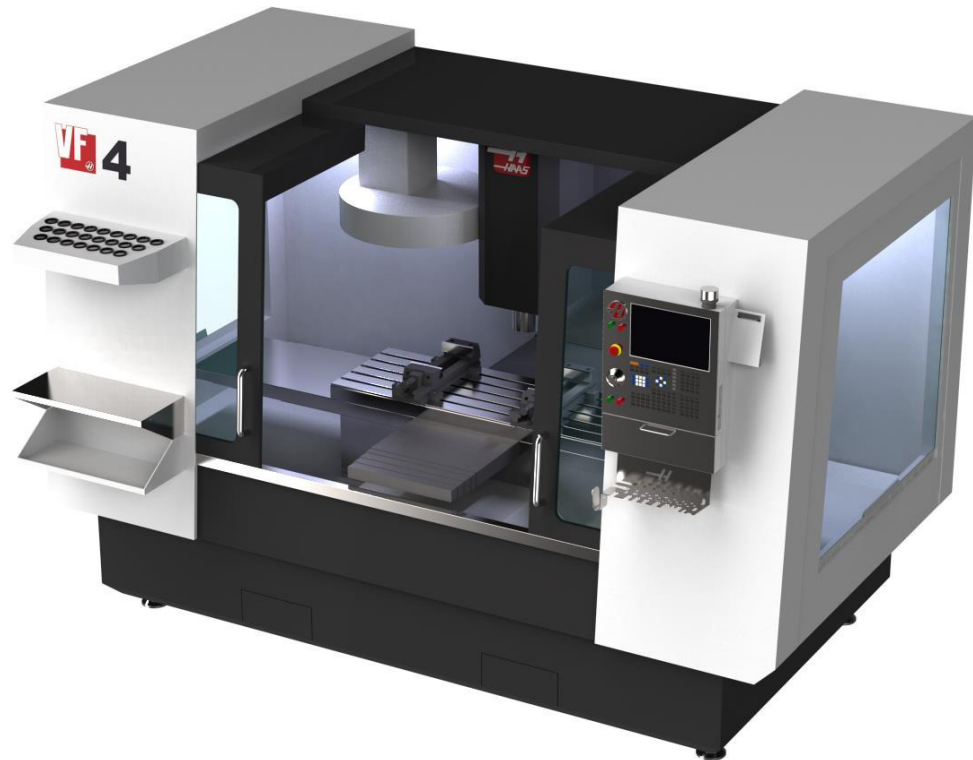




UNIVERSIDAD DE VALLADOLID
Escuela de Ingenierías Industriales
Grado en Ingeniería Mecánica



MODELADO Y SIMULACIÓN DEL CENTRO DE MECANIZADO VERTICAL HAAS VF-4 EN MASTERCAM



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TRABAJO FIN DE GRADO

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Universidad de Valladolid



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RESUMEN

A lo largo de la historia, el ser humano ha tratado de desarrollar la capacidad de anticiparse a los acontecimientos. Actualmente, podemos lograrlo en cierta medida con la simulación mediante software, llegando a convertirse en algo imprescindible en el sector industrial.

Una de las aplicaciones en el mundo de la fabricación es en el mecanizado por arranque de viruta. Sin embargo, a pesar de que los softwares CAM permiten simulaciones, el hecho de no contar con la geometría de la máquina y del resto de sus componentes, conduce a colisiones y grandes pérdidas económicas.

Este trabajo se basa en la creación de un centro de mecanizado para simulaciones en Mastercam. Tras el modelado de la máquina en el software SpaceClaim, se desarrollan los pasos a seguir en Mastercam para su puesta en funcionamiento. Posteriormente se hace una simulación del mecanizado de una pieza, exponiendo problemas y su posible solución.

Palabras clave

Mastercam, simulación, SpaceClaim, mecanizado, CAM

ABSTRACT

Getting ahead of the future has been considered one of the objectives of human beings along history. Nowadays we can achieve it, to some extent, thanks to software simulation, which has turned essential in industry.

One of the numerous applications of software simulation is in machining processes. However, the simulations provided by CAM softwares do not take into account the machine geometry. This may cause crashes and collisions afterwards, incurring high costs.

This Degree Final Project is based on building a virtual machining center in Mastercam. Once the machine model is created using SpaceClaim software, it is required to follow a number of steps for having it configured in Mastercam. Subsequently, a complete simulation of the machining process of a part will be performed, showing different issues and its feasible solutions.

Keywords

Mastercam, simulation, SpaceClaim, machining, CAM

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ABREVIATURA	SIGNIFICADO
<i>CAD</i>	Computer-Aided Desing (Diseño Asistido por Computador)
<i>CAM</i>	Computer-Aided Manufacturing (Fabricación Asistida por Computador)
<i>CMV</i>	Centro de Mecanizado Vertical
<i>CN</i>	Control Numérico
<i>CNC</i>	Control Numérico por Computador
<i>DNC</i>	Control numérico Directo
<i>ISO</i>	Organización internacional de normalización
<i>MHCN</i>	Máquina Herramienta con Control Numérico
<i>MIT</i>	Massachusetts Institute of Technology

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1.- CAPÍTULO 1. INTRODUCCIÓN

1.1.- INTRODUCCIÓN

En un mundo cada vez más competitivo, el hecho de poder conocer de forma aproximada lo que va a ocurrir en función de la toma de una decisión u otra puede determinar nuestros éxitos o fracasos. Hoy en día, gracias a los avances en el ámbito de la computación, los modelos matemáticos usados desde el pasado para simular distintos escenarios cuentan con el apoyo y simplicidad que proporciona la simulación por ordenador.

Una de las diversas aplicaciones de la simulación por ordenador la encontramos en los procesos de mecanizado, más concretamente en los de arranque de viruta. Esto, unido al desarrollo de la fabricación asistida por ordenador (CAM), ha permitido controlar los procesos de fabricación, disminuyendo el tener que recurrir al ensayo y error.

La gran mayoría de softwares CAM cuentan con la posibilidad de simular los procesos de mecanizado, pero estas simulaciones se basan en dar una idea general del resultado de cada operación en el material de partida y no proporcionan ninguna información adicional. No obstante, hay algunos softwares que permiten la introducción de elementos 3D que, con una correcta configuración, consiguen obtener un simulador de la máquina de mecanizado.

La introducción de la geometría de nuestra máquina dentro del software CAM supone una gran ventaja frente a las posibles colisiones entre elementos. Estas colisiones se traducen en grandes pérdidas tanto de material y herramientas como de nivel de productividad debido a posibles paradas de producción si los choques ocasionan daños a la máquina (a lo que habría que añadir los costes de reparación).

Este trabajo fin de grado persigue dar unas pautas para la creación de una máquina virtual en el software Mastercam, realizando de manera posterior el mecanizado completo de una pieza y tratando de mostrar posibles colisiones y su resolución. Con todo esto se intenta manifestar la ventaja competitiva de la simulación de forma más completa.

1.2.- OBJETIVOS

Los objetivos de este trabajo fin de grado se dividen tal y como se indica a continuación:

- El principal objetivo y más importante es poder concienciar sobre la importancia del uso de simulaciones en mecanizado ya que, aunque por un lado pueda suponer unos sobrecostes en el tiempo invertido en CAM, puede evitar muchos errores humanos y de cálculo que provocarían una mayor pérdida económica.
- Servir de guía para la configuración de una máquina virtual en el software Mastercam, debido a la poca información de la que se puede disponer.
- Dar a conocer con SpaceClaim una alternativa a los softwares de diseño vigentes y exponer su facilidad de uso.
- Dar una idea general de la forma de trabajo de Mastercam y exponer los problemas de colisiones a los que nos podríamos enfrentar al mecanizar una pieza.
- Ofrecer un conocimiento general sobre el funcionamiento y partes de un centro de mecanizado.

1.3.- ESTRUCTURA

El trabajo está estructurado en siete capítulos, contando cada uno de ellos con un propósito determinado:

- Capítulo 1: En el capítulo actual, se trata de facilitar una idea general sobre la finalidad y composición del trabajo.
- Capítulo 2: Proporciona información del mundo del mecanizado y sus aspectos más importantes.

- Capítulo 3: Tiene como objetivo ser una introducción al modelado con SpaceClaim, explicando en líneas generales los principales comandos y herramientas y su forma de trabajo.
- Capítulo 4: Se centra en las diferentes partes de la máquina elegida para la simulación (el centro de mecanizado Haas VF-4) y muestra el resultado tras su modelado en SpaceClaim.
- Capítulo 5: Trata de servir de guía para la configuración de una máquina virtual en Mastercam.
- Capítulo 6: Muestra el proceso de mecanizado de una pieza en Mastercam, desde el cálculo de parámetros de corte hasta la simulación de todas las operaciones, incidiendo en cómo se resolverían posibles colisiones.
- Capítulo 7: Contiene las conclusiones a las que se ha llegado tras la realización del trabajo

ANEXOS

A la estructura central del trabajo se han añadido los siguientes anexos:

- Planos de la pieza a mecanizar y del material de partida.
- Tabla con códigos G y M usados en Haas.
- Programa en código ISO que contiene el mecanizado de la pieza.

2.-CAPÍTULO 2. FUNDAMENTOS DE LAS MÁQUINAS- HERRAMIENTA CON CONTROL NUMÉRICO (MHCN)

El concepto de máquina-herramienta alude a máquinas utilizadas para modificar la forma de materia sólida. Son máquinas no portables, que alimentadas por una fuente de energía exterior pueden realizar una gran variedad de procesos que podemos dividir en dos tipos:

- Procesos con arranque de viruta: Fresado, torneado, taladrado
- Procesos sin arranque de viruta: Corte por plasma, por láser, chorro de agua, etc.

No obstante, gran parte del éxito de estas máquinas se basa en el desarrollo del sistema de automatización por control numérico. Su implantación no solo ha aportado beneficios en productividad, sino la capacidad de la fabricación de piezas que de no contar con ello hubiesen sido imposibles de llevar a cabo.

2.1.- NACIMIENTO Y EVOLUCIÓN DEL CONTROL NUMÉRICO

Al contrario de lo que se pueda pensar, el control numérico no surgió con el objetivo de optimizar los procesos de fabricación; fue creado como respuesta frente a diseños cada vez más complicados y con dificultades para ejecutarlos en máquina.

El inicio de estos problemas podemos situarlo en 1942, cuando en *Bendix Corporation* les es imposible fabricar de forma manual una leva para el regulador de una bomba de inyección para motores de avión. Para poder mecanizar el perfil final, era necesario la combinación de movimientos en varios ejes de coordenadas de forma simultánea.

En 1947 el americano John T. Parsons diseña un mando automático llamado *Digiton* con entrada de información numérica para la fabricación de hélices de helicóptero. Gracias a esto es contratado por U.S. Air Force y recibe el apoyo del Massachusetts Institute of Technology (M.I.T.). Comienza el desarrollo de una fresadora de tres ejes para contorneado controlado de forma digital.

En 1953 el M.I.T. comienza a usar el término de Control numérico.

Tres años más tarde la U.S. Air Force realiza un pedido de 170 máquinas de control numérico a fabricantes americanos.

De forma paralela, surge interés por el desarrollo de máquinas para operaciones más sencillas que no requieren un movimiento continuo pero sí precisión en el posicionamiento, por lo que el control numérico punto a punto apareció más tarde que el control numérico en contorneado.

En junio de 1956 se propuso a la Air Force la creación de un lenguaje de programación para control numérico, dando lugar al lenguaje APT.

A finales de los años cincuenta se incorpora un sistema de cambio automático de herramienta en fresadoras y mandrinadoras, dando el primer paso para el desarrollo de centros de mecanizado multi función por control numérico.

No es hasta 1960 cuando en el M.I.T. se comienza a perfeccionar el Control Numérico llegando a poder autorregular las condiciones de trabajo de las máquinas.

En 1968 se realizan los primeros ensayos de Control Numérico Directo (DNC).

El laboratorio Lawrence Livermore realiza un estudio en 1980 sobre la tecnología de las máquinas herramienta. Llegaron a la conclusión de que el tiempo de corte productivo era del 6% en industrias con un bajo volumen de producción; del 8% para industrias con un volumen medio y un 22% para fabricación con un volumen alto. Las tareas de cambio de herramienta, reglajes y preparación suponían un 15% del tiempo. El 70% del tiempo las plantas no tenían turnos de trabajo o estaban cerradas (El Mecanizado Moderno, Sandvik Coromant, 1994).

Este estudio revela que el camino correcto está enfocado a acciones que reduzcan los tiempos improductivos en las máquinas-herramienta, lo que ayuda al desarrollo de la automatización por control numérico y todo lo que engloba.

2.2.- VENTAJAS Y DESVENTAJAS DE LA UTILIZACIÓN DE SISTEMAS CNC

Podemos enumerar las ventajas de la implantación del sistema CNC de la siguiente forma:

- Aumento de la calidad debido a la mejora de la precisión.
- Producción más uniforme.
- Un mismo operario puede ocuparse de varias máquinas a la vez.
- Posibilidad de mecanizar productos con geometría complicada.
- Disminuyen la fatiga del operario.
- Aumento de la seguridad.
- Permite realizar pedidos urgentes.

Las desventajas más importantes se centrarían en las siguientes:

- Elevado coste de máquinas y accesorios necesarios.
- Al coste de mantenimiento de la máquina hay que añadir el del sistema de control, requiriéndose personal altamente cualificado.
- Para la amortización de la elevada inversión se necesita un gran volumen de pedidos.
- Alcanzar un funcionamiento eficiente depende de realizar correctamente cálculos y programas.

2.3.- ESTRUCTURA Y COMPONENTES PRINCIPALES DE LAS MHCN

Aunque todas las máquinas-herramienta se basan en los mismos principios, poseen múltiples diferencias. Sin embargo, vamos a centrarnos en la fresadora debido a su relación con este trabajo.

2.3.1.- Ejes principales

Están relacionados con los diferentes desplazamientos de los elementos móviles de la máquina. En una fresadora son los siguientes:

- Eje Z: Tomando el suelo como plano, se mueve de forma perpendicular con sentido desde el plano hacia la herramienta.
- Eje Y: Referido al movimiento transversal de la herramienta.
- Eje X: Movimiento longitudinal de la herramienta.

Todos ellos se muestran en la siguiente imagen:

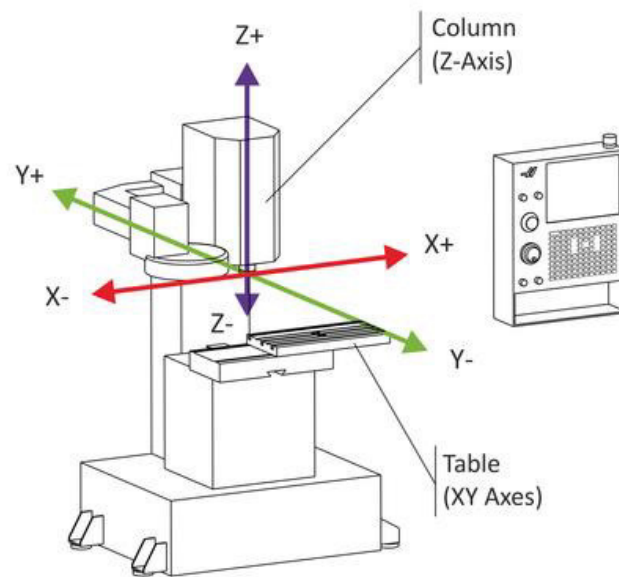


Figura 2.1. Ejes principales en una fresadora [1]

En control numérico se considerará que el movimiento lo realiza la herramienta, aunque realmente no ocurra así. Los signos de los ejes se usan para indicar dirección, no tienen un sentido matemático.

En las fresadoras, los ejes X e Y están asociados al movimiento de la mesa, mientras que el eje Z se relaciona con el movimiento del cabezal.

Algunas MHCN poseen cabezales orientables y/o mesas giratorias que rotan alrededor de su propio eje. Estos ejes se conocen como ejes complementarios de rotación, pudiendo regularse su posición y velocidad de manera autónoma.

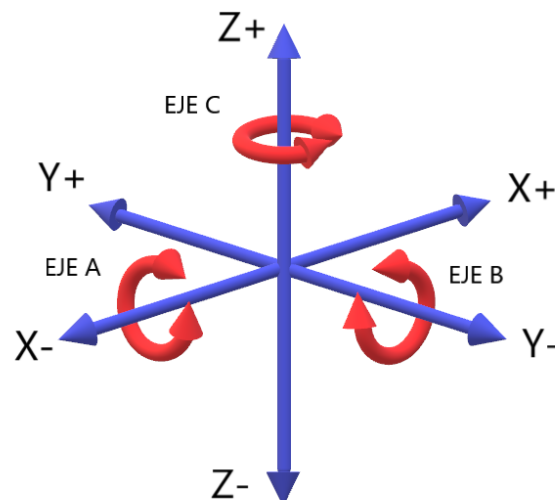


Figura 2.2. Ejes complementarios en una MHCN

2.3.2.- Sistemas de transmisión

Su misión principal es la realización de los movimientos en los distintos ejes ayudándose del giro generado por el grupo del motor reductor.

HUSILLOS DE BOLAS

Son actuadores mecánicos que permiten convertir el movimiento de rotación del grupo motor en el movimiento lineal de los ejes con una mínima pérdida por fricción. Se basa en un eje roscado de forma helicoidal que contiene rodamientos de bolas, actuando como un tornillo de precisión.



Figura 2.3. Husillo de bolas [2]

MOTORES DE TRANSMISIÓN

De manera habitual, se usan motores eléctricos de corriente continua dirigidos por señales electrónicas de entrada y salida, pudiendo acelerarse y girar de forma controlada en los dos sentidos.

Los tipos de motores más utilizados se muestran a continuación:

- Motores paso a paso: Se suelen usar en máquinas con poca capacidad. Generan un par de potencia bajo pero son muy precisos.



Figura 2.4. Motor paso a paso [3]

- Servomotores o motores encoder: Son los más utilizados. Pueden trabajar aportando un par elevado a bajas revoluciones. Su funcionamiento es similar al de los motores de corriente alterna convencionales pero añadiendo un encoder que permite controlar el número de revoluciones exactas del motor.



Figura 2.5. Servomotor [4]

- Motores lineales: Motores de nueva generación que pueden generar aceleraciones elevadas, reduciendo el tiempo de mecanizado en vacío. Su estátor y rotor están distribuidos de manera que no generan un par, sino una fuerza lineal en el sentido de su longitud.



Figura 2.6. Motor lineal de Siemens [5]

2.3.3.- Control de desplazamientos

Los anteriores sistemas no garantizan que las posiciones de los carros sean exactas debido a juegos entre elementos, inercias, falta de engrase, etc. Necesitamos a mayores un conjunto de elementos que indican la posición de los ejes de la máquina con gran exactitud. Los podemos dividir en varias partes:

CONTROL DE POSICIONES

El control de las posiciones se realiza mediante dos sistemas:

- Sistema Directo: Consta de un resolver óptico que controla la posición por conteo directo en una regla de medida situada en cada guía de la máquina. Las medidas efectuadas son traducidas a señales eléctricas y procesadas por el CN.

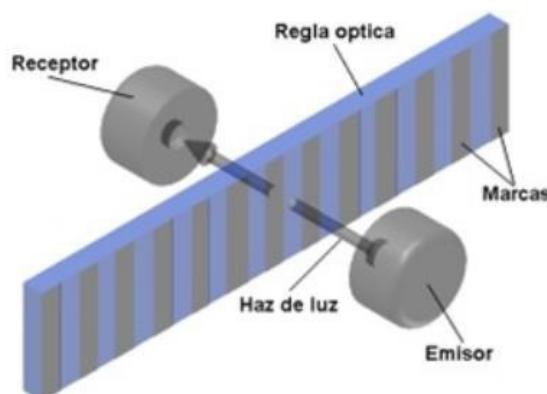


Figura 2.7. Medición de posición mediante sistema directo [6]

- Sistema Indirecto: En el sinfín hay colocado un disco graduado que gira de manera solidaria. Un resolver registra su movimiento y el control numérico calcula su posición a través del número de pulsos generado.

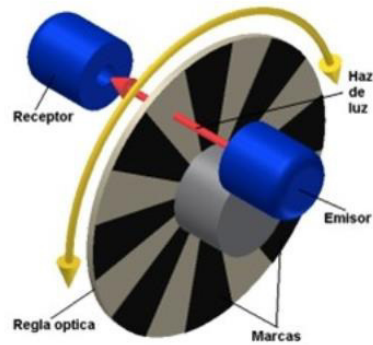


Figura 2.8. Medición de posición mediante sistema indirecto [7]

HUSILLO PRINCIPAL

En las fresadoras se encarga de la rotación de la herramienta. Puede ser accionado por un motor de corriente alterna o un motor de corriente continua.

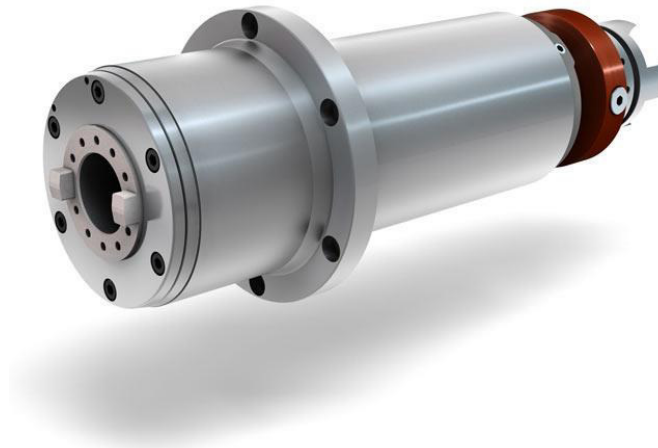


Figura 2.9. Husillo para máquinas de Haas [8]

- Motor de corriente alterna: La velocidad de giro es regulada mediante un reductor de engranajes. El rango de velocidades de giro depende de su complejidad.

- Motor de corriente continua: Un tacómetro procesa las velocidades de giro, llegando a poder seleccionar prácticamente cualquier velocidad (dentro de la capacidad y rango propios del motor).

2.3.4.- Sistema de control numérico

La estructura de un controlador numérico es similar a los sistemas informáticos clásicos. Podemos dividirlo en los siguientes componentes:

UNIDAD CENTRAL DE PROCESOS (UCP)

Se puede considerar el corazón del sistema de control numérico, teniendo como elemento principal un microprocesador. Sus tareas se pueden resumir en:

- Cálculo de posiciones de los ejes y desplazamientos.
- Control de los diferentes modos de funcionamiento de la máquina.
- Dirección de las señales entre los diferentes periféricos.
- Control de tráfico con el PLC.

PERIFÉRICOS DE ENTRADA

Sirven para el suministro de información a la UCP. Los más importantes se enumeran a continuación:

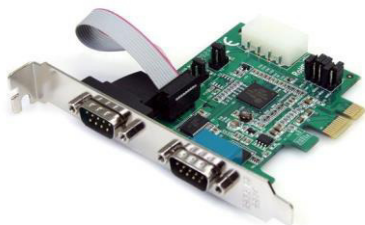
- Panel de mandos y teclado

Diseñados por áreas para facilitar la programación y el control manual de la máquina. Pueden diferir dentro de los mismos fabricantes.



Figura 2.10. Panel de mandos de Haas [9]

- Conexión con ordenador



Debido a la limitada capacidad de almacenamiento de los controles, puede ser necesaria la comunicación con un ordenador con capacidad superior. Este sistema de conexión se denomina DNC.

La norma de comunicación más habitual es en serie RS232. Ambos sistemas deben de contar con ella para que sea posible.

Figura 2.11. Tarjeta RS232 [10]

- Posicionadores

Indican la posición real de los ejes de forma constante y su información se envía a la UCP para ser procesada y comparada con la posición teórica.

PERIFÉRICOS DE SALIDA

Utilizados para recibir la información suministrada por la UCP.

- Monitor

Entre sus funciones más importantes se encuentran:

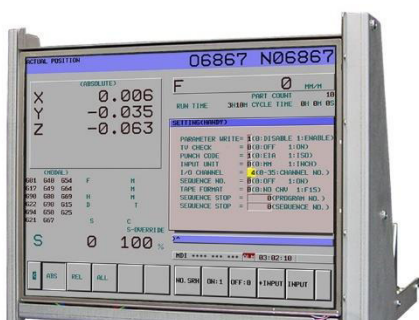


Figura 2.12. Monitor de la marca Fanuc [11]

- ✓ Ver la información aportada vía teclado.
- ✓ Controlar comunicaciones entre otros sistemas informáticos.
- ✓ Informar de los sistemas activados en la máquina.
- ✓ Realización de simulaciones de mecanizado por pantalla.
- ✓ Mostrar errores detectados en el sistema.

- Comunicaciones RS232

Ya explicadas en periféricos de entrada.

- Conexión con Intranet

Brinda un control total de la máquina desde cualquier otro punto que pertenezca a la red y tenga acceso autorizado

- Control de movimiento de ejes y elementos móviles de la máquinas (PLC)

Una vez que se procesan los datos la información se transmite a los diferentes órganos de la máquina a través de un PLC o autómatas programables. Funciona con un lenguaje de programación propio.



Figura 2.13. PLC de la marca Fanuc [12]

2.3.5.- Sistemas de sujeción

Los sistemas de sujeción tratados en este apartado van a ser los utilizados en fresadoras o centros de mecanizado.

El sistema de amarre utilizado debe facilitar la carga y descarga de las piezas y poder garantizar una repetibilidad en el posicionamiento de las mismas. Podemos encontrar los siguientes sistemas:

- Mordazas: Pueden ser básicas, autocentrantes, mecánicas e hidráulicas.



Figura 2.14. Mordaza autocentrante de la marca Schunk [13]

- Sistema de Bridas: Se utiliza sólo para piezas que no son posibles de amarrar en mordaza, ya que su montaje es mucho más complejo. Constan de bridas, calzos y espárragos para tensar la sujeción.



Figura 2.15. Sistema de sujeción con bridas [14]

- Placas angulares de apoyo: Permite el apoyo de las piezas con un cierto ángulo.



Figura 2.16. Placa angular [15]

- Mesas magnéticas: Muy útiles para materiales magnéticos. Son rápidas y además reducen el número de elementos que pueden originar colisión.



Figura 2.17. Mesa magnética orientable [16]

2.3.6.- Cambiadores automáticos

El mecanizado moderno exige cambios rápidos en las herramientas a utilizar, promoviendo el desarrollo de sistemas de anclaje rápidos y de sistemas automáticos de cambio.

Podemos dividir los sistemas automáticos de cambio en tres tipos:

- Carruseles: Tienen forma de disco y giran alrededor de su eje. Su capacidad de almacenaje está entre 6 y 20 herramientas y posee una garra adicional que realiza los intercambios.

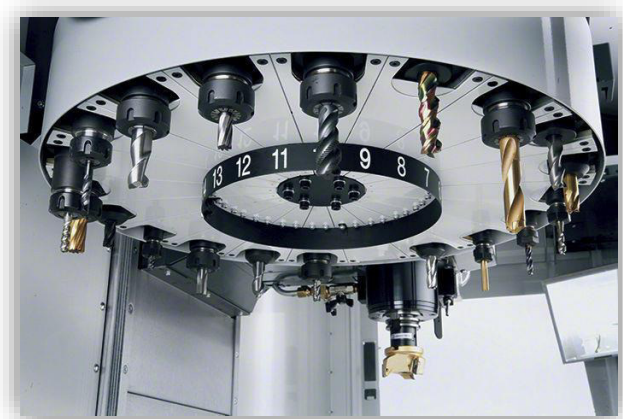


Figura 2.18. Cambiador de herramientas tipo carrusel [17]

- Tambores giratorios: Habitualmente están colocados en el propio cabezal y no es necesario intercambiar las herramientas con un brazo de cambio.

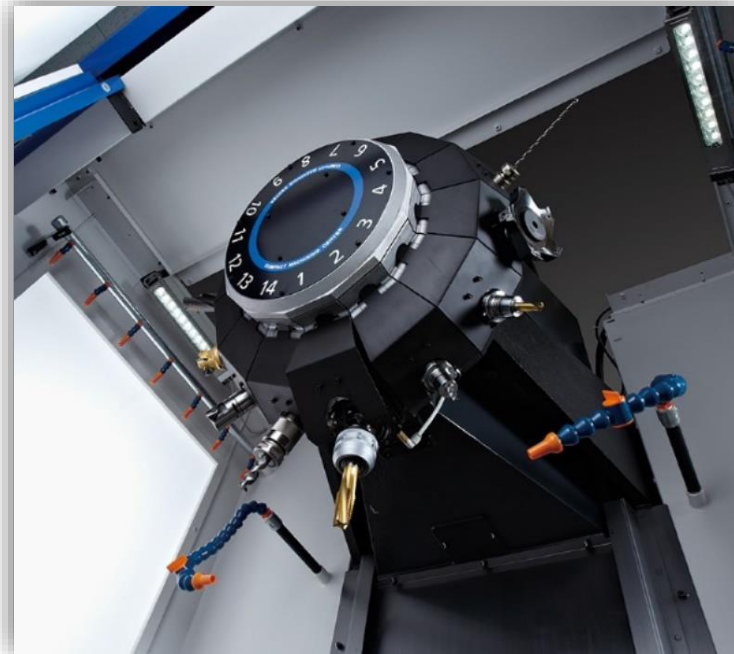


Figura 2.19. Cambiador de herramienta tipo tambor giratorio [18]

- Sistemas de cadena: Se recurre a este sistema cuando la cantidad de herramientas es muy elevada. Funciona con un brazo para efectuar el cambio, de forma similar al carrusel, pero es más lento.

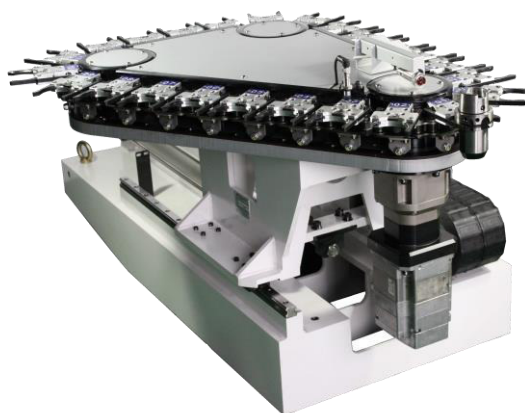


Figura 2.20. Cambiador de herramientas tipo cadena [19]

2.3.7.- Sistemas de herramientas en fresadora

Debido al elevado coste de las herramientas, es importante trabajar con herramientas modulares intercambiables. Los fabricantes fabrican sus herramientas teniendo en cuenta los estándares normalizados o diseñando sus propios sistemas.

Los principales componentes de este sistema modular se muestran en la siguiente imagen:



Figura 2.21. Sistema de herramientas en una fresadora

- Adaptador
Conecta la herramienta con el cabezal de la fresadora. En el mercado podemos encontrar varios sistemas en función de la forma de amarre.



Figura 2.22. Adaptador tipo MAS BT [20]

- Cuerpo portaherramientas

Es la parte más importante del conjunto, ya que es el que define el tipo de operación a realizar. En ocasiones se denomina herramienta a todo el conjunto de cuerpo portaherramienta y herramienta. Los tipos más importantes son:

- Plato o fresa de planear
- Plato o fresa de escuadrar
- Fresa de disco
- Fresa de copiado
- Fresa helicoidal de ranurado y contorneado
- Fresa de achaflanar y avellanar
- Fresa de ranurar en T
- Broca de plaquita intercambiable



Figura 2.23. Cuerpos portaherramientas del fabricante Sandvik

- Herramienta

Son los elementos encargados de cortar el material. En función de su geometría y material los resultados obtenidos y la elección de los parámetros de corte variará de manera importante. Pueden ser de dos tipos:

- Herramientas enterizas: Usadas desde siempre en máquinas convencionales. Pueden ser fresas enterizas, brocas, machos de roscar, etc.



Figura 2.24. Machos de roscado [21]

- Plaquitas de corte: Se acoplan en los asientos de los portaherramientas por medio de un tornillo. Su elección puede ser complicada debido a la amplia variedad existente. Su correcta elección y uso puede reducir el tiempo de mecanizado hasta en un 60%.



Figura 2.25. Plaquitas de corte del fabricante Sandvik [22]

3.-CAPÍTULO 3. MODELADO CON ANSYS SPACECLAIM

3.1.- INTRODUCCIÓN A SPACECLAIM

SpaceClaim constituye uno de los softwares para diseño en 3D más rápidos y con la interfaz de usuario más intuitiva del mercado actual. Creada como startup en 2005 por socios como Mike Payne, uno de los fundadores de *Solidworks*, no tarda en ser adquirida en 2014 por ANSYS.

Parte de su sencillez reside en reducir comandos que en otros softwares CAM coexisten de forma aislada y separada, condensándolos en comandos multitarea. Los cambios en los modelos pueden ser visualizados en tiempo real, lo que permite al usuario identificar de forma instantánea la operación que está realizando.

En el siguiente apartado se va a hacer un análisis general del funcionamiento de *SpaceClaim* y una introducción a los comandos principales.

3.2.- MODO DE TRABAJO Y COMANDOS PRINCIPALES EN SPACECLAIM

SpaceClaim se compone de varios módulos, pudiendo mantener en la mayor parte de ellos la ventana inicial de trabajo:

-Design: Aúna todas las herramientas principales para diseños con operaciones básicas. En este módulo está incluido el de ensamblaje.

-Insert: Permite insertar elementos externos y normalizados sin necesidad de modelarlos. También brinda la posibilidad de usar ecuaciones para la creación de geometría.

-Facets: Orientado a la preparación de archivos *.stl* para ser exportados a una impresora 3D.

-Detail: Diseño y elaboración de planos importados directamente de los componentes que se están modelando.

-Display: Herramientas para cambiar la apariencia y visualización de los modelos.

-Measure: Para realizar mediciones, detección de interferencias y medir la calidad de los diseños.

-Sheet Metal: Módulo específico para el diseño de chapas metálicas. Muy útil para planificación de plegados.

-Repair: Repara modelos en diferentes formatos de CAD para su posterior análisis o uso en CAM.

-Prepare: Preparación de modelos para su análisis.

-KeyShot: Exporta de forma directa los modelos de *SpaceClaim* al software *KeyShot*, permitiendo renderizar los diseños y realizar animaciones.

-Momentum: Conecta los ensamblajes de *SpaceClaim* con el software *Algoryx Momentum*, posibilitando realizar simulaciones de movimiento entre componentes.

A pesar de la variedad de elementos de trabajo, vamos a centrarnos en el módulo *Design*, ya que es el que se ha usado en mayor medida para el modelado del centro de mecanizado.

La ventana principal consta de las siguientes partes:

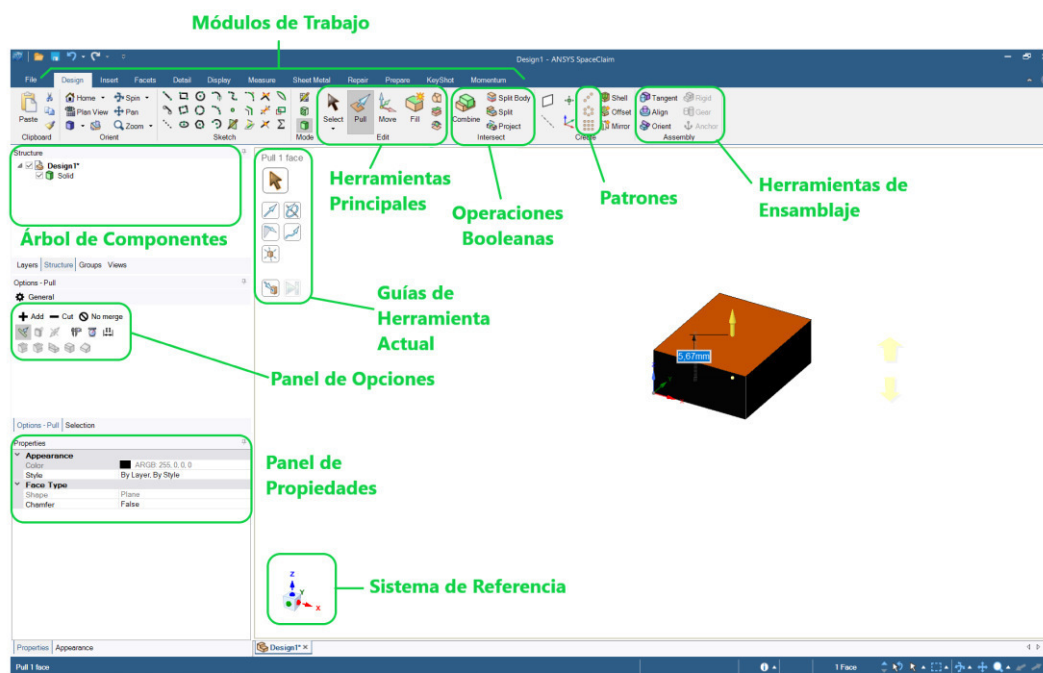


Figura 3.1. Módulo *Design* en *SpaceClaim*

Los diferentes elementos y componentes se organizan en un árbol con libertad para ser estructurado, de manera similar a otros softwares de diseño en 3D. Una gran ventaja es que permite la realización de *sketches* sin ocultar el resto de elementos, lo que facilita tomar referencias de manera sencilla.

Por otro lado, también es posible parametrizar modelos, pero por la forma de construirlos puede no tener la misma eficacia y potencia que en otros programas CAM.

A continuación se va a hacer un análisis de las herramientas principales de este módulo:

3.2.1.- Paleta Clipboard

Paleta con opciones de corte, copiado, pegado y copiado de formatos.

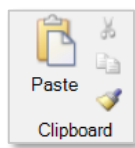


Figura 3.2. Paleta *Clipboard*

3.2.2.- Paleta Orient

Comandos generales de orientación, ampliación, reducción o rotación de la vista principal en la ventana de trabajo.

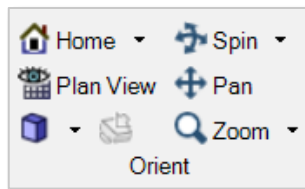


Figura 3.3. Paleta *Orient*

3.2.3.- Paleta Sketch

Herramientas para trazado de líneas, círculos, rectángulos, arcos o *splines*.

También permite hacer recortes de líneas, *offsets*, escalar o la generación de curvas mediante ecuaciones.

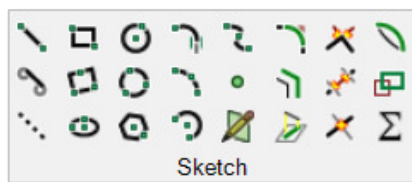


Figura 3.4. Paleta *Sketch*

3.2.4.- Paleta Mode

Posibilita intercambiar entre trabajar con sólido, en una sección o hacer un *sketch* en un plano.



Figura 3.5. Paleta *Mode*

3.2.5.- Paleta Edit

Probablemente la paleta más importante y usada para el modelado de elementos. Debido a todas las posibilidades que brinda, se va a profundizar en sus comandos principales.

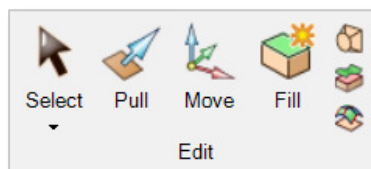


Figura 3.6. Paleta *Edit*

SELECT



Selecciona líneas, caras o sólidos. Al pulsar sobre una línea, es posible seleccionar una cadena clicando dos veces seguidas el botón izquierdo del ratón. Si, por el contrario, se quiere seleccionar el sólido, se debería pulsar 3 veces. También tiene un submenú de opciones para modificar el modo de selección:

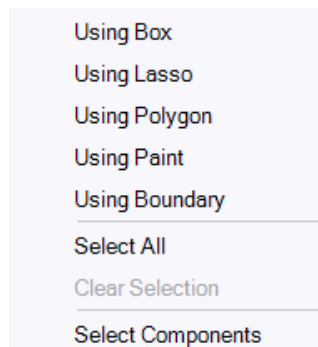


Figura 3.7. Submenú del comando *Select*



Junto con *Move*, es uno de los comandos más versátiles de *SpaceClaim*.

Al hacer una selección de una arista, sólido o una superficie, nos aparecerán en la parte superior izquierda de la ventana las siguientes opciones:

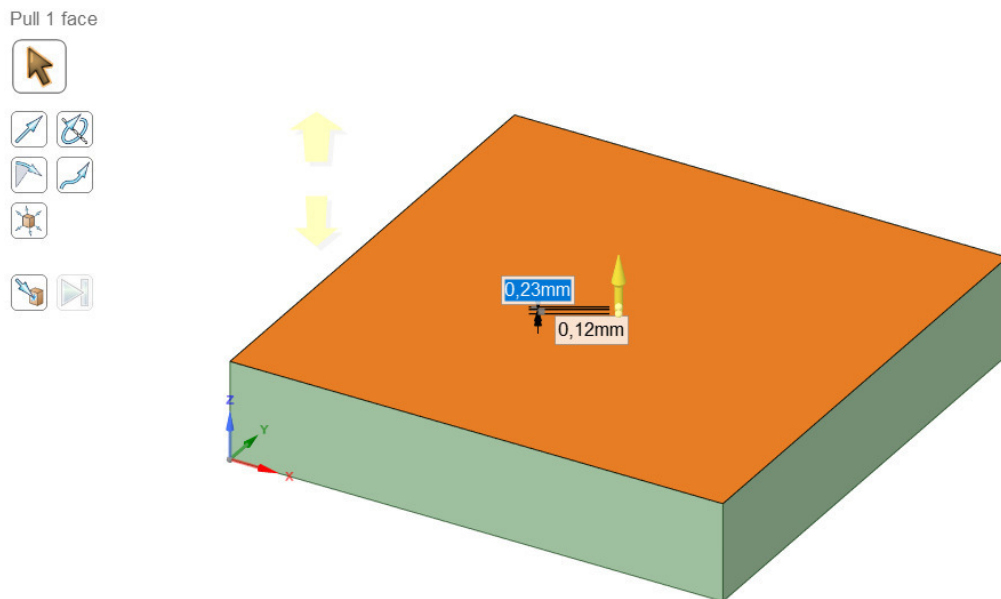


Figura 3.8. Opciones comando *Pull*

Estos botones nos permitirán tanto elegir la dirección de extrusión de la superficie o sólido como cambiar la escala e incluso realizar una rotación alrededor de un eje.

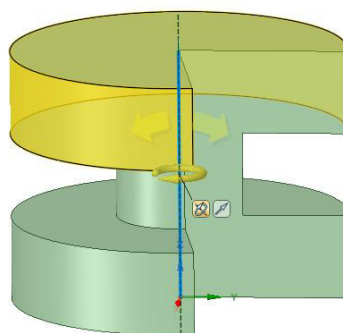


Figura 3.9. Rotación de sección alrededor de un eje

Tabla 1. Opciones de la herramienta *Pull*

OPCIONES DE LA HERRAMIENTA PULL		
	<i>Select</i>	Selecciona aristas, caras, superficies, sólidos o componentes
	<i>Pull Direction</i>	Selecciona la dirección en la que realizar la extrusión
	<i>Revolve</i>	Gira el elemento seleccionado entorno a un eje dado
	<i>Draft</i>	Pivota caras contiguas del mismo elemento alrededor de otro elemento
	<i>Sweep</i>	Realiza un barrido del elemento seleccionado a lo largo de una trayectoria
	<i>Scale Body</i>	Permite escalar el cuerpo tanto en ampliación como en reducción
	<i>Up To</i>	Usado para indicar una posición hasta la que se quiera extruir un elemento
	<i>Full Pull</i>	Extruye de manera automática hasta las caras más cercanas que intersequen con el cuerpo

A su vez, en el entorno cercano al puntero del ratón nos aparecerá este submenú:



Figura 3.10. Submenú del comando *Pull*

A través de esas opciones podremos indicar si queremos extruir añadiendo o restando material o si, por el contrario, no queremos que haya unión entre sólidos. También permite extruir en dos sentidos por igual o indicar que la extrusión se realice hasta un punto, arista o superficie identificable en el conjunto modelado.

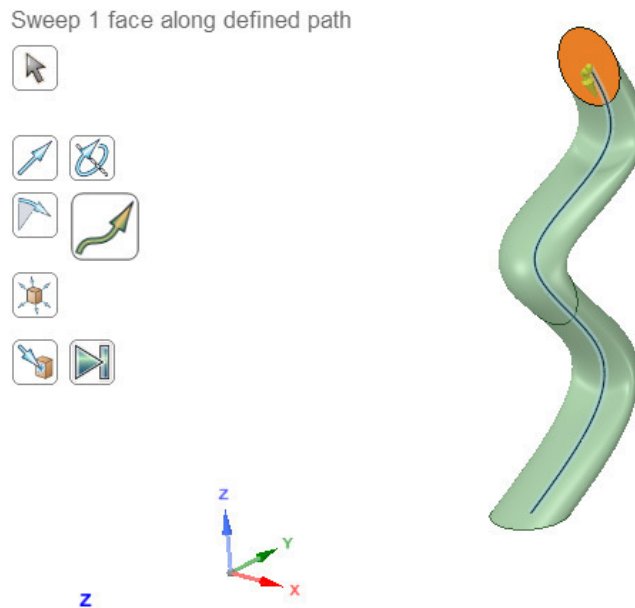


Figura 3.11. Extrusión de un círculo a lo largo de un *spline*

Al seleccionar una arista, se activarán otras opciones para poder hacer redondeos, chaflanes o extruir como superficies:

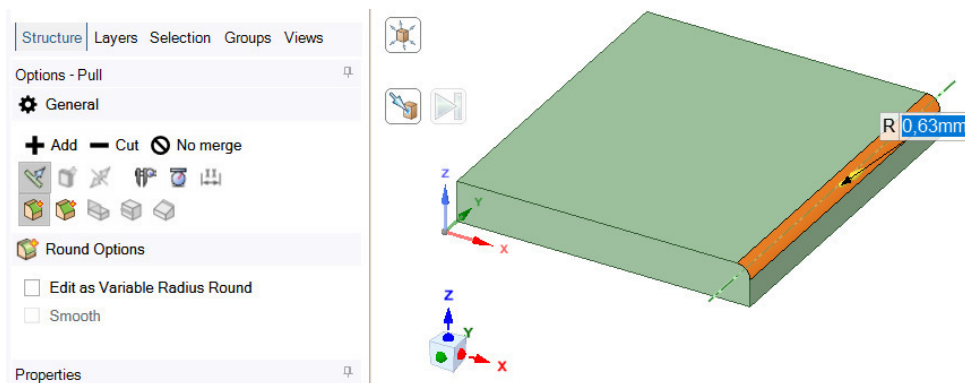


Figura 3.12. Redondeo de una arista con el comando *Pull*

MOVE

Como se ha indicado en el punto anterior, el comando *move* también se caracteriza por su amplio abanico de posibilidades. La inclusión de un sistema de coordenadas alternativo al general que permite giros o traslaciones en cualquier dirección y sentido y su facilidad de uso han sido un gran acierto.

Basta con desplazar el origen del sistema de coordenadas a la superficie, arista o sólido deseado y podremos mover, extruir, rotar, e incluso deformar en una dirección determinada.

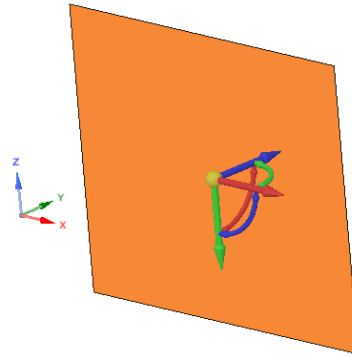


Figura 3.13. Sistema de ejes en comando *Move*

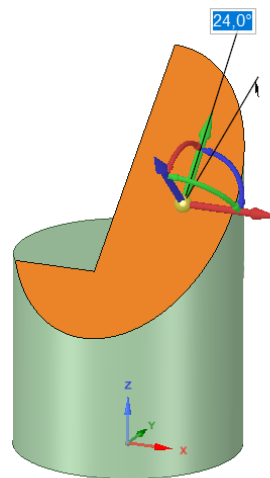











Figura 3.14. Giro de una cara alrededor del eje x

Al igual que el comando anterior, tiene asociado un menú de opciones que permiten diferentes resultados:

Tabla 2. Opciones de la herramienta *Move*

OPCIONES DE LA HERRAMIENTA MOVE		
	<i>Select</i>	Selecciona aristas, caras, superficies, sólidos o componentes
	<i>Select Component</i>	Selecciona el sólido al que pertenece el objeto seleccionado
	<i>Move Direction</i>	Traslada el objeto seleccionado a lo largo de una dirección indicada de forma previa
	<i>Anchor</i>	Mantiene el sistema de referencia fijo en el objeto seleccionado
	<i>Move Along Trajectory</i>	Traslada el objeto seleccionado a lo largo de una trayectoria indicada previamente
	<i>Move Radially About Axis</i>	Tras seleccionar un eje, permite mover el objeto alrededor en dirección radial
	<i>Fulcrum</i>	Mueve objetos alrededor de otros
	<i>Up To</i>	Usado para indicar una posición a la que se quiera desplazar un elemento
	<i>Orient to Object</i>	Orienta un elemento girando en un eje determinado hasta otro objeto seleccionado

FILL 

Tras seleccionar una región, rellena con sólido o superficie hasta alcanzar la superficie o sólido más próximos. También es capaz de eliminar material, en función de la situación en la que nos encontremos.

A través de la opción *Select Guide Curves*, podremos indicar unas curvas-guía para que realice la operación ajustándose, en la medida de lo posible, a esa trayectoria. En la siguiente imagen, podemos ver un ejemplo de su uso:

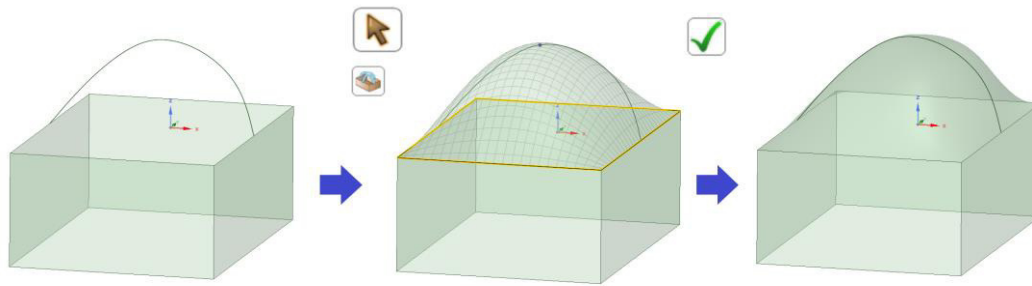


Figura 3.15. Uso del comando *Fill* con curva-guía

3.2.6.- Paleta *Intersect*

Paleta general de operaciones booleanas. Consta de 4 comandos que se explicarán en las siguientes líneas:

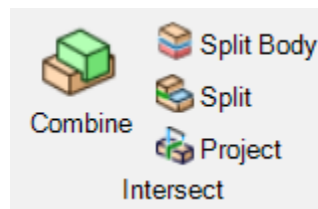


Figura 3.16. Paleta *Intersect*

COMBINE

Realiza combinaciones de elementos. Es posible añadir o fusionar objetos, pero también permite hallar el sólido intersección de dos cuerpos y eliminar el material sobrante en una misma operación.

