:00:18

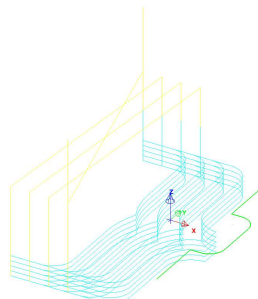


OPERATION INFO

Contour (2D)

CYCLE TIME:	0 HOURS, 1 MINUTES, 42 SECONDS
COMMENT:	DESBASTE PARA FICAR TORRE CENTRAL

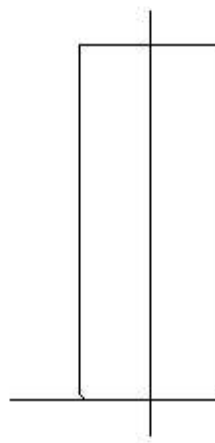
PROGRAM NUMBER:	0
SPINDLE SPEED:	5000 RPM
FEEDRATE:	2000.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-10.0
STOCK TO LEAVE:	0.2
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#4 - M20.00 ENDMILL3 BULL - FRESA PASTILHAS D20 R0.8

TYPE:	Endmill3 Bull
NUMBER:	4
DIAMETER:	20.0
CORNER RADIUS:	0.8
LENGTH OFFSET:	4
DIAMETER OFFSET:	4
MATERIAL:	Carbide
NUMBER OF FLUTES:	2
FPT:	0.2
SFM:	314.169
MFG CODE:	-
HOLDER:	
TIME:	00:01:42

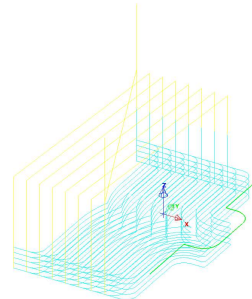


OPERATION INFO

Contour (2D)

CYCLE TIME:	0 HOURS, 5 MINUTES, 38 SECONDS
COMMENT:	DESBASTE PARA FICAR TORRE CENTRAL

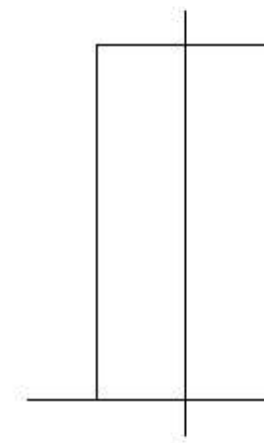
PROGRAM NUMBER:	0
SPINDLE SPEED:	4000 RPM
FEEDRATE:	1000.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-10.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M10.00 ENDMILL1 FLAT - FRESA NAVALHAS D10

TYPE:	Endmill1 Flat
NUMBER:	5
DIAMETER:	10.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	2
FPT:	0.125
SFM:	125.668
MFG CODE:	-
HOLDER:	
TIME:	00:05:38

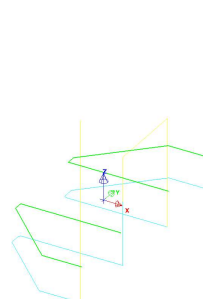


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME:	0 HOURS, 0 MINUTES, 38 SECONDS
COMMENT:	ESCAREAMENTO DO IMAN PARTE INFERIOR

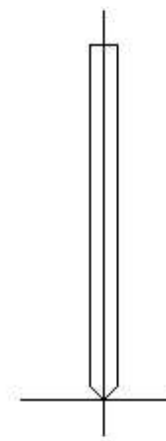
PROGRAM NUMBER:	0
SPINDLE SPEED:	3000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-10.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M4.00 CHAMFER MILL - ESCAREADOR D4

TYPE:	Chamfer mill
NUMBER:	5
DIAMETER:	4.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	4
FPT:	0.033
SFM:	37.7
MFG CODE:	—
HOLDER:	
TIME:	00:00:38

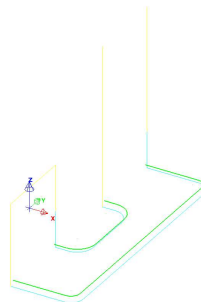


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME:	0 HOURS, 0 MINUTES, 30 SECONDS
COMMENT:	ESCAREAMENTO IMAN PARTE SUPERIOR

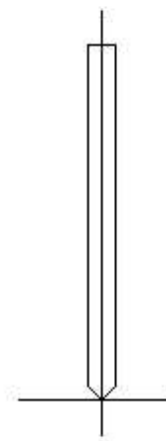
PROGRAM NUMBER:	0
SPINDLE SPEED:	3000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	0.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M4.00 CHAMFER MILL - ESCAREADOR D4