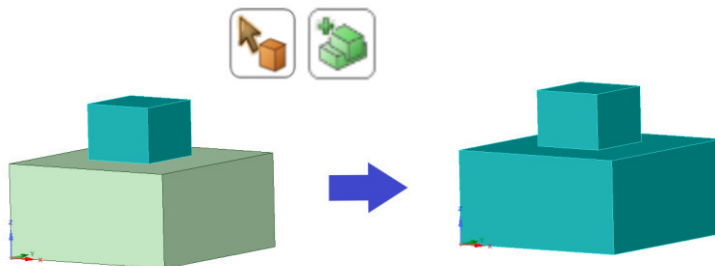


Figura 3.17. Fusión de sólidos con *Combine*

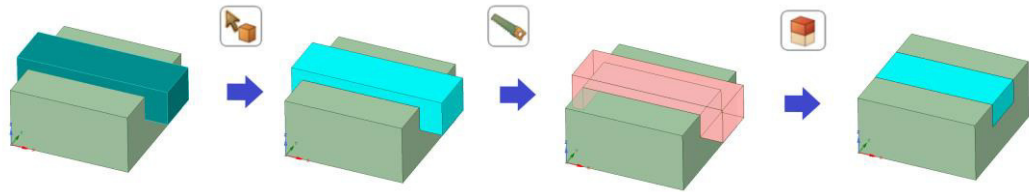


Figura 3.18. Uso de *Combine* con eliminación de material

SPLIT BODY 

Con el comando *Split Body* podremos dividir un elemento en dos partes, ya sea mediante el uso de una arista, cara o plano.

Al igual que el comando anterior, es posible eliminar el material no deseado en la misma operación.

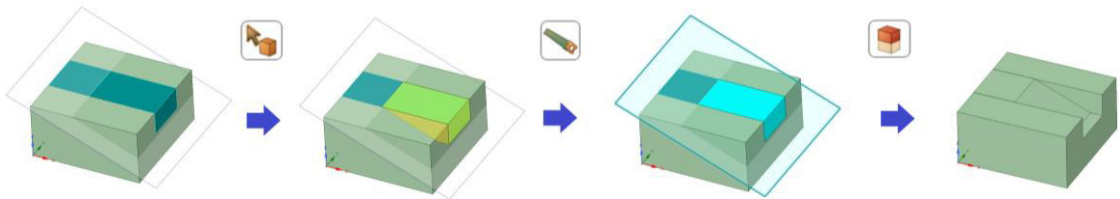


Figura 3.19. Uso del comando *Split Body* con la intersección de un plano

SPLIT 

Separa un sólido en partes por sus caras o aristas, con posibilidad de eliminar regiones tras hacer las divisiones.

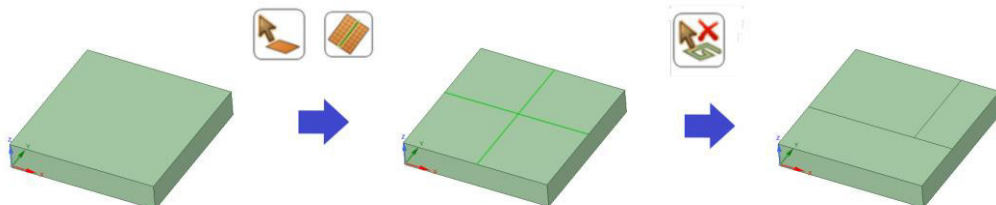
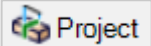


Figura 3.20. Uso del comando *Split*

PROJECT 

Útil para proyectar líneas en un sólido. También se puede usar para proyectar texto como líneas y poder extruir letras.

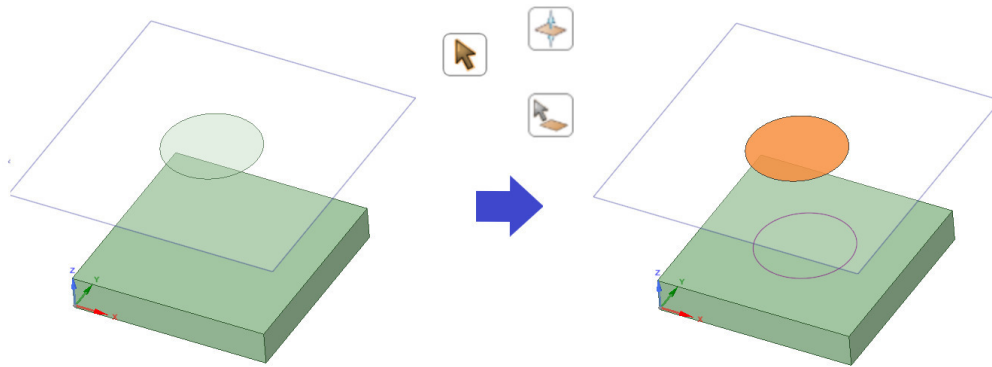


Figura 3.21. Proyección de una circunferencia en una superficie con *Project*

3.2.7.- Paleta Create

Engloba varios comandos muy distintos entre sí, pero muy útiles en la construcción de cualquier diseño.

Podemos dividirla en tres partes bien diferenciadas:

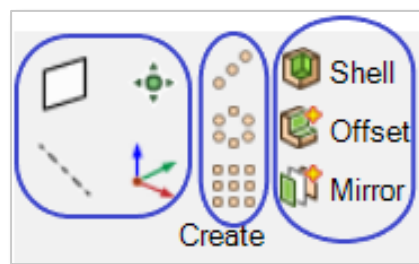












Figura 3.22. Paleta *Create*

En la siguiente tabla se hará una pequeña explicación del uso general de cada comando, profundizando después en las herramientas más importantes:

Tabla 3. Comandos de la paleta *Create*

COMANDOS DE LA PALETA CREATE		
	<i>Plane</i>	Crea un plano a partir de los datos mínimos para su definición
	<i>Axis</i>	Añade un eje al seleccionar una curva o en caras no paralelas
	<i>Point</i>	Permite insertar un punto en la posición deseada
	<i>Origin</i>	Inserta un sistema de coordenadas para poder tomar referencias al diseñar o medir
	<i>Linear</i>	Patrón lineal de líneas, superficies o sólidos
	<i>Circular</i>	Patrón circular de líneas, superficies o sólidos
	<i>Fill</i>	Patrón rectangular de líneas, superficies o sólidos
	<i>Shell</i>	Elimina una de las caras de un sólido creando una cavidad con un espesor determinado
	<i>Offset</i>	Establece una relación de offset entre dos caras
	<i>Mirror</i>	Crea una simetría de un elemento respecto de un plano seleccionado previamente

SHELL  Shell

Útil para crear vaciados con un determinado espesor. Basta con seleccionar la cara a eliminar e introducir la medida del espesor.

Como se puede ver en la siguiente imagen, crea una referencia y permite hacer modificaciones de espesor final y de la cara seleccionada a posteriori:

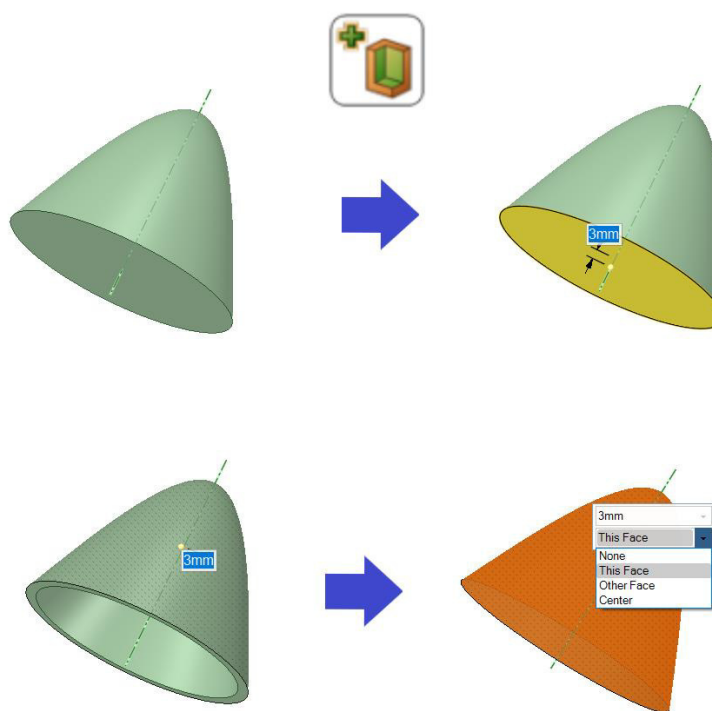


Figura 3.23. Uso del comando *Shell*

OFFSET  Offset

Posibilita la creación de relaciones entre caras, pudiendo modificar la distancia y con ello, dimensiones de cara al futuro. La cara en la que se ha establecido una relación de offset queda marcada por puntos para identificarla fácilmente.

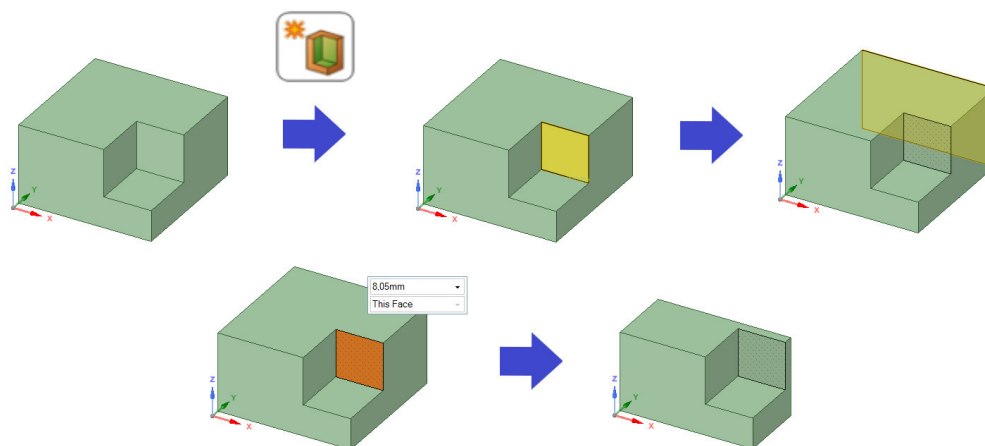



Figura 3.24. Uso del comando *Offset*

MIRROR  Mirror

De gran utilidad para elementos simétricos. Las modificaciones que se hagan en el elemento original se transmitirán directamente al simétrico al crearse una relación de forma automática. Esta relación puede ser desactivada.

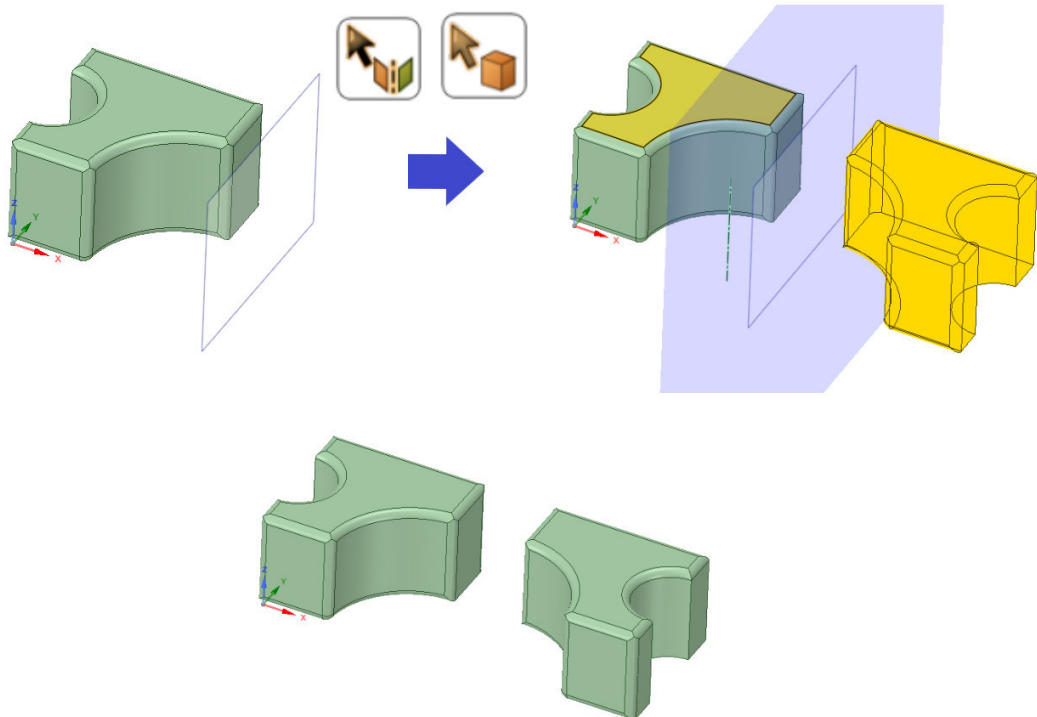


Figura 3.25. Uso del comando *Mirror*

3.2.8.- Paleta Assembly

Comandos usados para crear ensamblajes. En combinación con el software *Algoryx Momentum*, puede llegar a ser de gran utilidad para simulaciones cinemáticas.

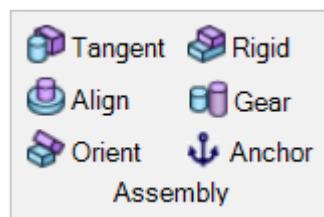








Figura 3.26. Paleta *Assembly*

Tabla 4. Comandos de la Paleta *Assembly*

COMANDOS DE LA PALETA ASSEMBLY		
	<i>Tangent</i>	Crea una restricción de tangencia entre dos cuerpos por una línea, un plano o un punto
	<i>Align</i>	Puede alinear dos puntos, líneas, planos o una combinación de ellos
	<i>Orient</i>	Una vez establecida, rota los sólidos para que parte de sus componentes estén en una misma dirección
	<i>Rigid</i>	Bloquea la orientación y posición de dos componentes entre sí
	<i>Gear</i>	Permite el giro de un componente como respuesta a rotar otro
	<i>Anchor</i>	Bloquea la posición de un solo elemento en el espacio

4.-CAPÍTULO 4. CARACTERÍSTICAS PRINCIPALES Y MODELADO DEL CENTRO DE MECANIZADO HAAS VF-4

La máquina elegida para la simulación es el centro de mecanizado vertical VF-4, del fabricante estadounidense Haas, uno de los líderes en fabricación y diseño de máquinas herramienta operadas por control numérico.

En los siguientes puntos se desarrollará una breve introducción a las características de la máquina y el modelado de sus diferentes partes.

4.1.- HISTORIA DE HAAS AUTOMATION

Los primeros pasos de la compañía datan de 1983, cuando *Gene Haas funda Haas Automation Inc.* y logran un gran éxito creando el primer divisor de pinza automático y programable del mercado. Esto permitió a la empresa seguir ampliando su gama de productos, fabricando accesorios para máquinas herramienta y mesas divisoras e indexadores programables de forma completa.



Figura 4.1. Haas 5C Collet Indexer (divisor de pinza) [23]

A partir de 1987 comenzó el desarrollo de centros de mecanizado verticales, presentando un año después los primeros prototipos del VF-1 en la feria internacional *Machine Tool Show* de Chicago (Illinois) y logrando un precio muy competitivo en el mercado.

En la actualidad, *Haas* posee unas instalaciones de 92000 m² en Oxnard (California), en las que se encargan de fabricar todos los componentes principales de sus máquinas. Cabe destacar que más de dos tercios de las máquinas herramienta que utilizan para la fabricación son de su propia marca.

Principalmente, su gama de productos se centra en centros de mecanizado horizontales, verticales, tornos CNC y mesas divisoras, aunque también fabrican máquinas de 5 ejes y equipos más especializados.



Figura 4.2. Haas UMC-750SS de 5 ejes [24]

4.2.- HAAS VF-4. CARACTERÍSTICAS Y ESPECIFICACIONES

Dentro de la gama de centros de mecanizado vertical CNC de Haas, el modelo VF-4 se encuentra entre las máquinas de tamaño medio. Tiene unas dimensiones máximas de 4089 x 3022 x 2270 mm y una velocidad de giro del husillo de hasta 8100 rpm. Posee un cambiador de herramientas automático de tipo carrusel de 20 estaciones, factor imprescindible hoy en día para alcanzar unos niveles mínimos de productividad. En cuanto a la refrigeración, consta de un sistema de refrigeración por inmersión con una capacidad de 208 litros.

Además cuenta con una pantalla LCD de 15" para facilitar la interacción con la máquina y un puerto USB para la importación de programas de control numérico. En la siguiente tabla podemos observar más especificaciones:

Tabla 5. Especificaciones del CMV Haas VF-4

RECORRIDOS		AVANCES	
Eje x	1270 mm	Rápidos en X	25.4 m/min
Eje Y	508 mm	Rápidos en Y	25.4 m/min
Eje Z	635 mm	Rápidos en Z	25.4 m/min
MESA		Corte máximo	16.5 m/min
Longitud	1321mm	MOTORES DE LOS EJES	
Anchura	457 mm	Empuje máx. X	11343 N
Anchura de ranuras en T	16 mm	Empuje máx. Y	11343 N
Distancia entre ejes de ranura en T	80 mm	Empuje máx. Z	18683 N
Número de ranuras en T estándar	5	CAMBIADOR DE HERRAMIENTAS	
Peso máximo en mesa	1588 kg	Tipo	Carrusel
HUSILLO		Capacidad	20
Potencia máxima	22.4 kW	Diámetro máximo de herramienta	89 mm
Velocidad máxima	8100 rpm	Peso máx. de herramienta	5.4 kg
Par máximo	122 Nm (2000rpm)	CARACTERÍSTICAS GENERALES	
Cono	CT o BT 40	Aire necesario	113 L/min, 6.9 bar
		Capacidad de refrigeración	208 L



Figura 4.3. CMV Haas VF-4 [25]

4.3.- MODELADO DEL CMV HAAS VF-4 CON SPACECLAIM

Para la creación del modelo de la máquina, necesario de cara a importar la geometría en 3D para las simulaciones en *Mastercam*, se ha usado el software de diseño *SpaceClaim*. Gran parte de las dimensiones de los distintos componentes del centro de mecanizado se han obtenido a partir de los planos facilitados por Haas. El resto de medidas no incluidas en los planos se han obtenido realizando mediciones de forma directa en el taller de mecanizado de AEDI Ingenieros, situado en el Parque Tecnológico de Boecillo (Valladolid).

Se han modelado los componentes más críticos, que son los elementos susceptibles de colisión: la mesa, mordazas, el husillo y sus componentes y el cabezal. Otras partes de la máquina como el extractor de viruta o los componentes posteriores no se han tenido en cuenta ya que su inclusión no suponía más que un aporte meramente estético.

En los siguientes apartados se explicará brevemente la función de los componentes modelados más importantes, adjuntando imágenes del modelo en *SpaceClaim* y/o su renderizado con *KeyShot*.

4.3.1.- Mesa de trabajo

Es la base para las mordazas o los elementos de sujeción. Posee 5 ranuras en T estándar para permitir el uso de tuercas en T. Puede desplazarse tanto en el eje X como en el eje Y con unos recorridos de 1270 y 508 mm respectivamente.

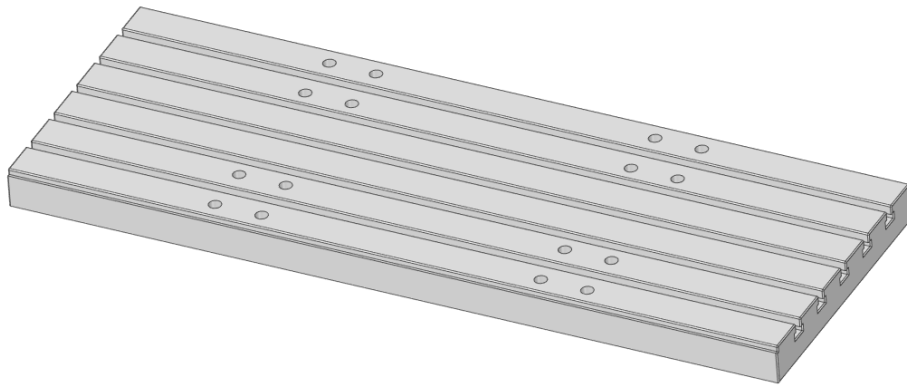


Figura 4.4. Modelado de mesa en *SpaceClaim*



Figura 4.5. Mesa renderizada en *KeyShot*

La mesa se sitúa sobre dos bases en las que se encuentran los husillos de bolas y los servomotores para conseguir el movimiento de los ejes. Todo ello queda oculto tras las cubiertas de las guías, que se desplazan unas sobre otras.

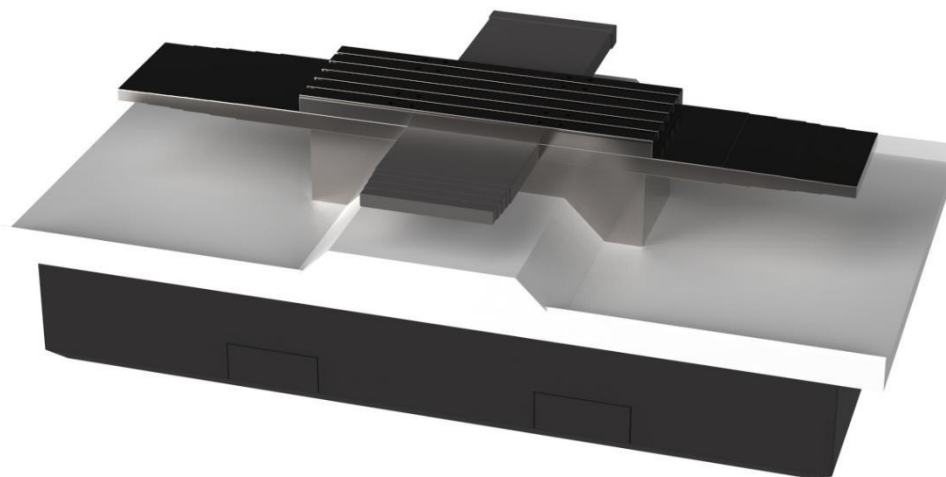


Figura 4.6. Base y bancada de la mesa de trabajo renderizada con KeyShot

4.3.2.- Cambiador de herramientas automático

Uno de los componentes más importantes de cara a tener un buen nivel de productividad. De tipo carrusel y con 20 estaciones, permite almacenar herramientas y que la máquina acceda a ellas por medio de una llamada en los programas con el comando T, indicando la posición en el cambiador. Esto es una gran ventaja frente a máquinas en las que el cambio de herramienta se efectúa de manera manual ya que en máquinas que no lo poseen no es posible hacer todas las operaciones de una misma posición de la pieza sin intervención humana.

A su vez, la máquina almacena en el ordenador la medida del diámetro y de la longitud y permite correcciones para compensar el gasto de las herramientas, ganando en precisión y exactitud.

El modo de funcionamiento es el siguiente:

1. El cabezal junto con el husillo, suben hasta la posición de cambio de herramienta.

2. El carrusel gira hasta que una posición vacía indicada previamente se aproxima y alinea con el husillo.
3. La puerta del carrusel se abre y parte del cambiador se sitúa justo debajo del husillo, tomando después la herramienta actual.
4. Con la herramienta almacenada, gira hasta que la posición de la herramienta seleccionada se alinee con el husillo.
5. Monta la herramienta en el husillo y tanto el carrusel como el cabezal vuelven a su posición inicial.

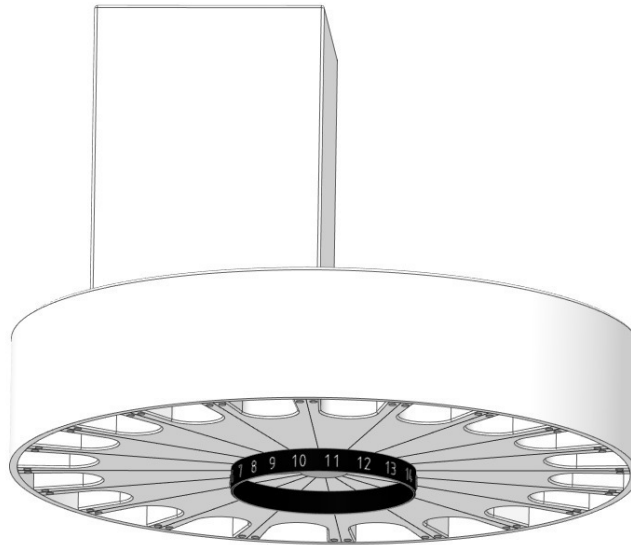


Figura 4.7. Carrusel modelado en *SpaceClaim*

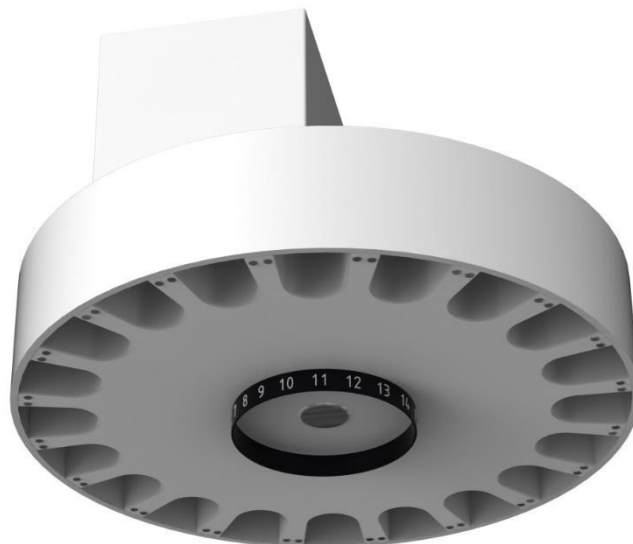


Figura 4.8. Carrusel de herramientas renderizado en *KeyShot*

4.3.3.- Panel de control

Constituye la interfaz principal de la máquina. Permite al operario programar y ejecutar programas CNC a través de la pantalla. Además, posee previsualizaciones de las trayectorias de mecanizado y programas almacenados para hacer operaciones concretas.

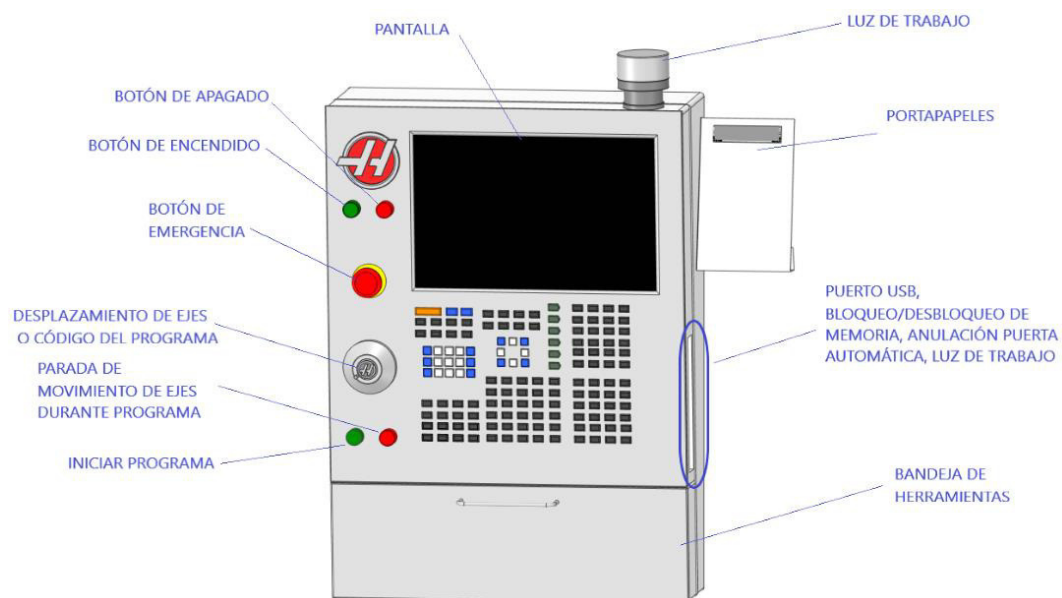


Figura 4.9. Panel de control modelado en *SpaceClaim*



Figura 4.10. Panel de control renderizado en *KeyShot*

La luz de trabajo indica diferentes estados de la máquina e informa de manera rápida de la existencia de algún problema en la operación. Su color varía entre:

- **Luz apagada:** Máquina al ralentí.
- **Verde:** Máquina funcionando correctamente.
- **Verde parpadeando:** Máquina parada esperando orden del operario.
- **Rojo parpadeando:** Se ha activado el botón de parada de emergencia o se ha producido un fallo.
- **Amarillo parpadeando:** Detección del final de la vida útil de una herramienta.

En cuanto al teclado, podemos dividirlo en las siguientes zonas según su función:

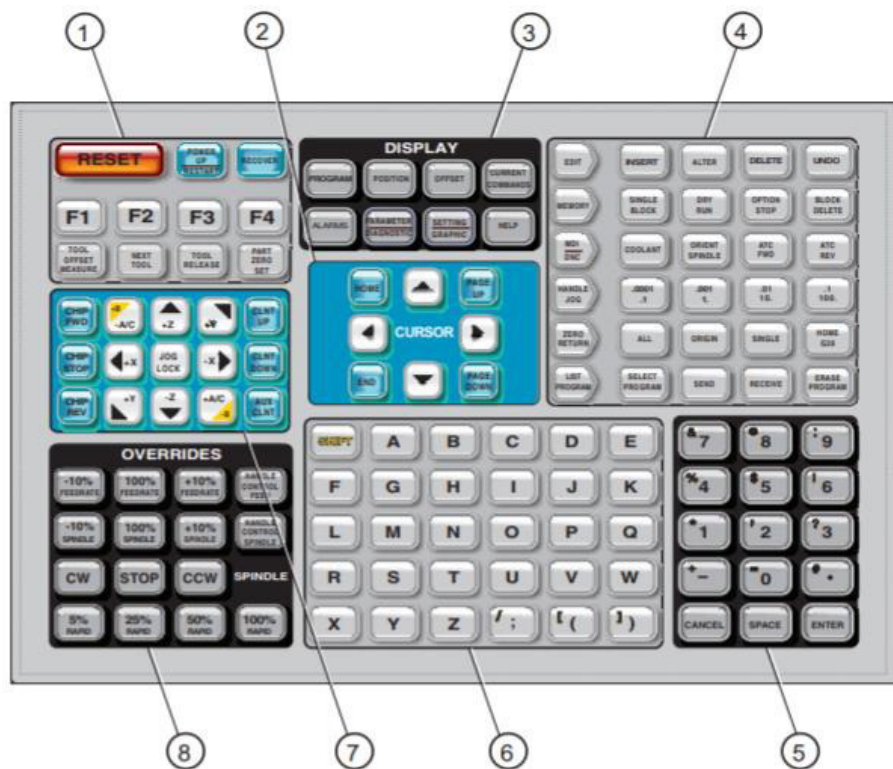


Figura 4.11. Teclado del panel de control [26]

- | | |
|--------------------------------------|-------------------------|
| 1. Teclas de función de la fresadora | 5. Teclas numéricas |
| 2. Teclas de cursor | 6. Teclas alfanuméricas |
| 3. Teclas de pantalla | 7. Teclas de avance |
| 4. Teclas de modo | 8. Teclas de anulación |

Cabina

Crea un recinto para aislar el área de trabajo del exterior. Es, en sí misma, un gran aporte a la seguridad del operario, ya que evita proyecciones de virutas, piezas o herramientas.

Posee dos ventanas en los laterales para facilitar la limpieza o el posicionamiento de piezas de grandes dimensiones.

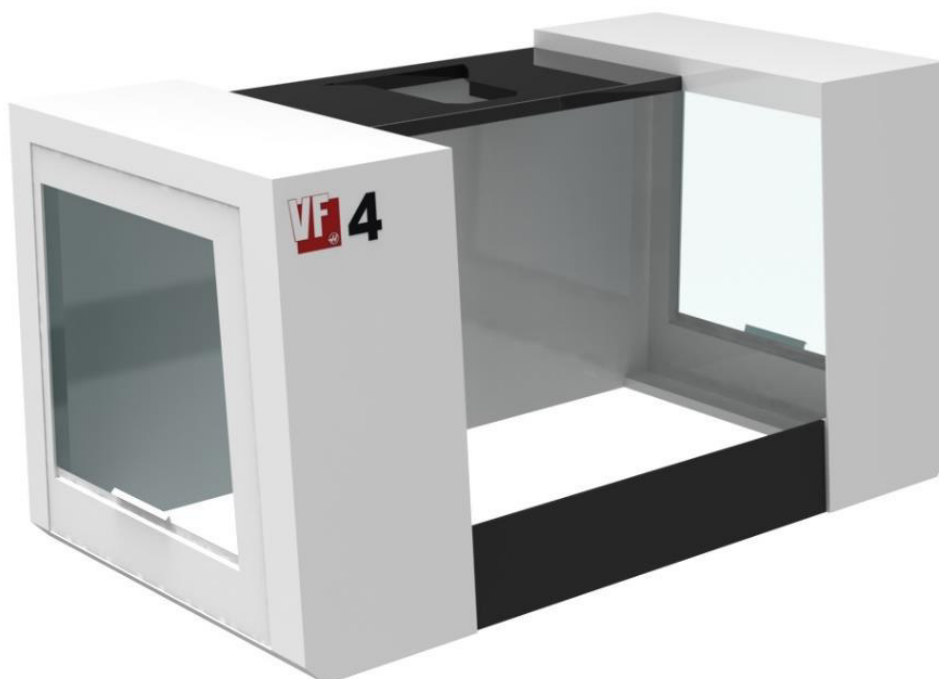


Figura 4.12. Cabina renderizada en *KeyShot*

4.3.4.- Puertas frontales

Suponen un elemento de seguridad al formar una barrera entre la zona de trabajo y el operario. Además de evitar posibles proyecciones, evita el contacto directo del operario con la máquina mientras está mecanizando, ya que poseen un detector de puertas abiertas. Esta detección posibilita que el centro de mecanizado bloquee gran parte de sus funciones mientras las puertas no estén cerradas, evitando numerosas imprudencias y accidentes.

Poseen un tirador y son correderas para reducir la superficie útil ocupada por el centro de mecanizado.

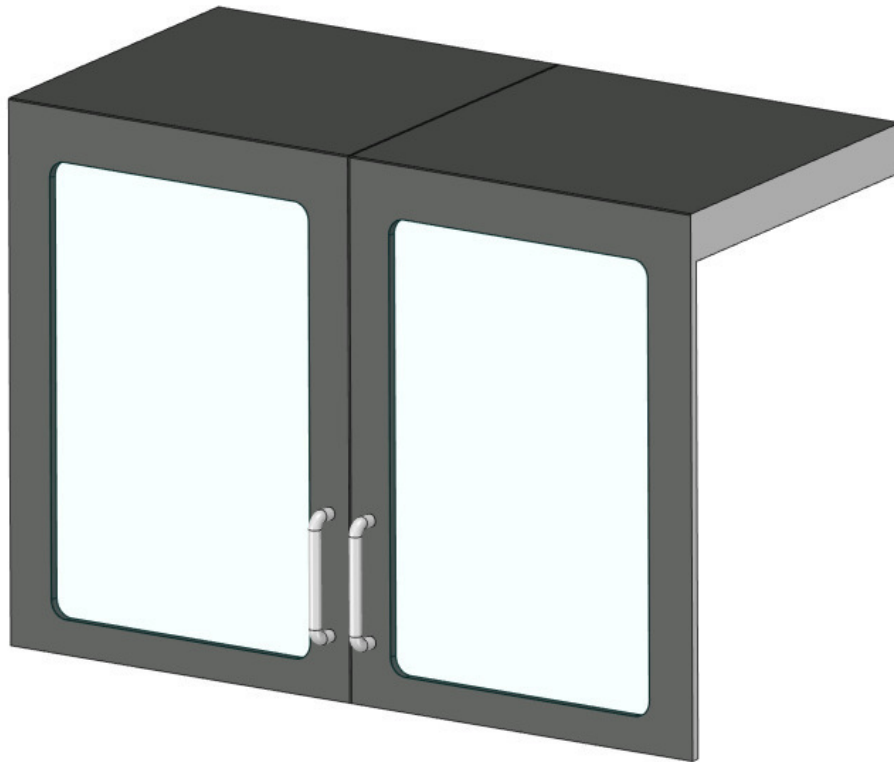


Figura 4.13. Modelado de puertas en *SpaceClaim*



Figura 4.14. Puerta derecha renderizada en *KeyShot*

4.3.5.- Conjunto del cabezal

Conforma el movimiento en el eje Z del centro de mecanizado. Con un recorrido de 635 mm, sirve de alojamiento para el husillo y los rodamientos.



Figura 4.15. Cabezal renderizado en KeyShot

En la parte inferior se encuentra el cabezal del husillo, diseñado para alojar adaptadores cónicos ISO 40.



Figura 4.16. Cabezal del husillo renderizado en KeyShot



4.3.6.- Mordazas

Las mordazas elegidas pertenecen a la marca *Forza*, en concreto al modelo PRD/150S. Las bocas, no guiadas, se adaptan perfectamente a la pieza al oscilar. Están fabricadas en acero F-155 y tienen una superficie de amarre de un ancho de 150 mm con una profundidad de 56mm. La longitud de la parte fija es de 502 mm.

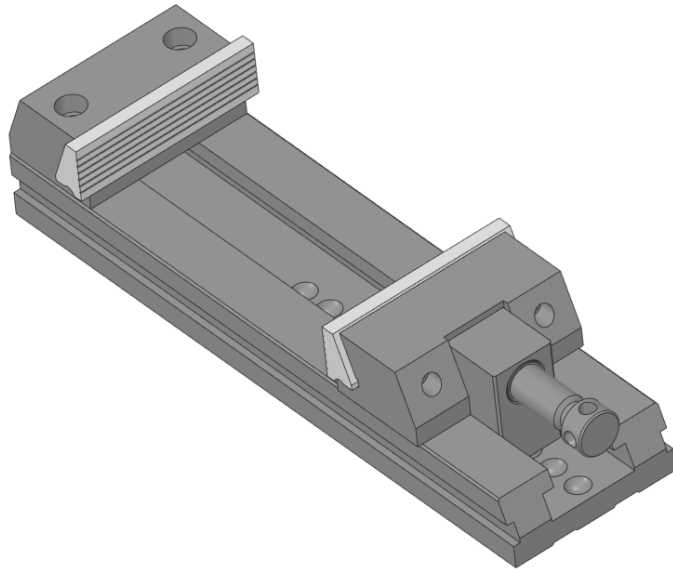


Figura 4.17. Mordaza modelada en *SpaceClaim*



Figura 4.18. Mordaza renderizada en *KeyShot*

4.3.7.- Patas niveladoras

Ajustando su longitud se pueden corregir la influencia de suelos no horizontales.



Figura 4.19. Pata niveladora renderizada en *KeyShot*

4.3.8.- Soporte para portaherramientas

En la parte superior izquierda de la máquina nos encontramos con un estante para almacenar portaherramientas con adaptadores cónicos. Con un total de veinticuatro plazas, permite tener cada herramienta montada en su adaptador. Esto, unido a las veinte posiciones del carrusel proporciona una gran ventaja en cuanto a tiempo de preparación.

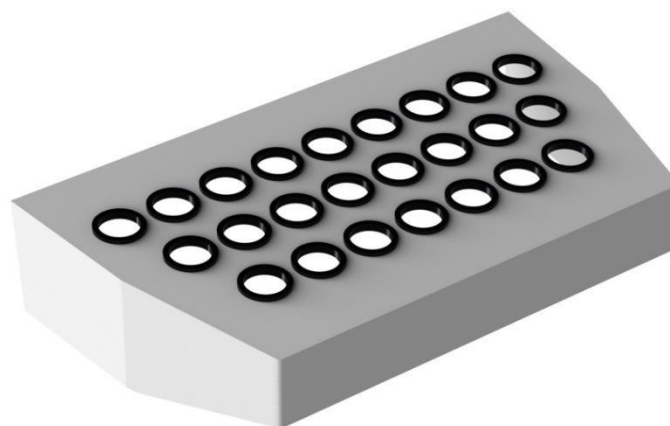


Figura 4.20. Soporte para portaherramientas renderizado en *KeyShot*

4.3.9.- Estantes para herramientas y utillaje

Además del soporte para portaherramientas, la máquina dispone de dos estantes más para almacenar elementos como plaquitas, pinzas o aparatos para hacer mediciones.

En la parte inferior del panel de control se sitúa una chapa troquelada y plegada para adaptarse a la forma de las herramientas más usuales. Su parte izquierda mantiene la pistola de aire para labores de limpieza al alcance del operario.

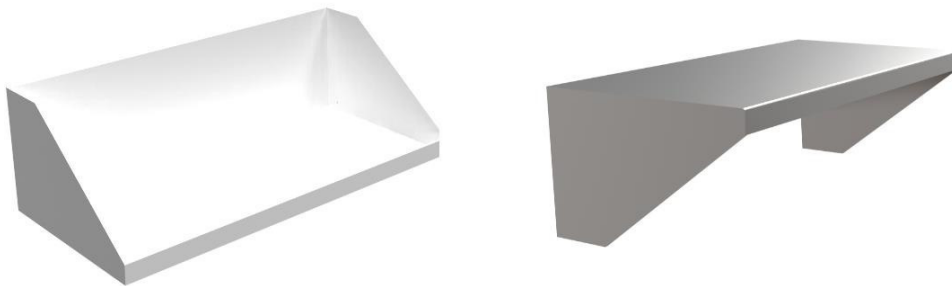


Figura 4.21. Estantes renderizados en *KeyShot*

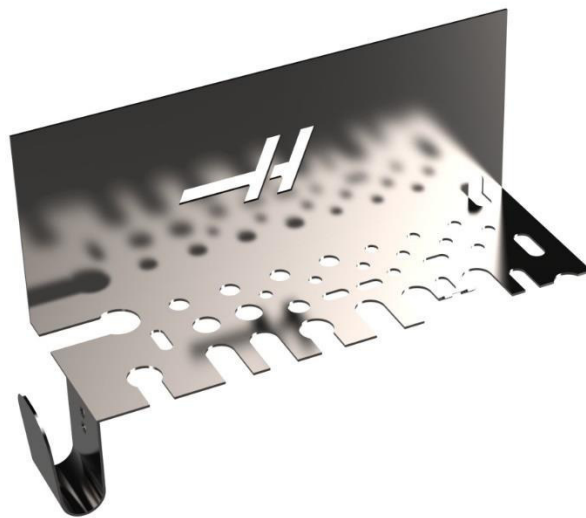


Figura 4.22. Chapa soporte herramientas renderizada en *KeyShot*

4.3.10.- CMV Haas VF-4

Los diferentes elementos se han modelado en SpaceClaim separándolos según su color y función para poder mantener esas características en su simulación con Mastercam. El árbol de elementos se ha estructurado de la siguiente forma:



Figura 4.23. Árbol de elementos en SpaceClaim

Tras modelar todos los componentes, el resultado final es el siguiente:

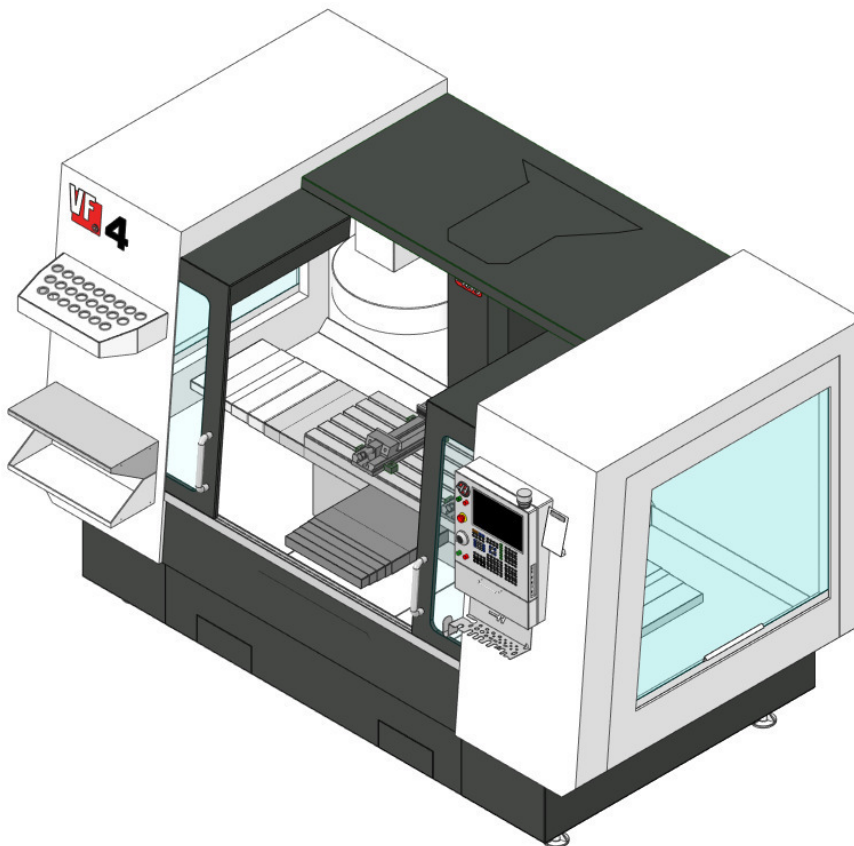


Figura 4.24. Vista isométrica del CMV Haas VF-4 en SpaceClaim

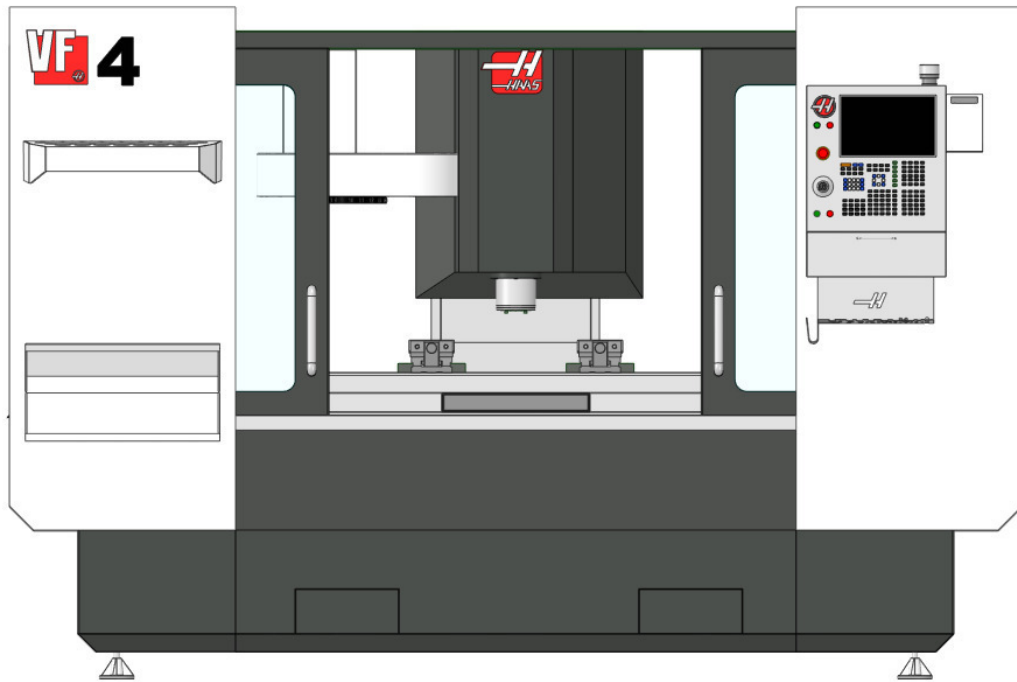


Figura 4.25. Vista frontal del CMV Haas VF-4 en SpaceClaim

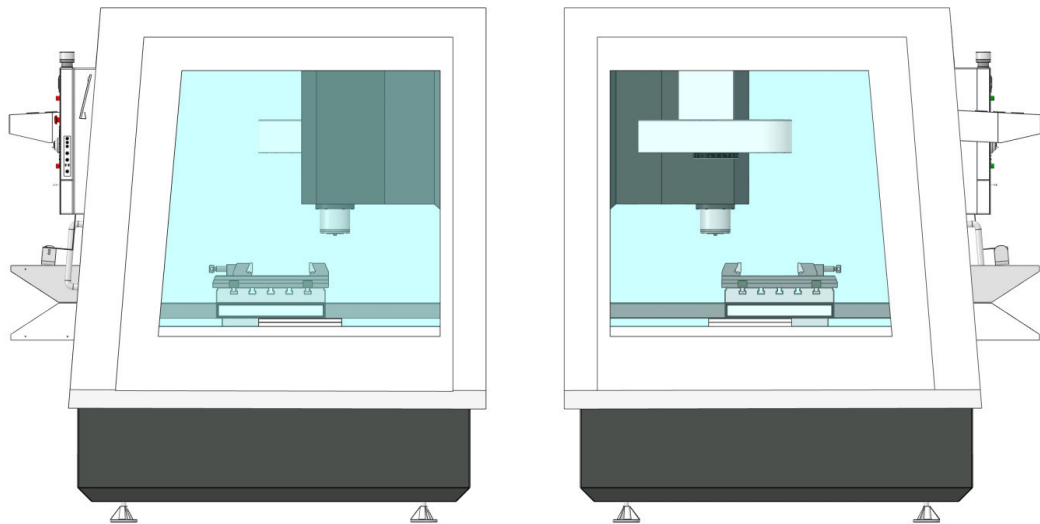


Figura 4.26. Vistas laterales del CMV Haas VF-4 en SpaceClaim

Posteriormente, se asocia cada elemento con su material correspondiente en *KeyShot*. Una de las ventajas de trabajar con los dos softwares vinculados es la posibilidad de realizar cambios en el modelo y actualizarlo de manera directa en *KeyShot*, además de poder exportar el árbol de elementos de forma conjunta.

Después de configurar las opciones de entorno e iluminación en *KeyShot* y renderizar, obtendremos las siguientes imágenes:

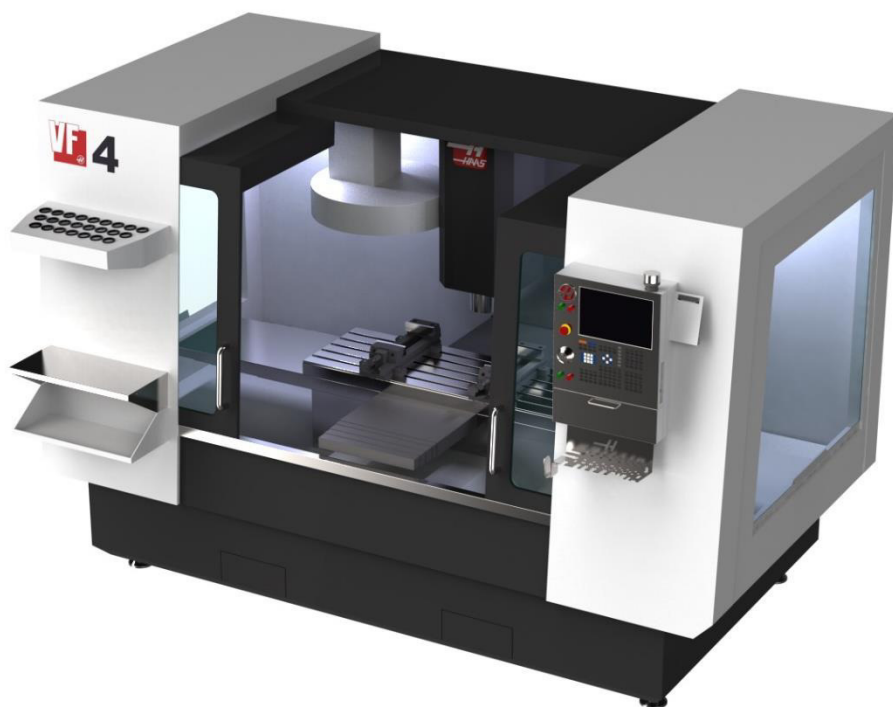


Figura 4.27. Vista isométrica del CMV Haas VF-4 renderizada en *KeyShot*

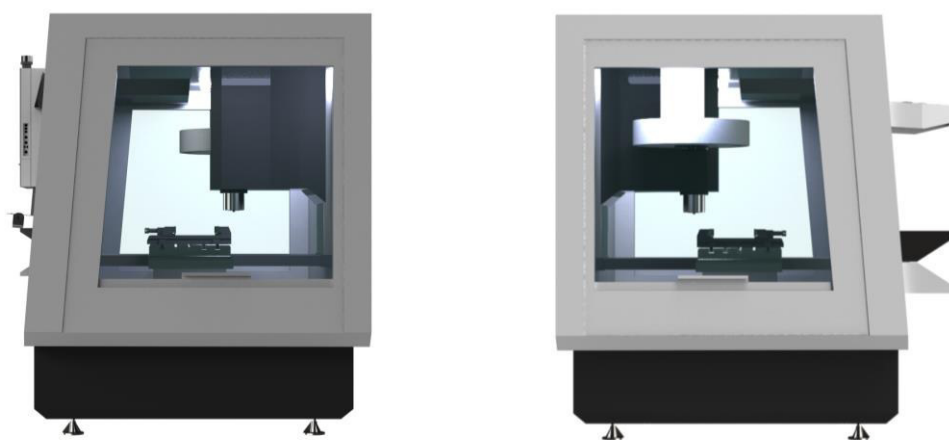


Figura 4.28. Vistas laterales del CMV Haas VF-4 renderizadas en *KeyShot*

5.-CAPÍTULO 5. SIMULACIÓN DEL CENTRO DE MECANIZADO VERTICAL CNC HAAS VF-4 EN MASTERCAM

A la hora de trabajar con software CAM, es de gran utilidad conocer la geometría de la máquina y de los elementos de sujeción de las piezas y herramientas. Prevenir y evitar, en la medida de lo posible, cualquier tipo de colisión o choque, debe de ser el máximo referente a tener en cuenta antes de ejecutar un programa en máquina. Los costes generados por colisiones no sólo derivan del reemplazamiento de herramientas, sino también de paradas de producción e incluso de incrementos importantes en los tiempos de preparación entre pieza y pieza.

Mastercam permite crear desde cero las bases para la simulación de una máquina mediante su módulo *Machine Simulation*, adaptándose así a las necesidades específicas del usuario.

En los siguientes puntos se van a desarrollar los pasos necesarios para importar el modelo del centro de mecanizado descrito en el punto anterior y cómo crear las relaciones cinemáticas entre las piezas móviles.

5.1.- ASPECTOS GENERALES DEL MÓDULO MACHINE SIMULATION

Por defecto, *Mastercam* cuenta con una pequeña librería de máquinas para diferentes procesos de mecanizado y distinto número de ejes. Aunque esto puede ser útil para mecanizar piezas en las que la probabilidad de colisión sea insignificante, no lo es si necesitamos contar con las dimensiones reales de la máquina en piezas con zonas poco accesibles y de geometrías complicadas.

La ruta de la almacenamiento de los archivos usados en simulación es la siguiente:

<C:\Users\Public\Documents\shared Mcam2018\MachineSimulation\MachSim>

Los archivos asociados a cada máquina se almacenan en su carpeta correspondiente, siendo de varios tipos:

- Archivos en formato .STL : Alojados la geometría 3D de la máquina.
- Archivo en formato .GIF : Imagen para identificar posteriormente cada simulador.

- Archivo en formato .XML : Contiene las relaciones entre las diferentes partes de la máquina y toda la información necesaria para la simulación.

SISTEMA DE REFERENCIA

El sistema de ejes utilizado será el usado habitualmente en CNC:

- Eje Z: Dirección del husillo principal, sentido de la pieza al husillo.
- Eje X: Paralelo la mesa de la máquina con dirección longitudinal.
- Eje Y: Perpendicular al eje X y sentido desde el frente de prensa hacia la pieza.
- U,v y w: Coordenadas secundarias en la dirección de los ejes descritos anteriormente.
- A, B y C: Coordenadas angulares alrededor de los ejes.

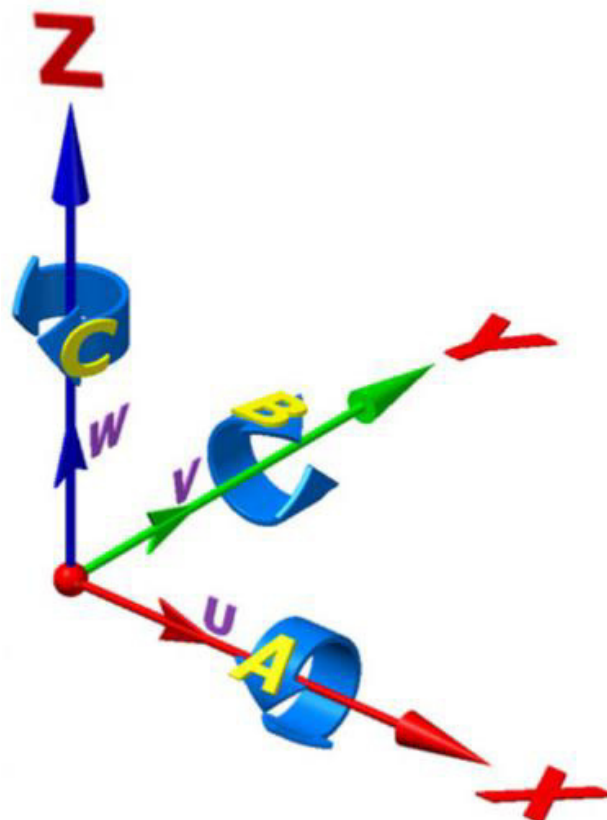


Figura 5.1. Sistema de coordenadas usado en Mastercam [27]

5.2.- IMPORTACIÓN DEL MODELO DE LA MÁQUINA EN MASTERCAM

En primer lugar, hay que tener claro cuáles son los movimientos principales de nuestra máquina y las relaciones cinemáticas entre sus componentes.

El modelo VF-4 de Haas posee dos movimientos en el eje X y el eje Y de la mesa, a lo que hay que añadir el vertical en el eje Z del conjunto del cabezal y husillo y el giro C de éste último.

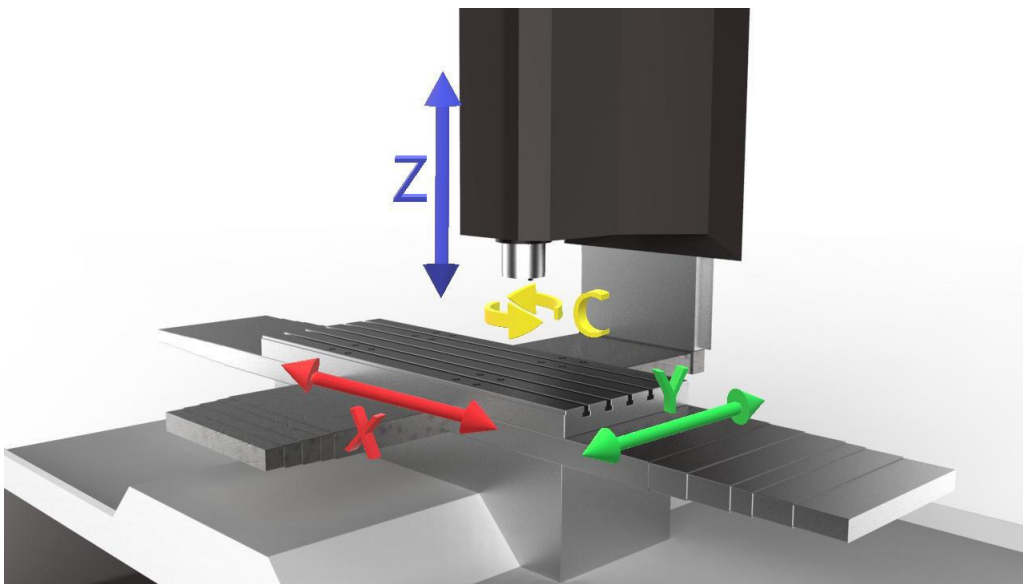


Figura 5.2. Esquema cinemático Haas VF-4

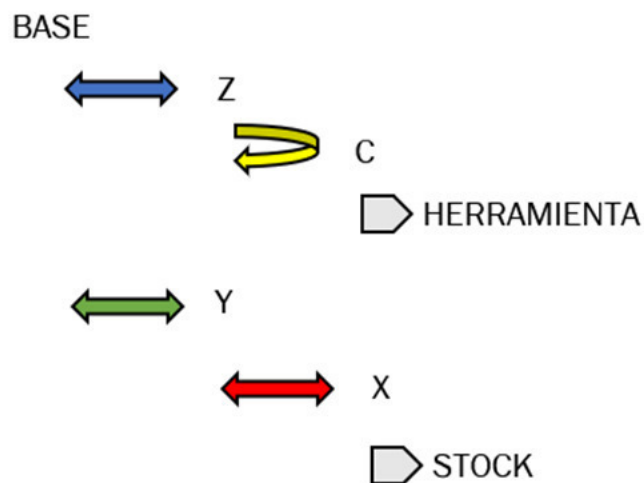


Figura 5.3. Esquema cinemático Haas VF-4

Antes de comenzar a importar cualquier archivo en Mastercam, debemos de cerciorarnos de guardar todos los elementos modelados que conforman el conjunto en un formato válido para Mastercam. Con el fin de poder mantener las propiedades y características de cada pieza, se guardará cada una de ellas en formato .STEP. Es posible mantener agrupaciones de piezas que posean el mismo color para simplificar el proceso (siempre que tengan el mismo movimiento).

El primer paso es abrir un archivo nuevo en Mastercam:

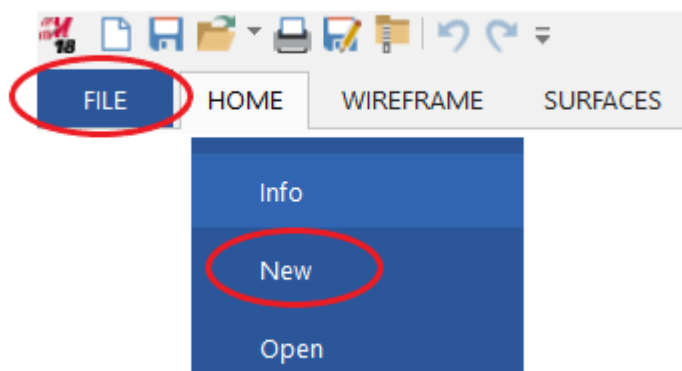


Figura 5.4. Indicaciones para abrir un archivo nuevo en Mastercam

A continuación guardaremos el archivo con el nombre de la máquina en formato .mcam.

El siguiente paso será importar cada uno de los archivos en formato .step. Para ello accedemos desde el menú principal a *FILE* y *MERGE*:

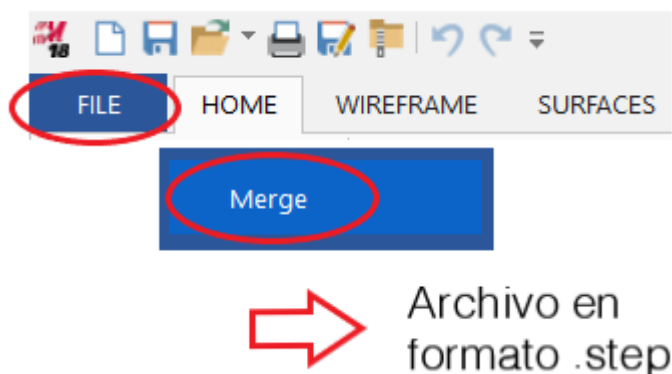


Figura 5.5. Adición de un archivo al actual en Mastercam



Es aconsejable guardar cada uno de los archivos que contienen cada componente en formato *.step* en una capa diferente con el fin de poder trabajar con ellos de forma independiente en los pasos futuros. Seleccionando *Change Level* tras pulsar el botón derecho del ratón, podremos elegir la capa a la que queremos desplazar el sólido actual.

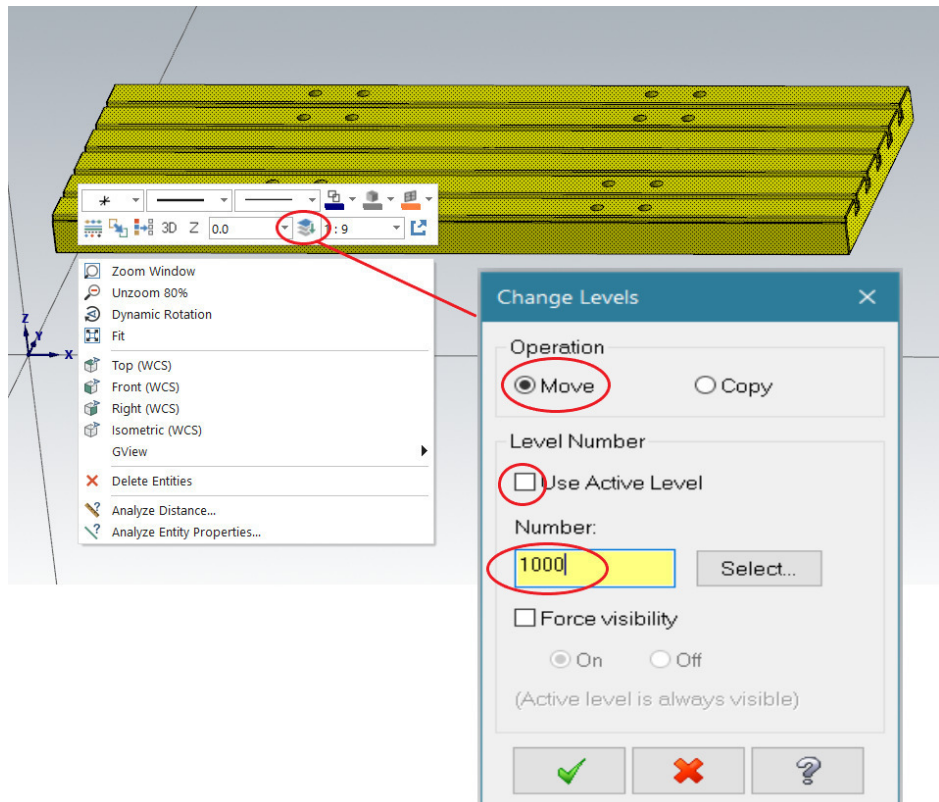


Figura 5.6. Uso de capas o niveles en Mastercam

Se recomienda seguir una notación que relacione el *.step* con el movimiento que posee para facilitar su importación posterior. En este caso se ha elegido la siguiente:

-BASEn: Para elementos que no posean movimiento.

-Xn, Yn, Zn: Elementos con desplazamiento en el eje X, Y o Z, respectivamente.

-An, Bn, Cn: Elementos con giro alrededor del eje X, Y o Z, respectivamente.

Tras abrir y distribuir todos los .step por niveles o capas se llegará a este resultado:

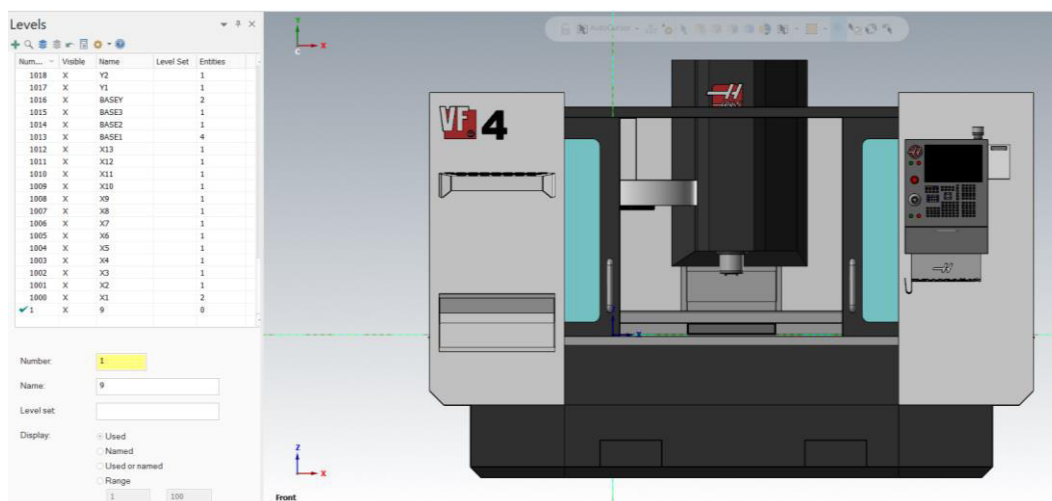


Figura 5.7. Componentes de la máquina importados en Mastercam

Es muy probable que tras importar todos los sólidos en Mastercam haya que trasladar todos los componentes para conseguir la posición correcta para la simulación. El cabezal deberá desplazarse de manera que la parte más exterior el husillo esté en contacto con la mesa. A su vez el origen del sistema de referencia deberá estar situado en el eje del husillo.

Para situar el cabezal en la posición deseada, tras activar el comando *Translate* seleccionaremos el conjunto del cabezal y el husillo. Aparecerá un sistema de referencia en la pantalla en el que podremos arrastrar el origen al punto deseado. A continuación, elegiremos la dirección de desplazamiento seleccionando la flecha correspondiente y escogeremos una arista de la mesa para indicar la cota final.

Tendremos que cerciorarnos de que en el método de translación está activada la opción de mover en lugar de copiar, ya que en muchas ocasiones aparece como seleccionada por defecto.

En las siguientes imágenes podemos observar los componentes a trasladar con sus aristas en color fucsia y el origen del sistema de coordenadas situado en el extremo del husillo:

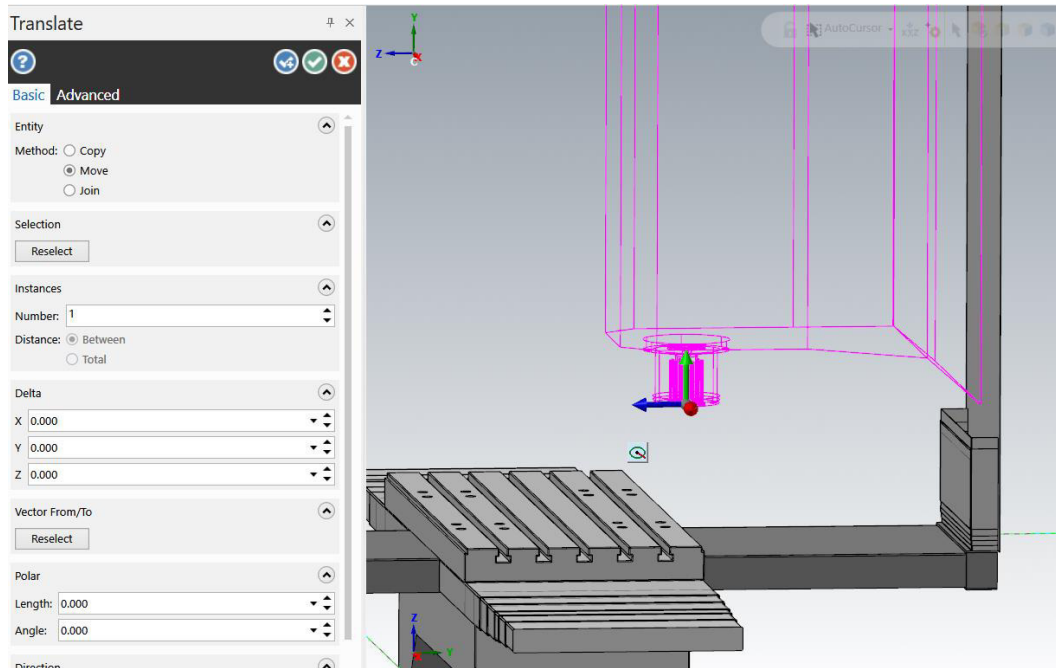


Figura 5.8. Desplazamiento de componentes en Mastercam

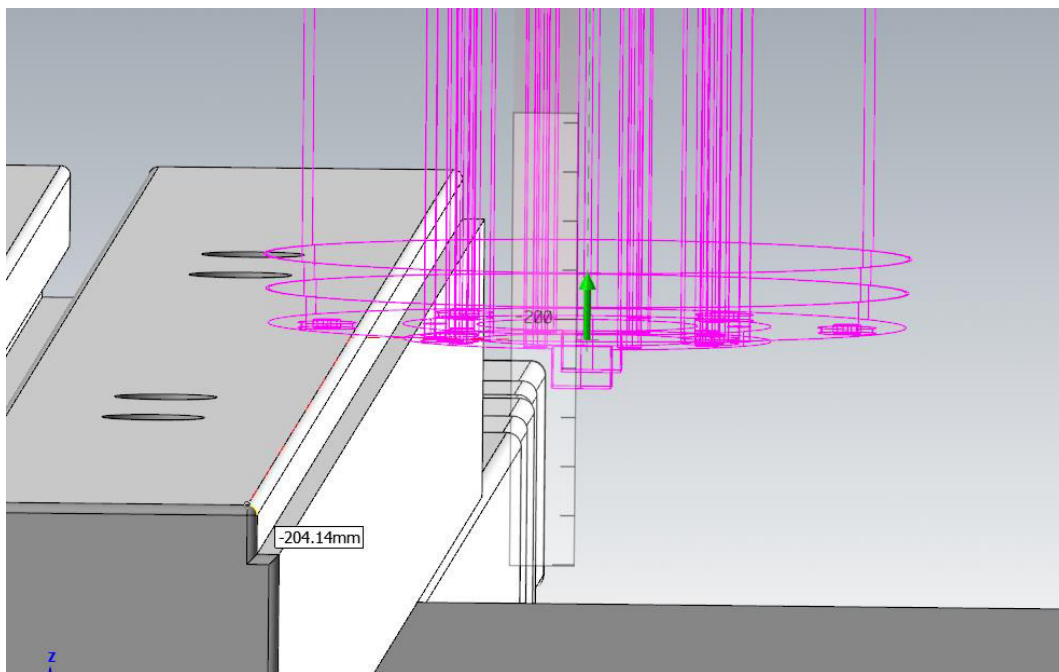


Figura 5.9. Arista de la mesa seleccionada para marcar la cota final del desplazamiento

La mesa también deberá de ser trasladada para que su centro coincida con el eje de rotación del husillo.

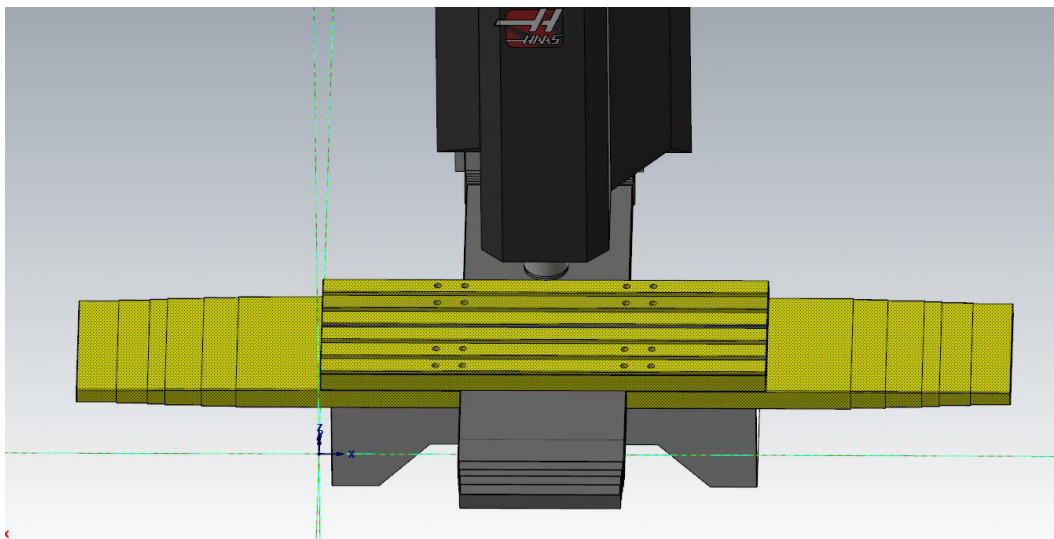


Figura 5.10. Componentes de la mesa a desplazar en la dirección del eje Y

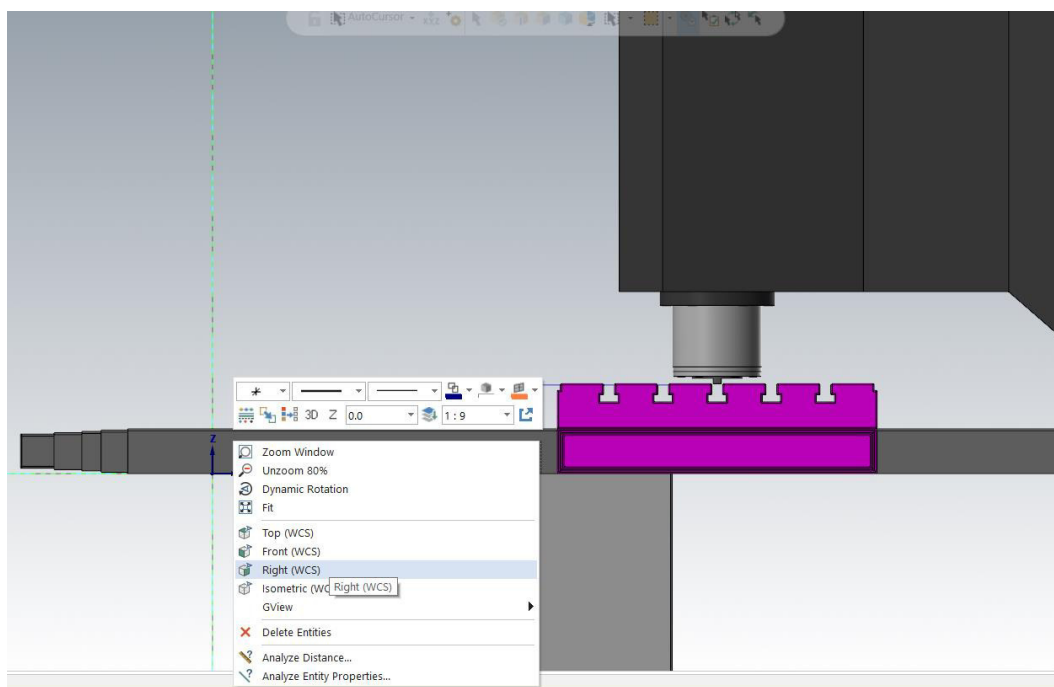


Figura 5.11. Vista lateral de la posición relativa del cabezal y la mesa

Una vez que las posiciones relativas entre los componentes del centro de mecanizado sean las correctas, desplazaremos todo el conjunto para que el centro de la superficie inferior del husillo coincida con el origen de coordenadas de Mastercam.

Para ello, posicionaremos el origen del eje de traslación en el centro del círculo inferior. Mastercam destacará automáticamente el centro de la circunferencia para seleccionarlo con más facilidad.

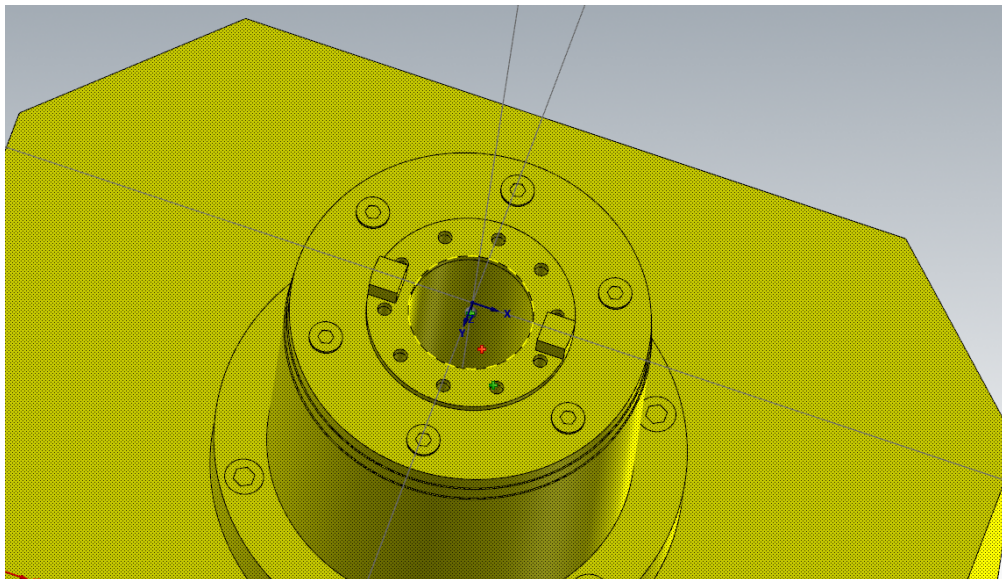


Figura 5.12. Posicionamiento husillo

El resultado final se muestra a continuación:

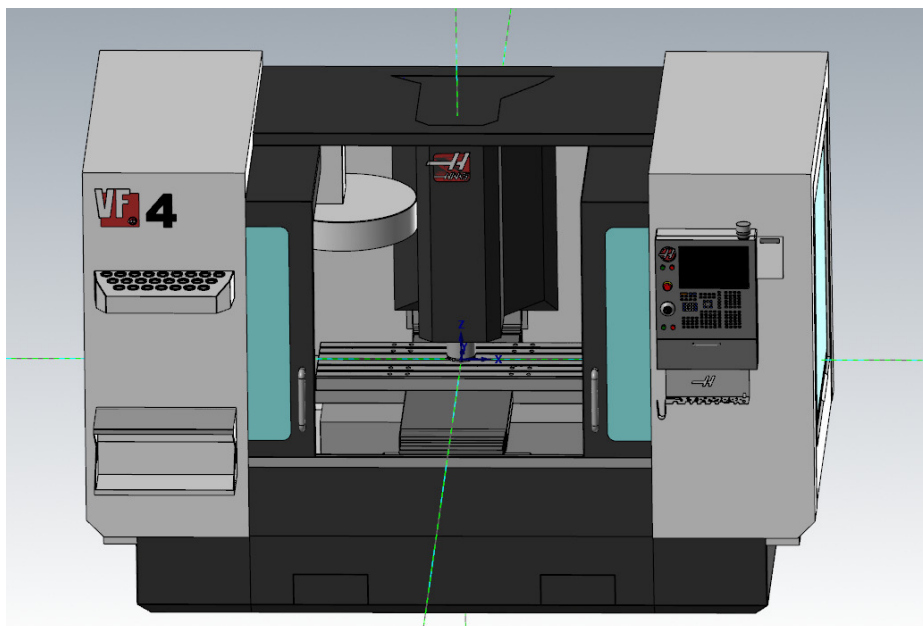


Figura 5.13. Posición y orientación final del centro de mecanizado Haas VF-4

Posteriormente se deberán guardar todos los componentes por separado en formato .STL. Debemos acceder a *Save Some* desde *File*.

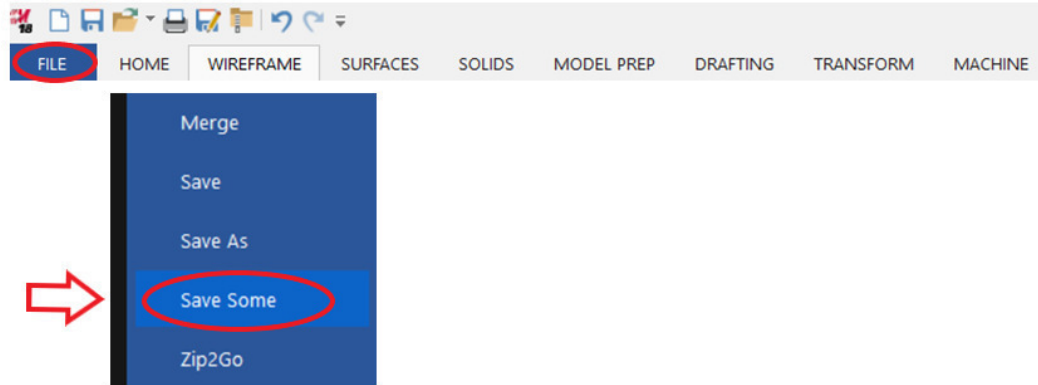


Figura 5.14. Instrucciones para guardado de componentes individuales

Sin embargo, dada la cantidad de componentes del modelo, es recomendable asociar esta opción a una tecla de acceso rápido para acelerar el proceso. Su configuración se encuentra en la ruta mostrada en la imagen:

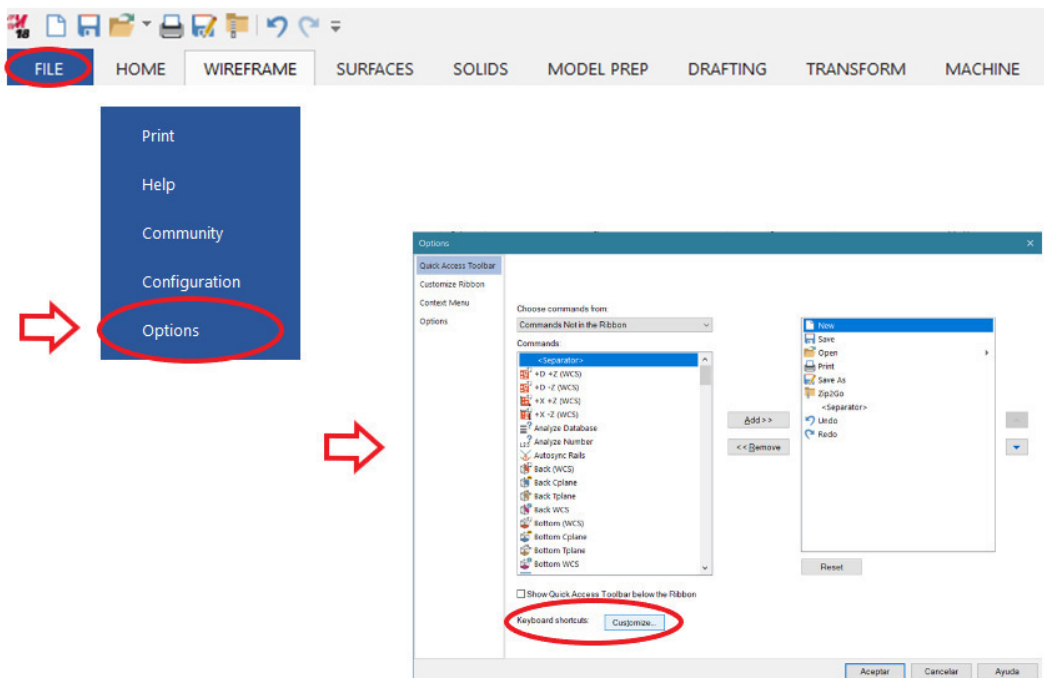


Figura 5.15. Configuración de los accesos rápidos de teclado

En la categoría de *File Tab* encontraremos el comando *Save Some*, al que se le ha asociado la *S* como tecla de acceso rápido.

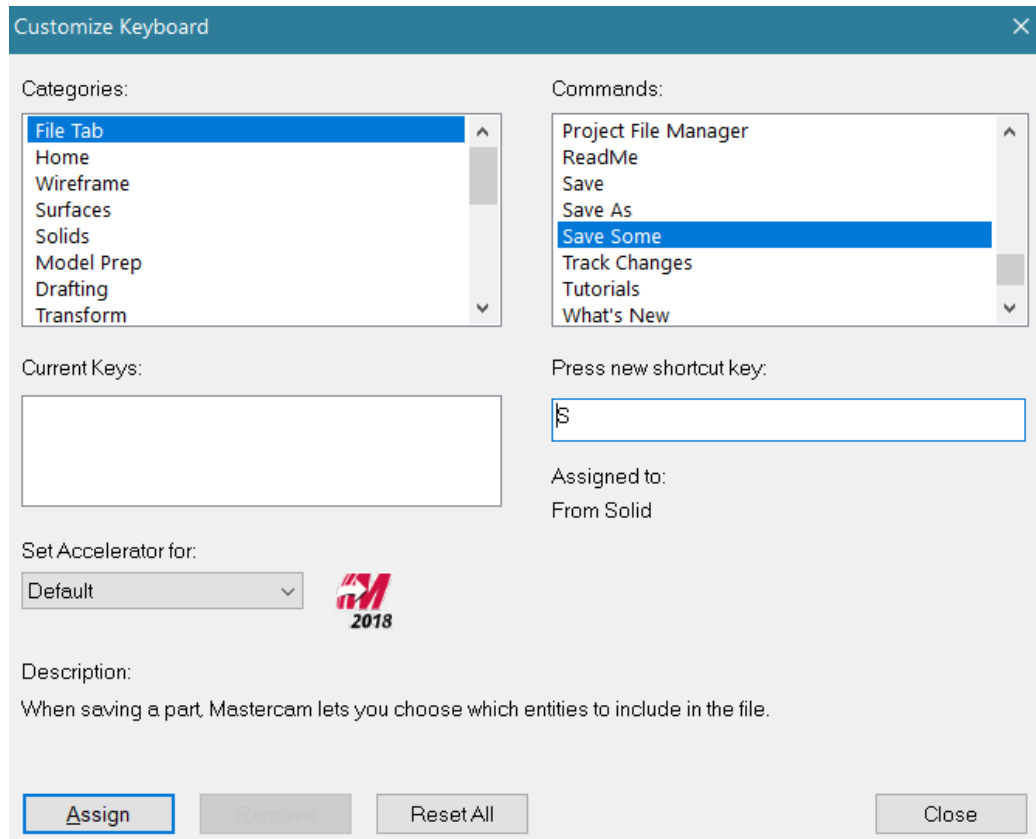


Figura 5.16. Configuración de tecla de acceso rápido para el comando *Save Some*

Los archivos en formato *.STL* se almacenarán en la misma carpeta en la que se aloja el archivo *.MCAM* de la máquina.

5.3.- CONFIGURACIÓN DE SIMULACIONES EN MASTERCAM

5.3.1.- Configuración general

Para poder acceder a la configuración de las simulaciones en Mastercam es necesario partir de una pieza en 3D con alguna operación de mecanizado generada. La trayectoria de mecanizado existente es algo trivial, por lo que generaremos una sencilla:

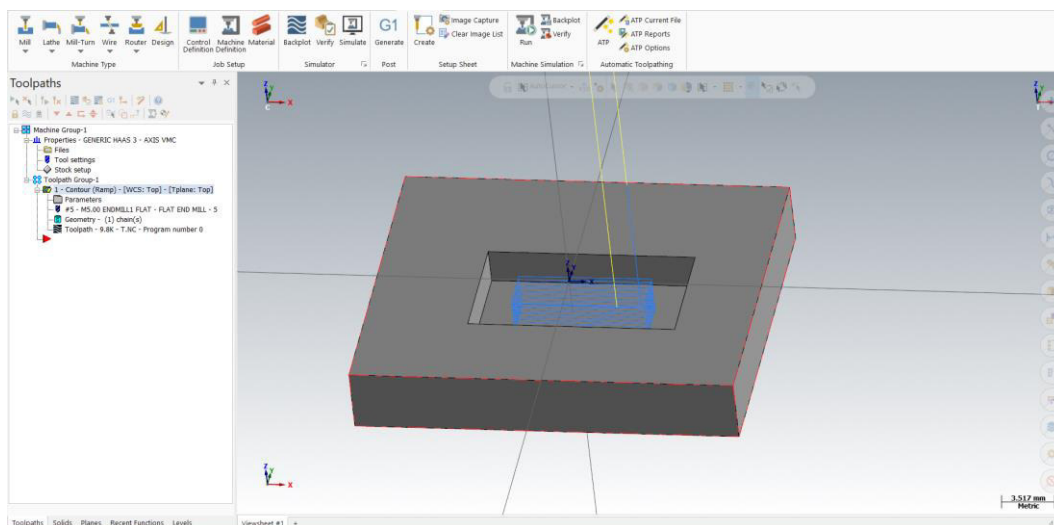


Figura 5.17. Pieza con operación de mecanizado generada

A continuación lanzamos el configurador inicial de la simulación, situado en la pestaña *Machine*:

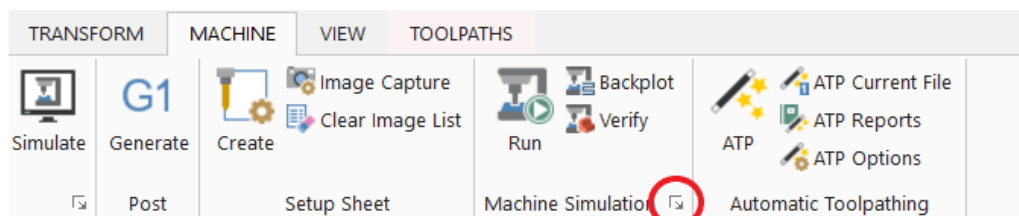


Figura 5.18. Acceso a Machine Simulation desde el menú de Mastercam

En la ventana emergente podremos seleccionar la máquina en la sección de Machine. Como aún no se ha configurado, es recomendable elegir una de características similares. Seleccionaremos la máquina 1_3AXGEN_VMC, en la que las últimas siglas se refieren a Vertical Milling Machine, además de contar con tres ejes como el centro de mecanizado elegido.

Adicionalmente, podemos añadir a la simulación la pieza de trabajo, elementos de sujeción o el stock inicial, aunque, por el momento vamos a centrar la atención en la cinemática de la fresadora.

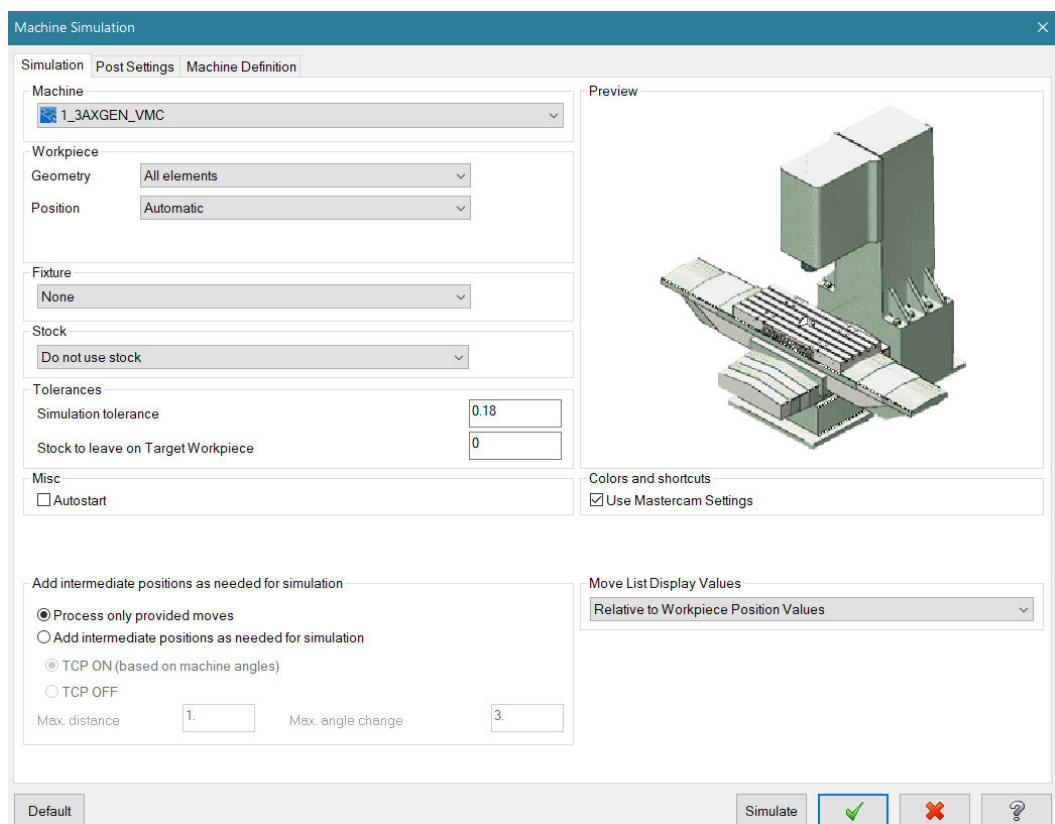


Figura 5.19. Ventana inicial del módulo *Machine Simulation*

En la tercera pestaña, *Machine Definition*, optaremos por el modo de detección automático para evitar problemas al introducir el movimiento en el eje X de las puertas, ya que Mastercam lo reconoce como otro eje principal de la máquina.

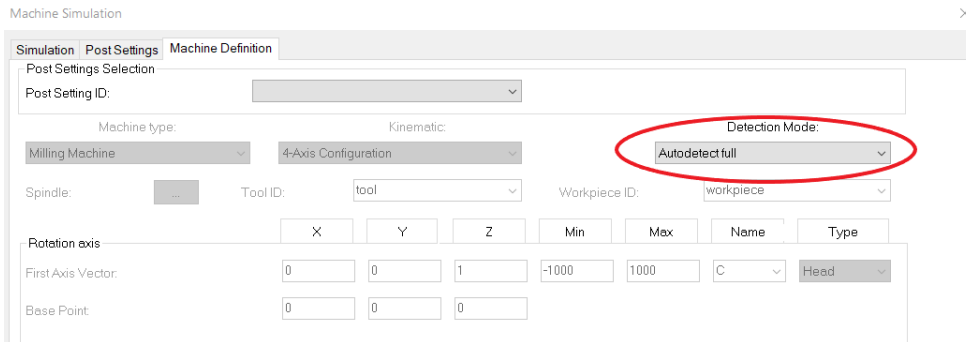


Figura 5.20. Pestaña *Machine Definition*

Una vez modificadas las opciones, pulsamos el botón *simulate*, en la parte inferior de la ventana. Nos encontraremos con la siguiente pantalla de simulación:

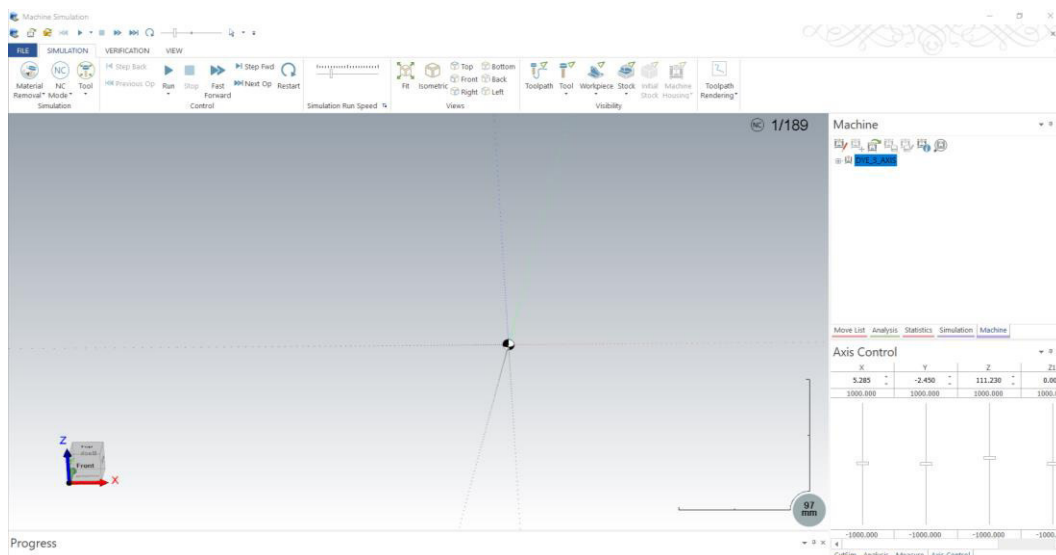


Figura 5.21. Pantalla de Machine Simulation

En el apartado de Machine, seleccionamos la opción de Edit Machine y tras ello, New Machine para importar los componentes guardados anteriormente.

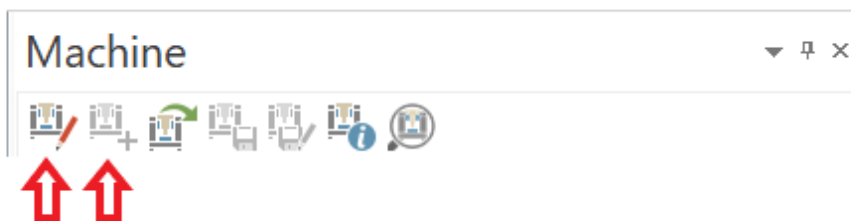


Figura 5.22. Opciones del apartado Machine

Insertaremos uno a uno los archivos .STL, de acuerdo con el esquema cinemático presentado al principio del capítulo.

Mastercam utiliza un árbol organizado jerárquicamente, por lo que habrá libertad para componer movimientos asociados a otro tipo de movimientos.

Para importar los distintos componentes, seleccionaremos con el botón derecho del ratón el elemento correspondiente (en el primer lugar sería la máquina). Nos aparecerá el siguiente cuadro de opciones:

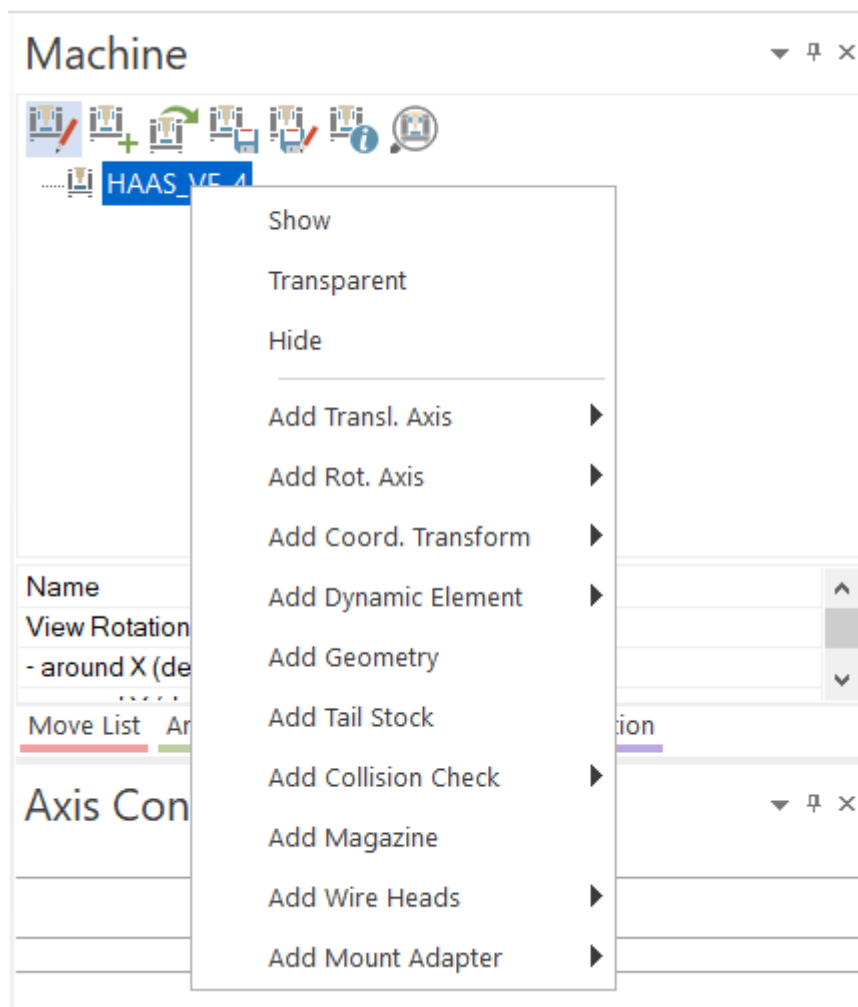


Figura 5.23. Opciones en la pestaña *Machine*

Por el momento, las opciones de inserción utilizadas van a ser las siguientes:

- Add Transl. Axis: Desplazamiento en el eje seleccionado.
- Add Rot. Axis: Giro en el eje seleccionado.
- Add Dynamic Element: Para añadir herramientas o stock.
- Add Geometry: Importa el elemento en STL. Se pueden seleccionar varios simultáneamente para facilitar esta tarea.