TYPE:	Chamfer mill
NUMBER:	5
DIAMETER:	4.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	4
FPT:	0.033
SFM:	37.7
MFG CODE:	—
HOLDER:	
TIME:	00:00:30

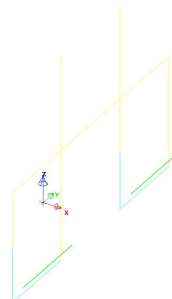


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME:	0 HOURS, 0 MINUTES, 7 SECONDS
COMMENT:	ESCAREAMENTO DE 2MM NO TOPO

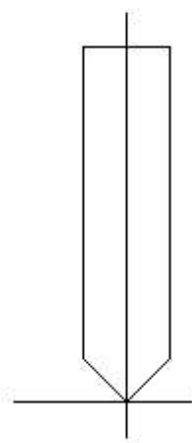
PROGRAM NUMBER:	0
SPINDLE SPEED:	5000 RPM
FEEDRATE:	1000.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	0.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#6 - M12.00 CHAMFER MILL - ESCAREADOR D12

TYPE:	Chamfer mill
NUMBER:	6
DIAMETER:	12.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	6
DIAMETER OFFSET:	6
MATERIAL:	Carbide
NUMBER OF FLUTES:	5
FPT:	0.04
SFM:	188.501
MFG CODE:	—
HOLDER:	
TIME:	00:00:07

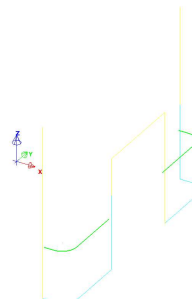


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME:	0 HOURS, 0 MINUTES, 30 SECONDS
COMMENT:	ESCAREAMENTO CURVAS NA PARTE DIREITA

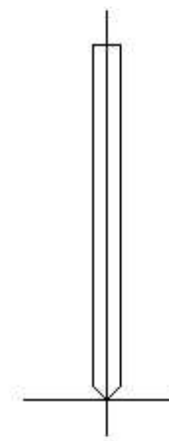
PROGRAM NUMBER:	0
SPINDLE SPEED:	3000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-19.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M4.00 CHAMFER MILL - ESCAREADOR D4

TYPE:	Chamfer mill
NUMBER:	5
DIAMETER:	4.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	4
FPT:	0.033
SFM:	37.7
MFG CODE:	—
HOLDER:	
TIME:	00:00:30

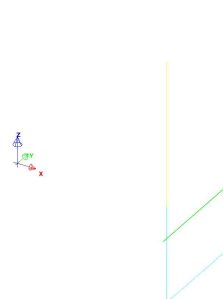


OPERATION INFO

Contour (2D chamfer)

CYCLE TIME:	0 HOURS, 0 MINUTES, 12 SECONDS
COMMENT:	ESCAREAMENTO RECTA NA PARTE DIREITA

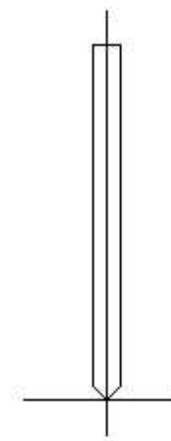
PROGRAM NUMBER:	0
SPINDLE SPEED:	3000 RPM
FEEDRATE:	400.0 mm/min
CLEARANCE PLANE:	50.0
RETRACT PLANE:	25.0
FEED PLANE:	10.0
DEPTH:	-15.0
STOCK TO LEAVE:	0.0
COMP TO TIP:	YES
WORK OFFSET:	0



TOOL INFO

#5 - M4.00 CHAMFER MILL - ESCAREADOR D4

TYPE:	Chamfer mill
NUMBER:	5
DIAMETER:	4.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	4
FPT:	0.033
SFM:	37.7
MFG CODE:	—
HOLDER:	
TIME:	00:00:12