Construimos el esqueleto de la máquina, siguiendo el esquema cinético inicial:

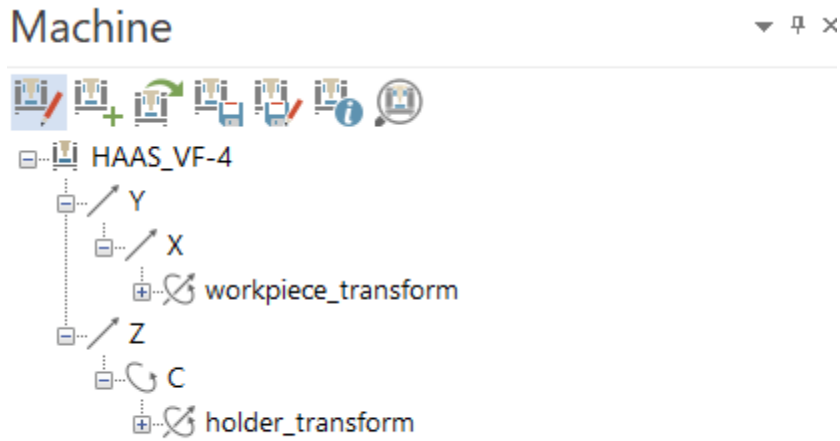


Figura 5.24. Árbol inicial del centro de mecanizado Haas VF-4

En la parte inferior del cuadro se puede modificar la apariencia de los componentes tanto color como transparencia o reflectividad. También es posible el uso de texturas.

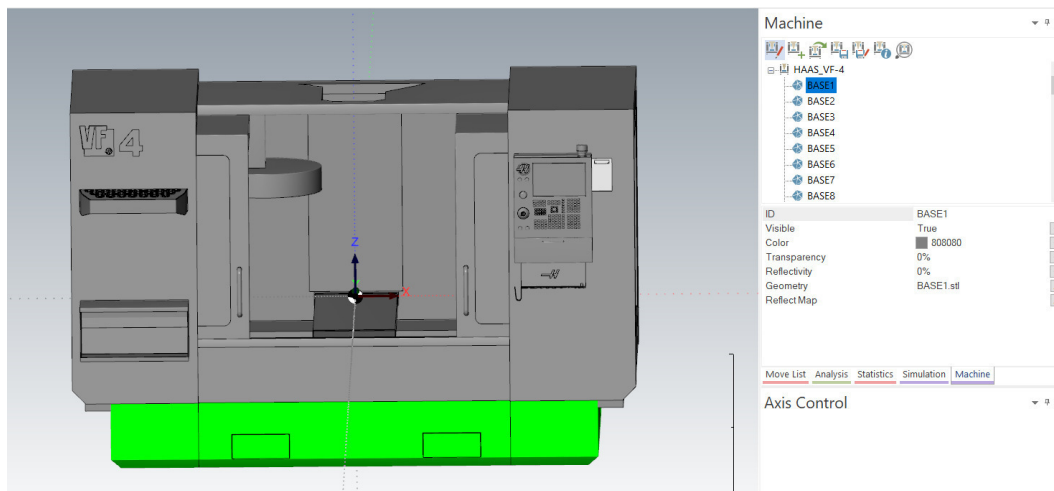


Figura 5.25. Opciones de edición de cada componente

Tras insertar los diferentes componentes y modificar sus propiedades, el aspecto final será el siguiente:

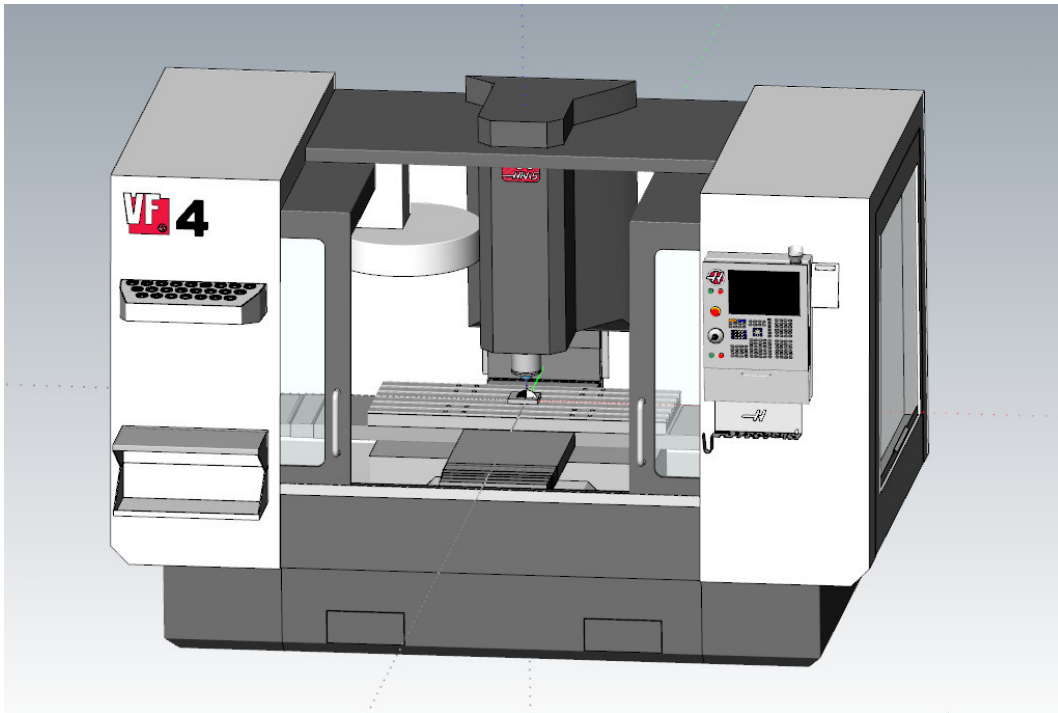


Figura 5.26. Haas VF-4 en el módulo de simulación

A fin de facilitar la observación de la simulación desde diferentes ángulos, se modificará la transparencia de los elementos de cristal en las propiedades de cada elemento:

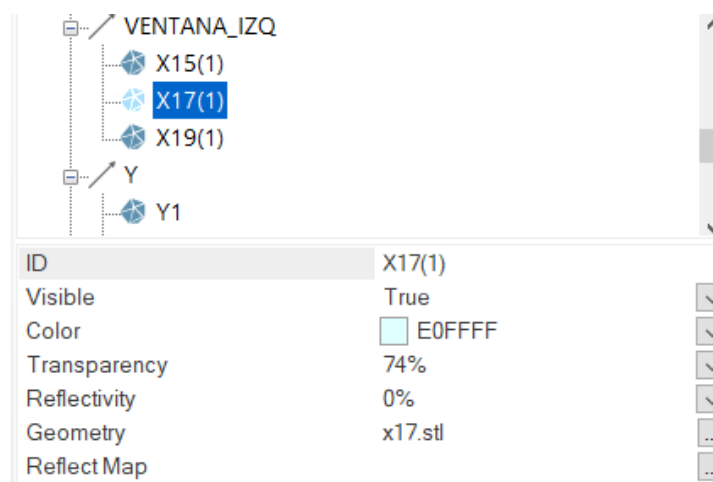


Figura 5.27. Modificación de la transparencia de un elemento

La posición inicial de cada componente, así como los límites superior e inferior de su movimiento en un eje podrán controlarse desde el panel de propiedades.

Por otro lado, desde la casilla de *axis control* tendremos la opción de mover los componentes de manera manual y detectar posibles problemas mediante un deslizador:

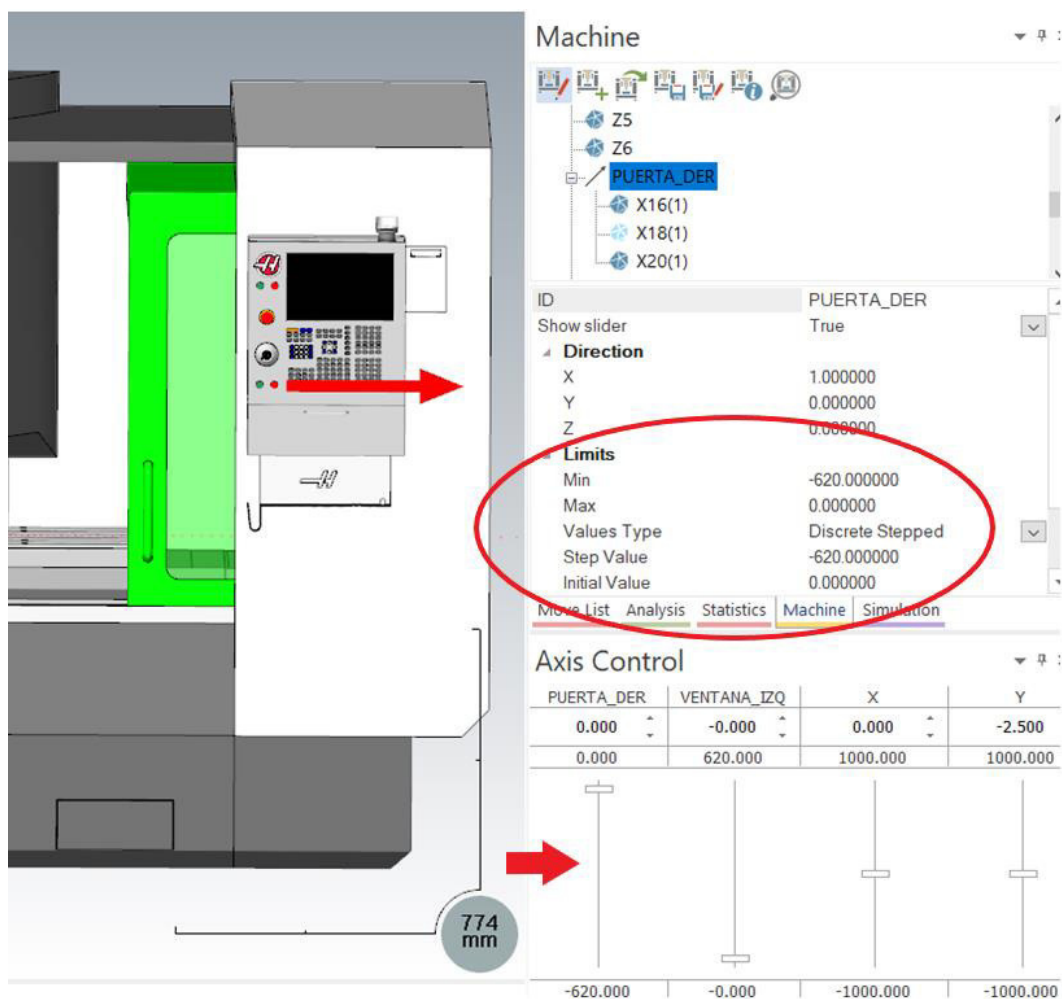


Figura 5.28. Configuración de la posición inicial y límites de movimiento

Existe la posibilidad de previsualizar la máquina a utilizar antes de realizar la simulación guardando una imagen de la misma en formato .GIF en la carpeta donde está almacenada toda la información. Deberá tener el mismo nombre que el archivo .XML que guarda toda la información que utiliza Mastercam.

La imagen almacenada será reconocida automáticamente y aparecerá al seleccionar el tipo de máquina en las opciones de la ventana anterior a la simulación:

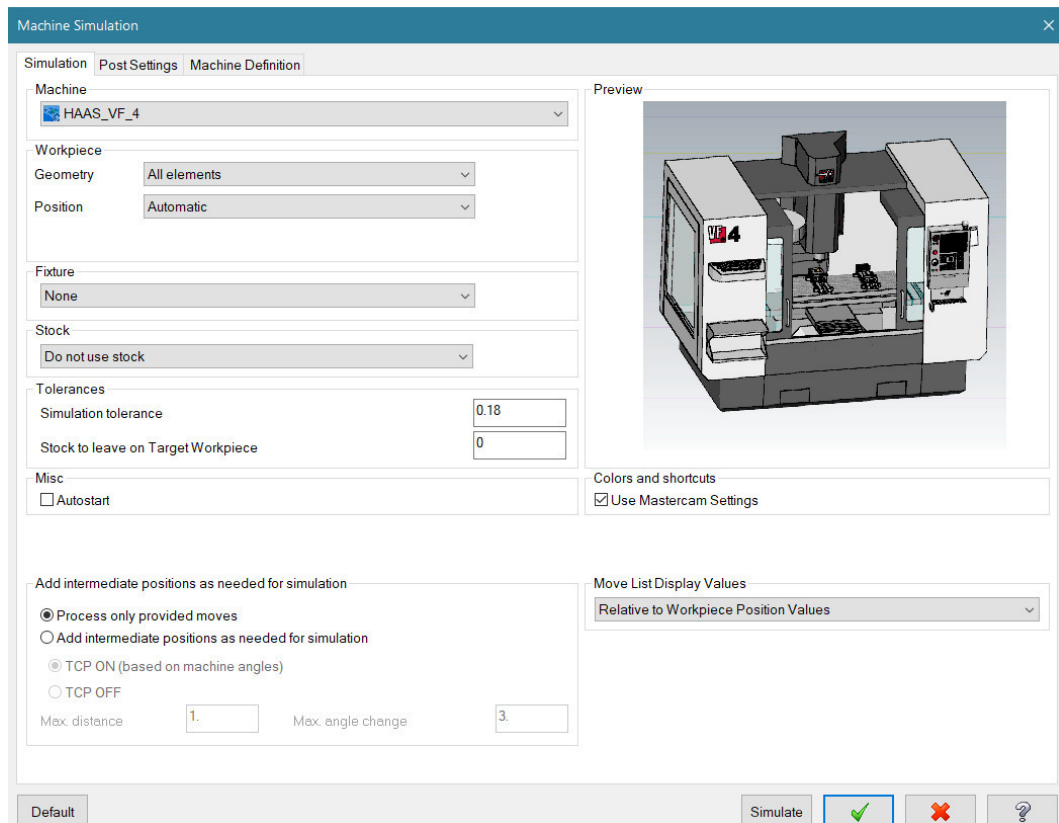


Figura 5.29. Imagen en miniatura de HAAS VF-4

5.3.2.- Importación de los elementos de fijación y configuración del reporte de colisiones

En un centro de mecanizado, los elementos de sujeción o fijación son uno de los componentes con mayor riesgo de colisión debido a la necesidad de la existencia de un contacto directo con el material a mecanizar. El hecho de elegir una forma de amarre u otra puede influir en los parámetros de mecanizado, las dimensiones del tocho de partida e incluso pueden llevarse a cabo modificaciones en el diseño de la pieza y el material en el que fabricarla debido a posibles complicaciones en el proceso de mecanizado.

Mastercam permite insertar y posicionar cualquier tipo de elemento de fijación con el único requisito de la obtención previa de su modelo en 3D.

Por comodidad, es recomendable trabajar desde un archivo en el que los elementos de sujeción estén situados en su ubicación habitual en la máquina y que sean los materiales a mecanizar los que sean trasladados hasta su posición de amarre.

En primer lugar, abrimos un archivo nuevo en Mastercam, que mantendremos de manera permanente para futuros programas en los que se vayan a utilizar los elementos de fijación en esas posiciones.

En nuestro caso, los elementos de sujeción elegidos van a ser las mordazas descritas en el apartado anterior, montadas en la mesa con ayuda de unas tuercas en T.

Mediante el comando *Merge*, importamos los diferentes elementos de sujeción. Es aconsejable añadir también la mesa de la máquina para facilitar su correcto posicionamiento. Si fuera necesario, podemos hacer uso de los comandos *Curve One Edge* y *Curve All Edges*, en la pestaña *Wireframe*, para extraer las aristas de los modelos y ubicarlos de forma adecuada.

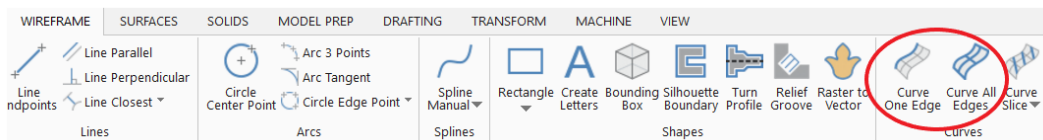


Figura 5.30. Comandos *Curve One Edge* y *Curve All Edges*

Tras terminar de posicionar los modelos, obtendremos algo así:

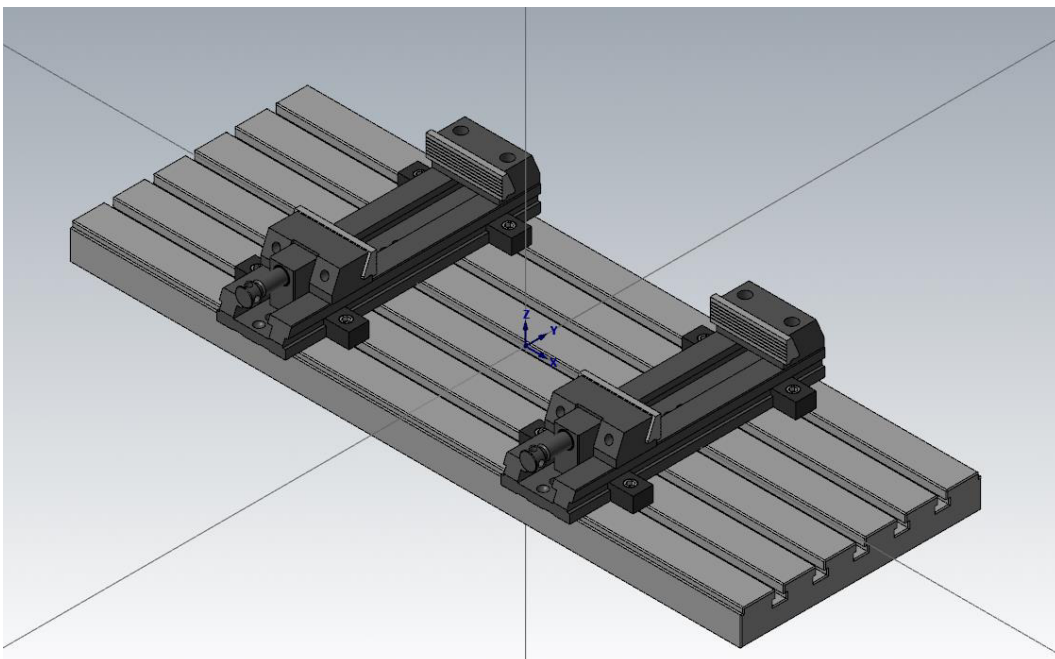


Figura 5.31. Sistema de fijación elegido en Mastercam

De cara a que Mastercam pueda reconocer los elementos de fijación, stock inicial y pieza final para interpretar e identificar de forma exitosa las colisiones, previo a la simulación hay que diferenciar los diferentes elementos.

Por un lado, vamos a optar por mantener de forma permanente el nivel 1 para almacenar el modelo de la pieza final. En el apartado de *Workpiece*, indicaremos que tome la geometría de una capa e introducimos el número del nivel.

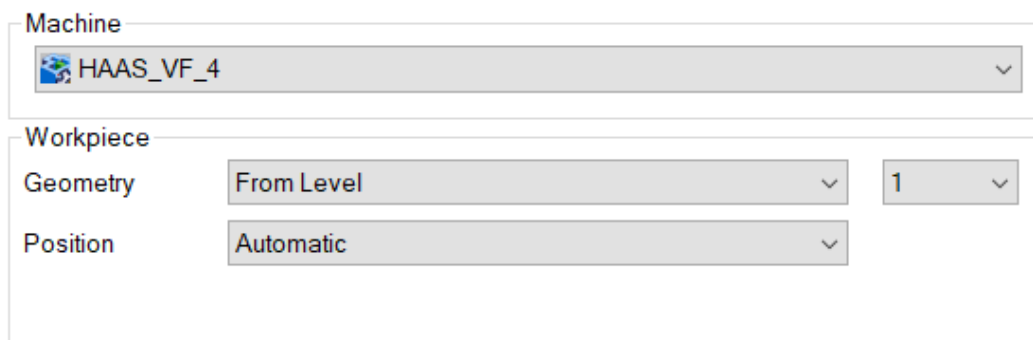


Figura 5.32. Selección del componente pieza final

Sin embargo, en el apartado de las fijaciones, utilizaremos la opción de seleccionar elementos, ya que no se permite seleccionar varias capas de forma simultánea. Al mantener el archivo base de la máquina y modificar sólo la capa de la pieza, este paso sólo habrá que realizarlo una vez.

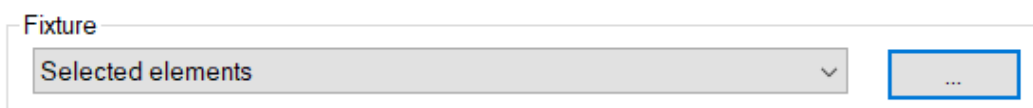


Figura 5.33. Selección de los componentes de los elementos de fijación

De esta forma, podremos mantener la mesa en la pantalla de trabajo de Mastercam pero que no aparezca en la simulación al estar ya incluida en la máquina.

Es recomendable seleccionar el stock inicial para poder visualizar en la simulación cómo se elimina el material en cada trayectoria y pasada. Al igual que en los pasos anteriores, hay varias opciones para aportar esa información. Seleccionaremos en este caso que tome el stock guardado en Mastercam. De cara a operaciones complejas lo mejor es almacenar el material que queda

operación tras operación mediante una opción de las simulaciones en Mastercam para tener un máximo control sobre las operaciones.

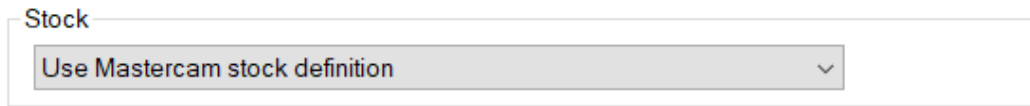


Figura 5.34. Selección stock inicial

En el apartado *Tolerances*, podremos fijar una tolerancia para detectar colisiones entre la pieza o stock inicial y la máquina:

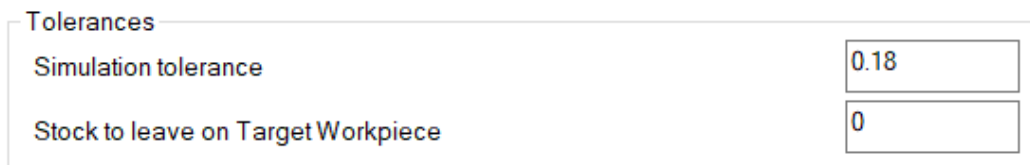


Figura 5.35. Tolerancia para detectar colisiones

El siguiente paso es añadir los reportes de colisiones para poder identificarlas. Pulsamos el botón *simulate* y accedemos a la edición de la máquina. Clicando en la máquina con el botón derecho del ratón, seguimos la siguiente ruta:

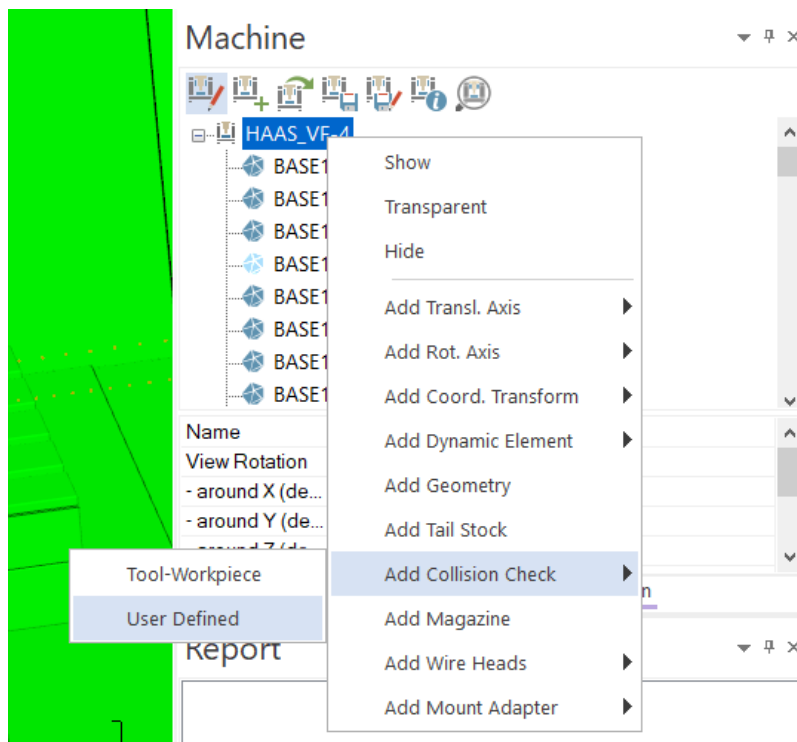


Figura 5.36. Ruta para añadir reportes de colisiones

En el árbol de la máquina aparecerá este icono:

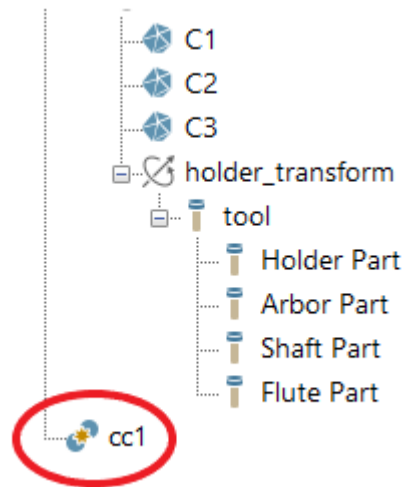


Figura 5.37. Icono de reporte de colisiones

Es posible añadir cuantos reportes sean necesarios, así que por cuestiones de organización es preferible crear uno para cada elemento principal de la máquina susceptible de producir colisión.

Como ejemplo, se van a introducir las posibles colisiones de la herramienta de corte y otros elementos de la máquina o fijaciones.

En el siguiente panel aparecen dos columnas. En una de ellas añadiremos la herramienta y en la columna contraria todos los componentes con los que pueda colisionar:

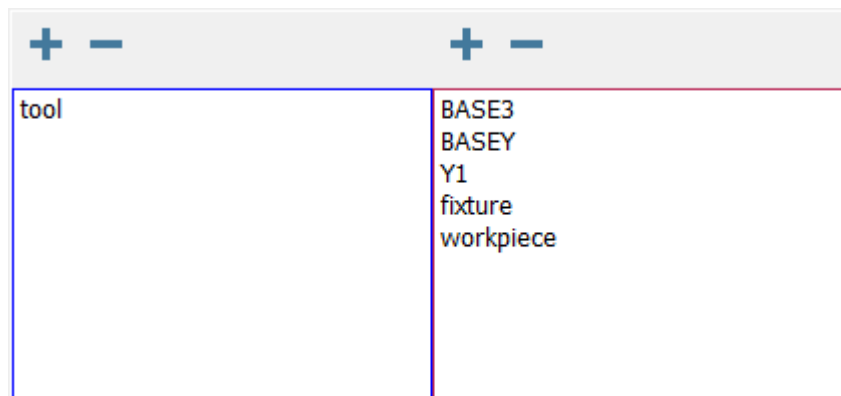


Figura 5.38. Panel para inserción de colisiones entre elementos

Mastercam resaltará en color granate o en azul los elementos seleccionados. Se ha añadido también la pieza a obtener para evitar trayectorias en las que pueda mecanizarse la pieza final.

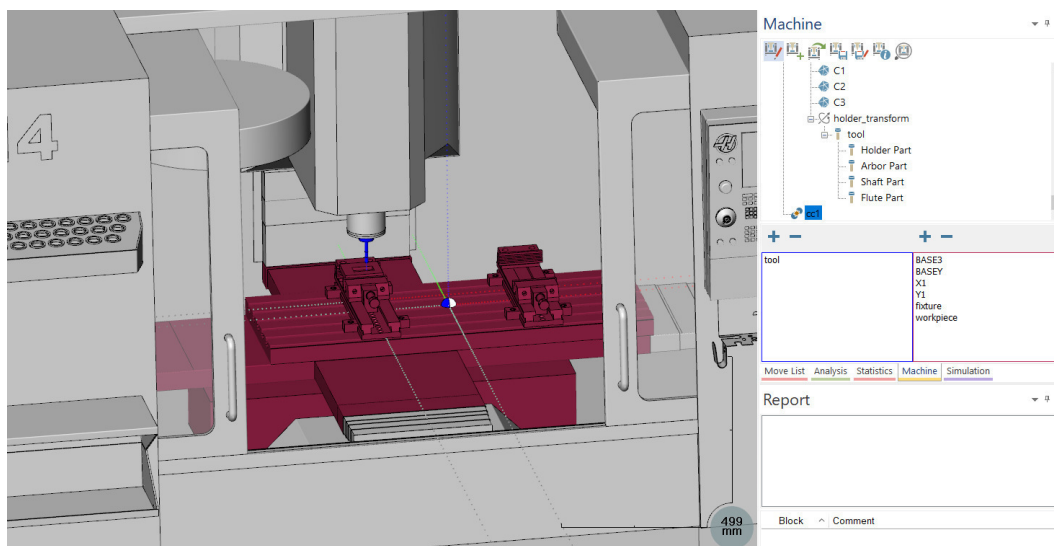


Figura 5.39. Reporte de colisiones para herramienta

Además, se ha creado un reporte de colisiones entre el cabezal y cualquier elemento de la máquina susceptible de poder ser alcanzado por el mismo. De la misma forma se ha hecho con la parte inferior del husillo.

En cuanto al menú de opciones (FILE OPTIONS), hay una serie de preferencias que es recomendable modificar. Entrando en la pestaña *Simulation Properties* marcamos las siguientes casillas:

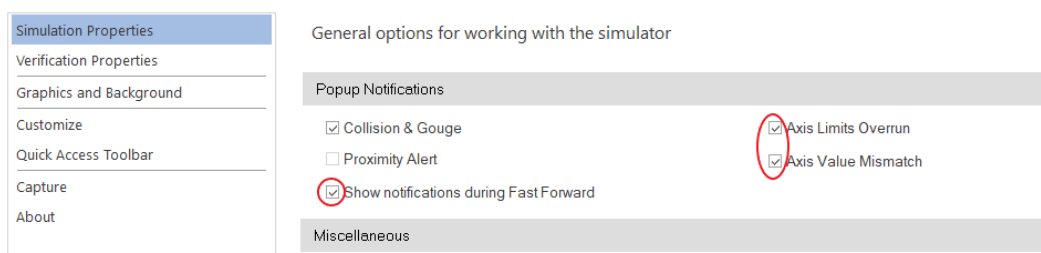


Figura 5.40. Ventana de *propiedades de la simulación*

Los límites de cada eje serán los introducidos en el límite superior e inferior de las propiedades de cada elemento.

En la pestaña *Graphics and Background* se recomienda desactivar la casilla de mostrar el centro de la máquina y activar la casilla de mostrar el centro del stock para evitar confusiones y tener ubicado en todo momento el cero de mecanizado.

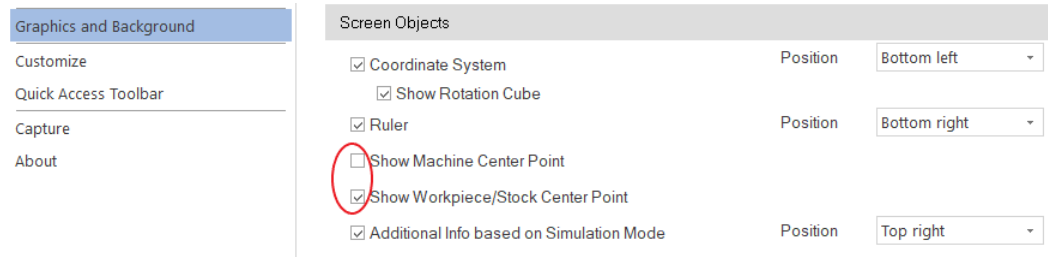


Figura 5.41. Ventana de gráficos y fondo

6.-CAPÍTULO 6. SIMULACIÓN DEL MECANIZADO DE UNA PIEZA EN EL CMV HAAS VF-4 CON MASTERCAM

Una vez se han ejecutado correctamente los pasos descritos en el anterior capítulo, contamos con la ayuda adicional de una simulación más aproximada a la realidad a la hora de generar programas de control numérico con Mastercam.

En los siguientes puntos se va a desarrollar todo el proceso para obtener los programas en código g para el mecanizado de una pieza concreta en un CMV VF-4 de Haas, centrándose en la resolución de posibles colisiones.

6.1.- CATÁLOGO DE HERRAMIENTAS EN MASTERCAM. ASPECTOS GENERALES

Al igual que muchos otros softwares CAM, *Mastercam* permite crear catálogos en los que almacena la geometría y los parámetros de corte de las herramientas que tengamos disponibles en el taller. Si actualmente no tenemos ninguna trayectoria de mecanizado, podemos acceder a la librería desde *Tool Manager* en la pestaña *Toolpaths*:

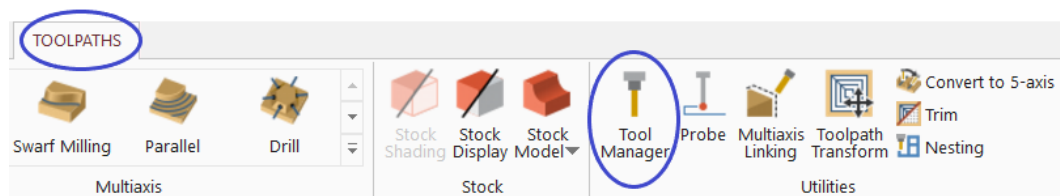


Figura 6.1. Acceso a Tool Manager desde el menú

Al entrar en el administrador de herramientas, se abrirá una ventana con dos partes bien diferenciadas. En la zona superior se muestran las herramientas que se han usado en la pieza actual, mientras que en la inferior aparecen todas las que forman parte de la librería seleccionada.

Para el mecanizado de esta pieza, crearemos una nueva librería clicando en el botón indicado en la siguiente imagen:

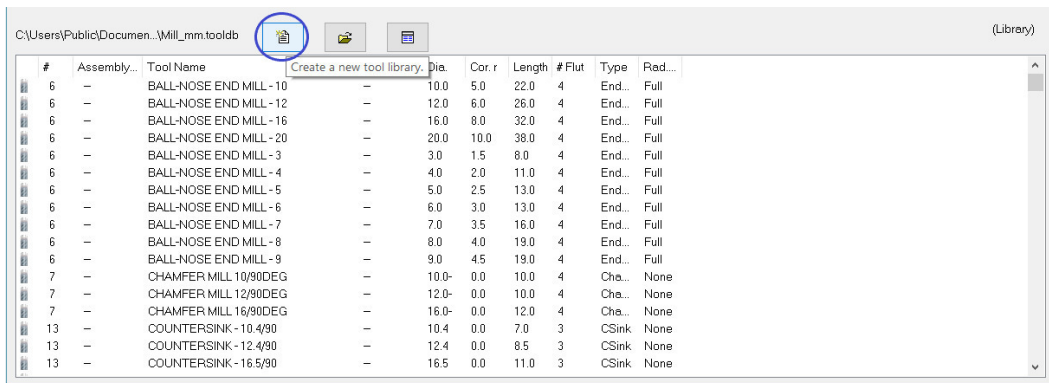


Figura 6.2. Ventana *Tool Manager*

Las librerías de *Mastercam* se almacenan con la extensión *.tooldb*, siendo recomendable crear una para cada material que se quiera mecanizar si no se quiere partir de las condiciones de corte calculadas por *Mastercam*.

Tras guardar la librería procederemos a introducir la geometría y parámetros de corte de cada herramienta. Pulsando con el botón derecho del ratón en cualquier punto de la ventana anterior podremos añadirla:

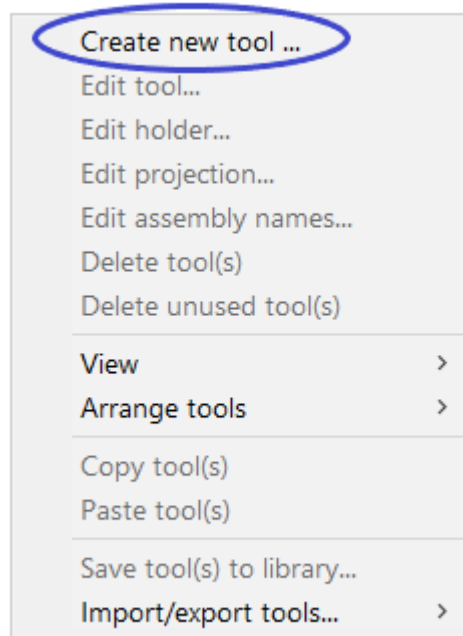


Figura 6.3. Creación de una nueva herramienta en *Mastercam*

La edición de herramientas se divide en tres sencillos pasos, divididos por pestañas.

6.1.1.- Paso 1..1. Selección del tipo de herramienta

En la primera pestaña, deberemos de elegir el tipo de herramienta que queremos añadir a nuestra librería. Aparecen agrupadas en dos clases: herramientas para operaciones de fresado y herramientas para operaciones de taladrado.

Dentro de cada grupo encontramos una gran diversidad de herramientas que, unidas posteriormente al tipo de operación a realizar, trabajarán de la forma correcta.

Si la herramienta a introducir no aparece entre las distintas opciones se podrá personalizar en el botón *custom tool*.

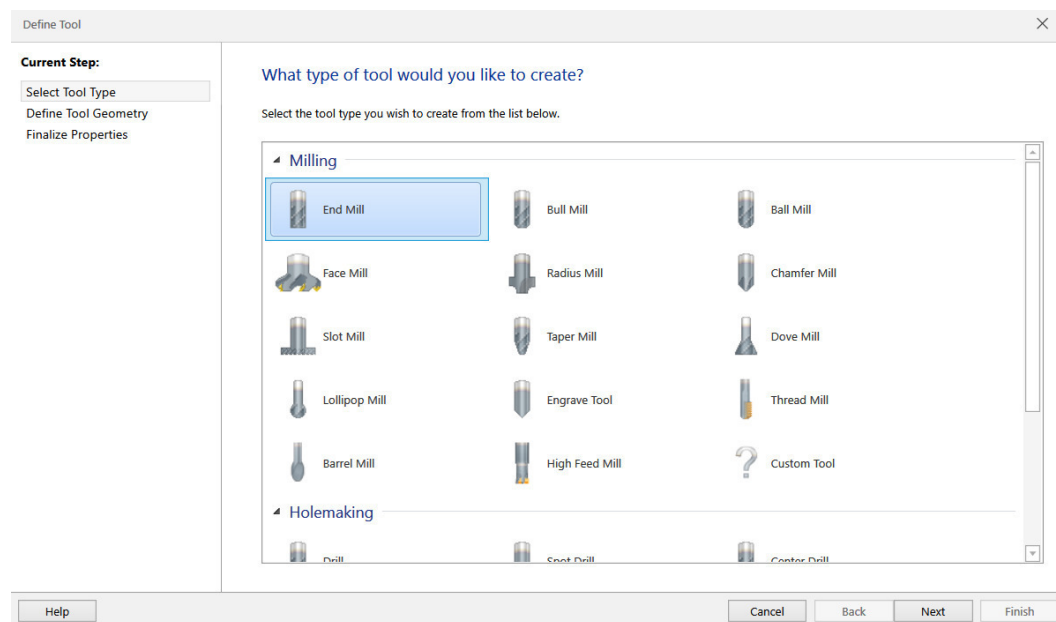


Figura 6.4. Pestaña *Select Tool Type*

6.1.2.- Paso 1.2. Definición de la geometría de la herramienta

Los parámetros a modificar en esta pestaña vendrán determinados por el tipo de herramienta seleccionada en el paso anterior.

Además de introducir los parámetros geométricos a mano, existe la opción de importarlos desde el modelo de la herramienta, bien sea desde un nivel de Mastercam o desde un archivo externo.

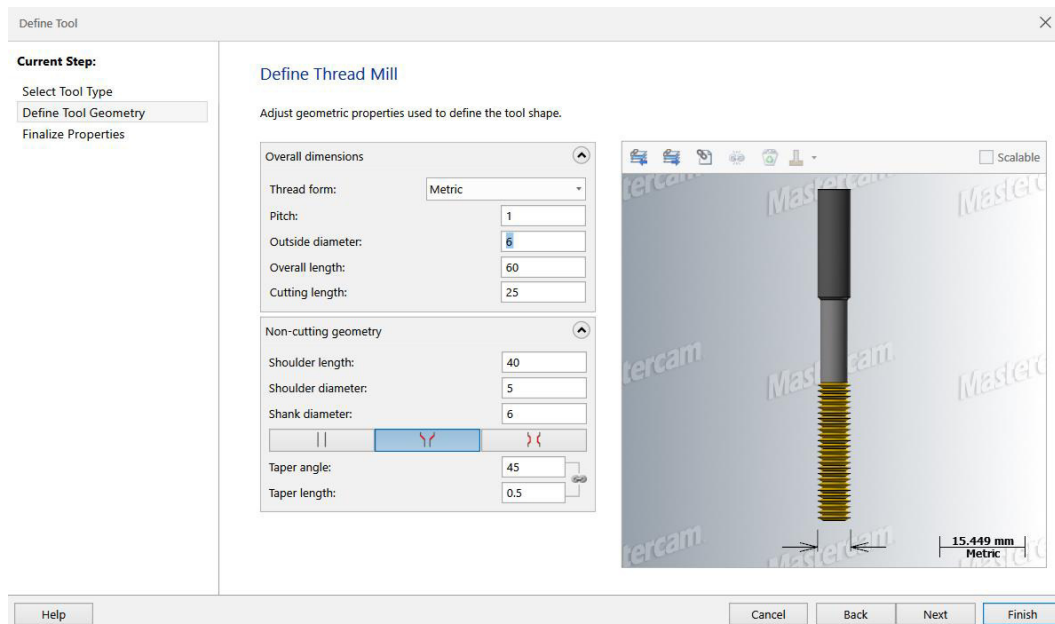


Figura 6.5. Pestaña *Define Tool Geometry*

6.1.3.- Paso 1.3. Parámetros de corte

En la última pestaña podremos introducir los parámetros de corte.

Cabe destacar que éstos podrán ser modificados de manera posterior en cada operación, pero es de gran utilidad tenerlos correctamente definidos para incrementar la automatización de las tareas de CAM, consiguiendo un gran ahorro de tiempo en la preparación de los programas de control numérico.

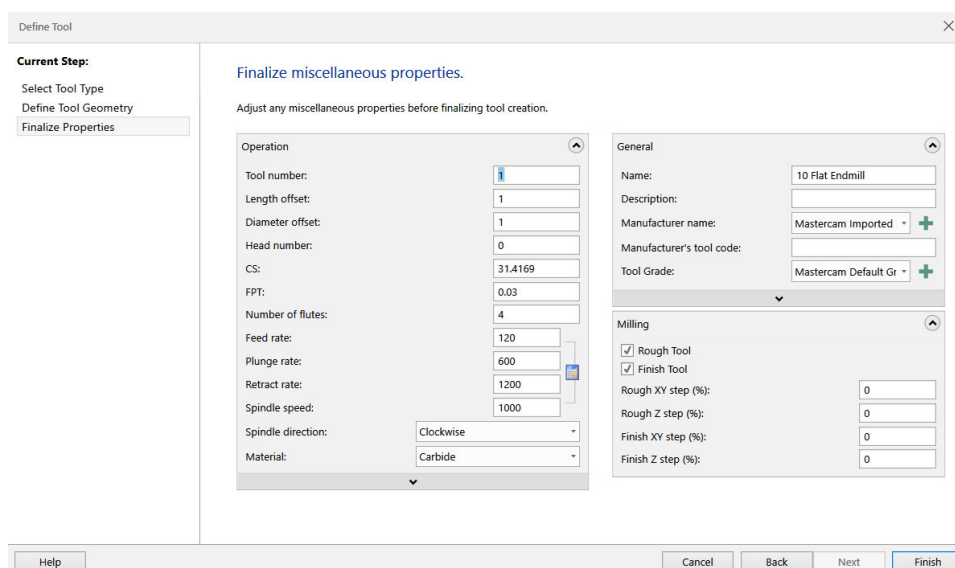


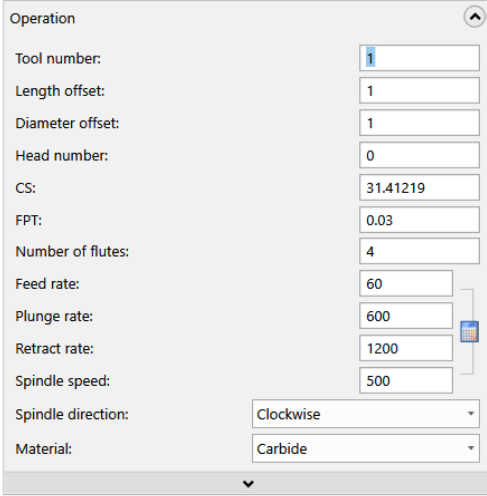
Figura 6.6. Pestaña de parámetros de corte

Los parámetros de corte están divididos en tres grupos:

OPERATION

Parámetros principales de corte. Son los siguientes:

- Tool Number: Número de la herramienta. Si se mantiene igual que el número de la posición de la herramienta en el carrusel evita que el operario tenga que modificar los números de cambio de herramienta en el código.
- Length offset: Número que indica la posición para almacenar la longitud de la herramienta. Al igual que el anterior, es recomendable que coincida con el número de la herramienta en el carrusel para evitar modificaciones.
- Diameter offset: Indica la posición para almacenar el diámetro de la herramienta. Dependiendo del tipo de compensación que se use, puede no aparecer posteriormente en el código.
- Head number: Reemplaza los *offsets* por el número introducido.
- CS: Siglas de Cutting Speed. Es la velocidad de corte, que Mastercam calcula automáticamente a partir del resto de parámetros introducidos. Viene determinada en m/min.
- FPT: Siglas de Feed Per Tooth. Es lo que conocemos como el avance por diente. Se da en mm.
- Feed Rate: Velocidad de avance en mm/min.
- Plunge Rate: Velocidad de bajada de la herramienta en Z sin mecanizar.
- Retract Rate: Velocidad de subida de la herramienta en Z sin mecanizar.
- Spindle Speed: Velocidad de giro del husillo, en rpm.
- Splindle Direction: Podemos seleccionar el sentido de giro del husillo.
- Material: Podemos seleccionar el material en el que está fabricada la herramienta. Existe la opción de personalizarlo si no está entre las opciones.



Operation	
Tool number:	1
Length offset:	1
Diameter offset:	1
Head number:	0
CS:	31.41219
FPT:	0.03
Number of flutes:	4
Feed rate:	60
Plunge rate:	600
Retract rate:	1200
Spindle speed:	500
Spindle direction:	Clockwise
Material:	Carbide

Figura 6.7. Parámetros de operación

Seleccionando la flecha podremos acceder a ajustes de la velocidad de corte y el avance por diente y a las opciones de refrigeración:

Standard Coolant	
Flood	Off
Mist	Off
Thru-tool	Off

Custom Coolant		
Flood	Ignore	Before
Mist	Ignore	Before
Thru-tool	Ignore	Before
Custom option 1	Ignore	Before
Custom option 2	Ignore	Before
Custom option 3	Ignore	Before
Custom option 4	Ignore	Before
Custom option 5	Ignore	Before
Custom option 6	Ignore	Before
Custom option 7	Ignore	Before

Figura 6.8. Pestaña de opciones de refrigeración

Dependiendo de las opciones seleccionadas, Mastercam insertará en el código del programa la activación del uso de taladrina o aire y el momento en el que se desea su uso. Su complejidad depende del sistema de lubricación instalado en la máquina y sus posibilidades.

GENERAL

En este apartado podremos introducir desde un nombre para reconocer la herramienta hasta los datos del fabricante y la referencia correspondiente en su catálogo.

Name:	19.997 Flat Endmill
Description:	
Manufacturer name:	Mastercam Imported +
Manufacturer's tool code:	
Tool Grade:	Mastercam Default Gr +

Figura 6.9. Parámetros generales



MILLING

Aquí se podrá indicar si la herramienta es válida para operaciones de desbaste, acabado o ambas. Además se podrán introducir los siguientes valores referidos a las pasadas:

- Rough XY step (%): Profundidad de pasada radial de desbaste dada en función de porcentaje respecto del valor del diámetro de la herramienta.
- Rough Z step (%): Profundidad de pasada axial de desbaste dada en función de porcentaje respecto del valor del diámetro de la herramienta.
- Finish XY step (%): Profundidad de pasada radial de acabado dada en función de porcentaje respecto del valor del diámetro de la herramienta.
- Finish Z step (%): Profundidad de pasada axial de acabado dada en función de porcentaje respecto del valor del diámetro de la herramienta.

Milling

Rough Tool

Finish Tool

Rough XY step (%): 0

Rough Z step (%): 0

Finish XY step (%): 0

Finish Z step (%): 0

Figura 6.10. Parámetros específicos de fresado

Pulsando el botón *Finish* la herramienta se guardaría en la librería seleccionada previamente. Todos los parámetros, tanto geométricos como de corte pueden ser editados en el futuro.

6.1.4.- Paso 2.1. Selección del adaptador

Para acercarnos más a la realidad en nuestra simulación, deberemos relacionar la herramienta con el adaptador correspondiente. En el caso de herramientas como brocas, podremos saber la superficie de amarre en la pinza y comunicársela al operario de máquina.

Podemos acceder a su edición a través de *Tool manager* y clicando con el botón derecho del ratón en la herramienta seleccionaremos *Edit Holder*:

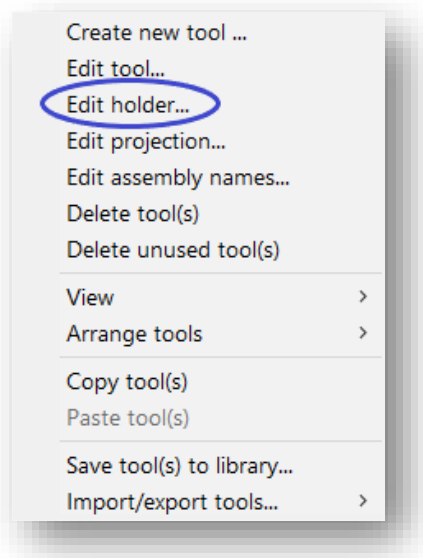


Figura 6.11. Acceso a la edición del adaptador

En la edición del adaptador podremos seleccionar el tipo de conexión inferior y superior y su diámetro. También se pueden añadir segmentos e ir construyéndolo y, como en la creación de herramientas, importar un archivo 3D externo con la geometría.

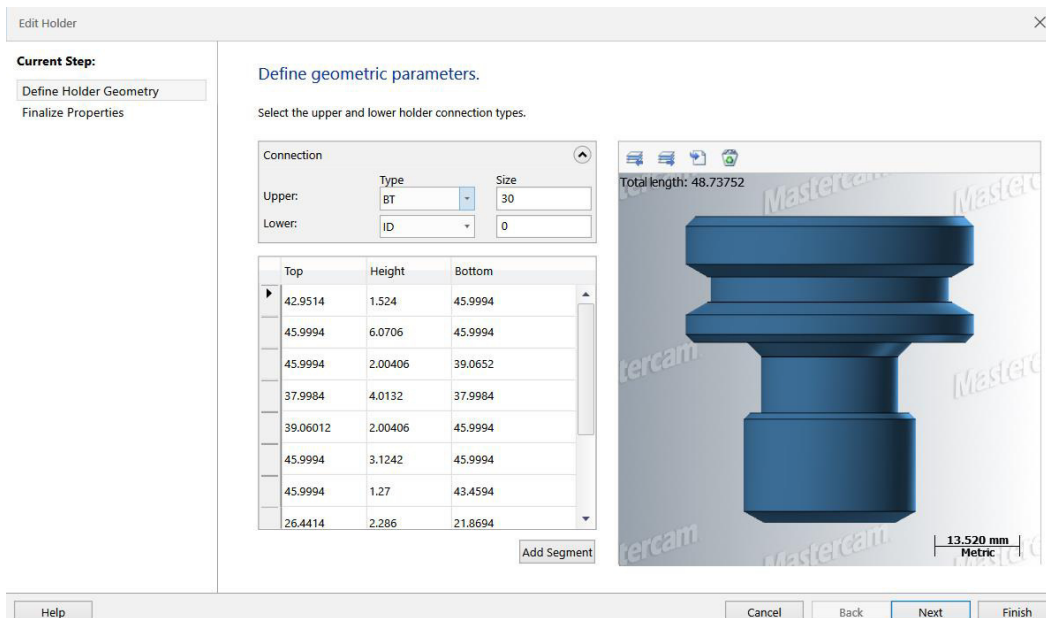


Figura 6.12. Pestaña de edición de la geometría del adaptador



6.1.5.- Paso 2.2. Propiedades finales del adaptador

En la última pestaña del editor se introducirá el nombre por el que queremos reconocer el adaptador, descripción, y la referencia y nombre del fabricante. También podremos indicar si permite el paso de refrigerante.

Figura 6.13. Pestaña de identificación del adaptador

6.1.6.- Paso 3.1. Ajuste de la distancia de amarre de la herramienta

Uno de los pasos más importantes de cara a controlar las colisiones. Accederemos a ello de forma similar al paso 2.1., pero seleccionando *Edit Projection* en lugar de *Edit Holder*. En la ventana de Mastercam aparecerán el adaptador y la herramienta en tres dimensiones. A su izquierda aparece una regla que indicará la distancia de amarre desde la punta de la herramienta. Basta con ajustarla y presionar el botón izquierdo del ratón y el botón de *enter* para aceptar los cambios.

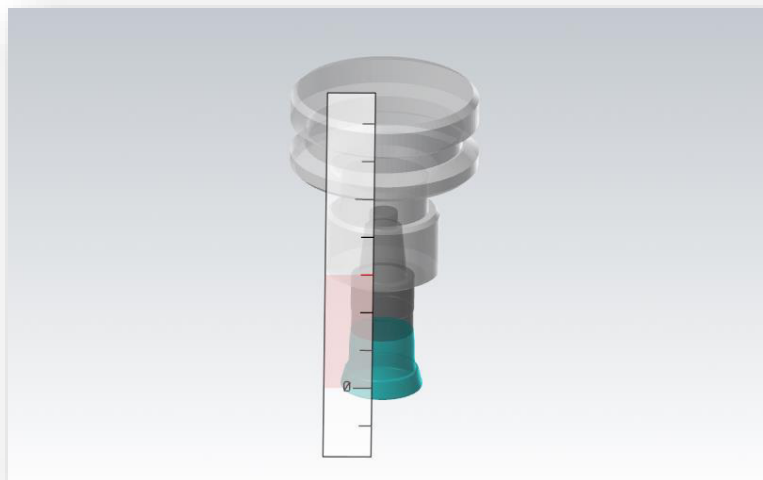


Figura 6.14. Ajuste de la distancia de amarre de la herramienta

6.2.- CÁLCULO DE LOS PARÁMETROS DE CORTE PARA FRESADO

Para hallar los parámetros de corte nos vamos a basar en los datos facilitados por el fabricante: el avance por diente y la velocidad de corte recomendados.

Existen varias combinaciones de parámetros de corte que pueden proporcionar resultados válidos, aunque a la hora de mecanizar influyen múltiples factores (algunos fuera del control del operario y del programador) y sólo podemos hacer una mera estimación del resultado final.

Las ecuaciones utilizadas en las siguientes líneas son fórmulas más bien generales y algunas de ellas sólo ofrecen aproximaciones. A la hora de hallar los siguientes parámetros se debería de recurrir a un estudio más específico y tener en cuenta un mayor número de factores si queremos obtener resultados más próximos a la realidad. Además no se ha tenido en cuenta el valor de la rugosidad, ya que la pieza a mecanizar no exige condiciones de acabado concretas.

La forma de trabajar con los parámetros va a ser la siguiente:

- En primer lugar se van a tener en cuenta el diámetro de la herramienta y el número de dientes. Además se van a usar la velocidad de corte para ese material y el avance por diente recomendados por el fabricante.
- Hallamos la velocidad de giro del husillo con los datos anteriores y la sustituimos por la velocidad máxima permitida por la máquina si la supera.
- Calculamos la velocidad de avance a partir del valor de la velocidad de giro, del avance por diente y del número de dientes.
- Una vez calculada la velocidad de giro, vamos a ir haciendo combinaciones de profundidad de corte axial y profundidad de corte radial (dentro de los valores recomendados por el fabricante).
- En estas combinaciones se tendrá en cuenta que permanezcan dentro de los valores permitidos tres factores: El espesor de viruta, la potencia de corte y el par de corte producidos.

6.2.1.- Velocidad de giro del husillo

La velocidad de giro del husillo se calculará a partir de la fórmula general:

$$n = \frac{V_c \cdot 1000}{\pi \cdot D} \quad (6.2.1)$$

n: Velocidad de giro del husillo (rpm)

V_c: Velocidad de corte (m/min)

D: Diámetro de corte (mm)

6.2.2.- Velocidad de avance

Para hallar la velocidad de avance usaremos la fórmula:

$$V_f = n \cdot f_z \cdot z \quad (6.2.2)$$

n: Velocidad de giro del husillo (rpm)

f_z: Avance por diente (mm)

z: Número de dientes

6.2.3.- Espesor promedio de viruta

Una forma de saber si los parámetros de corte pueden ir bien encaminados es hallar el espesor promedio de viruta. Según los datos facilitados por Sandvik un espesor correcto estaría entre 0.1 mm y 0.2 mm, aunque depende del tipo de material y la operación a realizar.

Para el cálculo el espesor promedio, se ha utilizado la siguiente fórmula proporcionada en el catálogo de herramientas de Dormer:

$$h_m = \frac{f_z \cdot a_e \cdot 360}{D \cdot \pi \cdot \arccos \left[1 - \frac{2 \cdot a_e}{D} \right]} \quad (6.2.3)$$

h_m: Promedio del espesor de la viruta (mm)

f_z: Avance por diente (mm)

a_e: Profundidad radial (mm)

D: Diámetro de la herramienta (mm)

6.2.4.- Potencia de corte

En el cálculo de la potencia de corte van a influir cuatro parámetros: La profundidad axial y radial, la velocidad de avance y la fuerza específica de corte.

La fuerza específica de corte es función del material a mecanizar y el espesor de la viruta. Para calcularla vamos a usar la siguiente fórmula del catálogo de herramientas de Dormer:

$$k_c = k_{c1} \cdot h_m^{-z} \quad (6.2.4.1)$$

K_c : Fuerza específica de corte (N/mm²)

K_{c1} : Fuerza específica de corte por mm (N/mm)

h_m : Espesor promedio

z : Factor de corrección

Los valores de la fuerza específica de corte de los distintos tipos de acero y del factor de corrección dependiendo de la operación a realizar, podrán ser extraídos de la siguiente tabla:

			Taladrado	Fresado		Roscado
			k	k_{c1}	z	k_c
Aplicación por grupo de material			Factor de material	N/mm ²	Factor de corrección	N/mm ²
1. Acero	1.1	Acero blando	1,3	1400	0,18	2000
	1.2	Acero de construcción/cementación	1,4	1450	0,22	2100
	1.3	Acero al carbono	1,9	1500	0,20	2200
	1.4	Acero aleado	1,9	1550	0,20	2400
	1.5	Acero aleado/temple y revenido	2,7	1600	0,20	2500
	1.6	Acero aleado/temple y revenido	3,4	1700	0,20	2600
	1.7	Acero aleado cementado	3,7	1900	0,20	2900
	1.8	Acero aleado cementado	4,0	2300	0,20	2900

Figura 6.15. Fuerzas específicas de corte y factores de corrección para aceros

Una vez calculada la fuerza específica de corte se hallará la potencia de corte neta necesaria:

$$P_c = \frac{a_p \cdot a_e \cdot V_f \cdot k_c}{60 \cdot 10^6} \quad (6.2.4.2)$$

P_c : Potencia de corte (kW)

a_e : Profundidad radial (mm)

a_p : Profundidad axial (mm)

V_f : Velocidad de avance (mm/min)

k_c : Fuerza específica de corte (N/mm²)

6.2.5.- Par de corte

Podremos hallar el par de corte necesario a partir de la siguiente fórmula:

$$M_c = \frac{a_p \cdot a_e \cdot V_f \cdot k_c}{2 \cdot \pi \cdot n} \quad (6.2.5)$$

M_c : Par de corte (Nm)

a_e : Profundidad radial (mm)

a_p : Profundidad axial (mm)

V_f : Velocidad de avance (mm/min)

k_c : Fuerza específica de corte (N/mm²)

n : Velocidad de giro del husillo (rpm)

El rendimiento de la máquina depende de los valores de P_c , M_c y n , además del tipo accionamiento del husillo. Para el accionamiento por correa podremos saber si nuestros valores están dentro de los límites a través de siguiente gráfica facilitada por Haas:

Accionamiento vectorial de Haas

14,9 kW • 7.500 rpm • Cono ISO 40

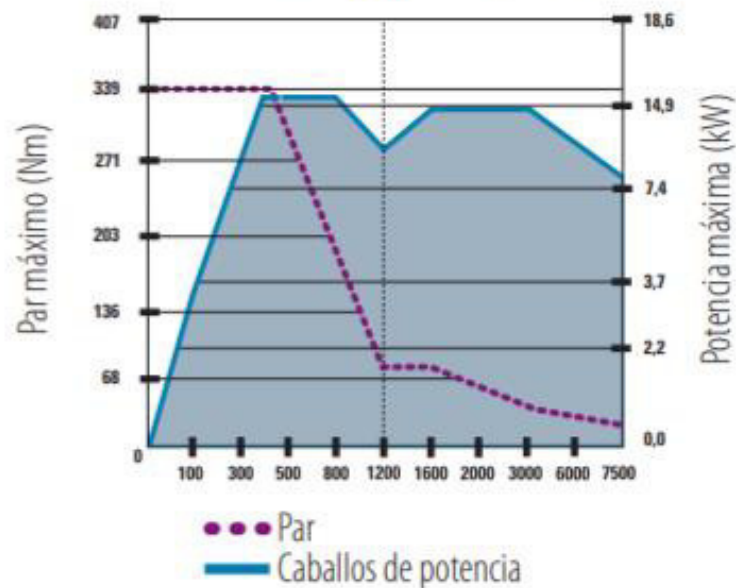


Figura 6.16. Gráfica P_c - M_c - n de Haas para accionamiento por correa [28]

Para calcular los parámetros de fresado vamos a ayudarnos de la siguiente hoja de cálculo:

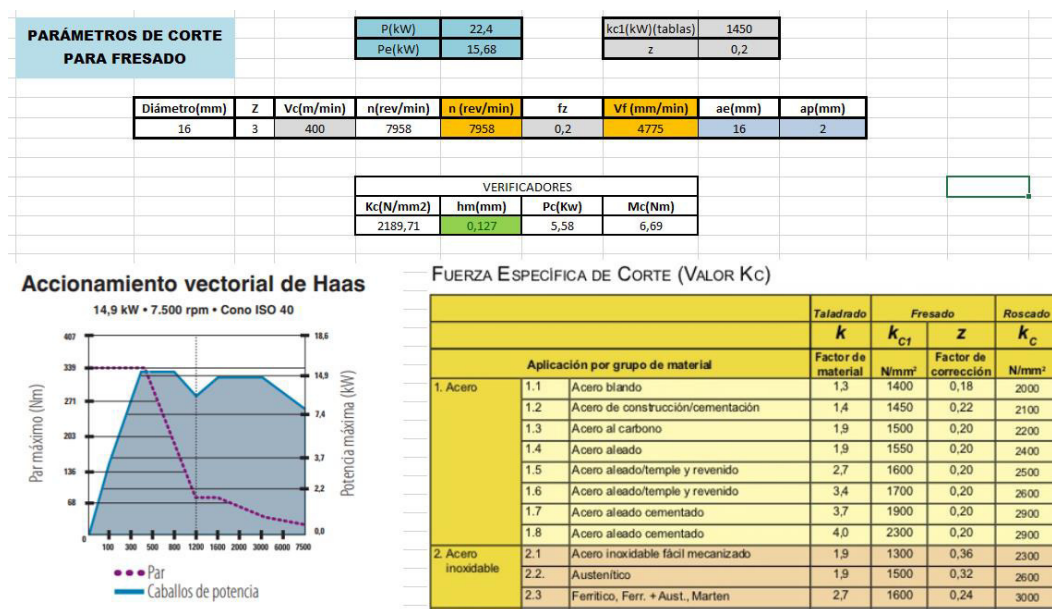


Figura 6.17. Hoja de cálculo para hallar parámetros de corte de fresado

En las celdas en gris (Vc y fz) introduciremos los valores recomendados por el fabricante o valores ya establecidos como kc1 y z. La velocidad de giro se calcula en una celda pero posteriormente se comprueba si supera los límites del centro de mecanizado y si es así, la sustituye por la máxima velocidad permitida.

En azul aparecen ap y ae, valores que podremos ir modificando mientras controlamos los verificadores.

La celda del espesor medio tiene asignado un formato condicional con tres colores:

- Gris: El espesor de la viruta puede ser mayor. Baja productividad.
- Verde: El espesor de viruta se encuentra dentro de los límites óptimos.
- Rojo: Espesor de viruta demasiado alto.

6.3.- CÁLCULO DE LOS PARÁMETROS DE CORTE PARA TALADRADO

Los parámetros de corte para las operaciones de taladrado se van a hallar de la siguiente forma:

- Tomamos la velocidad de corte y el avance por revolución recomendados por el fabricante.
- Se calcula la velocidad de giro del husillo con el diámetro y la velocidad de corte.
- Buscamos en la tabla facilitada por Dormer el factor de material para hallar la potencia necesaria y comprobamos que esté dentro del límite de la máquina.

En las operaciones de taladrado hay que tener en cuenta otros factores como la necesidad de desalojar viruta para taladros profundos o con materiales que generan viruta continua.

Las fórmulas utilizadas se van a ver en los siguientes apartados.

6.3.1.- Velocidad de giro del husillo

La ecuación para hallar la velocidad de giro del husillo es la misma que para fresado:

$$n = \frac{V_c \cdot 1000}{\pi \cdot D} \quad (6.3.1)$$

n: Velocidad de giro del husillo (rpm)

V_c : Velocidad de corte (m/min)

D: Diámetro de corte (mm)

6.3.2.- Velocidad de avance

En este caso, la fórmula de la velocidad de avance para fresado se verá modificada, ya que el desplazamiento de la herramienta es vertical. No se va a tener en cuenta el número de labios de la broca y hablaremos de avance por revolución en lugar de avance por diente

$$V_f = n \cdot f_n \quad (6.3.2)$$

n: Velocidad de giro del husillo (rpm)
f_n: Avance por diente (mm)

6.3.3.- Potencia de taladrado

Para calcular la potencia de taladrado deberemos buscar previamente en la tabla el factor de material K correspondiente a nuestro material:

			Taladrado	Fresado	Roscado	
			k	k _{C1}	z	k _C
Aplicación por grupo de material			Factor de material	N/mm ²	Factor de corrección	N/mm ²
1. Acero	1.1	Acero blando	1,3	1400	0,18	2000
	1.2	Acero de construcción/cementación	1,4	1450	0,22	2100
	1.3	Acero al carbono	1,9	1500	0,20	2200
	1.4	Acero aleado	1,9	1550	0,20	2400
	1.5	Acero aleado/temple y revenido	2,7	1600	0,20	2500
	1.6	Acero aleado/temple y revenido	3,4	1700	0,20	2600
	1.7	Acero aleado cementado	3,7	1900	0,20	2900
	1.8	Acero aleado cementado	4,0	2300	0,20	2900

Figura 6.18. Factor de material para taladrado de aceros

Tras encontrarlo, aplicamos la siguiente fórmula:

$$P = \frac{1.25 \cdot D^2 \cdot K \cdot n \cdot (0.056 + 1.5 \cdot f_n)}{100000} \quad (6.3.3)$$

P: Potencia (kW)

K: Factor de material

D: Diámetro (mm)

V_f: Velocidad de avance (mm/min)

f_n: Avance por revolución (mm/rev)



Para calcular los diferentes parámetros vamos a usar una hoja de cálculo para facilitar la tarea.

Sustituiremos la velocidad de corte y del avance por revolución (celdas en gris) y tomaremos los valores de la velocidad de giro y la velocidad de avance para introducirlos en Mastercam (celdas en naranja).

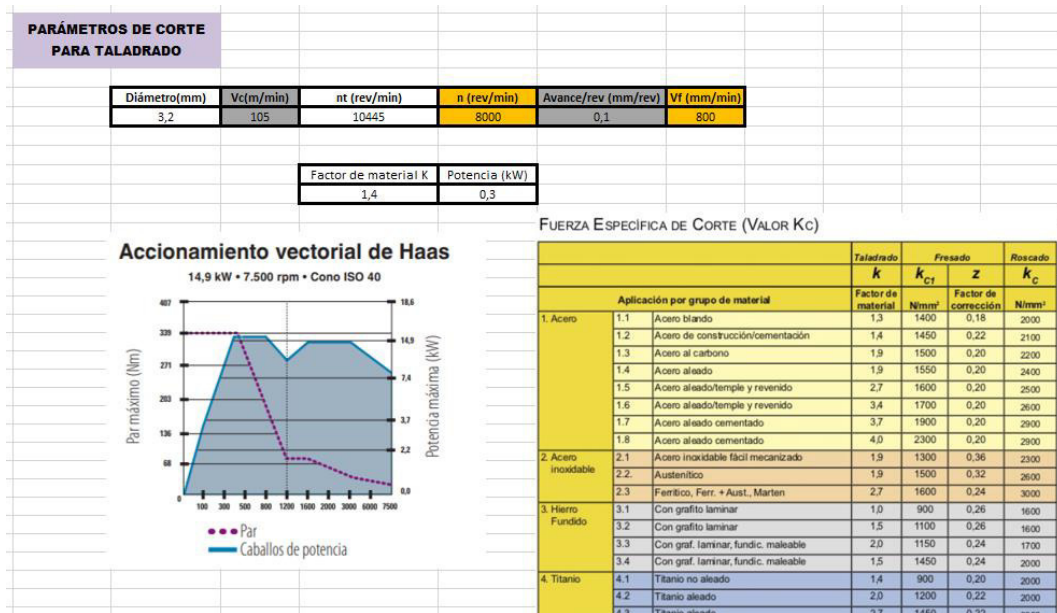


Figura 6.19. Hoja de cálculo para hallar parámetros de corte de taladrado

Al igual que en el caso anterior, usaremos la gráfica proporcionada por Haas para comprobar que el valor no sea superior al máximo permitido para esa velocidad de giro del husillo

Los siguientes apartados se centrarán en el mecanizado de la pieza y cada operación a realizar. En ellos se hará un análisis de las trayectorias de mecanizado, herramientas seleccionadas y sus parámetros de corte correspondientes y posibles soluciones ante colisiones en la simulación.

6.4.- MATERIAL Y CARACTERÍSTICAS DE LA PIEZA A MECANIZAR

La pieza a obtener se ha diseñado de forma que su mecanizado pueda dar lugar a varios tipos de colisiones, no teniendo otras dificultades añadidas. Se trata de una pieza de acero F-114 que parte de un tocho inicial con unas dimensiones de 305x170x60.4 escuadrado previamente.

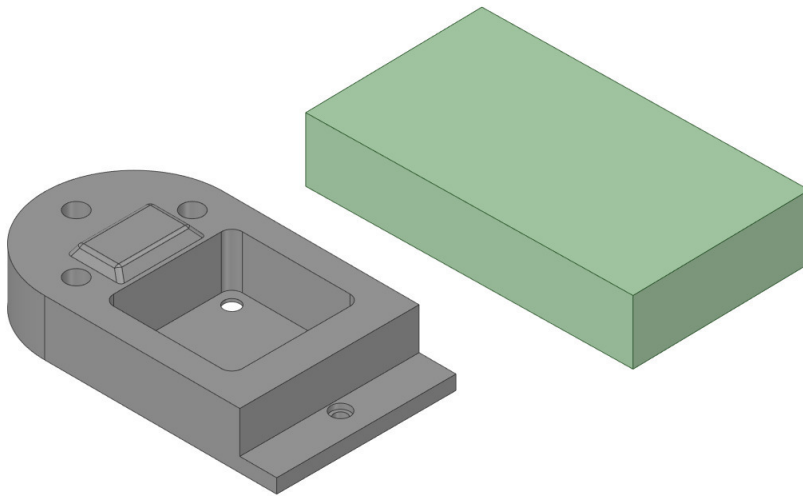


Figura 6.20. Pieza inicial y material de partida modelados en SpaceClaim

6.5.- OPERACIÓN 1. CONTORNEADO CON INTERPOLACIÓN CIRCULAR

En primer lugar se va a mecanizar la zona circular de la pieza usando una fresa de plato contorneando con interpolación circular y realizando varias pasadas axiales.

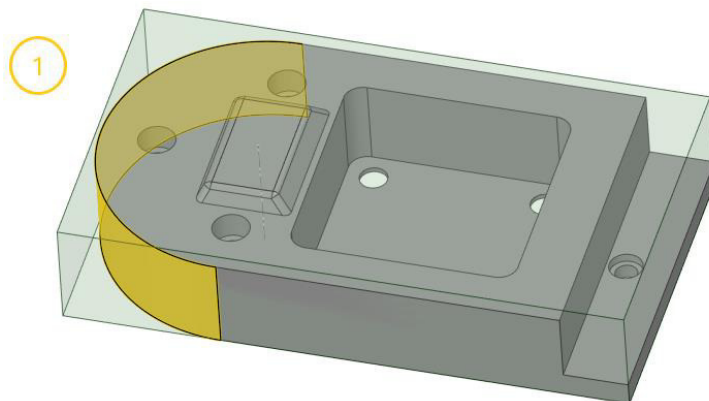


Figura 6.21. Zona a mecanizar en la primera operación

6.5.1.- Selección de herramientas

Para la selección de herramientas se va a recurrir a la web de Sandvik, ya que ofrece un asistente para la creación de ensamblajes entre herramientas y sus adaptadores correspondientes.

El plato elegido es válido para escuadrar, con un diámetro de corte de 20 mm para poder evitar, en la medida de lo posible, colisiones con la mordaza.

FRESA DE PLATO D=20 mm

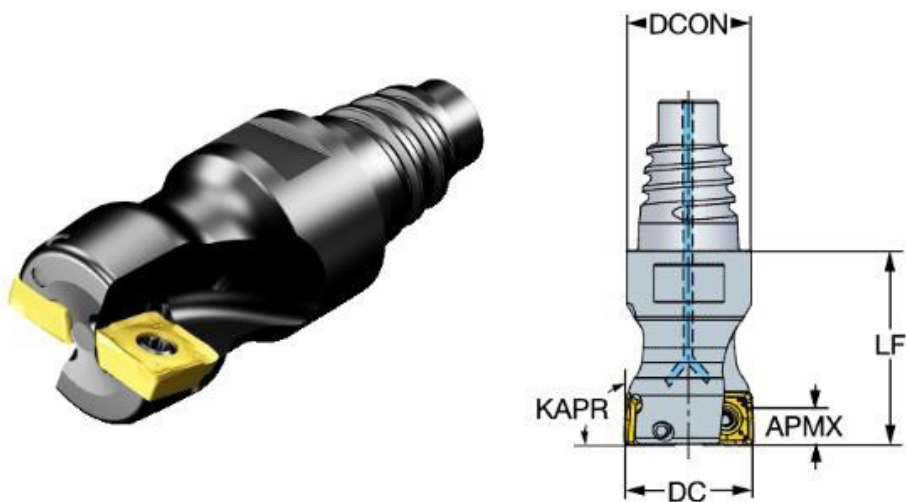


Figura 6.22. Portaherramientas op 1 [29]

Tabla 6. Datos de portaherramientas. Operación 1

DATOS DE PORTAHERRAMIENTAS	
Código ISO	490-020EH20-08L
Diámetro de Corte (DC)	20 mm
Profundidad de corte máxima	5.5 mm
Longitud funcional (LF)	30 mm
Número de elementos de corte	2
Par	1.2 Nm
Velocidad de giro máxima	48500 rpm

La velocidad de giro máxima que permite supera con creces la velocidad de giro máxima de la máquina, luego en este aspecto no puede generar ningún problema

PLAQUITA DE CORTE 490R-08T308E-MM 1130

Las plaquitas de corte elegidas son compatibles con el plato seleccionado y válidas para mecanizar acero.

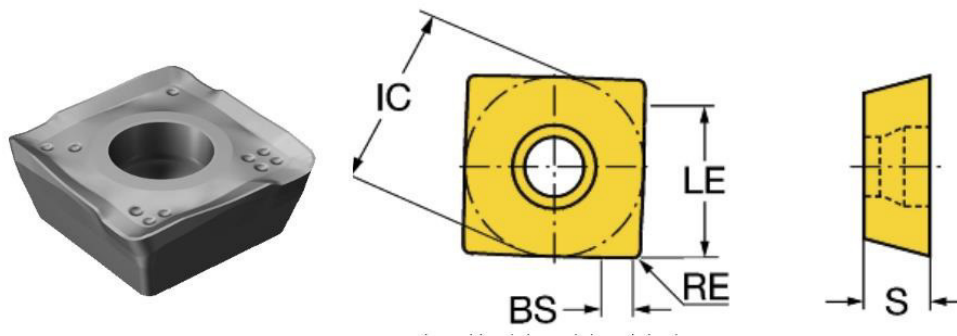


Figura 6.23. Plaqueta de corte op 1 [29]

Tabla 7. Datos de plaqueta de corte. Operación 1

DATOS DE PLAQUETA DE CORTE	
Código ISO	490R-08T308E-MM 1130
Código de forma de plaqueta	S
Longitud de filo (BS)	1.2 mm
Ángulo de filo principal	90°
Recubrimiento	PVD AlTiCrN
Diámetro de círculo inscrito (IC)	8.5 mm
Longitud efectiva del filo (LE)	5.6 mm
Radio de punta (RE)	0.8 mm
Grosor de la plaqueta	3.3 mm
Avance por diente recomendado (fz)	0.17 mm (0.12 - 0.22)
Velocidad de corte recomendada (Vc)	270 m/min (275-265)

ADAPTADOR

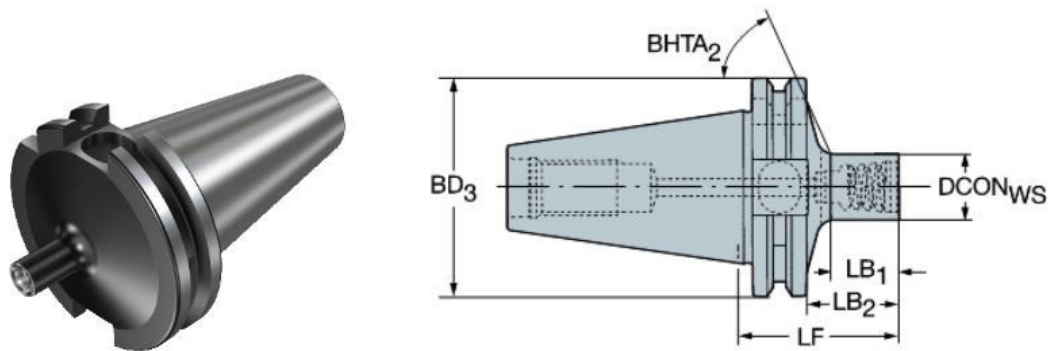


Figura 6.24. Adaptador op 1 [29]

Tabla 8. Datos de adaptador. Operación 1

DATOS DE ADAPTADOR	
Código ISO	392.140EH-40 20 046
Longitud funcional (LF)	46 mm
Diámetro del cuerpo (BD1)	19.2 mm
Diámetro del cuerpo (BD3)	63.5 mm
Par	50 Nm
Velocidad de giro máxima	18000 rpm

6.5.2.- Parámetros de corte y operación

Para hallar los parámetros de corte hacemos uso de las hojas de cálculo anteriores y seguimos los pasos explicados.

Tabla 9. Parámetros de corte op 1

PARÁMETROS DE CORTE OP 1	
Diámetro (D)	20 mm
Número de dientes (Z)	2
Velocidad de corte (V _c)	270 m/min
Avance por diente (f _z)	0.17 mm
Profundidad radial (a _e)	15 mm
Profundidad axial (a _p)	4 mm
Velocidad de giro (n)	4297 rpm
Velocidad de avance (V _f)	1461 mm/min

Tabla 10. Verificadores op 1

VERIFICADORES OP 1	
Fuerza específica de corte (N/mm ²)	2304.42
Espesor promedio h _m (mm)	0.12 ✓
Potencia de corte (kW)	3.37 ✓
Par de corte (Nm)	7.49 ✓

Antes de comenzar a configurar las operaciones deberemos de acceder desde la ventana de Toolpaths a Tool settings para que de forma automática se conserven los parámetros introducidos en las propiedades de la herramienta.

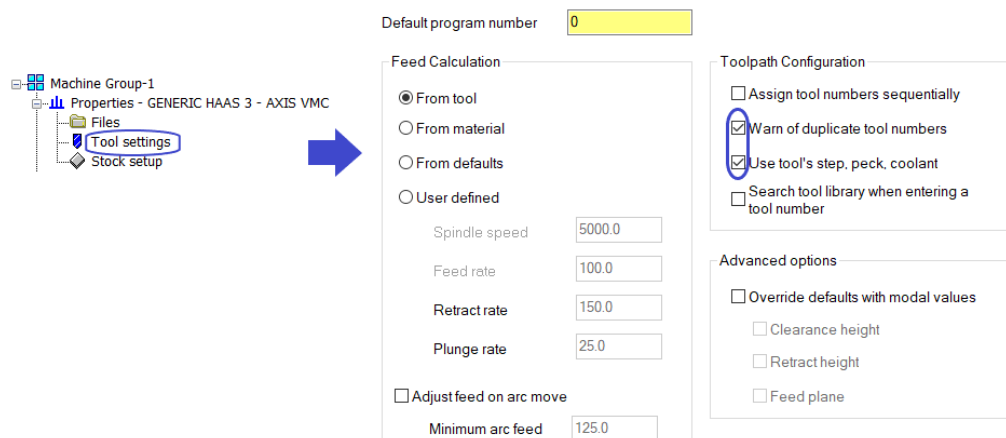


Figura 6.25. Activación de propiedades de herramienta

Por otra parte, de cara al mecanizado en máquina, habrá que proporcionar un origen de coordenadas de la pieza que deberá de indicar el operario por medio de un palpador. Lo posicionaremos en la cara superior del tocho de partida mediante unas líneas auxiliares:

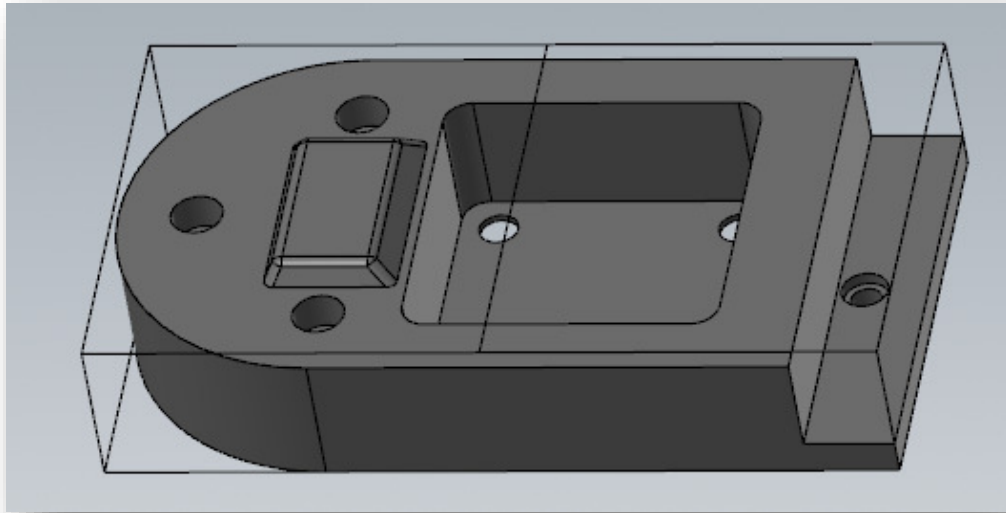


Figura 6.26. Posición del origen de coordenadas de la pieza

Para que Mastercam genere el código con el origen de referencia en el punto deseado, trasladaremos todo el conjunto con Move Origin (dentro de la pestaña Transform) y seleccionamos el centro de la cara superior del stock.

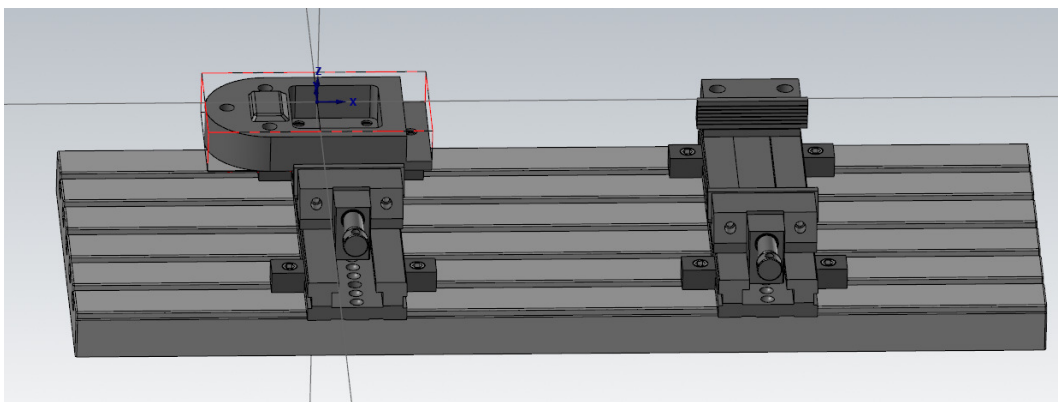


Figura 6.27. Traslación del cero de la pieza

Tras tener nuestra pieza correctamente posicionada, seleccionamos la trayectoria de mecanizado. Comprobamos que los datos de la herramienta son correctos y accedemos a la pestaña de parámetros de corte. La compensación será de tipo “computer”, ya que no se va a medir el diámetro de la herramienta en máquina y no se va a usar ningún tipo de compensación. Mastercam compensará la trayectoria en función del radio de la herramienta.

La pestaña Depth cuts se refiere a la profundidad de pasada en el eje Z. Podemos introducir pasadas de acabado e indicarle si tienen que ser en rampa mediante la opción Tapered walls. El orden de corte será por contorno y mantendremos la herramienta abajo ya que no hay peligro de colisiones.

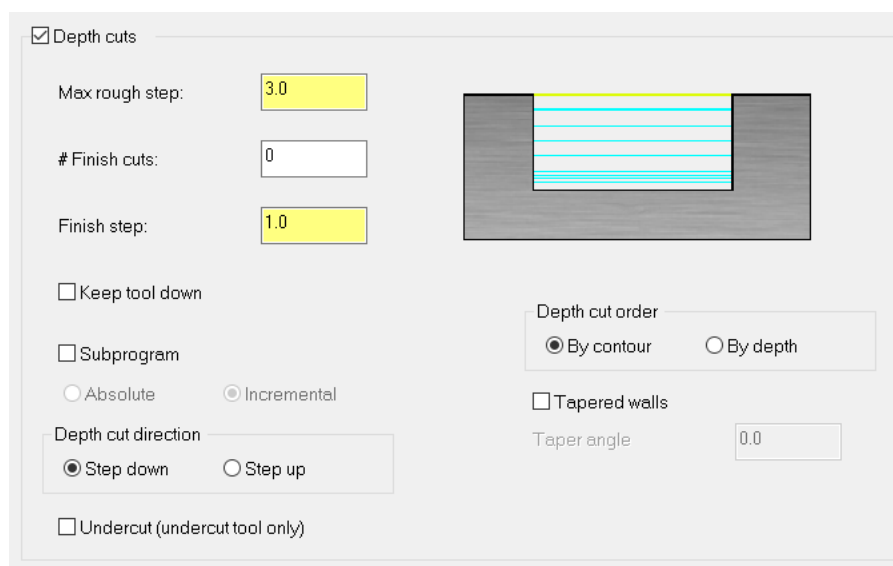


Figura 6.28. Pestaña Depth cuts en Mastercam

De momento dejaremos la pestaña de trayectorias de entrada y salida como viene por defecto. Tras configurar el resto de parámetros veremos si es necesario hacer alguna modificación, aunque habría un ahorro de tiempo si se modificara para que la trayectoria de vuelta al inicio la realizara fuera de pieza y no tuviese que subir hasta la altura de retracción.

En la pestaña Multi Passes tendremos que modificar el número de pasadas, ya que, debido a la limitación del tamaño de diámetro de la herramienta para evitar colisión con la mordaza, no podremos eliminar todo el material en una sola pasada. Introduciremos un dos en el número de pasadas y un espaciado de 15 mm entre ellas.

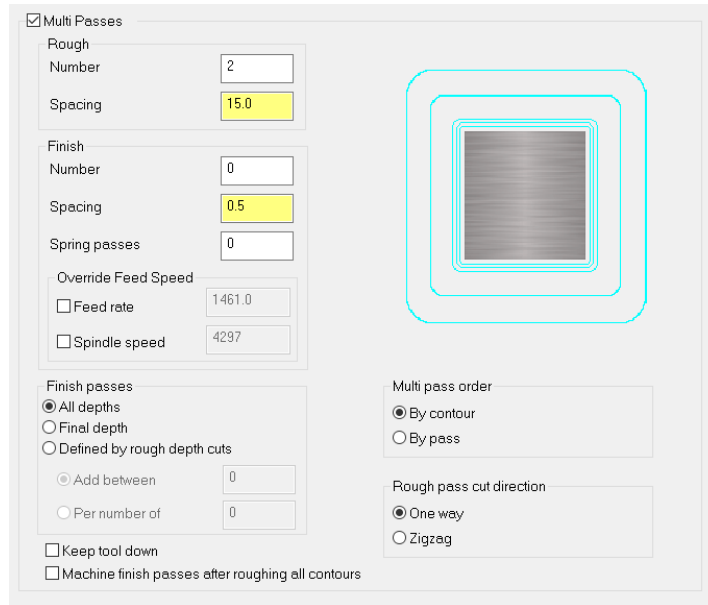


Figura 6.29. Pestaña Multi Passes en Mastercam

A continuación, vamos a editar la pestaña Linking Parameters, una de las más importantes a controlar para evitar problemas de colisiones. Lo más recomendable es trabajar con referencias absolutas desde el origen de coordenadas, ya que podemos diferenciar bien los valores que quedan por encima de la pieza (en valor positivo) y los valores que entrarían dentro del espacio ocupado por la pieza (en valor negativo). El significado de cada plano de trabajo es el siguiente:

- Clearance: Es la altura que alcanza la herramienta para traslaciones entre una operación y la siguiente.
- Retract: Altura de seguridad hasta la que sube la herramienta entre pasadas dentro de una misma operación.
- Feed Plane: Plano en el que la herramienta pasa de llevar un movimiento rápido a girar a la velocidad de mecanizado.
- Top of Stock: Marca la cara superior de la superficie a mecanizar.
- Depth: Indica la profundidad de mecanizado.

En la casilla de Depth, tras indicar el origen de referencia con la opción de referencia absoluta, restaremos 1 mm para evitar la presencia de rebabas al finalizar la operación.

Las opciones quedarán así:

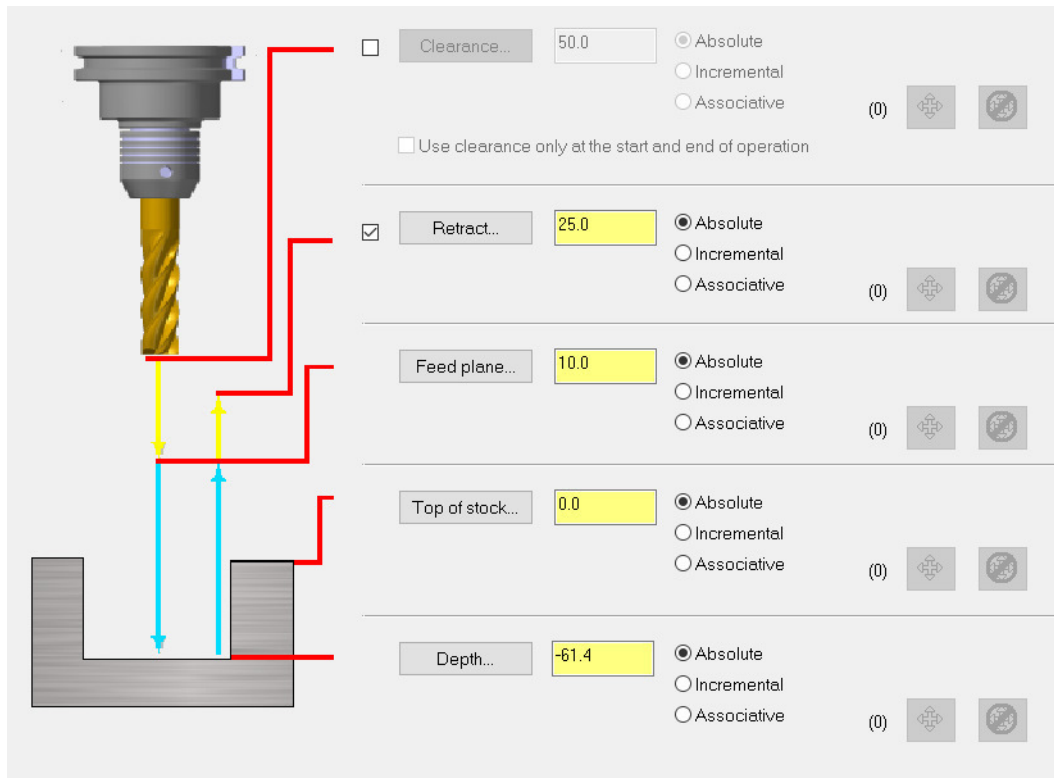


Figura 6.30. Pestaña Linking Parameters en Mastercam

Tras terminar toda la edición de los parámetros de operación abriremos el modo de visualización de trayectorias pulsando el botón Backplot Selected Operations en la zona superior de la pestaña Toolpaths. Observamos que la herramienta no va a colisionar con la mordaza desde la vista en planta y la vista frontal:

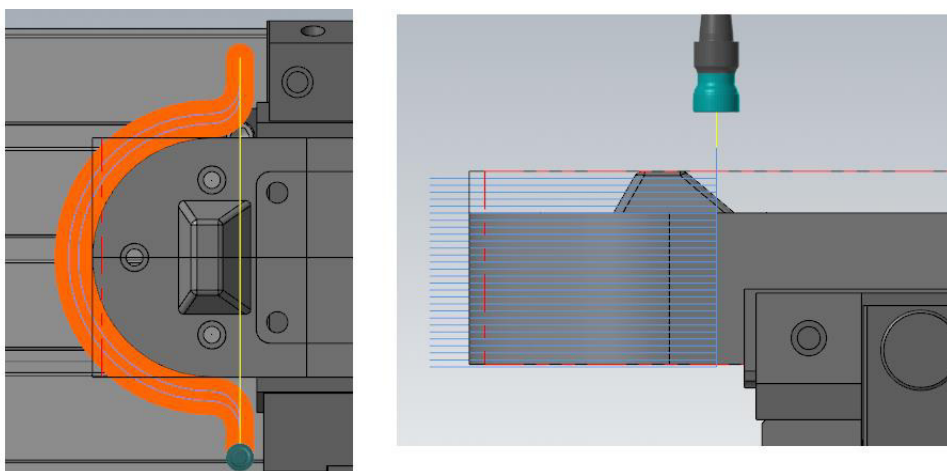


Figura 6.31. Trayectoria de mecanizado de la operación 1

El siguiente paso es simular la operación con Machine Simulation. Pulsamos el botón Run y observamos la simulación. Tras unos instantes, nos encontramos con esta ventana de aviso de colisión a los 11 min y 1.9 segundos:



Figura 6.32. Aviso de colisión entre portaherramientas y stock

Según el mensaje, nos indica la existencia de una colisión entre el stock y el adaptador.

Seleccionando la opción de no continuar podremos observar que el adaptador seleccionado no cuenta con la longitud necesaria para esta pieza:

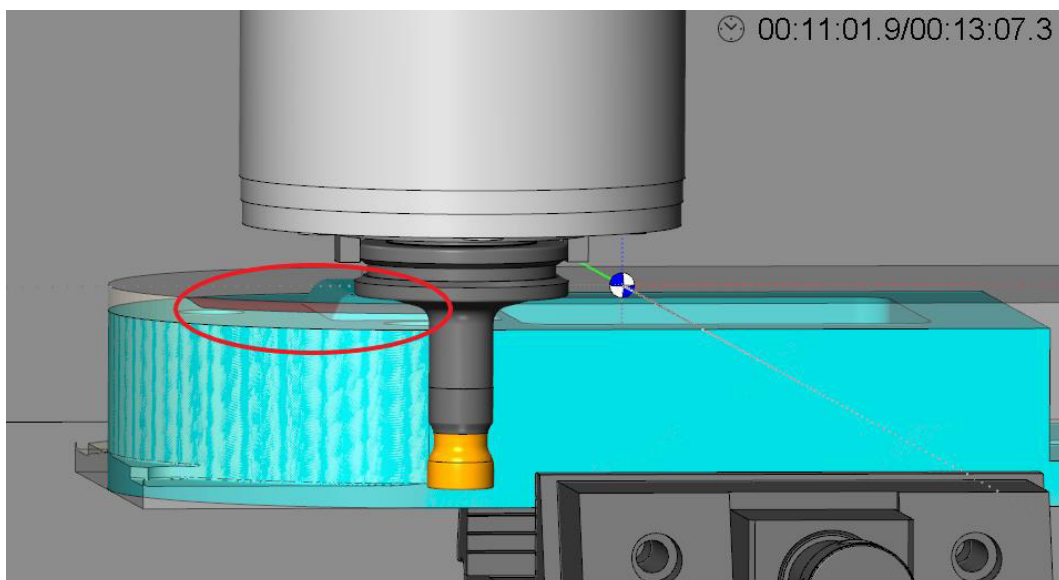


Figura 6.33. Colisión entre adaptador y stock inicial

Tenemos varias alternativas para resolver este problema:

- Cambiar el adaptador por uno de mayor longitud.
- Cambiar la herramienta por una de mayor longitud.
- Cambiar portaherramientas y herramienta ya montado.

La opción de cambiar la herramienta por una de mayor longitud pero del mismo diámetro para evitar colisión con la mordaza sería lo correcto, pero dadas las limitaciones que puede haber en un taller puede no ser posible. Por otra parte, sustituir todo el conjunto por portaherramientas y adaptador distinto ya montados puede ahorrar tiempo de preparación en máquina, pero habría que modificar el programa CAM debido a la compensación por ordenador, que no permite cambios posteriores. Además, el número de pasadas si el diámetro fuera mucho menor podría ser mayor, aumentando el tiempo de mecanizado.

Probablemente, la opción más acertada sea mantener la herramienta y cambiar el adaptador por uno de mayor longitud. Esto podría afectar a la velocidad de giro y de avance, ya que habría que disminuirla. Sin embargo, no supondría un problema muy importante ya que se podría reducir en el tanto por ciento necesario directamente en el centro de mecanizado.

Tras modificar el adaptador por otro de mayor longitud, podemos observar en la simulación que es posible realizar la operación sin colisiones:

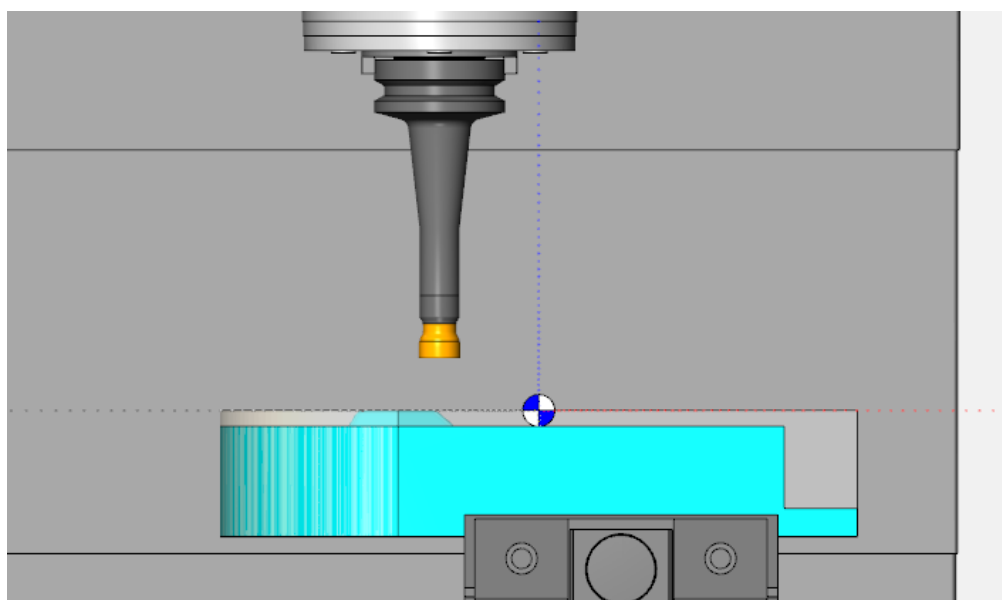


Figura 6.34. Operación 1 tras sustitución de adaptador

6.6.- OPERACIÓN 2. FRESADO EN ESCUADRA

En la siguiente operación se mecanizará la parte lateral derecha a falta de la realización del taladro y el lamado.

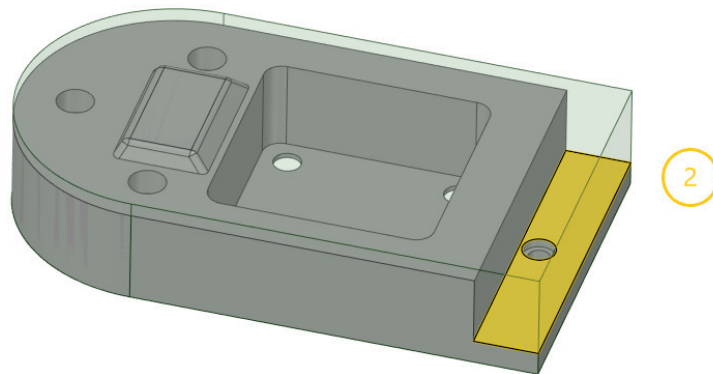


Figura 6.35. Zona a mecanizar en la segunda operación

Para introducir otro tipo de colisión vamos a suponer que por circunstancias de la producción en la otra mordaza está montado un poste para realizar los taladros justo después de terminar de mecanizar esta pieza sin necesidad de intervención del operario. También es posible intercalar operaciones que compartan la misma herramienta para ahorrar tiempo en cambios de las mismas.