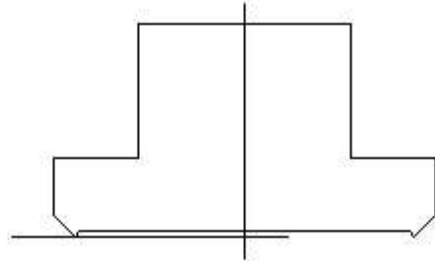


TOOL LIST

Sorted: NO

TOOL INFO**#1 - M80.00 FACE MILL - ROCA FACEJAR D80**

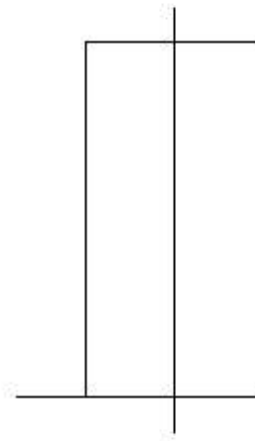
TYPE: Face mill
NUMBER: 1
DIAMETER: 80.0
CORNER RADIUS: 0.0
LENGTH OFFSET: 1
DIAMETER OFFSET: 1
MATERIAL: Carbide
NUMBER OF FLUTES: 6
FPT: 0.083
SFM: 754.006
MFG CODE: -
HOLDER:
TIME: 00:00:31



USED BY OPERATION: # 22 Facing

TOOL INFO**#5 - M10.00 ENDMILL1 FLAT - FRESA NAVALHAS D10**

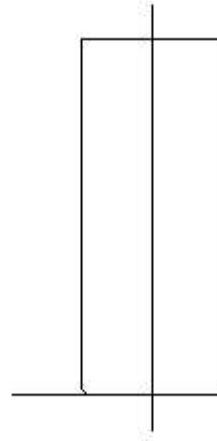
TYPE: Endmill1 Flat
NUMBER: 5
DIAMETER: 10.0
CORNER RADIUS: 0.0
LENGTH OFFSET: 5
DIAMETER OFFSET: 5
MATERIAL: Carbide
NUMBER OF FLUTES: 2
FPT: 0.125
SFM: 125.668
MFG CODE: -
HOLDER:
TIME: 00:56:19



USED BY OPERATION: # 23 Contour (2D)
USED BY OPERATION: # 24 Contour (2D)
USED BY OPERATION: # 26 Contour (2D)
USED BY OPERATION: # 30 Contour (2D)

TOOL INFO**#4 - M20.00 ENDMILL3 BULL - FRESA PASTILHAS D20 R0.8**

TYPE:	Endmill3 Bull
NUMBER:	4
DIAMETER:	20.0
CORNER RADIUS:	0.8
LENGTH OFFSET:	4
DIAMETER OFFSET:	4
MATERIAL:	Carbide
NUMBER OF FLUTES:	2
FPT:	0.2
SFM:	314.169
MFG CODE:	-
HOLDER:	
TIME:	00:09:04

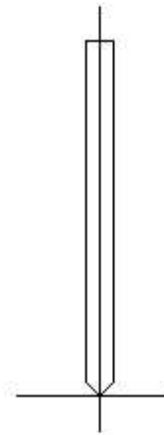


USED BY OPERATION: # 25 Contour (2D)

USED BY OPERATION: # 29 Contour (2D)

TOOL INFO**#5 - M4.00 CHAMFER MILL - ESCAREADOR D4**

TYPE:	Chamfer mill
NUMBER:	5
DIAMETER:	4.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	5
DIAMETER OFFSET:	5
MATERIAL:	Carbide
NUMBER OF FLUTES:	4
FPT:	0.033
SFM:	37.7
MFG CODE:	-
HOLDER:	
TIME:	00:03:14



USED BY OPERATION: # 27 Contour (2D chamfer)

USED BY OPERATION: # 28 Contour (2D chamfer)

USED BY OPERATION: # 31 Contour (2D chamfer)

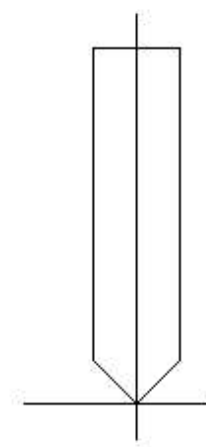
USED BY OPERATION: # 32 Contour (2D chamfer)

USED BY OPERATION: # 34 Contour (2D chamfer)

USED BY OPERATION: # 35 Contour (2D chamfer)

TOOL INFO**#6 - M12.00 CHAMFER MILL - ESCAREADOR D12**

TYPE:	Chamfer mill
NUMBER:	6
DIAMETER:	12.0
CORNER RADIUS:	0.0
LENGTH OFFSET:	6
DIAMETER OFFSET:	6
MATERIAL:	Carbide
NUMBER OF FLUTES:	5
FPT:	0.04
SFM:	188.501
MFG CODE:	-
HOLDER:	
TIME:	00:00:07



USED BY OPERATION:	# 33	Contour (2D chamfer)
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WORK OFFSETS**OFFSET INFO**

NUMBER:	0	VNUM:	4	ORIGIN:	0.0, -0.0, 45.0
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USED BY OPERATION:	#	All operations
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