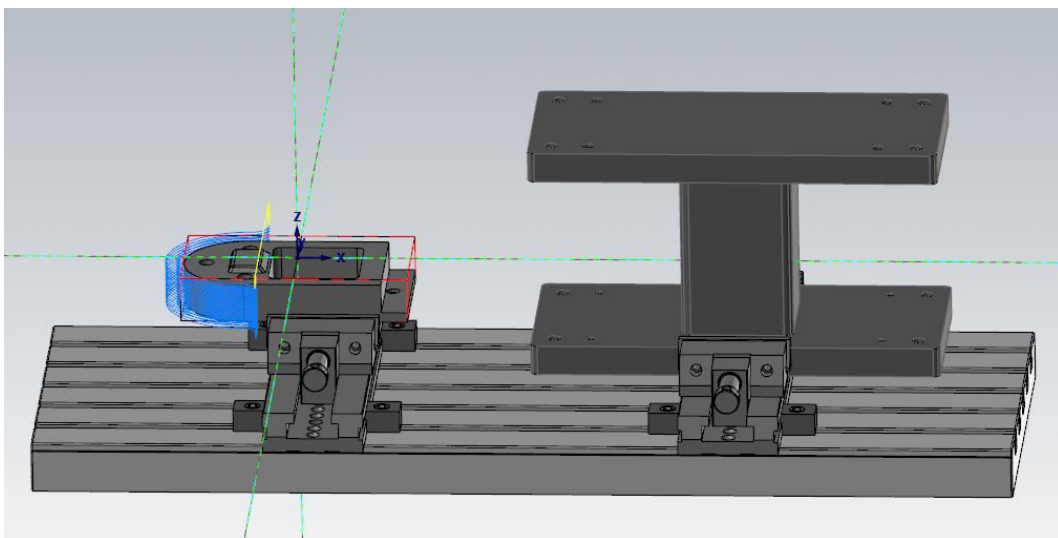


Figura 6.36. Pieza a mecanizar y poste en las mordazas

6.6.1.- Selección de herramientas

En esta operación podríamos usar la herramienta de la anterior, pero el tiempo ahorrado en el cambio de herramienta no compensaría frente a tener que realizar dos pasadas radiales debido al valor del diámetro. Por tanto vamos a buscar una fresa de plato de mayor diámetro.

FRESA DE PLATO D=54mm

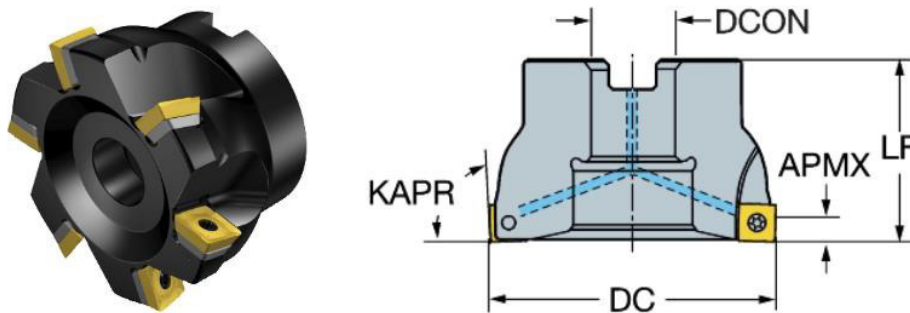


Figura 6.37. Portaherramientas op 2 [29]

Tabla 11. Datos de portaherramientas. Operación 2

DATOS DE PORTAHERRAMIENTAS	
Código ISO	490-054Q22-14M
Diámetro de Corte (DC)	54 mm
Profundidad de corte máxima	10 mm
Longitud funcional (LF)	40 mm
Número de elementos de corte	6
Par	3 Nm
Velocidad de giro máxima	13000 rpm

PLAQUITA DE CORTE 490R-140408M-PM 1130

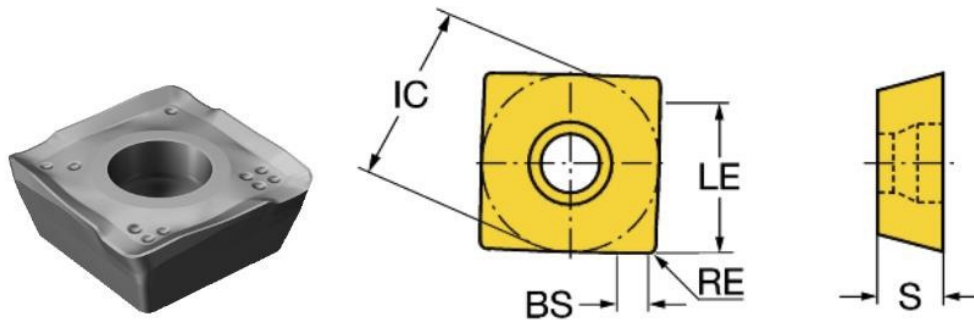


Figura 6.38. Plaquita de corte op 2 [29]

Tabla 12. Datos de plaquita de corte. Operación 2

DATOS DE PLAQUITA DE CORTE	
Código ISO	490R-140408M-PM 1130
Código de forma de plaquita	S
Longitud de filo (BS)	2 mm
Ángulo de filo principal	90°
Recubrimiento	PVD AlTiCrN
Diámetro de círculo inscrito (IC)	13.8 mm
Longitud efectiva del filo (LE)	10.3 mm
Radio de punta (RE)	0.8 mm
Grosor de la plaquita	3.9 mm
Avance por diente recomendado (fz)	0.17 mm (0.12 - 0.25)
Velocidad de corte recomendada (Vc)	270 m/min (275-260)

Es una plaquita más polivalente que la de la operación anterior. Los parámetros de corte para acero se mantienen en valores similares.

ADAPTADOR

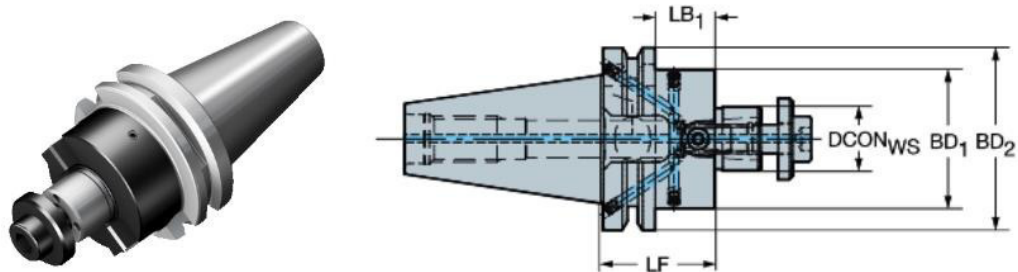


Figura 6.39. Adaptador op 2 [29]

Tabla 13. Datos de adaptador. Operación 2

DATOS DE ADAPTADOR	
Código ISO	392.54005C4022040
Longitud funcional (LF)	40 mm
Diámetro del cuerpo (BD1)	63.5 mm
Diámetro del cuerpo (BD2)	48 mm
Par	45 Nm
Velocidad de giro máxima	18000 rpm

Adaptador de cono ISO 40 para ajustarse sin complicaciones al husillo de nuestro centro de mecanizado. No permite alcanzar una profundidad muy alta en las operaciones, pero es más que suficiente para la tarea actual.

6.6.2.- Parámetros de corte y de operación

Sustituyendo los valores determinados en la hoja de cálculo llegamos a los siguientes valores:

Tabla 14. Parámetros de corte op 2

PARÁMETROS DE CORTE OP 2	
Diámetro (D)	54 mm
Número de dientes (Z)	6
Velocidad de corte (V_c)	270 m/min
Avance por diente (f_z)	0.17 mm
Profundidad radial (a_e)	35 mm
Profundidad axial (a_p)	3 mm
Velocidad de giro (n)	1592 rpm
Velocidad de avance (V_f)	1623 mm/min

Tabla 15. Verificadores op 2

VERIFICADORES OP 2	
Fuerza específica de corte (N/mm ²)	2321.46
Espesor promedio h_m (mm)	0.118 ✓
Potencia de corte (kW)	6.60 ✓
Par de corte (Nm)	39.59 ✓

Se ha disminuido la profundidad de corte en Z debido a la mayor profundidad de corte radial. Ya en Mastercam, introducimos la herramienta y el portaherramientas en el catálogo.

Esta vez sí vamos a modificar las entradas y salidas de la herramienta. En la pestaña Lead In/Out introducimos una entrada y salida tangencial con una distancia del 40% y un arco de circunferencia del 40%. En Depth Cuts indicamos que la herramienta no suba en cada pasada al plato de retracción.

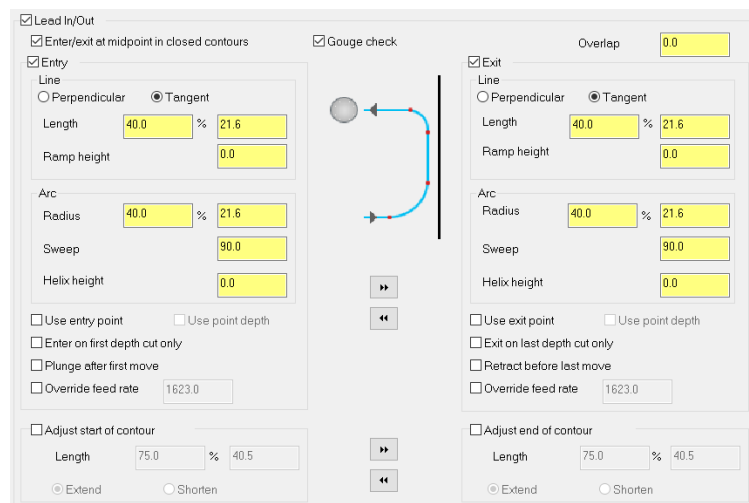


Figura 6.40. Pestaña Lead In/Out

La trayectoria final aparece en verde. Observamos que no parece interferir de ninguna manera en nuestra pieza.

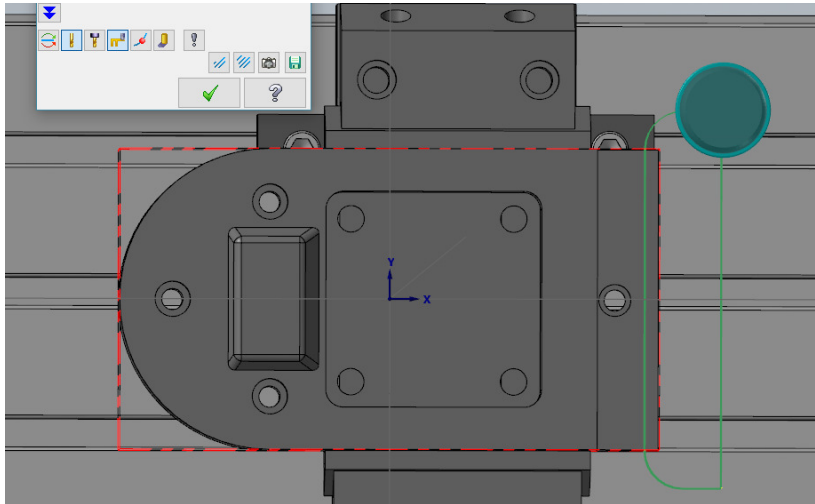


Figura 6.41. Trayectoria Operación 2

Procedemos a hacer una simulación en máquina para observar otro tipo de colisiones posibles. A los 5 minutos de mecanizado podemos observar un choque entre el cabezal y el poste situado en la mordaza derecha:

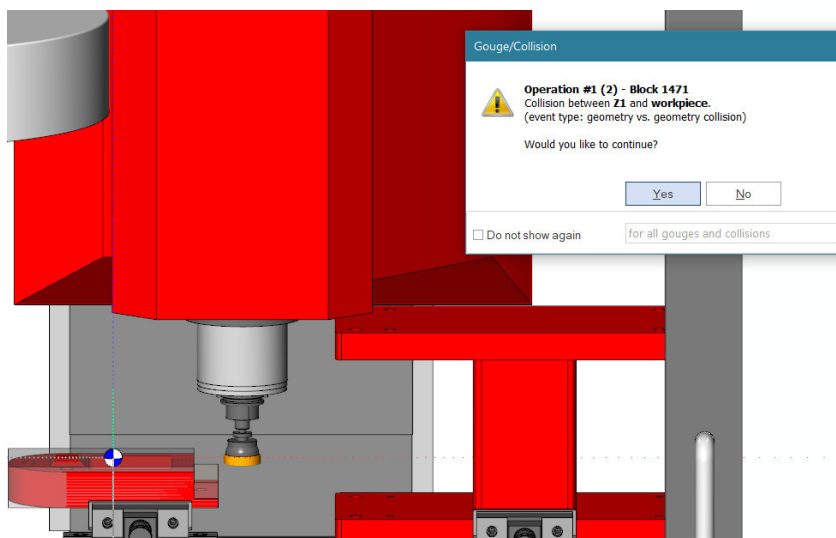


Figura 6.42. Colisión entre cabezal y poste

Tendríamos varias opciones para solventar esta situación:

- Desplazar la mordaza lo suficiente para evitar colisión.
- Usar un alargador con el portaherramientas, aunque en algunas situaciones esto sería imposible.
- No montar el poste aún en la mordaza y ejecutar dos programas de mecanizado independientes.

Se ha optado por la primera opción. En estos casos se puede ver la gran utilidad de tener un simulador con las medidas reales de nuestra máquina, ya que con geometrías complejas y teniendo en cuentas trayectorias de mecanizado es difícil y muy costoso predecir si puede existir colisión.

En la siguiente imagen podemos ver la operación terminada sin problemas de colisión:

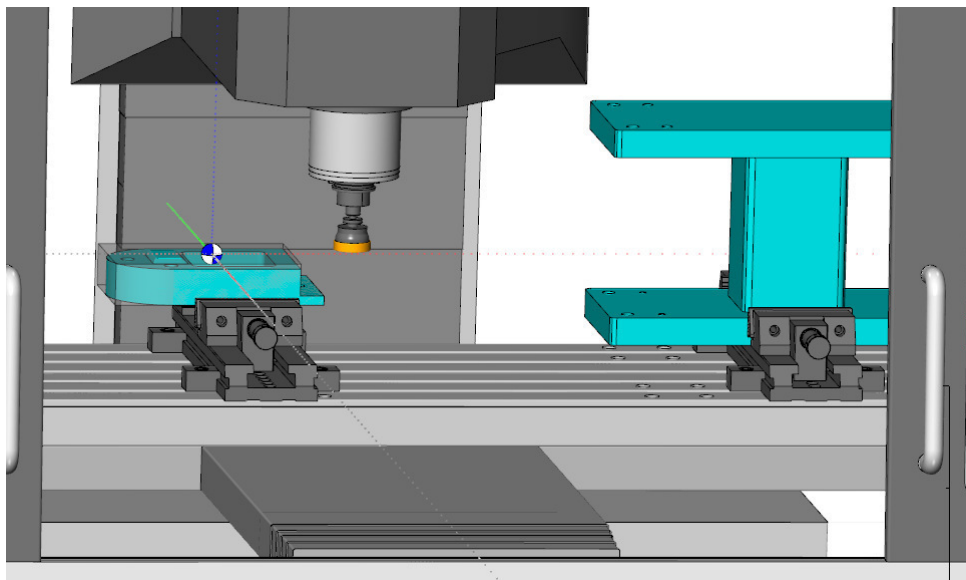


Figura 6.43. Operación 2 finalizada sin colisiones

6.7.- OPERACIÓN 3. DESBASTE DE CARA SUPERIOR

En tercera operación se va a mecanizar la cara superior. El objetivo es desbastar hasta la base de una isla, que se contorneará después por medio de otra operación.

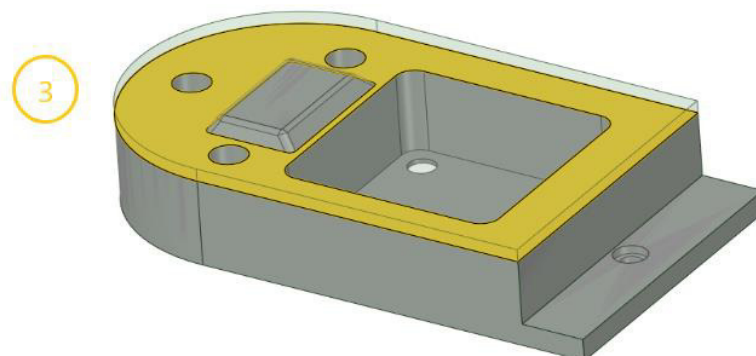


Figura 6.44. Superficie operación 3

6.7.1.- Selección de herramientas

Tanto la adaptador como el portaherramientas y las plaquitas de corte van a ser las mismas que en el apartado anterior. Esto permitirá un ahorro en el cambio de herramienta ya que la pieza no requiere un acabado concreto.

6.7.2.- Parámetros de corte y operación

Los parámetros de corte se van a mantener iguales a la anterior operación. Bien es cierto que la profundidad radial va a modificarse constantemente durante cada pasada debido al tipo de trayectoria. Por este motivo modificaremos esta profundidad para tener en cuenta su influencia.

Tabla 16. Parámetros de corte op 3

PARÁMETROS DE CORTE OP 3	
Diámetro (D)	54 mm
Número de dientes (Z)	6
Velocidad de corte (V_c)	270 m/min
Avance por diente (f_z)	0.17 mm
Profundidad radial (a_e)	54 mm
Profundidad axial (a_p)	3 mm
Velocidad de giro (n)	1592 rpm
Velocidad de avance (V_f)	1623 mm/min

Tabla 17. Verificadores op 3

VERIFICADORES OP 3	
Fuerza específica de corte (N/mm ²)	2364.92
Espesor promedio h_m (mm)	0.108 ✓
Potencia de corte (kW)	10.37 ✓
Par de corte (Nm)	62.23 ✓

En cuanto al tipo de operación a realizar en Mastercam, vamos a optar por un fresado dinámico de alta velocidad en dos dimensiones (2D High Speed Dynamic Milling). Las trayectorias de esta operación garantizan que se use el mayor diámetro posible, maximizando así la cantidad de material mecanizado.

Para realizarlo deberemos seleccionar varias cadenas: una cadena para indicar la superficie a mecanizar, otra para marcar la isla que fresaremos después y otra para indicar la entrada de la herramienta.

La trayectoria generada es compleja y puede ilustrar la ventaja de realizar el programa de mecanizado en un software CAM frente a realizarlo en máquina:

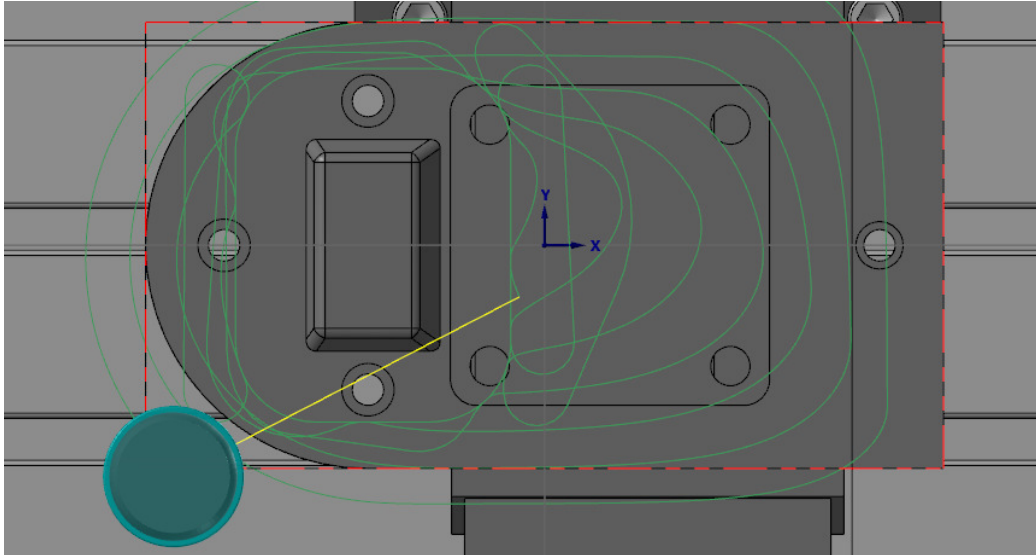


Figura 6.45. Trayectoria de mecanizado de la tercera operación

Tras esta operación, nuestra pieza tendrá este aspecto:

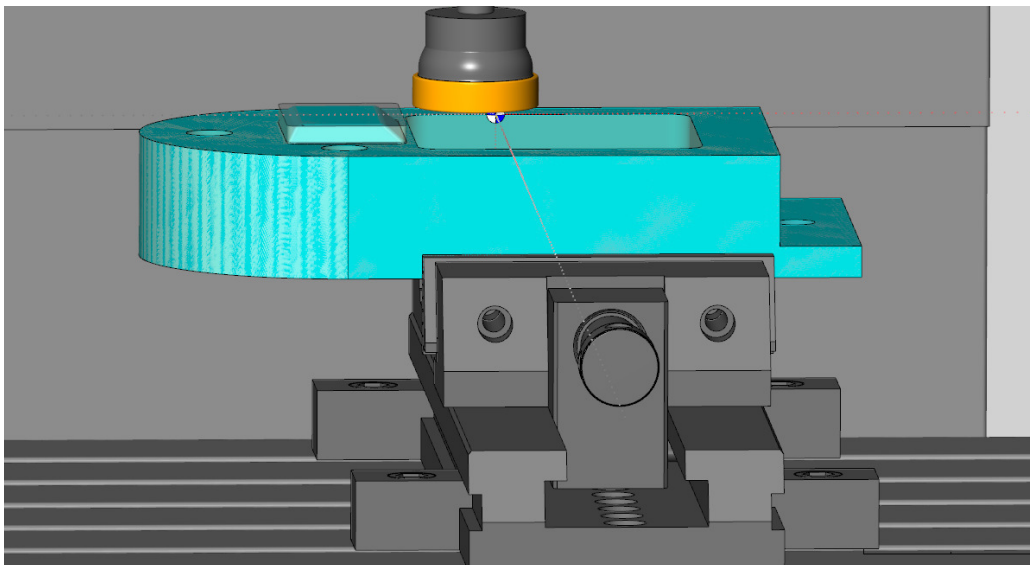


Figura 6.46. Aspecto de la pieza tras la operación 3

6.8.- OPERACIÓN 4. COPIADO DE CONTORNO

En esta operación vamos a mecanizar la isla de la cara superior. Si analizamos la superficie con la herramienta Dynamic podemos observar una distinta inclinación en las caras. Esta diferencia nos impide realizar la operación como un contorneado en rampa por lo que recurriremos a un copiado de contorno. Para lograr un buen acabado vamos a dividir la operación en dos, ya que se va a hacer uso de una fresa esférica y no pueden cortar demasiada cantidad de material.

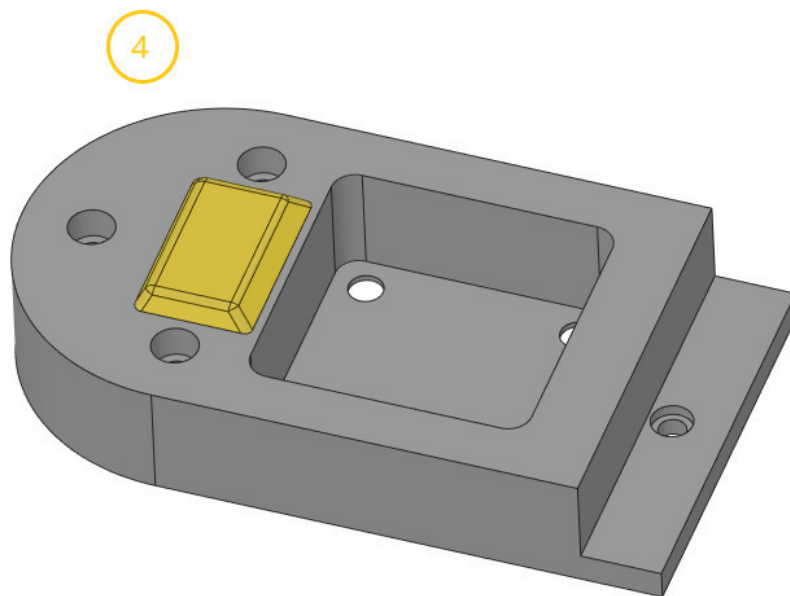


Figura 6.47. Superficie a mecanizar en operación 4

6.8.1.- Selección de herramientas

La operación de desbaste la vamos a realizar con el plato utilizado en la operación anterior ya que no va a proporcionar el acabado final y puede ahorrar tiempo en el cambio de herramienta. Podemos aumentar la velocidad de avance ya que el empañe del plato va a ser mínimo.

Para la operación de acabado vamos a usar una fresa esférica. El radio de la punta garantiza una superficie con pocos escalones y un mejor acabado.



FRESA ESFÉRICA D=12 mm

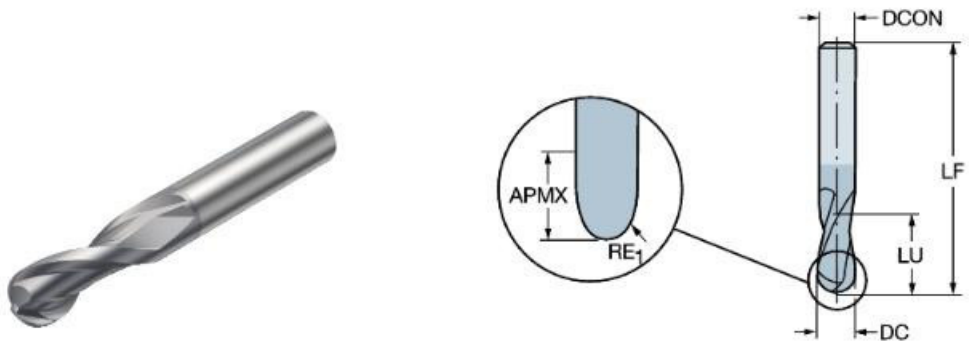


Figura 6.48. Herramienta op 4 [29]

Tabla 18. Datos herramienta op 4

DATOS DE HERRAMIENTA	
Código ISO	1B230-1200-XA 1630
Diámetro de Corte (DC)	12 mm
Profundidad de corte máxima	22 mm
Longitud funcional (LF)	83 mm
Número de filos	2
Recubrimiento	PVD AlCrN
Velocidad de giro máxima	80000 rpm

PORTAPINZAS

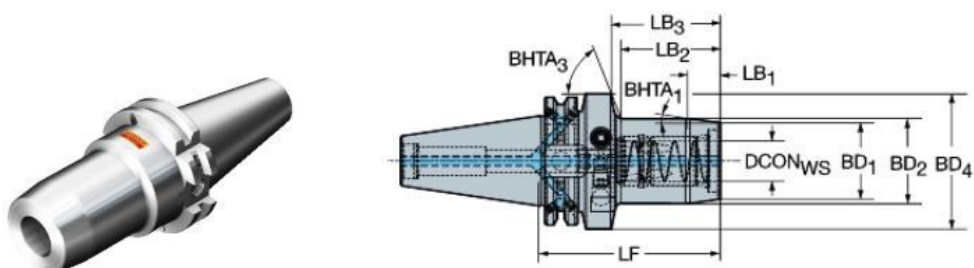


Figura 6.49. Portapinzas op 4 [29]

Tabla 19. Datos portapinzas op 4

DATOS DE PORTAPINZAS	
Código ISO	930-IB40-S-12-080
Longitud funcional (LF)	80 mm
Diámetro del cuerpo (BD1)	28 mm
Diámetro del cuerpo (BD2)	32 mm
Par	8 Nm
Velocidad de giro máxima	18000 rpm

6.8.2.- Parámetros de corte y operación

Como se ha mencionado anteriormente, dividimos la operación en dos fases:

COPIADO DE CONTORNO. DESBASTE

Aumentaremos la velocidad de avance por diente con respecto a la operación anterior, ya que tanto la profundidad radial como la axial van a disminuir notablemente:

Tabla 20. Parámetros de corte op 4.1

PARÁMETROS DE CORTE OP 4.1	
Diámetro (D)	54 mm
Número de dientes (Z)	6
Velocidad de corte (V_c)	270 m/min
Avance por diente (f_z)	0.25 mm
Profundidad radial (a_e)	10 mm
Profundidad axial (a_p)	1 mm
Velocidad de giro (n)	1592 rpm
Velocidad de avance (V_f)	2387 mm/min

Tabla 21. Verificadores op 4.1

VERIFICADORES OP 4.1	
Fuerza específica de corte (N/mm ²)	2385.38
Espesor promedio h_m (mm)	0.104 ✓
Potencia de corte (kW)	0.95 ✓
Par de corte (Nm)	5.7 ✓

En primer lugar deberemos extraer la superficie de mecanizado con la herramienta From Solid de la pestaña Surfaces. Antes de ello crearemos otra capa desde Levels para poder aislarla:

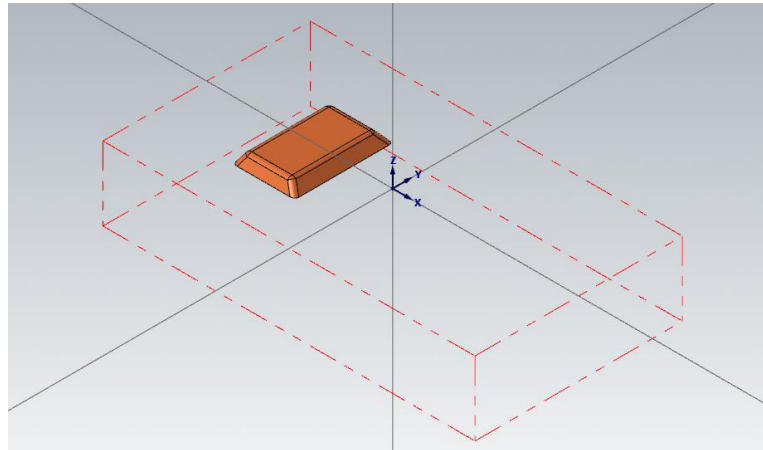


Figura 6.50. Superficie a mecanizar aislada

Ya en Toolpaths crearemos una operación de tipo Surface Rough Contour. En la superficie a mecanizar seleccionaremos la que hemos extraído recientemente, mientras que también indicaremos en Check la cara superior de la pieza para que las trayectorias eviten su mecanizado. En el apartado de parámetros de superficie dejaremos unas creces de 0.5 mm para la pasada de acabado:

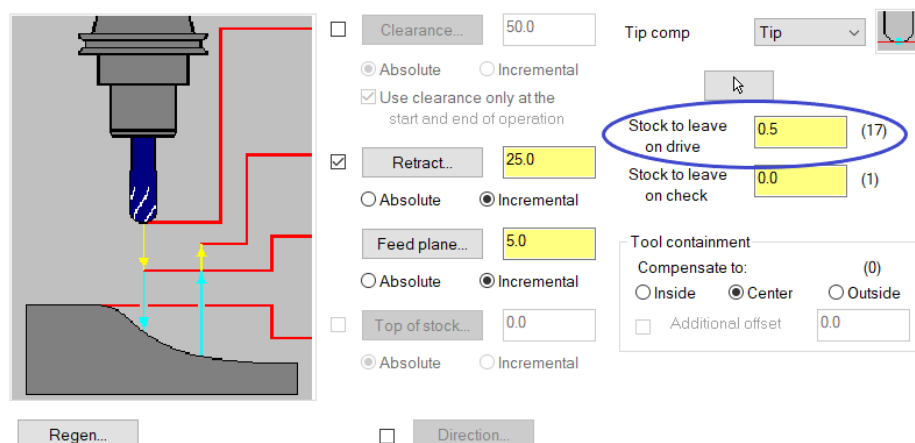


Figura 6.51. Pestaña Surface Parameters

En la pestaña Rough contour parameters, dentro de la casilla de Maximum stepdown introduciremos 1mm. Este parámetro hará que la diferencia de altura entre cada pasada sea como máximo del valor introducido. En cuanto a la transición indicaremos que siga la superficie y debido a que la herramienta puede entrar en pieza marcaremos la casilla Helix para que la entrada sea helicoidal. En Cut depths indicaremos profundidades absolutas e introduciremos la profundidad máxima y mínima de la superficie. Ésta será la trayectoria de mecanizado:

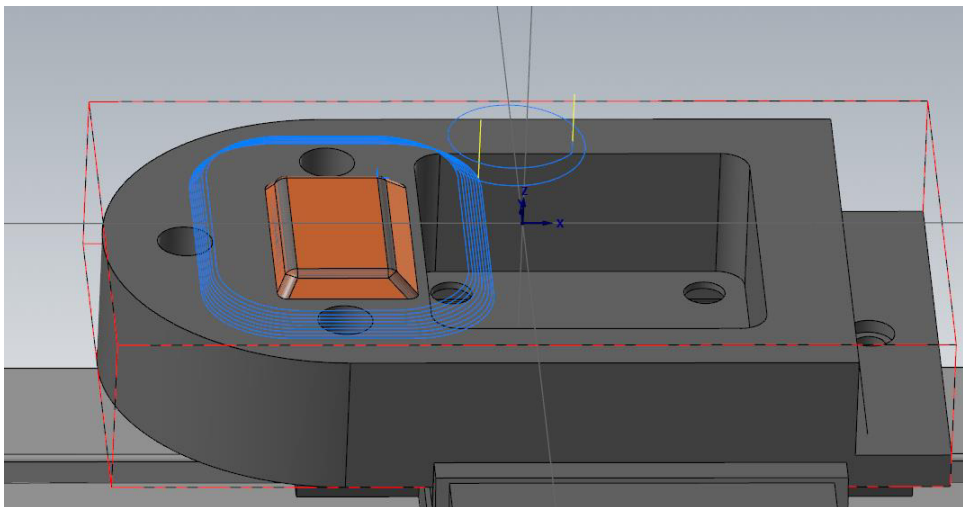


Figura 6.52. Trayectoria de mecanizado op 4. Desbaste

Tras realizar la simulación, obtendremos el siguiente resultado:

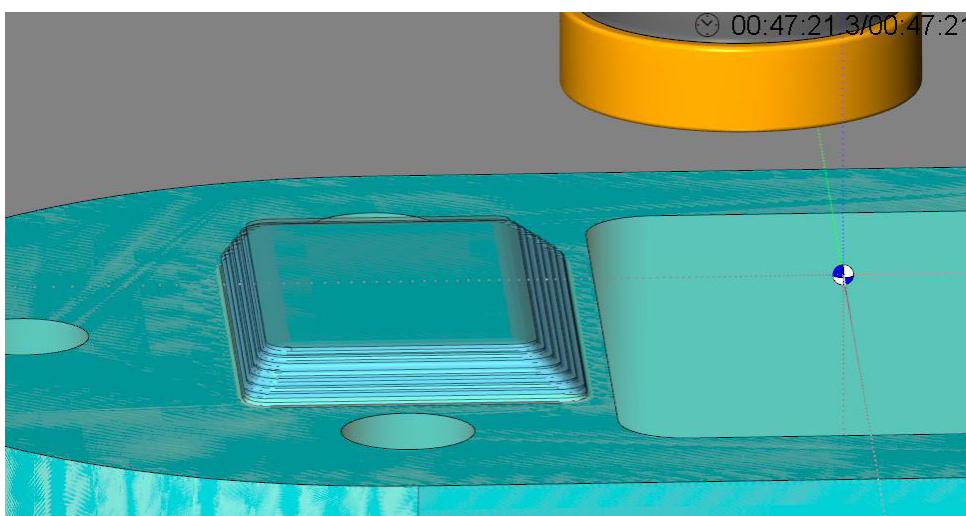


Figura 6.53. Pieza tras la operación de desbaste

COPIADO DE CONTORNO. ACABADO

Antes de nada, deberemos de calcular los parámetros de corte de la fresa:

Tabla 22. Parámetros de corte op 4.2

PARÁMETROS DE CORTE OP 4.2	
Diámetro (D)	12 mm
Número de dientes (Z)	2
Velocidad de corte (V_c)	350 m/min
Avance por diente (f_z)	0.16 mm
Profundidad radial (a_e)	0.5 mm
Profundidad axial (a_p)	1 mm
Velocidad de giro (n)	8000 rpm
Velocidad de avance (V_f)	2560 mm/min

Tabla 23. Verificadores op 4.2

VERIFICADORES OP 4.2	
Fuerza específica de corte (N/mm ²)	3082.89
Espesor promedio h_m (mm)	0.032 ✓
Potencia de corte (kW)	0.07 ✓
Par de corte (Nm)	0.08 ✓

El espesor promedio a obtener es muy inferior a 0.1, lo que es habitual en operaciones de copiado. La potencia de corte y par de corte son insignificantes ya que la cantidad de material a retirar es mínima.

El modo de proceder es muy similar al de la operación anterior, pero seleccionaremos que la operación sea de tipo finish. De cara a obtener un buen acabado, es de vital importancia que en la pestaña Finish Contour Parameters introduzcamos 0.2 como distancia máxima entre pasadas:

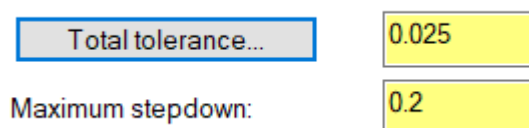


Figura 6.54. Distancia máxima entre pasadas

En la siguiente imagen podemos observar el resultado tras esta operación. Ya no se aprecian escalones y obtenemos una superficie con menor rugosidad.

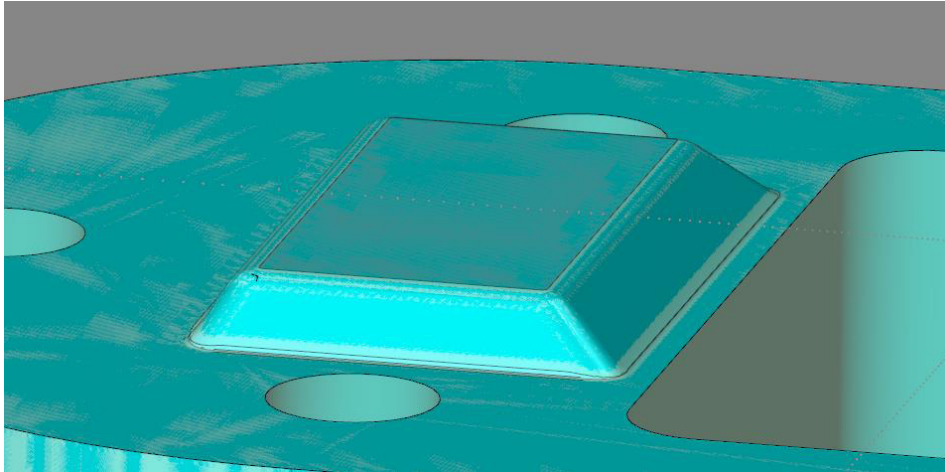


Figura 6.55. Pieza tras operación 4.2

6.9.- OPERACIÓN 5. CAJEADO

El siguiente paso es mecanizar la cajera central. Al igual que la operación anterior vamos a realizarla en dos fases ya que el diámetro que necesitamos para alcanzar el radio en el contorno es demasiado pequeño y requeriría demasiadas pasadas para retirar todo el material.

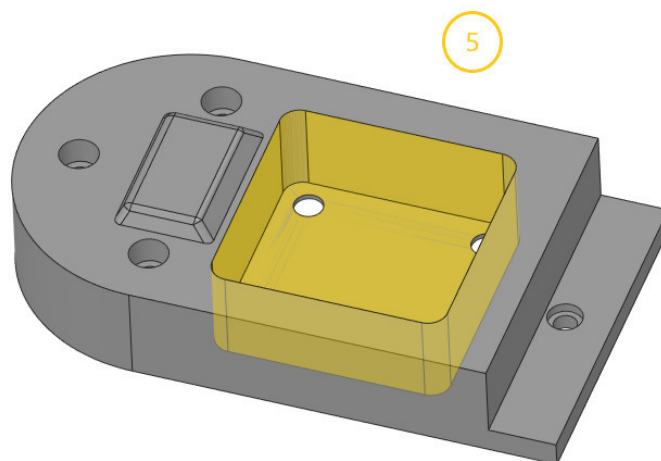


Figura 6.56. Superficie a mecanizar en operación 5

6.9.1.- Selección de herramientas

Para la operación de desbaste vamos a usar el plato de 54mm. Esto nos permitirá retirar una gran cantidad de material en pocas pasadas.

En cuanto al acabado, incorporaremos en el catálogo una fresa de punta plana de diámetro próximo a 20, con una longitud suficientemente grande como para que no produzca colisión entre el portapinzas y la pieza.

FRESA PLANA D=19.05mm

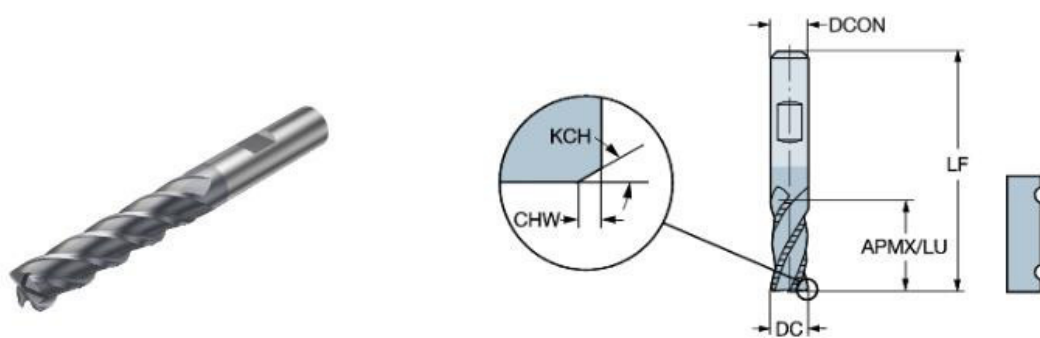


Figura 6.57. Herramienta op 5 [29]

Tabla 24. Datos herramienta op 5

DATOS DE HERRAMIENTA	
Código ISO	2P370-1905-PB 1740
Diámetro de Corte (DC)	19.05 mm
Profundidad de corte máxima	76.2 mm
Longitud funcional (LF)	142.875 mm
Número de filos	4
Recubrimiento	PVD AlTiN
Velocidad de giro máxima	80000 rpm

PORTAHERRAMIENTAS WELDON

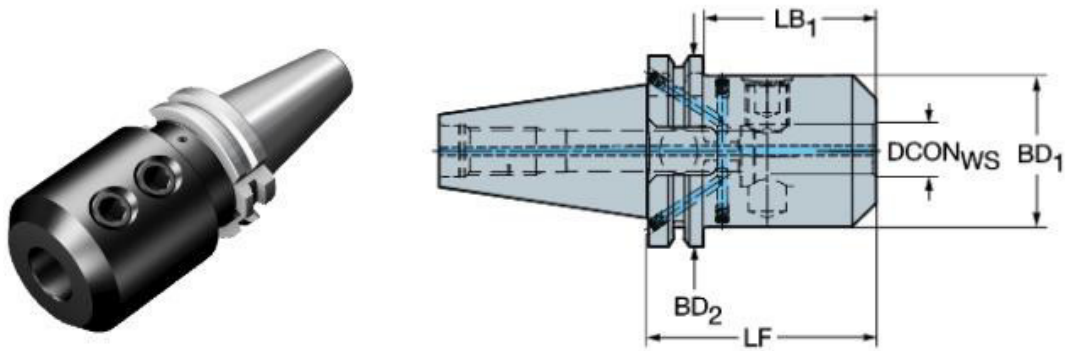


Figura 6.58. Portaherramientas op 5 [29]

Tabla 25. Portaherramientas op 5

DATOS DE PORTAHERRAMIENTAS	
Código ISO	A392.54523-4019065
Longitud funcional (LF)	65 mm
Diámetro del cuerpo (BD1)	44.5 mm
Diámetro del cuerpo (BD2)	63.5 mm
Par	20 Nm
Longitud del cuerpo (LB1)	45.9 mm
Longitud del cuerpo (LB2)	65 mm
Ángulo del semi-cono del cuerpo	0°




6.9.2.- Parámetros de corte y operación

Al calcular los parámetros de corte de la fresa, volvemos a observar un espesor de viruta pequeño.

Tabla 26. Parámetros de corte op 5

PARÁMETROS DE CORTE OP 5	
Diámetro (D)	19.05 mm
Número de dientes (Z)	4
Velocidad de corte (V_c)	100 m/min
Avance por diente (f_z)	0.09 mm
Profundidad radial (a_e)	2 mm
Profundidad axial (a_p)	27 mm
Velocidad de giro (n)	1671 rpm
Velocidad de avance (V_f)	602 mm/min

Tabla 27. Verificadores op 5

VERIFICADORES OP 5	
Fuerza específica de corte (N/mm ²)	3168.47
Espesor promedio h_m (mm)	0.029 
Potencia de corte (kW)	1.72 
Par de corte (Nm)	9.81 

Mastercam tiene una operación dedicada exclusivamente a la realización de cajas y a la que accedemos desde Mill Toolpaths y seleccionando Pocket.

El tipo de caja será el estándar y no dejaremos creces ni en suelo ni en paredes, ya que la pieza no requiere un acabado específico y mecanizaremos la mayor cantidad de material posible en la primera parte de la operación.

La herramienta tiene que entrar forzosamente en pieza, por lo que es más que recomendable que la entrada se realice en rampa o hélice para minimizar daños en plaquitas o portaherramientas. En la pestaña de Roughing hay una subpestaña para poder controlar el modo de entrada de la herramienta desde Entry Motion.

No se harán pasadas de acabado y las pasadas en z serán de 3 mm en 3 mm.

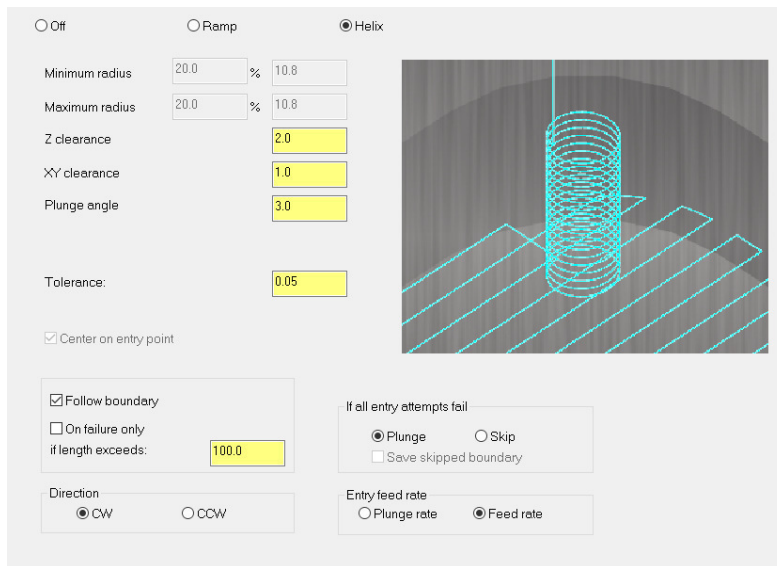


Figura 6.59. Configuración de entrada de la herramienta en operaciones de cajeado

La trayectoria de mecanizado se muestra a continuación:

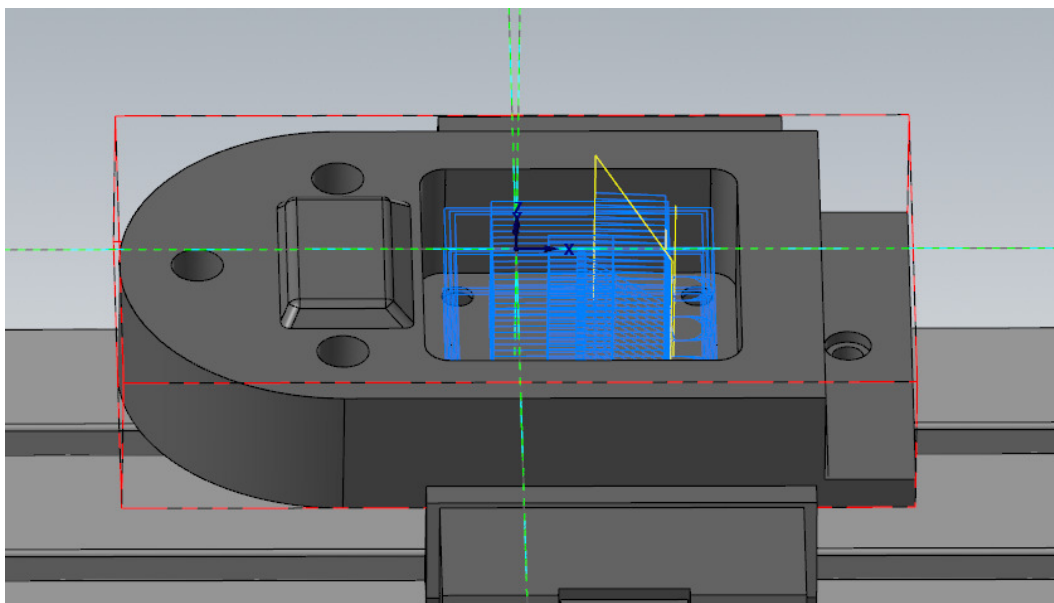


Figura 6.60. Trayectoria de mecanizado en operación 5. Desbaste

Para mecanizar los redondeos con el radio correcto, vamos a utilizar la fresa plana de diámetro 19.05 con un contorneado. Se harán varias pasadas tanto en el eje z como radialmente, siempre asegurándose de no sobrecargar la fresa para evitar su desgaste prematuro o rotura.

La trayectoria que seguirá se muestra en la imagen:

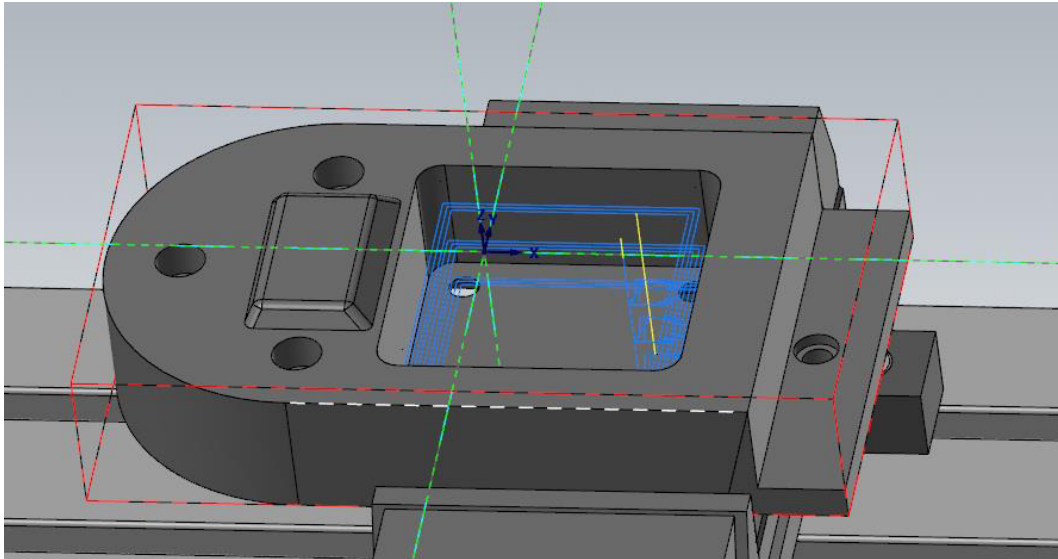


Figura 6.61. Trayectoria final op 5

6.10.- OPERACIÓN 6. TALADRADO

La siguiente operación consiste en mecanizar los taladros presentes en la pieza. Se trata de una cantidad de ocho con un diámetro de 12 mm.

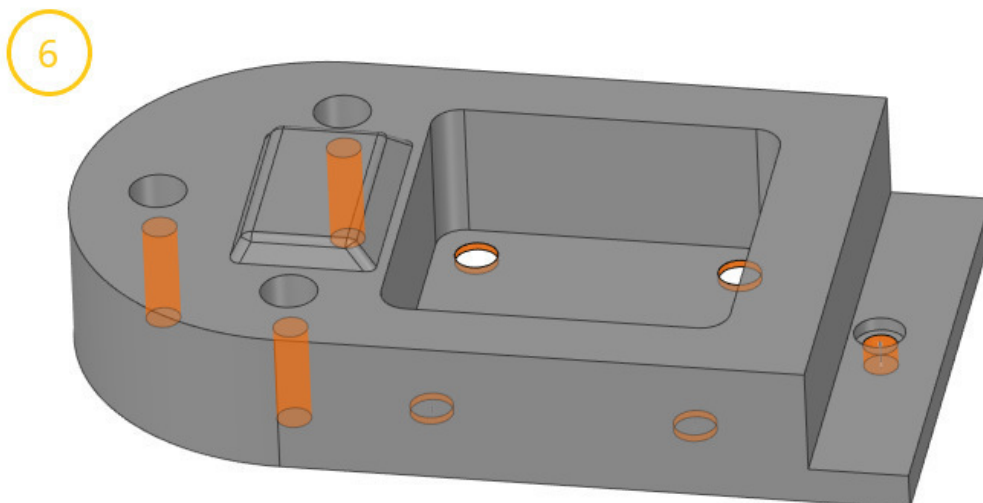


Figura 6.62. Superficies a mecanizar en op 6

6.10.1.- Selección de herramientas

Para mecanizar los taladros sin ningún problema en cuanto a posibles colisiones, tendremos que tener en cuenta la máxima profundidad que necesitamos alcanzar en toda la pieza.

La distancia más restrictiva se corresponde con el espesor del tocho de partida, ya que coincide con la distancia desde la cara superior de la zona con copiado hasta la base de la pieza. Debemos superar esa longitud desde la distancia de amarre hasta la punta de la broca. Además, debemos de tener en cuenta que el canal de desalajo de viruta esté libre de material en todo momento en su parte superior.

BROCA D=12mm

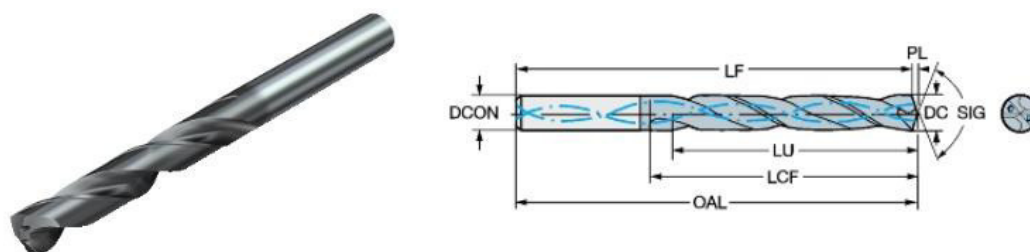


Figura 6.63. Herramienta op 6 [29]

Tabla 28. Datos herramienta op 6

DATOS DE HERRAMIENTA	
Código ISO	460.1-1200-060A1-XM GC34
Diámetro de Corte (DC)	12 mm
Longitud utilizable (LU)	56.6 mm
Longitud funcional (LF)	116.2 mm
Longitud de desahogo para viruta (LCF)	71 mm
Longitud total (OAL)	118 mm
Velocidad de giro máxima	7958 rpm
Longitud de punta (PL)	18 mm

PORTABROCAS

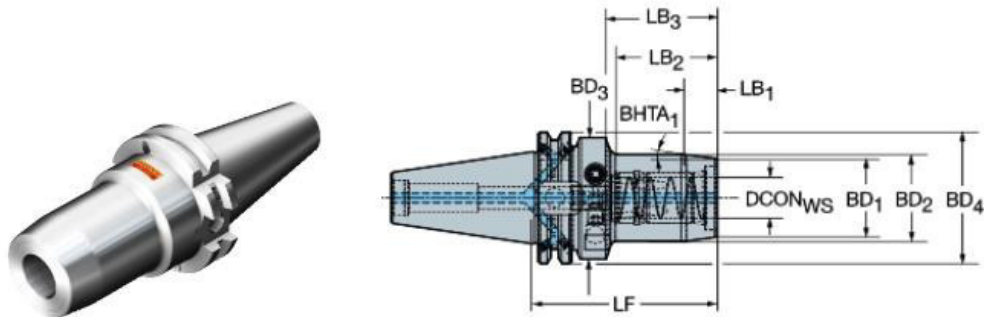


Figura 6.64. Portabrocas op 6 [29]

Tabla 29. Datos de portabrocas op 6

DATOS DE PORTABROCAS	
Código ISO	930-I40-S-12-080
Longitud funcional (LF)	80 mm
Diámetro del cuerpo (BD1)	28 mm
Diámetro del cuerpo (BD2)	32 mm
Par	8 Nm
Longitud del cuerpo (LB1)	45.9 mm
Longitud del cuerpo (LB2)	38.2 mm
Ángulo del semi-cono del cuerpo	0°

6.10.2.- Parámetros de corte y operación

Para calcular los parámetros de corte de la broca, vamos a usar la hoja de cálculo de taladrado. En el catálogo del fabricante nos indican una velocidad de corte de 107 m/min y un avance por vuelta de 0.28 mm. Sustituyendo en las ecuaciones obtenemos:

Tabla 30. Parámetros de corte op 6

PARÁMETROS DE CORTE OP 6	
Diámetro (D)	12 mm
Velocidad de corte (V _c)	107 m/min
Avance por vuelta (f _n)	0.28 mm
Velocidad de giro (n)	2838 rpm
Velocidad de avance (V _f)	795 mm/min

Tabla 31. Verificadores op 6

VERIFICADORES OP 6	
Factor de material	1.4
Potencia de corte (kW)	3.4 ✓

Antes de seleccionar la operación, deberemos extraer los contornos de los taladros en Mastercam para facilitar su selección. Para ello, usaremos la herramienta Curve One Edge de la pestaña Wireframe.

Vamos a realizar la operación en tres fases, ya que la profundidad de taladrado varía notablemente de unas zonas a otras.

Para acceder a la operación de taladrado, seleccionamos Drill desde Toolpaths. A continuación, pulsando en Entities seleccionamos los contornos de los tres taladros de la izquierda. Necesitamos que la operación se produzca desalojando viruta, ya que la profundidad de corte es demasiado alta y podría haber problemas de evacuación del calor y material mecanizado.

En la pestaña de parámetros de corte seleccionaremos la opción Peck Drill y modificaremos los valores de First Peck y Subsequent Peck para que en la primera bajada mecanice hasta 15 mm y en las pasadas sucesivas lo haga de 10 mm en 10 mm.

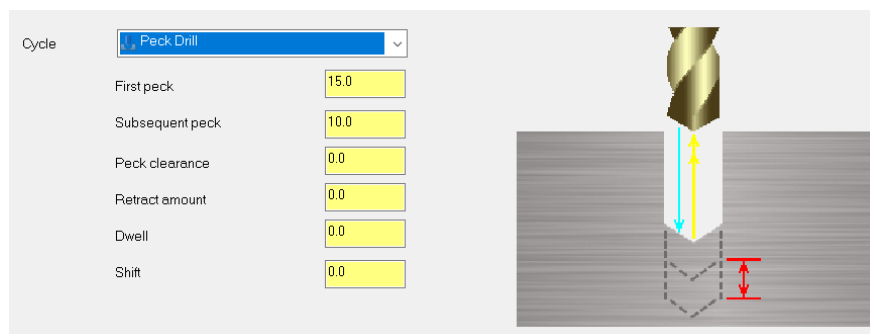


Figura 6.65. Operación 6 con desalojo de viruta

En la pestaña Linking Parameters, aumentaremos la profundidad del taladrado para salvar la superficie cónica de la punta de la broca

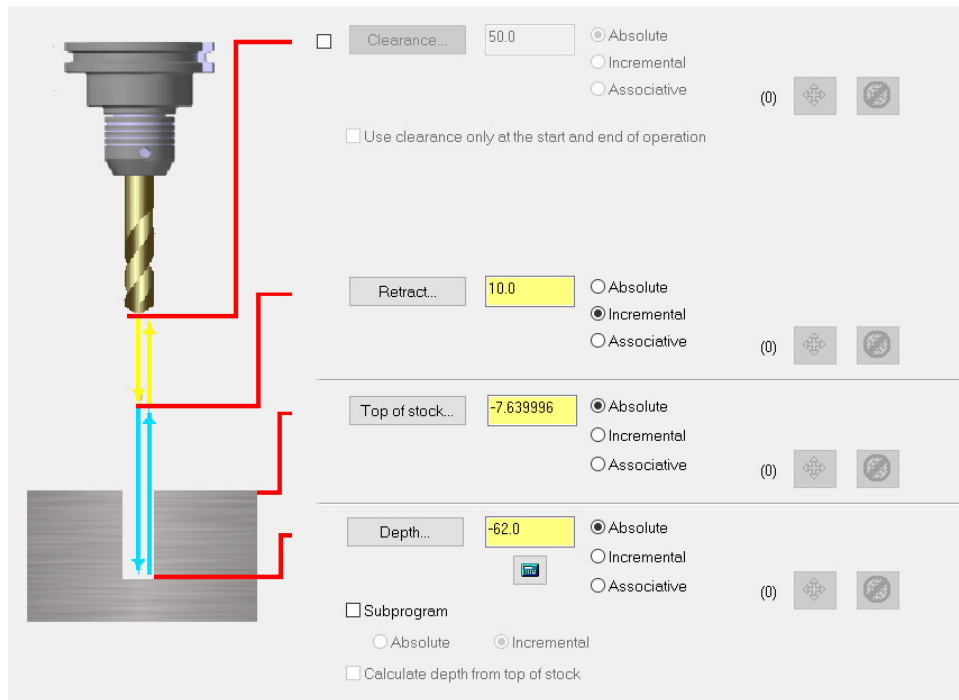


Figura 6.66. Pestaña Linking Parameters operación 6

En el resto de taladros optaremos por la opción Drill /Counterbore ya que no es necesario desalojar viruta debido a la poca profundidad de los mismos.

Si no modificamos la altura en Clearance, nos aparecerá un aviso de colisión entre la herramienta y la pieza al hacer la simulación:

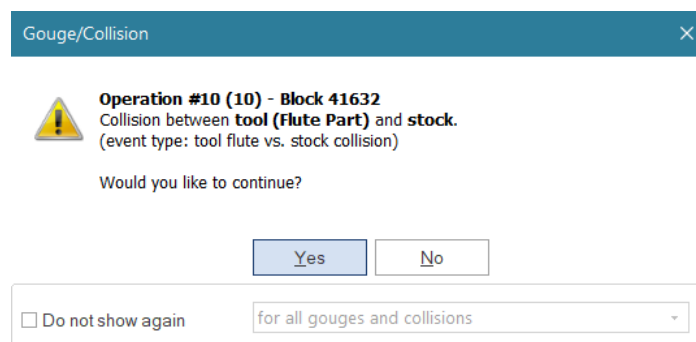


Figura 6.67. Aviso de colisión entre herramienta y pieza

Este tipo de colisión es muy común ya que habitualmente los taladros se suelen hacer en el mismo plano y para trasladarse de uno a otro no suele ser necesario modificar la altura del plano de desplazamiento entre operaciones.

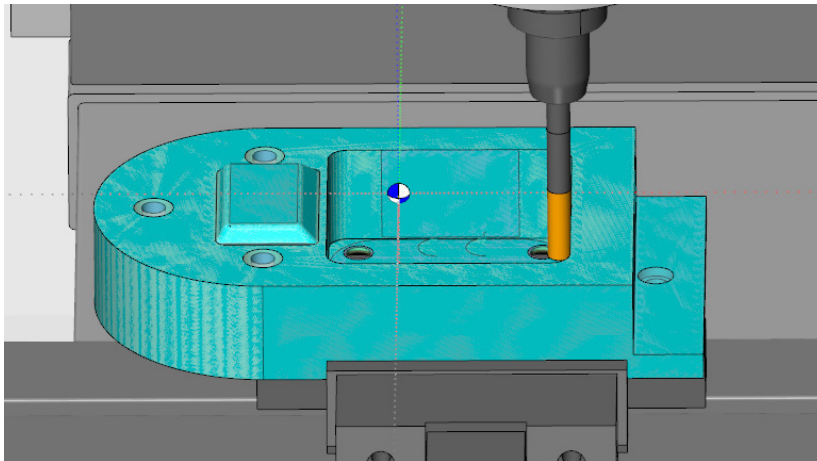


Figura 6.68. Colisión entre herramienta y pieza

Para solucionarlo en la pestaña Linking Parameters de la última operación activaremos la opción Clearance y modificaremos su valor:

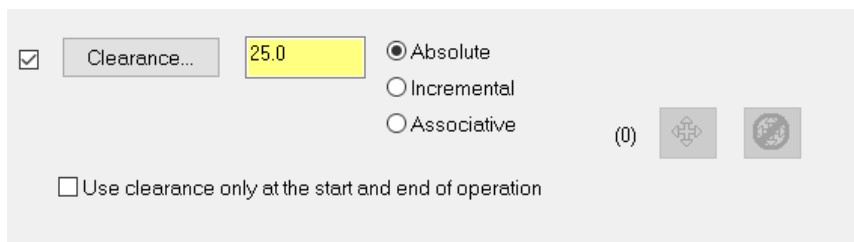


Figura 6.69. Opción Clearance

Al volver a hacer la simulación podemos observar que las operaciones se terminan con éxito:

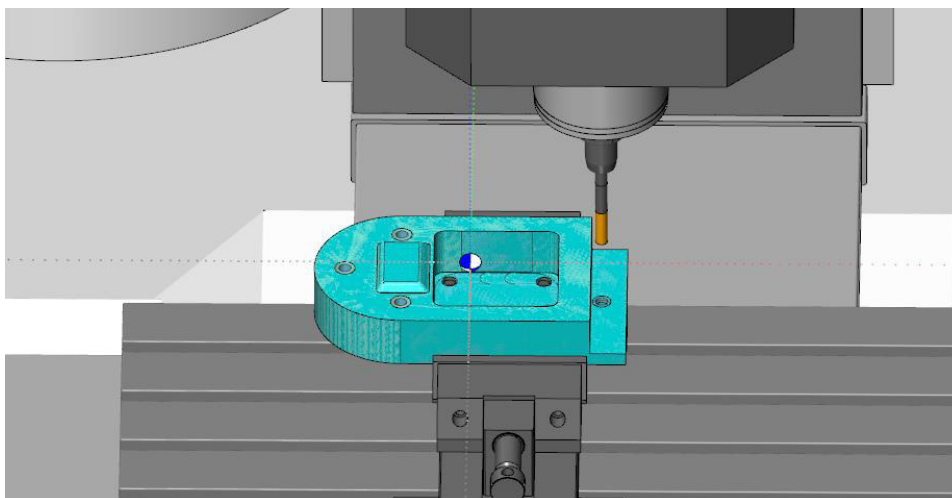


Figura 6.70. Operación 6 finalizada

6.11.- OPERACIÓN 7. FRESADO DE AGUJEROS ABOCARDADOS

La última operación consistirá en la ampliación de algunos de los taladros en su zona más exterior para crear un alojamiento para cabezas de tornillos.

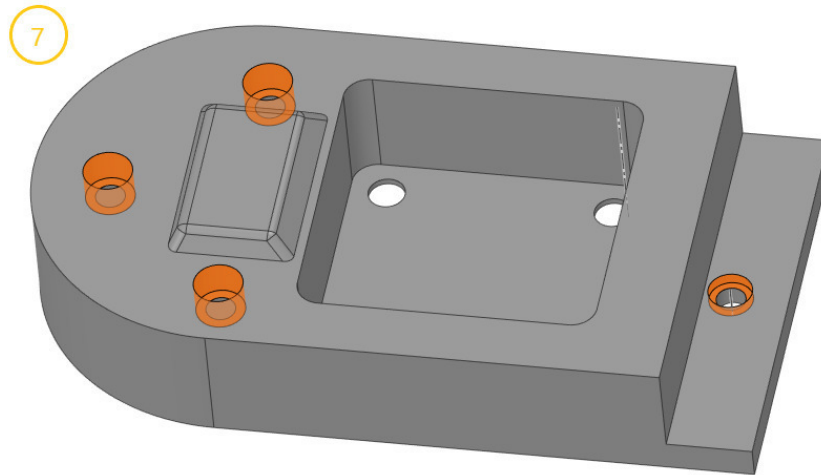


Figura 6.71. Superficie a mecanizar en operación 7

6.11.1.- Selección de herramientas

Aunque hay herramientas específicas para realizar este tipo de operación, vamos a optar por elegir una más polivalente debido a la limitación de diámetros en herramientas especiales.

La herramienta elegida será una fresa de diámetro inferior al agujero previamente mecanizado para evitar mecanizar con la punta, ya que puede disminuir la vida útil de la herramienta. Se ha optado por una fresa plana de diámetro 9.525 mm para evitar colisión en la bajada hasta la profundidad del diámetro superior.

FRESA D=9.525 mm

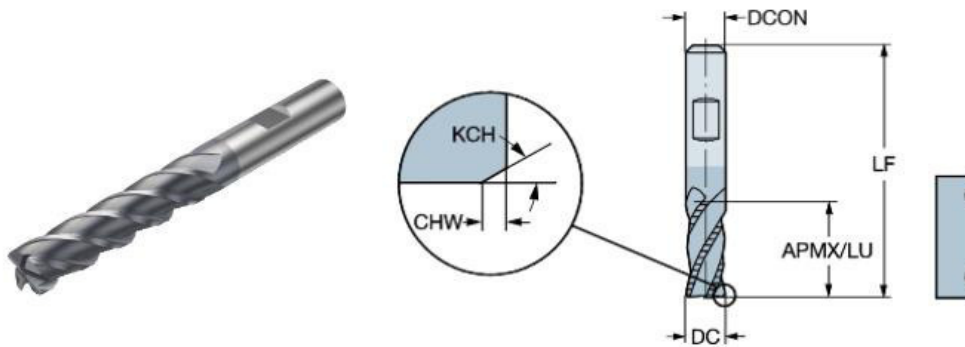


Figura 6.72. Herramienta op 7 [29]

Tabla 32. Datos herramienta op 7

DATOS DE HERRAMIENTA	
Código ISO	2P370-0953-PB 1740
Diámetro de Corte (DC)	9.525 mm
Profundidad de corte máxima	38.1 mm
Longitud funcional (LF)	85.725 mm
Número de filos	4
Recubrimiento	PVD AlTiN
Velocidad de giro máxima	80000 rpm

PORTAHERRAMIENTAS

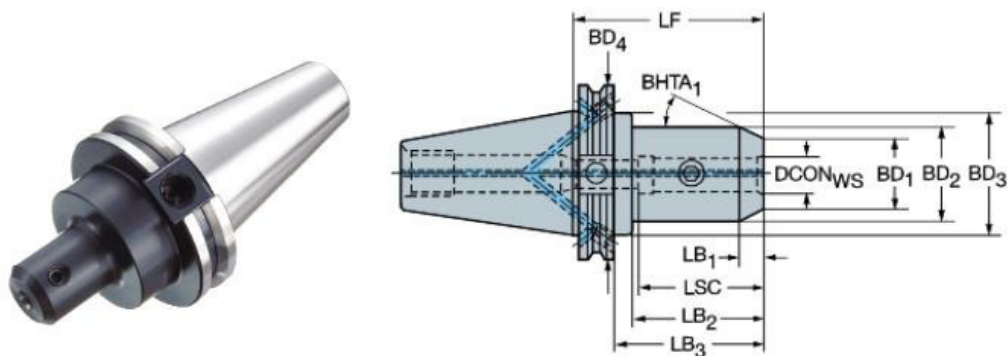


Figura 6.73. Portaherramientas Weldon op 7 [29]

Tabla 33. Portaherramientas op 7

DATOS DE PORTAHERRAMIENTAS	
Código ISO	AA3B20-40 09 063
Longitud funcional (LF)	63.5 mm
Diámetro del cuerpo (BD1)	20 mm
Diámetro del cuerpo (BD2)	25.4 mm
Par	10 Nm
Longitud del cuerpo (LB1)	2.8 mm
Longitud del cuerpo (LB2)	28.4 mm




6.11.2.- Parámetros de corte y operación

Los parámetros de corte vuelven a dar valores de potencia, espesor y par bajos, ya que es una operación en la que se elimina poco material en cada pasada:

Tabla 34. Parámetros de corte op 7

PARÁMETROS DE CORTE OP 7	
Diámetro (D)	9.525 mm
Número de dientes (Z)	4
Velocidad de corte (V_c)	105 m/min
Avance por diente (f_z)	0.05 mm
Profundidad radial (a_e)	0.5 mm
Profundidad axial (a_p)	15 mm
Velocidad de giro (n)	3509 rpm
Velocidad de avance (V_f)	702 mm/min

Tabla 35. Verificadores op 7

VERIFICADORES OP 7	
Fuerza específica de corte (N/mm ²)	3883.61
Espesor promedio h_m (mm)	0.011 
Potencia de corte (kW)	0.34 
Par de corte (Nm)	0.93 

El modo de operación es un contorneado desde la profundidad final del diámetro mayor del agujero. La fresa bajará hasta la cota de cambio de diámetro e irá abriendo en pasadas de 0.5 en 0.5 para no sobrecargar la fresa y ganar en precisión. Al igual que en la operación de taladrado, dividiremos ésta en dos fases distintas debido a la diferencia de altura entre los taladros.

El primer paso será seleccionar la operación Contour desde Toolpaths. En este tipo de operación es muy importante controlar y previsualizar el punto de entrada de la herramienta. En la pestaña Lead In/out seleccionaremos una entrada y salida tangencial e iremos modificando los valores de la longitud y el radio hasta que el eje de la fresa coincida con el centro del agujero al inicio del mecanizado.

Tras probar varias combinaciones llegamos a la conclusión de que una buena combinación es una longitud de línea del 17% y un radio del 0.2% del diámetro:

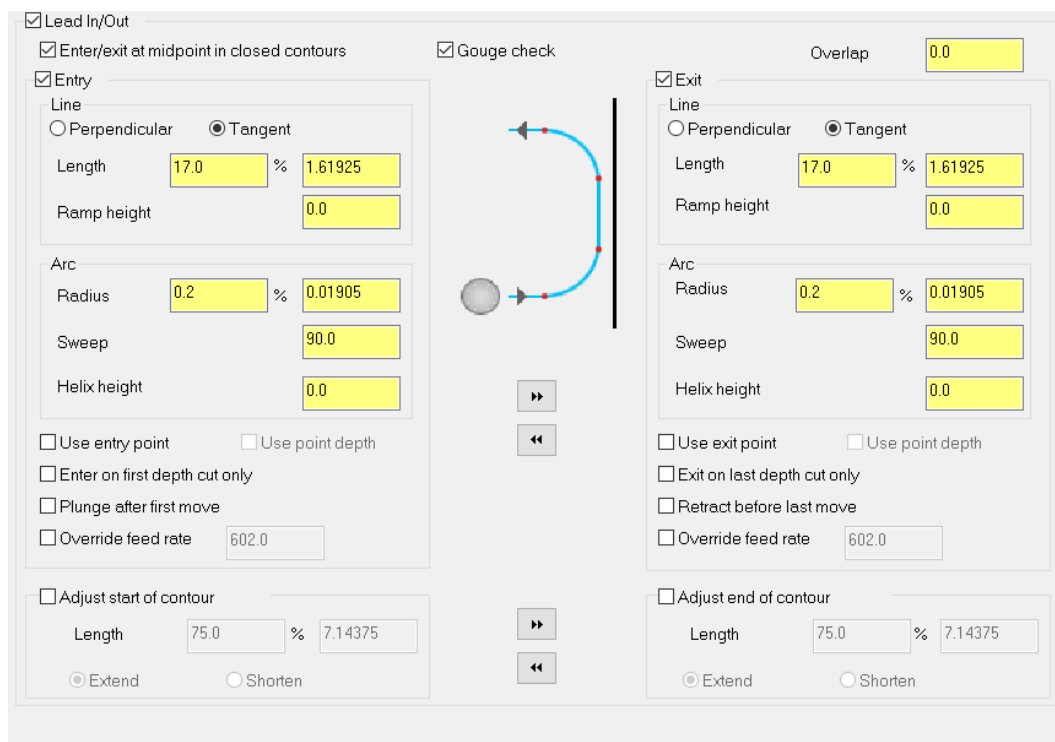


Figura 6.74. Parámetros de entrada y salida op 7

La trayectoria seguida por la fresa en cada taladro se muestra en la siguiente imagen:

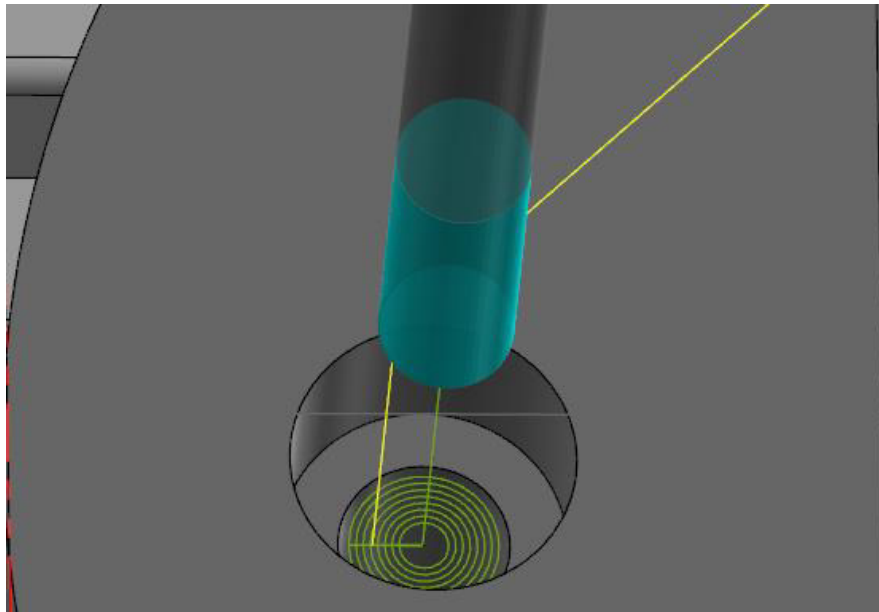


Figura 6.75. Trayectoria de mecanizado op 7

Simulando todas las operaciones comprobamos que no se produce ningún tipo de colisión y que el stock inicial ha adquirido la geometría final de la pieza:

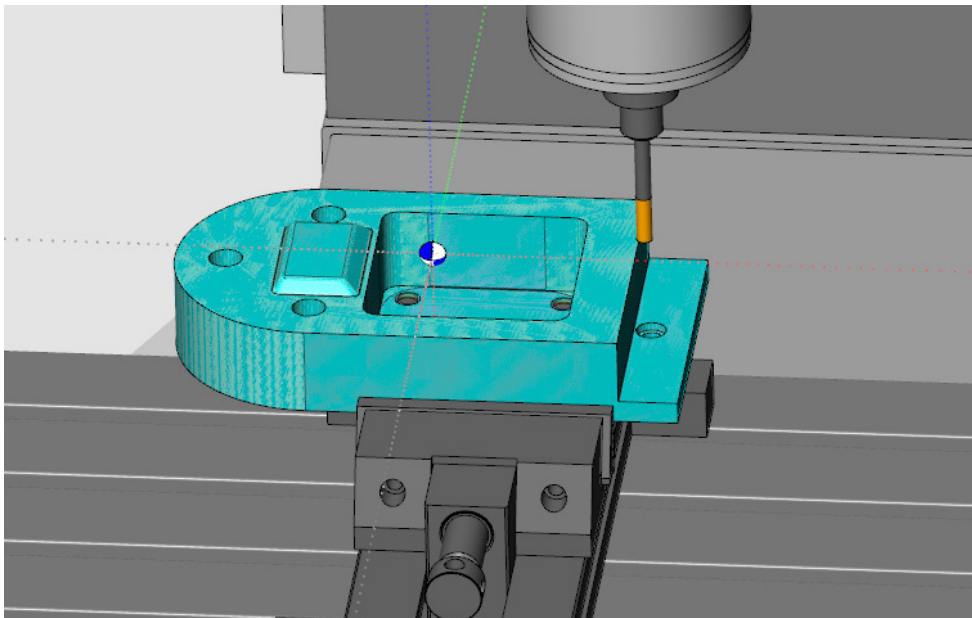


Figura 6.76. Pieza mecanizada por completo

7.-CAPÍTULO 7. CONCLUSIONES

7.1.- Conclusiones generales

Para una empresa, la posibilidad de tener una copia exacta en 3D de sus máquinas y poder simular los procesos de mecanizado antes de efectuarlos en material puede ser una gran ventaja. Por otro lado, puede suponer unos sobrecostes al incrementar el tiempo empleado en CAM realizando las simulaciones y teniendo que posicionar los elementos de fijación y la pieza. Sin embargo, estos sobrecostes son insignificantes frente a la rotura de herramientas o colisiones que desemboquen en averías que paren la producción.

En piezas muy sencillas de mecanizar en las que la probabilidad de choque sea prácticamente nula, podría prescindirse de ello, pero siempre teniendo en cuenta que un fallo humano no produciría errores fatales; como no modificar el plano de seguridad en una pieza en la que el cero de mecanizado esté en el punto más bajo y la herramienta colisione al trasladarse.

Una línea de trabajo futura muy interesante sería la aplicación a máquinas de 5 ejes. En este tipo de mecanizados, el uso de una máquina virtual para hacer simulaciones pasa de ser algo opcional (aunque muy recomendable), a ser algo de uso prácticamente obligatorio. Las libertades de movimiento asignadas a la máquina y la orientación de las mismas a una menor intervención del operario facilitan en gran medida la aparición de colisiones.

7.2.- Conclusiones personales

La realización de este TFG ha resultado muy interesante de cara a profundizar en el conocimiento de otros programas alternativos a los utilizados durante los estudios. Tanto el uso de SpaceClaim como de Mastercam ha sido muy cómodo tras las competencias en CAD Y CAM adquiridas en la carrera.

El mecanizado de la pieza y la búsqueda de posibles colisiones ha reforzado mi convencimiento sobre la necesidad del uso de máquinas virtuales.

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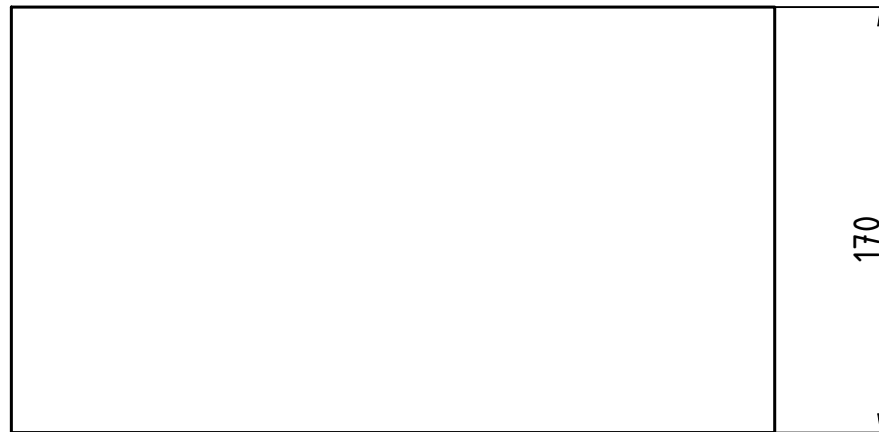
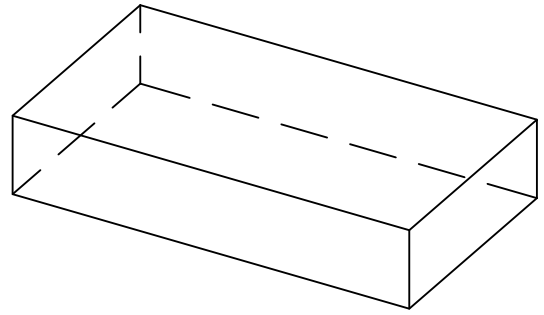
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ANEXOS

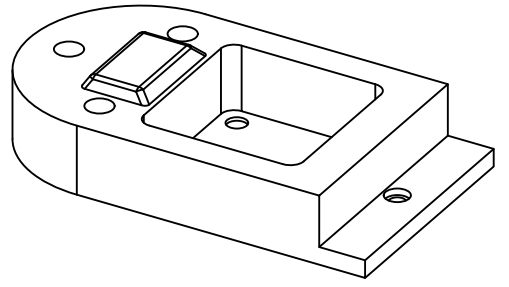
ANEXO I. PLANOS



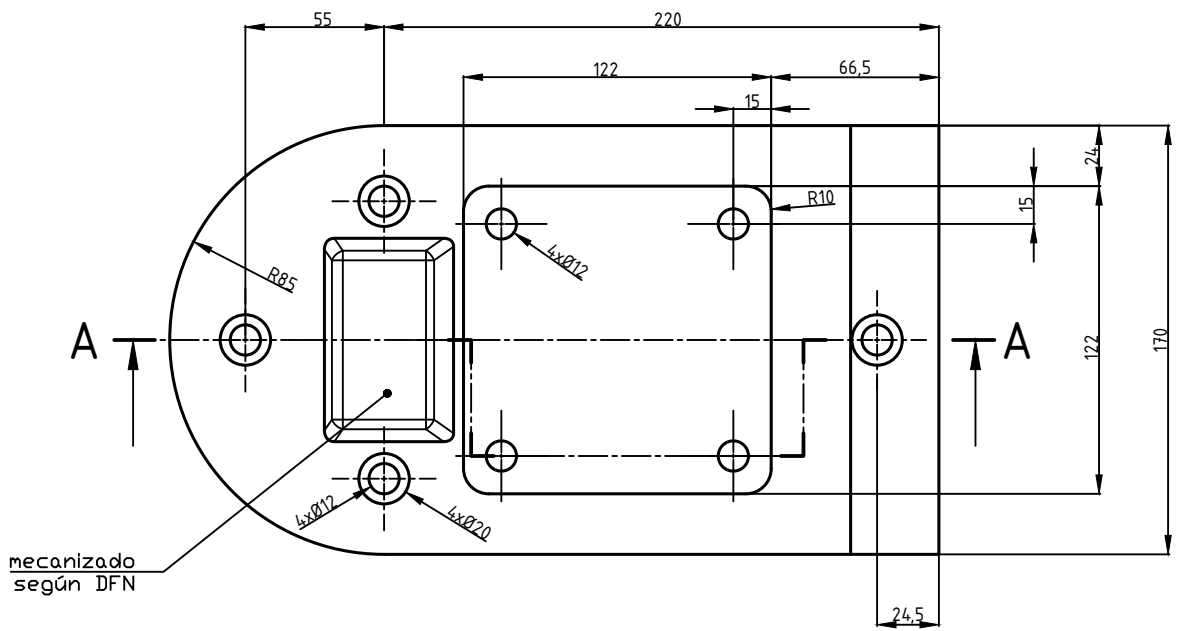
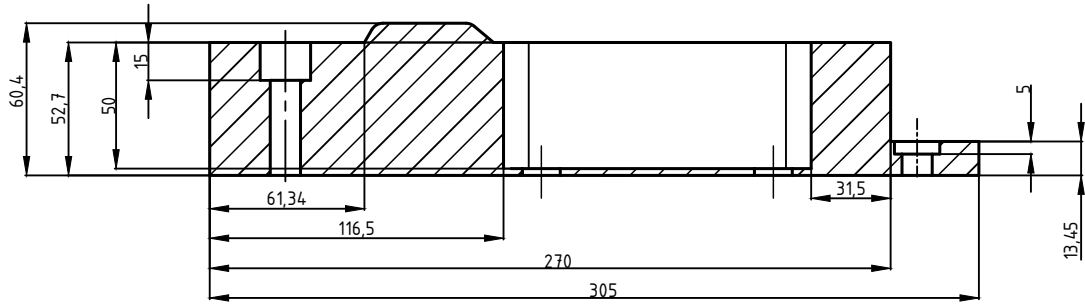
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UNIVERSIDAD DE VALLADOLID Grado en Ingeniería Mecánica		
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	REFERENCIA:	FECHA REV: 27/06/18
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		TAMAÑO: A4



A-A



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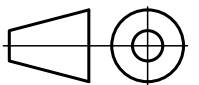
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TRATAMIENTO:

OBSERVACIONES:

UNIVERSIDAD DE VALLADOLID
Grado en Ingeniería Mecánica



DENOMINACIÓN: PIEZA SIMULACIÓN

REFERENCIA:

NOMBRE: ORTEGA MARTÍN, VIENA

FECHA: 27/06/18

FECHA REV: 27/06/18

Nº DE PLANO: 2

2

TAMAÑO: A4

ESCALA: 1:3

ANEXO II. TABLA DE CÓDIGOS G HAAS PARA FRESADO

PRINCIPALES CÓDIGOS G PARA FRESADO EN HAAS	
G00	Posicionamiento con movimiento rápido
G01	Movimiento de interpolación lineal
G02	Movimiento de interpolación circular CW
G03	Movimiento de interpolación circular CCW
G04	Pausa
G09	Parada exacta
G10	Establecer correctores
G12	Fresado circular de cavidades CW
G13	Fresado circular de cavidades CCW
G17	Selección de plano XY
G18	Selección de plano XZ
G19	Selección de plano YZ
G20	Selección pulgadas
G21	Selección sistema métrico
G28	Retorno a la posición cero de la máquina a través del punto de referencia
G29	Movimiento desde el punto de referencia
G40	Cancelar la compensación de la herramienta de corte
G41	2D Compensación de la herramienta de corte izq
G42	2D Compensación de la herramienta de corte der
G43	Compensación de la longitud de la herramienta +
G44	Compensación de la longitud de la herramienta -
G52	Establecer sistema de coordenadas de trabajo

PRINCIPALES CÓDIGOS G PARA FRESADO EN HAAS (continuación)	
G80	Cancelar del ciclo fijo
G81	Ciclo fijo de taladrado
G82	Ciclo fijo de taladrado de puntos
G83	Ciclo fijo de taladrado usando avances cortos
G84	Ciclo fijo de roscado
G90	Comandos de posicionamiento absoluto
G91	Comandos de posicionamiento incremental
G92	Establecer valor de cambio de sistema de coordenadas de trabajo

ANEXO III. TABLA DE CÓDIGOS M HAAS PARA FRESADO

PRINCIPALES CÓDIGOS M PARA FRESADO EN HAAS	
M02	Fin del programa
M03	Encendido del husillo CW
M04	Encendido del husillo CCW
M05	Detener husillo
M06	Cambio de herramienta
M08	Refrigerante encendido
M09	Refrigerante apagado
M30	Fin del programa y reinicio
M98	Llamada a subprograma
M99	Bucle o retorno a subprograma

ANEXO IV. PROGRAMA CNC DE MECANIZADO

(T1 PLATO 20 ACERO H1 D1 T OOL DIA. - 20.) (T2 PLATO ACERO 54 H2 D2 TOOL DIA. - 54.) (T3 FRESA ESFÉRICA 12 H3 D3 TOOL DIA. - 12.) (T4 FRESA PLANA 19.05 H4 D4 TO OL DIA. - 19.05) (T5 BROCA 12 H5 D5 TOOL DIA. - 12.) (T6 FRESA 9.525 H6 D6 TO OL DIA. - 9.525) N100 G21 N110 G0 G17 G40 G49 G80 G90 / N120 G91 G28 Z0. / N130 G28 X0. Y0. / N140 G92 X250. Y250. Z250. (PLATO 20 ACERO) N150 T1 M6 N160 G0 G90 X- 47.5 Y-150. S4297 M3 N170 G43 H1 Z25. N180 M8 N190 Z10. N200 G1 Z- 3.837 F1000. N210 Y-130. F1461. N220 G3 X-67.5 Y-110. I-20. J0. N230 G2 X- 177.5 Y0. I0. J110. N240 X-67.5 Y110. I110. J0. N250 G3 X-47.5 Y130. I0. J20. N260 G1 Y150. N270 G0 Z25. N280 Y-135. N290 Z10. N300 G1 Z- 3.837 F1000. N310 Y-115. F1461. N320 G3 X-67.5 Y-95. I-20. J0. N330 G2 X- 162.5 Y0. I0. J95. N340 X-67.5 Y95. I95. J0. N350 G3 X-47.5 Y115. I0. J20. N360 G1 Y135. N370 G0 Z25. N380 Y-150. N390 Z10. N400 G1 Z- 7.675 F1000.	N410 Y-130. F1461. N420 G3 X-67.5 Y-110. I-20. J0. N430 G2 X- 177.5 Y0. I0. J110. N440 X-67.5 Y110. I110. J0. N450 G3 X-47.5 Y130. I0. J20. N460 G1 Y150. N470 G0 Z25. N480 Y-135. N490 Z10. N500 G1 Z- 7.675 F1000. N510 Y-115. F1461. N520 G3 X-67.5 Y-95. I-20. J0. N530 G2 X- 162.5 Y0. I0. J95. N540 X-67.5 Y95. I95. J0. N550 G3 X-47.5 Y115. I0. J20. N560 G1 Y135. N570 G0 Z25. N580 Y-150. N590 Z10. N600 G1 Z- 11.512 F1000. N610 Y-130. F1461. N620 G3 X-67.5 Y-110. I-20. J0. N630 G2 X- 177.5 Y0. I0. J110. N640 X-67.5 Y110. I110. J0. N650 G3 X-47.5 Y130. I0. J20. N660 G1 Y150. N670 G0 Z25. N680 Y-135. N690 Z10. N700 G1 Z- 11.512 F1000. N710 Y-115. F1461. N720 G3 X-67.5 Y-95. I-20. J0. N730 G2 X- 162.5 Y0. I0. J95. N740 X-67.5 Y95. I95. J0. N750 G3 X-47.5 Y115. I0. J20. N760 G1 Y135. N770 G0 Z25. N780 Y-150. N790 Z10. N800 G1 Z- 15.35 F1000. N810 Y-130. F1461. N820 G3 X-67.5 Y-110. I-20. J0. N830 G2 X- 177.5 Y0. I0. J110.	N840 X-67.5 Y110. I110. J0. N850 G3 X-47.5 Y130. I0. J20. N860 G1 Y150. N870 G0 Z25. N880 Y-135. N890 Z10. N900 G1 Z- 15.35 F1000. N910 Y-115. F1461. N920 G3 X-67.5 Y-95. I-20. J0. N930 G2 X- 162.5 Y0. I0. J95. N940 X-67.5 Y95. I95. J0. N950 G3 X-47.5 Y115. I0. J20. N960 G1 Y135. N970 G0 Z25. N980 Y-150. N990 Z10. N1000 G1 Z- 19.188 F1000. N1010 Y-130. F1461. N1020 G3 X- 67.5 Y-110. I- 20. J0. N1030 G2 X- 177.5 Y0. I0. J110. N1040 X-67.5 Y110. I110. J0. N1050 G3 X- 47.5 Y130. I0. J20. N1060 G1 Y150. N1070 G0 Z25. N1080 Y-135. N1090 Z10. N1100 G1 Z- 19.188 F1000. N1110 Y-115. F1461. N1120 G3 X- 67.5 Y-95. I- 20. J0. N1130 G2 X- 162.5 Y0. I0. J95. N1140 X-67.5 Y95. I95. J0. N1150 G3 X- 47.5 Y115. I0. J20. N1160 G1 Y135. N1170 G0 Z25. N1180 Y-150. N1190 Z10. N1200 G1 Z- 23.025 F1000. N1210 Y-130. F1461. N1220 G3 X- 67.5 Y-110. I- 20. J0. N1230 G2 X- 177.5 Y0. I0. J110. N1240 X-67.5 Y110. I110. J0. N1250 G3 X- 47.5 Y130. I0. J20. N1260 G1 Y150. N1270 G0 Z25.	N1280 Y-135. N1290 Z10. N1300 G1 Z- 23.025 F1000. N1310 Y-115. F1461. N1320 G3 X- 67.5 Y-95. I- 20. J0. N1330 G2 X- 162.5 Y0. I0. J95. N1340 X-67.5 Y95. I95. J0. N1350 G3 X- 47.5 Y115. I0. J20. N1360 G1 Y135. N1370 G0 Z25. N1380 Y-150. N1390 Z10. N1400 G1 Z- 26.863 F1000. N1410 Y-130. F1461. N1420 G3 X- 67.5 Y-110. I- 20. J0. N1430 G2 X- 177.5 Y0. I0. J110. N1440 X-67.5 Y110. I110. J0. N1450 G3 X- 47.5 Y130. I0. J20. N1460 G1 Y150. N1470 G0 Z25. N1480 Y-135. N1490 Z10. N1500 G1 Z- 26.863 F1000. N1510 Y-115. F1461. N1520 G3 X- 67.5 Y-95. I- 20. J0. N1530 G2 X- 162.5 Y0. I0. J95. N1540 X-67.5 Y95. I95. J0. N1550 G3 X- 47.5 Y115. I0. J20. N1560 G1 Y135. N1570 G0 Z25. N1580 Y-150. N1590 Z10. N1600 G1 Z- 30.7 F1000. N1610 Y-130. F1461. N1620 G3 X- 67.5 Y-110. I- 20. J0. N1630 G2 X- 177.5 Y0. I0. J110. N1640 X-67.5 Y110. I110. J0. N1650 G3 X- 47.5 Y130. I0. J20. N1660 G1 Y150. N1670 G0 Z25. N1680 Y-135. N1690 Z10. N1700 G1 Z- 30.7 F1000. N1710 Y-115. F1461.	N1720 G3 X- 67.5 Y-95. I- 20. J0. N1730 G2 X- 162.5 Y0. I0. J95. N1740 X-67.5 Y95. I95. J0. N1750 G3 X- 47.5 Y115. I0. J20. N1760 G1 Y135. N1770 G0 Z25. N1780 Y-150. N1790 Z10. N1800 G1 Z- 34.538 F1000. N1810 Y-130. F1461. N1820 G3 X- 67.5 Y-110. I- 20. J0. N1830 G2 X- 177.5 Y0. I0. J110. N1840 X-67.5 Y110. I110. J0. N1850 G3 X- 47.5 Y130. I0. J20. N1860 G1 Y150. N1870 G0 Z25. N1880 Y-135. N1890 Z10. N1900 G1 Z- 34.538 F1000. N1910 Y-115. F1461. N1920 G3 X- 67.5 Y-95. I- 20. J0. N1930 G2 X- 162.5 Y0. I0. J95. N1940 X-67.5 Y95. I95. J0. N1950 G3 X- 47.5 Y115. I0. J20. N1960 G1 Y135. N1970 G0 Z25. N1980 Y-150. N1990 Z10. N2000 G1 Z- 38.375 F1000. N2010 Y-130. F1461. N2020 G3 X- 67.5 Y-110. I- 20. J0. N2030 G2 X- 177.5 Y0. I0. J110. N2040 X-67.5 Y110. I110. J0. N2050 G3 X- 47.5 Y130. I0. J20. N2060 G1 Y150. N2070 G0 Z25. N2080 Y-135. N2090 Z10. N2100 G1 Z- 38.375 F1000. N2110 Y-115. F1461. N2120 G3 X- 67.5 Y-95. I- 20. J0. N2130 G2 X- 162.5 Y0. I0. J95.
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ANEXO IV. PROGRAMA CNC DE MECANIZADO

N2140 X-67.5 Y95. I95. J0. N2150 G3 X- 47.5 Y115. I0. J20. N2160 G1 Y135. N2170 G0 Z25. N2180 Y-150. N2190 Z10. N2200 G1 Z- 42.212 F1000. N2210 Y-130. F1461. N2220 G3 X- 67.5 Y-110. I- 20. J0. N2230 G2 X- 177.5 Y0. I0. J110. N2240 X-67.5 Y110. I110. J0. N2250 G3 X- 47.5 Y130. I0. J20. N2260 G1 Y150. N2270 G0 Z25. N2280 Y-135. N2290 Z10. N2300 G1 Z- 42.212 F1000. N2310 Y-115. F1461. N2320 G3 X- 67.5 Y-95. I- 20. J0. N2330 G2 X- 162.5 Y0. I0. J95. N2340 X-67.5 Y95. I95. J0. N2350 G3 X- 47.5 Y115. I0. J20. N2360 G1 Y135. N2370 G0 Z25. N2380 Y-150. N2390 Z10. N2400 G1 Z- 46.05 F1000. N2410 Y-130. F1461. N2420 G3 X- 67.5 Y-110. I- 20. J0. N2430 G2 X- 177.5 Y0. I0. J110. N2440 X-67.5 Y110. I110. J0. N2450 G3 X- 47.5 Y130. I0. J20. N2460 G1 Y150. N2470 G0 Z25. N2480 Y-135. N2490 Z10. N2500 G1 Z- 46.05 F1000. N2510 Y-115. F1461. N2520 G3 X- 67.5 Y-95. I- 20. J0. N2530 G2 X- 162.5 Y0. I0. J95. N2540 X-67.5 Y95. I95. J0. N2550 G3 X- 47.5 Y115. I0. J20. N2560 G1 Y135.	N2570 G0 Z25. N2580 Y-150. N2590 Z10. N2600 G1 Z- 49.888 F1000. N2610 Y-130. F1461. N2620 G3 X- 67.5 Y-110. I- 20. J0. N2630 G2 X- 177.5 Y0. I0. J110. N2640 X-67.5 Y110. I110. J0. N2650 G3 X- 47.5 Y130. I0. J20. N2660 G1 Y150. N2670 G0 Z25. N2680 Y-135. N2690 Z10. N2700 G1 Z- 49.888 F1000. N2710 Y-115. F1461. N2720 G3 X- 67.5 Y-95. I- 20. J0. N2730 G2 X- 162.5 Y0. I0. J95. N2740 X-67.5 Y95. I95. J0. N2750 G3 X- 47.5 Y115. I0. J20. N2760 G1 Y135. N2770 G0 Z25. N2780 Y-150. N2790 Z10. N2800 G1 Z- 53.725 F1000. N2810 Y-130. F1461. N2820 G3 X- 67.5 Y-110. I- 20. J0. N2830 G2 X- 177.5 Y0. I0. J110. N2840 X-67.5 Y110. I110. J0. N2850 G3 X- 47.5 Y130. I0. J20. N2860 G1 Y150. N2870 G0 Z25. N2880 Y-135. N2890 Z10. N2900 G1 Z- 53.725 F1000. N2910 Y-115. F1461. N2920 G3 X- 67.5 Y-95. I- 20. J0. N2930 G2 X- 162.5 Y0. I0. J95. N2940 X-67.5 Y95. I95. J0. N2950 G3 X- 47.5 Y115. I0. J20. N2960 G1 Y135. N2970 G0 Z25. N2980 Y-150. N2990 Z10. N3000 G1 Z- 57.563 F1000.	N3010 Y-130. F1461. N3020 G3 X- 67.5 Y-110. I- 20. J0. N3030 G2 X- 177.5 Y0. I0. J110. N3040 X-67.5 Y110. I110. J0. N3050 G3 X- 47.5 Y130. I0. J20. N3060 G1 Y150. N3070 G0 Z25. N3080 Y-135. N3090 Z10. N3100 G1 Z- 57.563 F1000. N3110 Y-115. F1461. N3120 G3 X- 67.5 Y-95. I- 20. J0. N3130 G2 X- 162.5 Y0. I0. J95. N3140 X-67.5 Y95. I95. J0. N3150 G3 X- 47.5 Y115. I0. J20. N3160 G1 Y135. N3170 G0 Z25. N3180 Y-150. N3190 Z10. N3200 G1 Z- 61.4 F1000. N3210 Y-130. F1461. N3220 G3 X- 67.5 Y-110. I- 20. J0. N3230 G2 X- 177.5 Y0. I0. J110. N3240 X-67.5 Y110. I110. J0. N3250 G3 X- 47.5 Y130. I0. J20. N3260 G1 Y150. N3270 G0 Z25. N3280 Y-135. N3290 Z10. N3300 G1 Z- 61.4 F1000. N3310 Y-115. F1461. N3320 G3 X- 67.5 Y-95. I- 20. J0. N3330 G2 X- 162.5 Y0. I0. J95. N3340 X-67.5 Y95. I95. J0. N3350 G3 X- 47.5 Y115. I0. J20. N3360 G1 Y135. N3370 G0 Z25. N3380 M5 (PLATO 54 ACERO) N3410 T2 M6 N3420 G0 G90 X187.7 Y106.6 S1592 M3	N3430 G43 H2 Z25. N3440 M8 N3450 Z10. N3460 G1 Z- 2.931 F1000. N3470 X166.1 F1623. N3480 G3 X144.5 Y85. I0. J-21.6 N3490 G1 Y-85. N3500 G3 X166.1 Y-106.6 I21.6 J0. N3510 G1 X187.7 N3520 Y106.6 N3530 Z-5.861 F1000. N3540 X166.1 F1623. N3550 G3 X144.5 Y85. I0. J-21.6 N3560 G1 Y-85. N3570 G3 X166.1 Y-106.6 I21.6 J0. N3580 G1 X187.7 N3590 Y106.6 N3600 Z-8.792 F1000. N3610 X166.1 F1623. N3620 G3 X144.5 Y85. I0. J-21.6 N3630 G1 Y-85. N3640 G3 X166.1 Y-106.6 I21.6 J0. N3650 G1 X187.7 N3660 Y106.6 N3670 Z-11.722 F1000. N3680 X166.1 F1623. N3690 G3 X144.5 Y85. I0. J-21.6 N3700 G1 Y-85. N3710 G3 X166.1 Y-106.6 I21.6 J0. N3720 G1 X187.7 N3730 Y106.6 N3740 Z-14.653 F1000. N3750 X166.1 F1623. N3760 G3 X144.5 Y85. I0. J-21.6 N3770 G1 Y-85. N3780 G3 X166.1 Y-106.6 I21.6 J0. N3790 G1 X187.7 N3800 Y106.6 N3810 Z-17.584 F1000. N3820 X166.1 F1623. N3830 G3 X144.5 Y85. I0. J-21.6 N3840 G1 Y-85.	N3850 G3 X166.1 Y-106.6 I21.6 J0. N3860 G1 X187.7 N3870 Y106.6 N3880 Z-20.514 F1000. N3890 X166.1 F1623. N3900 G3 X144.5 Y85. I0. J-21.6 N3910 G1 Y-85. N3920 G3 X166.1 Y-106.6 I21.6 J0. N3930 G1 X187.7 N3940 Y106.6 N3950 Z-23.445 F1000. N3960 X166.1 F1623. N3970 G3 X144.5 Y85. I0. J-21.6 N3980 G1 Y-85. N3990 G3 X166.1 Y-106.6 I21.6 J0. N4000 G1 X187.7 N4010 Y106.6 N4020 Z-26.376 F1000. N4030 X166.1 F1623. N4040 G3 X144.5 Y85. I0. J-21.6 N4050 G1 Y-85. N4060 G3 X166.1 Y-106.6 I21.6 J0. N4070 G1 X187.7 N4080 Y106.6 N4090 Z-29.306 F1000. N4100 X166.1 F1623. N4110 G3 X144.5 Y85. I0. J-21.6 N4120 G1 Y-85. N4130 G3 X166.1 Y-106.6 I21.6 J0. N4140 G1 X187.7 N4150 Y106.6 N4160 Z-32.237 F1000. N4170 X166.1 F1623. N4180 G3 X144.5 Y85. I0. J-21.6 N4190 G1 Y-85. N4200 G3 X166.1 Y-106.6 I21.6 J0. N4210 G1 X187.7 N4220 Y106.6 N4230 Z-35.167 F1000. N4240 X166.1 F1623. N4250 G3 X144.5 Y85. I0. J-21.6 N4260 G1 Y-85.
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N4270 G3	N4650 X-	N4940 X-	N5240 X-	N5620 X-35.676
X166.1 Y-106.6	145.704 Y-	175.333 Y-8.83	140.069 Y74.27	Y100.759
I21.6 J0.	80.319 Z-2.51	N4950 X-	N5250 X-	N5630 X-33.019
N4280 G1	N4660 X-	175.398 Y-	137.728 Y76.29	Y100.699
X187.7	146.183 Y-	5.725	N5260 X-135.33	N5640 X-30.365
N4290 Y106.6	79.742 Z-2.529	N4960 X-	Y78.239	Y100.635
N4300 Z-38.098	N4670 X-	175.373 Y-	N5270 X-	N5650 X-27.711
F1000.	146.696 Y-	2.618	132.876	Y100.569
N4310 X166.1	79.196 Z-2.547	N4970 X-	Y80.113	N5660 X-25.059
F1623.	N4680 X-	175.259 Y.489	N5280 X-	Y100.501
N4320 G3	147.279 Y-	N4980 X-	130.369	N5670 X-22.409
X144.5 Y85.	78.47	175.055 Y3.593	Y81.913	Y100.431
I0. J-21.6	N4690 X-	N4990 X-	N5290 X-127.81	N5680 X-19.758
N4330 G1 Y-85.	148.606 Y-	174.761 Y6.691	Y83.636	Y100.359
N4340 G3	76.872	N5000 X-	N5300 X-	N5690 X-17.109
X166.1 Y-106.6	N4700 X-	174.378 Y9.779	125.204	Y100.285
I21.6 J0.	150.171 Y-	N5010 X-	Y85.281	N5700 X-14.46
N4350 G1	74.967	173.906	N5310 X-	Y100.211
X187.7	N4710 X-	Y12.856	122.551	N5710 X-11.811
N4360 Y106.6	151.825 Y-	N5020 X-	Y86.846	Y100.136
N4370 Z-41.029	72.881	173.344	N5320 X-	N5720 X-9.162
F1000.	N4720 X-	Y15.919	119.854 Y88.33	Y100.06
N4380 X166.1	153.496 Y-	N5030 X-	N5330 X-	N5730 X-6.514
F1623.	70.679	172.693	117.116	Y99.983
N4390 G3	N4730 X-	Y18.964	Y89.731	N5740 X-3.865
X144.5 Y85.	155.155 Y-	N5040 X-	N5340 X-	Y99.906
I0. J-21.6	68.384	171.954	114.339	N5750 X-1.216
N4400 G1 Y-85.	N4740 X-	Y21.989	Y91.049	Y99.828
N4410 G3	156.784 Y-	N5050 X-	N5350 X-	N5760 X1.433
X166.1 Y-106.6	66.009	171.128	111.527	Y99.75
I21.6 J0.	N4750 X-	Y24.991	Y92.282	N5770 X4.082
N4420 G1	158.372 Y-	N5060 X-	N5360 X-108.68	Y99.671
X187.7	63.563	170.213	Y93.429	N5780 X6.731
N4430 Y106.6	N4760 X-	Y27.968	N5370 X-	Y99.592
N4440 Z-43.959	159.911 Y-	N5070 X-	105.803 Y94.49	N5790 X9.38
F1000.	61.052	169.213	N5380 X-	Y99.513
N4450 X166.1	N4770 X-	Y30.917	102.897	N5800 X12.03
F1623.	161.394 Y-	N5080 X-	Y95.462	Y99.434
N4460 G3	58.482	168.126	N5390 X-99.966	N5810 X14.68
X144.5 Y85.	N4780 X-	Y33.834	Y96.347	Y99.355
I0. J-21.6	162.818 Y-	N5090 X-	N5400 X-97.012	N5820 X17.33
N4470 G1 Y-85.	55.856	166.955	Y97.142	Y99.275
N4480 G3	N4790 X-	Y36.718	N5410 X-94.037	N5830 X19.981
X166.1 Y-106.6	164.177 Y-	N5100 X-165.7	Y97.847	Y99.196
I21.6 J0.	53.178	Y39.566	N5420 X-91.045	N5840 X22.636
N4490 G1	N4800 X-165.47	N5110 X-	Y98.462	Y99.12
X187.7	Y-50.451	164.363	N5430 X-88.06	N5850 X25.297
N4500 Y106.6	N4810 X-	Y42.375	Y98.984	Y99.053
N4510 Z-46.89	166.692 Y-	N5120 X-	N5440 X-85.11	N5860 X27.963
F1000.	47.679	162.943	Y99.419	Y98.993
N4520 X166.1	N4820 X-	Y45.143	N5450 X-82.194	N5870 X30.632
F1623.	167.841 Y-	N5130 X-	Y99.78	Y98.939
N4530 G3	44.864	161.443	N5460 X-79.31	N5880 X33.305
X144.5 Y85.	N4830 X-	Y47.867	Y100.077	Y98.892
I0. J-21.6	168.916 Y-	N5140 X-	N5470 X-76.456	N5890 X35.981
N4540 G1 Y-85.	42.01	159.864	Y100.319	Y98.849
N4550 G3	N4840 X-	Y50.545	N5480 X-73.628	N5900 X38.659
X166.1 Y-106.6	169.913 Y-	N5150 X-	Y100.515	Y98.811
I21.6 J0.	39.119	158.208	N5490 X-70.825	N5910 X41.34
N4560 G1	N4850 X-	Y53.174	Y100.67	Y98.777
X187.7	170.832 Y-	N5160 X-	N5500 X-68.044	N5920 X44.023
N4570 G0 Z25.	36.195	156.475	Y100.79	Y98.747
(PLATO 54	N4860 X-171.67	Y55.752	N5510 X-65.283	N5930 X46.708
ACERO)	Y-33.24	N5170 X-	Y100.881	Y98.72
N4580 X-	N4870 X-	154.668	N5520 X-62.538	N5940 X49.394
141.873 Y-	172.426 Y-	Y58.277	Y100.945	Y98.696
88.095 Z6.	30.257	N5180 X-	N5530 X-59.81	N5950 X52.082
N4590 Z3.	N4880 X-173.1	152.787	Y100.987	Y98.675
N4600 G1 Z-	Y-27.249	Y60.745	N5540 X-57.094	N5960 X54.772
2.297 F1000.	N4890 X-	N5190 X-	Y101.009	Y98.656
N4610 X-144.17	173.688 Y-	150.835	N5550 X-54.391	N5970 X57.462
Y-82.886 Z-	24.218	Y63.157	Y101.014	Y98.639
2.436 F1623.	N4900 X-	N5200 X-	N5560 X-51.698	N5980 X60.154
N4620 X-	174.191 Y-	148.814	Y101.004	Y98.624
144.493 Y-	21.168	Y65.508	N5570 X-49.014	N5990 X62.847
82.21 Z-2.454	N4910 X-	N5210 X-	Y100.983	Y98.61
N4630 X-	174.608 Y-	146.724	N5580 X-46.336	N6000 X65.54
144.858 Y-	18.101	Y67.796	Y100.952	Y98.598
81.555 Z-2.473	N4920 X-	N5220 X-	N5590 X-43.665	N6010 X68.234
N4640 X-	174.938 Y-	144.569	Y100.913	Y98.587
145.262 Y-	15.021	Y70.021	N5600 X-40.998	N6020 X70.929
80.924 Z-2.492	N4930 X-175.18	N5230 X-142.35	Y100.867	Y98.578
	Y-11.929	Y72.179	N5610 X-38.336	N6030 X73.624
			Y100.815	Y98.569

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N6040 X76.32	N6460 X130.172	N6880 X107.365	N7300 X-9.134	N7700 X-
Y98.562	Y14.415	Y-88.209	Y-98.424	119.729 Y-79.9
N6050 X79.016	N6470 X130.263	N6890 X104.534	N7310 X-11.839	N7710 X-
Y98.555	Y11.669	Y-89.35	Y-98.433	122.173 Y-
N6060 X81.713	N6480 X130.344	N6900 X101.674	N7320 X-14.543	78.129
Y98.549	Y8.928	Y-90.37	Y-98.44	N7720 X-
N6070 X84.41	N6490 X130.416	N6910 X98.798	N7330 X-17.246	124.552 Y-
Y98.544	Y6.191	Y-91.279	Y-98.447	76.277
N6080 X87.107	N6500 X130.48	N6920 X95.913	N7340 X-19.949	N7730 X-
Y98.539	Y3.458	Y-92.088	Y-98.452	126.866 Y-
N6090 X89.805	N6510 X130.537	N6930 X93.026	N7350 X-22.652	74.346
Y98.535	Y.728	Y-92.807	Y-98.458	N7740 X-
N6100 X92.503	N6520 X130.588	N6940 X90.142	N7360 X-25.355	129.112 Y-
Y98.531	Y-1.998	Y-93.446	Y-98.462	72.338
N6110 X94.732	N6530 X130.633	N6950 X87.265	N7370 X-28.057	N7750 X-
Y98.516	Y-4.722	Y-94.012	Y-98.466	131.288 Y-
N6120 X96.488	N6540 X130.673	N6960 X84.395	N7380 X-30.759	70.258
Y98.337	Y-7.443	Y-94.515	Y-98.47	N7760 X-
N6130 X98.473	N6550 X130.709	N6970 X81.535	N7390 X-33.461	133.393 Y-
Y97.931	Y-10.162	Y-94.961	Y-98.473	68.107
N6140 X100.626	N6560 X130.741	N6980 X78.686	N7400 X-36.162	N7770 X-
Y97.229	Y-12.879	Y-95.356	Y-98.476	135.424 Y-
N6150 X102.868	N6570 X130.769	N6990 X75.847	N7410 X-38.864	65.888
Y96.213	Y-15.594	Y-95.707	Y-98.479	N7780 X-
N6160 X105.142	N6580 X130.795	N7000 X73.019	N7420 X-41.565	137.381 Y-
Y94.894	Y-18.308	Y-96.018	Y-98.481	63.603
N6170 X107.393	N6590 X130.817	N7010 X70.202	N7430 X-44.266	N7790 X-
Y93.29	Y-21.02	Y-96.294	Y-98.483	139.262 Y-
N6180 X109.575	N6600 X130.837	N7020 X67.395	N7440 X-46.992	61.255
Y91.425	Y-23.73	Y-96.539	N7450 X-49.756	N7800 X-
N6190 X111.653	N6610 X130.855	N7030 X64.597	Y-98.473	141.064 Y-
Y89.33	Y-26.44	Y-96.756	N7460 X-52.553	58.847
N6200 X113.602	N6620 X130.871	N7040 X61.808	Y-98.444	N7810 X-
Y87.041	Y-29.149	Y-96.949	N7470 X-55.377	142.785 Y-
N6210 X115.406	N6630 X130.885	N7050 X59.028	Y-98.388	56.381
Y84.591	Y-31.856	Y-97.121	N7480 X-58.224	N7820 X-
N6220 X117.06	N6640 X130.897	N7060 X56.255	Y-98.298	144.425 Y-
Y82.012	Y-34.563	Y-97.273	N7490 X-61.089	53.861
N6230 X118.565	N6650 X130.909	N7070 X53.489	Y-98.167	N7830 X-145.98
Y79.335	Y-37.269	Y-97.408	N7500 X-63.969	Y-51.29
N6240 X119.925	N6660 X130.919	N7080 X50.73	Y-97.99	N7840 X-
Y76.583	Y-39.974	Y-97.529	N7510 X-66.86	147.452 Y-
N6250 X121.148	N6670 X130.928	N7090 X47.977	Y-97.761	48.668
Y73.777	Y-42.679	Y-97.636	N7520 X-69.759	N7850 X-
N6260 X122.242	N6680 X130.935	N7100 X45.229	Y-97.476	148.837 Y-
Y70.934	Y-45.384	Y-97.731	N7530 X-72.662	45.999
N6270 X123.22	N6690 X130.942	N7110 X42.486	Y-97.13	N7860 X-
Y68.067	Y-48.087	Y-97.815	N7540 X-75.566	150.134 Y-
N6280 X124.091	N6700 X130.949	N7120 X39.748	Y-96.721	43.286
Y65.187	Y-50.791	Y-97.891	N7550 X-78.467	N7870 X-
N6290 X124.865	N6710 X130.954	N7130 X37.013	Y-96.244	151.341 Y-
Y62.3	Y-53.494	Y-97.957	N7560 X-81.364	40.533
N6300 X125.553	N6720 X130.959	N7140 X34.282	Y-95.698	N7880 X-
Y59.414	Y-56.197	Y-98.017	N7570 X-84.253	152.458 Y-
N6310 X126.164	N6730 X130.964	N7150 X31.555	Y-95.08	37.742
Y56.532	Y-58.899	Y-98.07	N7580 X-87.13	N7890 X-
N6320 X126.706	N6740 X130.968	N7160 X28.83	Y-94.389	153.483 Y-
Y53.657	Y-61.603	Y-98.117	N7590 X-89.992	34.916
N6330 X127.187	N6750 X130.874	N7170 X26.108	Y-93.622	N7900 X-
Y50.791	Y-63.256	Y-98.159	N7600 X-92.838	154.415 Y-
N6340 X127.613	N6760 X130.585	N7180 X23.388	Y-92.778	32.058
Y47.935	Y-65.159	Y-98.196	N7610 X-95.663	N7910 X-
N6350 X127.991	N6770 X130.024	N7190 X20.671	Y-91.857	155.253 Y-
Y45.09	Y-67.268	Y-98.23	N7620 X-98.465	29.17
N6360 X128.327	N6780 X129.149	N7200 X17.955	Y-90.858	N7920 X-
Y42.255	Y-69.505	Y-98.259	N7630 X-101.24	155.996 Y-
N6370 X128.624	N6790 X127.956	N7210 X15.241	Y-89.779	26.256
Y39.431	Y-71.792	Y-98.286	N7640 X-	N7930 X-
N6380 X128.888	N6800 X126.459	N7220 X12.528	103.986 Y-	156.643 Y-
Y36.617	Y-74.063	Y-98.309	88.622	23.319
N6390 X129.123	N6810 X124.687	N7230 X9.817	N7650 X-	N7940 X-
Y33.814	Y-76.276	Y-98.33	106.699 Y-	157.193 Y-
N6400 X129.331	N6820 X122.674	N7240 X7.107	87.386	20.362
Y31.02	Y-78.396	Y-98.349	N7660 X-	N7950 X-
N6410 X129.515	N6830 X120.452	N7250 X4.398	109.378 Y-	157.646 Y-
Y28.234	Y-80.394	Y-98.365	86.071	17.389
N6420 X129.679	N6840 X118.058	N7260 X1.69 Y-	N7670 X-	N7960 X-158.
Y25.456	Y-82.253	98.38	112.019 Y-	Y-14.403
N6430 X129.825	N6850 X115.524	N7270 X-1.017	84.678	N7970 X-
Y22.686	Y-83.964	Y-98.393	N7680 X-	158.257 Y-
N6440 X129.955	N6860 X112.88	N7280 X-3.724	114.645 Y-	11.406
Y19.923	Y-85.524	Y-98.405	83.183	N7980 X-
N6450 X130.07	N6870 X110.153	N7290 X-6.429	N7690 X-117.22	158.414 Y-
Y17.166	Y-86.936	Y-98.415	Y-81.586	8.402

N7990 X-	N8290 X-	N8680 X-8.167	N9100 X100.895	N9520 X112.663
158.471 Y-	116.697	Y86.255	Y64.279	Y-52.291
5.393	Y70.399	N8690 X-5.451	N9110 X102.444	N9530 X111.093
N8000 X-	N8300 X-	Y86.204	Y61.633	Y-54.804
158.429 Y-	114.096	N8700 X-2.738	N9120 X103.865	N9540 X109.316
2.384	Y71.935	Y86.15	Y58.926	Y-57.215
N8010 X-	N8310 X-	N8710 X-.029	N9130 X105.165	N9550 X107.35
158.287 Y.622	111.443	Y86.094	Y56.172	Y-59.513
N8020 X-	Y73.377	N8720 X2.674	N9140 X106.35	N9560 X105.216
158.046 Y3.622	N8320 X-	Y86.036	Y53.381	Y-61.686
N8030 X-	108.742	N8730 X5.373	N9150 X107.429	N9570 X102.935
157.704 Y6.611	Y74.725	Y85.978	Y50.563	Y-63.726
N8040 X-	N8330 X-106.	N8740 X8.07	N9160 X108.408	N9580 X100.529
157.264 Y9.589	Y75.977	Y85.92	Y47.727	Y-65.63
N8050 X-	N8340 X-	N8750 X10.763	N9170 X109.296	N9590 X98.016
156.723	103.222	Y85.863	Y44.879	Y-67.397
Y12.552	Y77.135	N8760 X13.455	N9180 X110.1	N9600 X95.416
N8060 X-	N8350 X-	Y85.808	Y42.024	Y-69.029
156.084	100.416	N8770 X16.145	N9190 X110.827	N9610 X92.746
Y15.494	Y78.198	Y85.754	Y39.166	Y-70.53
N8070 X-	N8360 X-97.588	N8780 X18.834	N9200 X111.484	N9620 X90.019
155.347	Y79.171	Y85.703	Y36.308	Y-71.904
Y18.414	N8370 X-94.742	N8790 X21.523	N9210 X112.078	N9630 X87.249
N8080 X-	Y80.058	Y85.654	Y33.454	Y-73.16
154.512	N8380 X-91.885	N8800 X24.211	N9220 X112.614	N9640 X84.446
Y21.307	Y80.862	Y85.607	Y30.604	Y-74.303
N8090 X-153.58	N8390 X-89.02	N8810 X26.899	N9230 X113.097	N9650 X81.62
Y24.171	Y81.589	Y85.563	Y27.76	Y-75.342
N8100 X-	N8400 X-86.15	N8820 X29.587	N9240 X113.533	N9660 X78.778
152.552	Y82.243	Y85.521	Y24.923	Y-76.285
Y27.001	N8410 X-83.28	N8830 X32.275	N9250 X113.926	N9670 X75.926
N8110 X-	Y82.83	Y85.482	Y22.094	Y-77.139
151.428	N8420 X-80.411	N8840 X34.963	N9260 X114.28	N9680 X73.069
Y29.798	Y83.353	Y85.445	Y19.272	Y-77.912
N8120 X-150.21	N8430 X-77.545	N8850 X37.652	N9270 X114.599	N9690 X70.21
Y32.554	Y83.819	Y85.41	Y16.458	Y-78.611
N8130 X-	N8440 X-74.685	N8860 X40.341	N9280 X114.887	N9700 X67.353
148.899	Y84.231	Y85.377	Y13.652	Y-79.241
Y35.268	N8450 X-71.831	N8870 X43.03	N9290 X115.146	N9710 X64.5 Y-
N8140 X-	Y84.594	Y85.347	Y10.854	79.811
147.497	N8460 X-68.986	N8880 X45.72	N9300 X115.38	N9720 X61.652
Y37.936	Y84.913	Y85.319	Y8.063	Y-80.325
N8150 X-	N8470 X-66.149	N8890 X48.411	N9310 X115.591	N9730 X58.811
146.005	Y85.191	Y85.293	Y5.279	Y-80.788
Y40.554	N8480 X-63.32	N8900 X51.102	N9320 X115.78	N9740 X55.977
N8160 X-	Y85.432	Y85.269	Y2.502	Y-81.206
144.425 Y43.12	N8490 X-60.5	N8910 X53.794	N9330 X115.951	N9750 X53.15
N8170 X-	Y85.64	Y85.246	Y-.269	Y-81.582
142.756	N8500 X-57.689	N8920 X56.486	N9340 X116.105	N9760 X50.331
Y45.632	Y85.818	Y85.226	Y-3.034	Y-81.922
N8180 X-	N8510 X-54.887	N8930 X59.178	N9350 X116.244	N9770 X47.521
141.002	Y85.969	Y85.207	Y-5.794	Y-82.227
Y48.086	N8520 X-52.093	N8940 X61.871	N9360 X116.369	N9780 X44.718
N8190 X-	Y86.096	Y85.189	Y-8.548	Y-82.503
139.165	N8530 X-49.307	N8950 X64.565	N9370 X116.482	N9790 X41.922
Y50.478	Y86.201	Y85.173	Y-11.298	Y-82.751
N8200 X-	N8540 X-46.528	N8960 X67.259	N9380 X116.583	N9800 X39.134
137.247	Y86.286	Y85.158	Y-14.043	Y-82.975
Y52.805	N8550 X-43.757	N8970 X70.106	N9390 X116.675	N9810 X36.353
N8210 X-135.25	Y86.354	Y85.081	Y-16.784	Y-83.176
Y55.065	N8560 X-40.991	N8980 X72.947	N9400 X116.757	N9820 X33.578
N8220 X-	Y86.406	Y84.774	Y-19.521	Y-83.358
133.176	N8570 X-38.232	N8990 X75.734	N9410 X116.831	N9830 X30.81
Y57.255	Y86.443	Y84.223	Y-22.255	Y-83.521
N8230 X-	N8580 X-35.479	N9000 X78.477	N9420 X116.898	N9840 X28.047
131.025	Y86.468	Y83.428	Y-24.986	Y-83.668
Y59.373	N8590 X-32.731	N9010 X81.167	N9430 X116.958	N9850 X25.29
N8240 X-	Y86.482	Y82.39	Y-27.714	Y-83.801
128.803	N8600 X-29.987	N9020 X83.796	N9440 X117.012	N9860 X22.538
Y61.415	Y86.485	Y81.115	Y-30.44	Y-83.921
N8250 X-	N8610 X-27.248	N9030 X86.344	N9450 X117.061	N9870 X19.79
126.511	Y86.48	Y79.614	Y-33.163	Y-84.028
Y63.378	N8620 X-24.513	N9040 X88.794	N9460 X117.101	N9880 X17.046
N8260 X-	Y86.466	Y77.903	Y-35.917	Y-84.125
124.152	N8630 X-21.781	N9050 X91.135	N9470 X116.976	N9890 X14.307
Y65.261	Y86.445	Y75.999	Y-38.771	Y-84.213
N8270 X-	N8640 X-19.053	N9060 X93.354	N9480 X116.605	N9900 X11.571
121.728	Y86.418	Y73.92	Y-41.563	Y-84.291
Y67.059	N8650 X-16.328	N9070 X95.443	N9490 X115.986	N9910 X8.838
N8280 X-	Y86.384	Y71.688	Y-44.32	Y-84.362
119.242	N8660 X-13.605	N9080 X97.397	N9500 X115.12	N9920 X6.109
Y68.773	Y86.346	Y69.324	Y-47.031	Y-84.426
	N8670 X-10.885	N9090 X99.214	N9510 X114.01	N9930 X3.382
	Y86.303	Y66.848	Y-49.694	Y-84.483

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N9940 X-.657 Y-84.535	N460 X-114.787 Y-61.925	N880 G3 X-114.943	N1180 X-50.183 Y71.758	N1600 X65.504 Y67.548
N9950 X-2.065 Y-84.582	N470 X-117.027 Y-59.875	Y50.008 I-3.61 J4.015	N1190 X-47.41 Y71.892	N1610 X68.163 Y66.121
N9960 X-4.785 Y-84.624	N480 X-119.187 Y-57.737	N890 G2 X-113.66 Y52.382	N1200 X-44.641 Y72.008	N1620 X70.727 Y64.502
N9970 X-7.503 Y-84.661	N490 X-121.263 Y-55.517	I24.363 J-11.636	N1210 X-41.876 Y72.109	N1630 X73.186 Y62.705
N9980 X-10.219 Y-84.695	N500 X-123.249 Y-53.216	N900 X-112.74 Y53.797 I23.08	N1220 X-39.115 Y72.195	N1640 X75.531 Y60.744
N9990 X-12.934 Y-84.726	N510 X-125.143 Y-50.839	J-14.01	N1230 X-36.357 Y72.267	N1650 X77.756 Y58.636
N100 X-15.647 Y-84.753	N520 X-126.943 Y-48.386	N910 G1 X-112.237	N1240 X-33.603 Y72.327	N1660 X79.855 Y56.397
N110 X-18.359 Y-84.778	N530 X-128.643 Y-45.864	N920 G2 X-110.587	N1250 X-30.853 Y72.375	N1670 X81.827 Y54.041
N120 X-21.07 Y-84.801	N540 X-130.242 Y-43.276	Y56.654 I22.16	N1260 X-28.106 Y72.411	N1680 X83.671 Y51.587
N130 X-23.782 Y-84.821	N550 X-131.735 Y-40.625	J-15.425	N1270 X-25.363 Y72.438	N1690 X85.389 Y49.047
N140 X-26.497 Y-84.838	N560 X-133.121 Y-37.915	N930 X-108.915 Y58.437 I20.51	N1280 X-22.624 Y72.456	N1700 X86.983 Y46.437
N150 X-29.222 Y-84.851	N570 X-134.397 Y-35.151	N940 G1 X-108.53 Y58.811	N1290 X-19.888 Y72.465	N1710 X88.458 Y43.767
N160 X-31.958 Y-84.857	N580 X-135.559 Y-32.338	N950 G2 X-106.505	N1300 X-17.156 Y72.467	N1720 X89.818 Y41.051
N170 X-34.708 Y-84.854	N590 X-136.607 Y-29.479	I18.837 J-19.343	N1310 X-14.427 Y72.462	N1730 X91.07 Y38.297
N180 X-37.473 Y-84.838	N600 X-137.537 Y-26.578	N960 X-104.435 Y62.088	N1320 X-11.703 Y72.452	N1740 X92.22 Y35.513
N190 X-40.254 Y-84.806	N610 X-138.348 Y-23.643	I16.812 J-21.127	N1330 X-8.981 Y72.437	N1750 X93.274 Y32.708
N200 X-43.051 Y-84.752	N620 X-139.038 Y-20.676	N970 G1 X-103.736	N1340 X-6.264 Y72.417	N1760 X94.239 Y29.886
N210 X-45.865 Y-84.672	N630 X-139.606 Y-17.683	Y62.544	N1350 X-3.549 Y72.394	N1770 X95.121 Y27.054
N220 X-48.694 Y-84.563	N640 X-140.05 Y-14.668	N980 G2 X-101.404	N1360 X-.837 Y72.368	N1780 X95.927 Y24.215
N230 X-51.54 Y-84.417	N650 X-140.368 Y-11.637	I14.743 J-22.62	N1370 X1.873 Y72.34	N1790 X96.661 Y21.372
N240 X-54.4 Y-84.232	N660 X-140.561 Y-8.596	N990 X-98.948 Y65.022	N1380 X4.58 Y72.31	N1800 X97.331 Y18.529
N250 X-57.271 Y-84.001	N670 X-140.627 Y-5.547	I12.411 J-23.979	N1390 X7.285 Y72.279	N1810 X97.941 Y15.687
N260 X-60.15 Y-83.721	N680 X-140.565 Y-2.499	N1000 X-97.981 Y65.384 I9.955	N1400 X9.988 Y72.246	N1820 X98.496 Y12.849
N270 X-63.036 Y-83.387	N690 X-140.376 Y.544	J-25.098	N1410 X12.69 Y72.214	N1830 X99.001 Y10.015
N280 X-65.928 Y-82.993	N700 X-140.06 Y3.577	N1010 G1 X-97.161 Y65.674	N1420 X15.39 Y72.181	N1840 X99.461 Y7.186
N290 X-68.824 Y-82.537	N710 X-139.615 Y6.596	N1020 G2 X-94.575 Y66.444	N1430 X18.089 Y72.148	N1850 X99.879 Y4.363
N300 X-71.717 Y-82.014	N720 X-139.043 Y9.592	I8.988 J-25.46	N1440 X20.787 Y72.115	N1860 X100.258 Y1.546
N310 X-74.606 Y-81.421	N730 X-138.345 Y12.562	N1030 X-91.981 Y66.944 I6.402	N1450 X23.484 Y72.083	N1870 X100.604 Y-1.265
N320 X-77.487 Y-80.754	N740 X-137.521 Y15.5	J-26.23	N1460 X26.181 Y72.052	N1880 X100.917 Y-4.068
N330 X-80.36 Y-80.01	N750 X-136.572 Y18.402	N1040 G1 X-89.215 Y67.453	N1470 X28.877 Y72.021	N1890 X101.202 Y-6.866
N340 X-83.222 Y-79.185	N760 X-135.499 Y21.259	N1050 X-86.439 Y67.937	N1480 X31.572 Y71.991	N1900 X101.461 Y-9.657
N350 X-86.071 Y-78.273	N770 X-134.305 Y24.068	N1060 X-83.655 Y68.392	N1490 X34.267 Y71.962	N1910 X101.698 Y-12.489
N360 X-88.899 Y-77.269	N780 X-132.99 Y26.825	N1070 X-80.866 Y68.82	N1500 X36.962 Y71.935	N1920 X101.862 Y-15.534
N370 X-91.702 Y-76.169	N790 X-131.557 Y29.522	N1080 X-78.074 Y69.218	N1510 X39.656 Y71.908	N1930 X101.84 Y-18.563
N380 X-94.47 Y-74.974	N800 X-130.009 Y32.154	N1090 X-75.279 Y69.587	N1520 X42.351 Y71.882	N1940 X101.602 Y-21.536
N390 X-97.198 Y-73.681	N810 X-128.346 Y34.717	N1100 X-72.484 Y69.929	N1530 X45.062 Y71.857	N1950 X101.137 Y-24.457
N400 X-99.884 Y-72.29	N820 X-126.573 Y37.206	N1110 X-69.689 Y70.242	N1540 X48.025 Y71.794	N1960 X100.445 Y-27.325
N410 X-102.52 Y-70.801	N830 X-124.692 Y39.614	N1120 X-66.895 Y70.53	N1550 X51.081 Y71.592	N1970 X99.525 Y-30.139
N420 X-105.1 Y-69.216	N840 X-122.707 Y41.937	N1130 X-64.102 Y70.791	N1560 X54.094 Y71.201	N1980 X98.383 Y-32.886
N430 X-107.621 Y-67.534	N850 X-120.621 Y44.172	N1140 X-61.312 Y71.028	N1570 X57.046 Y70.604	N1990 X97.028 Y-35.555
N440 X-110.08 Y-65.756	N860 X-118.439 Y46.311	N1150 X-58.525 Y71.243	N1580 X59.936 Y69.796	N2000 X95.47 Y-38.134
N450 X-112.47 Y-63.886	N870 X-116.206 Y48.32	N1160 X-55.741 Y71.435	N1590 X62.757 Y68.777	N2010 X93.722 Y-40.613

N2020 X91.8 Y-42.978	N2440 X-22.632 Y-70.932	62.842 I11.881 J24.245	N3050 X-123.608 Y-8.604	N3350 X-113.256 Y54.238 Z-2.497
N2030 X89.723 Y-45.224	N2450 X-25.403 Y-70.949	N2810 X-104.058 Y-62.338 I14.243 J22.938	N3060 X-123.407 Y-5.549	N3360 X-113.108 Y55.074 Z-2.484
N2040 X87.506 Y-47.343	N2460 X-28.185 Y-70.948	N2820 G1 X-104.749 Y-61.875	N3070 X-123.062 Y-2.503	N3370 X-113.019 Y55.918 Z-2.472
N2050 X85.167 Y-49.334	N2470 X-30.978 Y-70.928	N2830 G2 X-106.914 Y-60.263 I15.024 J22.434	N3080 X-122.568 Y.524	N3380 X-112.99 Y56.766 Z-2.459
N2060 X82.724 Y-51.195	N2480 X-33.783 Y-70.884	N2510 X-42.277 Y-70.573	N3090 X-121.925 Y3.525	N3390 X-113.024 Y57.684 Z-2.446
N2070 X80.192 Y-52.927	N2490 X-36.6 Y-70.813	N2520 X-45.134 Y-70.397	N3100 X-121.128 Y6.489	N3400 X-113.128 Y58.596 Z-2.432
N2080 X77.586 Y-54.534	N2500 X-39.432 Y-70.711	N2530 X-48.002 Y-70.176	N3110 X-120.178 Y9.409	N3410 X-113.301 Y59.498 Z-2.418
N2090 X74.919 Y-56.019	N2510 X-42.277 Y-70.573	N2540 X-50.88 Y-69.906	N3120 X-119.075 Y12.275	N3420 X-113.541 Y60.384 Z-2.405
N2100 X72.202 Y-57.387	N2520 X-45.134 Y-70.397	N2550 X-53.765 Y-69.583	N3130 X-118.588 Y13.419	N3430 X-113.847 Y61.25 Z-2.392
N2110 X69.447 Y-58.645	N2530 X-48.002 Y-70.176	N2560 X-56.663 Y-69.2	N3140 G3 X-118.158 Y15.532 I-4.97 J2.113	N3440 X-114.218 Y62.09 Z-2.378
N2120 X66.662 Y-59.799	N2540 X-50.88 Y-69.906	N2570 X-59.567 Y-68.752	N3150 G1 Y18.232	N3450 X-114.652 Y62.9 Z-2.365
N2130 X63.855 Y-60.856	N2580 X-62.474 Y-68.232	N2580 X-62.474 Y-68.232	N3160 Y20.932	N3460 X-115.145 Y63.674 Z-2.351
N2140 X61.031 Y-61.822	N2590 X-65.38 Y-67.635	N2600 X-66.219 Y-67.447	N3170 Y23.632	N3470 X-115.695 Y64.409 Z-2.338
N2150 X58.197 Y-62.704	N2610 G3 X-67.401 Y-67.316 I-1.182 J-5.269	N2610 G3 X-67.401 Y-67.316 I-1.182 J-5.269	N3180 Y26.332	N3480 X-116.299 Y65.101 Z-2.324
N2160 X55.355 Y-63.508	N2620 G1 X-70.101	N2620 G1 X-70.101	N3190 Y29.032	N3490 X-116.954 Y65.745 Z-2.311
N2170 X52.511 Y-64.241	N2630 X-72.801	N2630 X-72.801	N3200 Y31.732	N3500 X-117.656 Y66.337 Z-2.297
N2180 X49.666 Y-64.909	N2640 X-75.501	N2640 X-75.501	N3210 Y34.432	N3510 G3 X-125.139 Y68.916 I-7.484 J-9.572 F2500.
N2190 X46.823 Y-65.516	N2650 X-78.201	N2650 X-78.201	N3220 Y35.886	N3520 X-137.289 Y56.841 I0. J-12.15
N2200 X43.983 Y-66.068	N2660 X-80.901	N2660 X-80.901	N3230 G2 X-118.126 Y37.197 I27. J0.	N3530 G1 X-137.981 Y-55.321
N2210 X41.147 Y-66.57	N2670 X-83.601	N2670 X-83.601	N3240 G1 X-118.096 Y37.817	N3540 Y-55.396
N2220 X38.318 Y-67.027	N2680 X-86.301	N2680 X-86.301	N3250 G2 X-117.83 Y40.502	N3550 G3 X-125.831 Y-67.546 I12.15
N2230 X35.494 Y-67.441	N2690 X-87.24	N2690 X-87.24	N3260 X-117.64 Y41.612	N3570 G1 X-117.885 Y-
N2240 X32.677 Y-67.818	N2700 G2 X-87.643 Y-67.313 I0. J27.	N2700 G2 X-87.643 Y-67.313 I0. J27.	N3270 G1 X-117.448 Y42.611	
N2250 X29.866 Y-68.159	N2710 G1 X-87.778 Y-67.311	N2710 G1 X-87.778 Y-67.311	N3280 G2 X-116.805 Y45.233	
N2260 X27.062 Y-68.47	N2720 G2 X-90.471 Y-67.136 I.403 J26.997	N2720 G2 X-90.471 Y-67.136 I.403 J26.997	N3290 J-126.513 J-5.106	
N2270 X24.265 Y-68.752	N2730 X-90.979 Y-67.072	N2730 X-90.979 Y-67.072	N3300 X-115.917 Y47.748 I25.87 J-7.728	
N2280 X21.474 Y-69.007	N2740 G1 X-91.851 Y-66.955	N2740 G1 X-91.851 Y-66.955	N3310 G1 X-115.561 Y48.615	
N2290 X18.69 Y-69.24	N2750 G2 X-94.504 Y-66.461 I3.604 J26.759	N2750 G2 X-94.504 Y-66.461 I3.604 J26.759	N3320 G2 X-114.414 Y51.058	
N2300 X15.912 Y-69.45	N2760 X-97.095 Y-65.705	N2760 X-97.095 Y-65.705	N3330 J-124.981 J-10.243	
N2310 X13.139 Y-69.642	I6.257 J26.265	I6.257 J26.265	N3340 G1 X-114.042 Y51.821 Z-2.534	
N2320 X10.372 Y-69.815	N2770 X-97.649 Y-65.506	N2770 X-97.649 Y-65.506	N3350 X-113.724 Y52.607 Z-2.522	
N2330 X7.61 Y-69.973	I8.848 J25.509	I8.848 J25.509	N3360 X-113.461 Y53.415 Z-2.509	
N2340 X4.853 Y-70.115	N2780 G1 X-98.436 Y-65.214	N2780 G1 X-98.436 Y-65.214		
N2350 X2.101 Y-70.245	N2790 G2 X-100.915 Y-64.149 I9.402 J25.31	N2790 G2 X-100.915 Y-64.149 I9.402 J25.31		
N2360 X-.647 Y-70.363	N2800 X-103.277 Y-	N2800 X-103.277 Y-		
N2370 X-3.392 Y-70.469				
N2380 X-6.135 Y-70.566				
N2390 X-8.877 Y-70.652				
N2400 X-11.62 Y-70.73				
N2410 X-14.365 Y-70.797				
N2420 X-17.114 Y-70.854				
N2430 X-19.869 Y-70.899				

ANEXO IV. PROGRAMA CNC DE MECANIZADO

64.587 Z-2.311	N3840 G1 Y-	Y65.927 Z-	N4620 X-27.098	N5040 X76.044
F1623.	33.186	2.419	Y63.839	Y24.471
N3580 X-	N3850 Y-30.486	N4230 X-	N4630 X-24.816	N5050 X77.255
117.193 Y-	N3860 Y-27.786	100.379 Y65.6	Y63.341	Y21.716
63.94 Z-2.325	N3870 Y-25.086	Z-2.48	N4640 X-22.476	N5060 X78.373
N3590 X-	N3880 Y-22.386	N4240 X-99.902	Y62.885	Y18.936
116.553 Y-	N3890 Y-19.686	Y65.572 Z-	N4650 X-20.088	N5070 X79.402
63.241 Z-2.339	N3900 Y-16.986	2.487	Y62.469	Y16.137
N3600 X-115.97	N3910 Y-14.286	N4250 X-99.424	N4660 X-17.659	N5080 X80.349
Y-62.494 Z-	N3920 Y-11.586	Y65.562 Z-	Y62.09	Y13.323
2.353	N3930 Y-8.886	2.494	N4670 X-15.194	N5090 X81.22
N3610 X-	N3940 Y-6.186	N4260 X-98.716	Y61.745	Y10.49
115.447 Y-	N3950 Y-3.486	Y65.583 Z-	N4680 X-12.699	N5100 X82.02
61.704 Z-2.367	N3960 Y-.786	2.505	Y61.43	Y7.592
N3620 X-	N3970 Y1.914	N4270 X-98.011	N4690 X-10.178	N5110 X82.71
114.987 Y-	N3980 Y4.614	Y65.645 Z-	Y61.145	Y4.608
60.876 Z-2.381	N3990 Y7.314	2.515	N4700 X-7.635	N5120 X83.212
N3630 X-	N4000 Y10.014	N4280 X-97.31	Y60.885	Y1.617
114.593 Y-	N4010 Y12.714	Y65.748 Z-	N4710 X-5.073	N5130 X83.488
60.015 Z-2.395	N4020 Y15.414	2.526	Y60.649	Y-1.343
N3640 X-	N4030 Y18.114	N4290 X-96.617	N4720 X-2.494	N5140 X83.529
114.268 Y-	N4040 X-	Y65.891 Z-	Y60.433	Y-4.279
59.125 Z-2.409	118.181	2.536	N4730 X.099	N5150 X83.332
N3650 X-	Y18.863 Z-	N4300 X-95.933	Y60.237	Y-7.187
114.012 Y-	2.536	Y66.075 Z-	N4740 X2.705	N5160 X82.896
58.213 Z-2.423	N4050 X-118.25	2.547	Y60.058	Y-10.072
N3660 X-	Y19.609 Z-	N4310 G2 X-	N4750 X5.321	N5170 X82.223
113.829 Y-	2.525	91.981 Y66.944	Y59.895	Y-12.921
57.283 Z-2.437	N4060 X-	17.76 J-25.861	N4760 X7.946	N5180 X81.316
N3670 X-	118.365 Y20.35	N4320 X-91.105	Y59.746	Y-15.729
113.718 Y-	Z-2.514	Y67.054 I3.808	N4770 X10.58	N5190 X80.184
56.343 Z-2.451	N4070 X-	J-26.73	Y59.609	Y-18.474
N3680 X-	118.526	N4330 G1 X-	N4780 X13.22	N5200 X78.835
113.681 Y-	Y21.081 Z-	90.171 Y67.156	Y59.484	Y-21.146
55.396 Z-2.465	2.502	N4340 G2 X-	N4790 X15.867	N5210 X77.282
N3690 X-	N4080 X-	87.477 Y67.315	Y59.37	Y-23.732
113.708 Y-	118.731	I2.931 J-26.84	N4800 X18.52	N5220 X75.54
54.597 Z-2.477	Y21.802 Z-	N4350 X-87.24	Y59.265	Y-26.217
N3700 X-	2.491	Y67.316 I.237	N4810 X21.177	N5230 X73.625
113.786 Y-	N4090 X-118.98	J-26.999	Y59.169	Y-28.591
53.802 Z-2.488	Y22.509 Z-2.48	N4360 G1 X-	N4820 X23.853	N5240 X71.556
N3710 X-	N4100 X-	84.54	Y59.078	Y-30.847
113.917 Y-	121.449	N4370 X-81.84	N4830 X26.624	N5250 X69.348
53.014 Z-2.5	Y28.871 Z-2.38	N4380 X-79.14	Y58.981	Y-32.978
N3720 X-	N4110 X-123.49	N4390 X-76.44	N4840 X29.547	N5260 X67.021
114.099 Y-	Y34.132 Z-	N4400 X-73.74	Y58.839	Y-34.982
52.236 Z-2.512	2.297	N4410 X-71.04	N4850 X32.572	N5270 X64.589
N3730 X-	N4120 X-125.1	N4420 X-68.34	Y58.598	Y-36.858
114.333 Y-	Y38.28 F2500.	N4430 X-65.64	N4860 X35.616	N5280 X62.07
51.472 Z-2.524	N4130 G2 X-	N4440 X-62.94	Y58.215	Y-38.607
N3740 X-	126.478	N4450 X-60.24	N4870 X38.631	N5290 X59.477
114.615 Y-	Y45.642 I18.97	N4460 X-57.54	Y57.661	Y-40.232
50.724 Z-2.535	J7.362	N4470 X-54.84	N4880 X41.595	N5300 X56.824
N3750 X-	N4140 X-	N4480 X-52.14	Y56.925	Y-41.738
114.947 Y-	112.711	N4490 X-49.44	N4890 X44.499	N5310 X54.121
49.997 Z-2.547	Y64.896	N4500 X-46.74	Y56.	Y-43.128
N3760 G2 X-	I20.348 J0.	N4510 X-44.04	N4900 X47.333	N5320 X51.378
116.468 Y-	N4150 G1 X-	N4520 X-43.899	Y54.885	Y-44.41
46.248 I24.188	111.645	N4530 G2 X-	N4910 X50.087	N5330 X48.605
J11.996	Y65.228 Z-	43.19 Y67.306	Y53.584	Y-45.589
N3770 X-	2.313 F1623.	I0. J-27.	N4920 X52.754	N5340 X45.809
116.611 Y-	N4160 X-	N4540 G1 X-	Y52.102	Y-46.671
45.785 I25.71	110.562	42.832 Y67.297	N4930 X55.325	N5350 X42.995
J8.247	Y65.501 Z-2.33	N4550 G2 X-	Y50.449	Y-47.664
N3780 G1 X-	N4170 X-	40.141 Y67.091	N4940 X57.793	N5360 X40.169
116.906 Y-	109.466	I-.709 J-	Y48.634	Y-48.573
44.808	Y65.714 Z-	26.991	N4950 X60.149	N5370 X37.335
N3790 G2 X-	2.346	N4560 X-39.737	Y46.67	Y-49.405
117.554 Y-	N4180 X-	Y67.037 I-3.4	N4960 X62.39	N5380 X34.497
42.188 I25.854	108.359	J-26.785	Y44.571	Y-50.165
J7.785	Y65.867 Z-	N4570 G1 X-	N4970 X64.511	N5390 X31.658
N3800 X-	2.362	38.726 Y66.893	Y42.35	Y-50.859
117.937 Y-	N4190 X-	N4580 G2 X-	N4980 X66.511	N5400 X28.819
39.516 I26.502	107.246	36.076 Y66.38	Y40.02	Y-51.494
J5.165	Y65.959 Z-	I-3.804 J-	N4990 X68.39	N5410 X25.983
N3810 G1 Y-	2.379	26.731	Y37.596	Y-52.072
39.513	N4200 X-106.13	N4590 X-33.496	N5000 X70.149	N5420 X23.151
N3820 X-	Y65.99 Z-2.395	Y65.606 I-	Y35.089	Y-52.6
118.042 Y-	N4210 X-105.33	6.454 J-26.218	N5010 X71.789	N5430 X20.323
38.377	Y65.974 Z-	N4600 G1 X-	Y32.513	Y-53.081
N3830 G2 X-	2.407	31.451 Y64.971	N5020 X73.316	N5440 X17.5 Y-
118.158 Y-	N4220 X-	N4610 X-29.314	Y29.878	53.52
35.886 I26.884	104.531	Y64.382	N5030 X74.732	N5450 X14.682
J2.491			Y27.194	Y-53.92

N5460 X11.87	N5810 X-65.499	N6100 X-45.206	N6430 X15.388	N6850 X21.59
Y-54.285	N5820 X-68.199	Y70.607 Z-	Y47.622	Y-33.993
N5470 X9.063	N5830 X-70.899	2.417	N6440 X18.32	N6860 X18.759
Y-54.616	N5840 X-71.648	N6110 X-41.558	Y47.068	Y-34.918
N5480 X6.261	Y-67.339 Z-	Y68.314 Z- 2.48	N6450 X21.286	N6870 X15.918
Y-54.918	2.536	N6120 X-40.912	Y46.399	Y-35.762
N5490 X3.462	N5850 X-72.394	Y67.935 Z-	N6460 X24.241	N6880 X13.071
Y-55.191	Y-67.408 Z-	2.491	Y45.594	Y-36.53
N5500 X.666 Y-	2.525	N6130 X-40.243	N6470 X27.159	N6890 X10.218
55.439	N5860 X-73.135	Y67.596 Z-	Y44.639	Y-37.228
N5510 X-2.128	Y-67.523 Z-	2.502	N6480 X30.02	N6900 X7.362
Y-55.661	2.514	N6140 X-39.555	Y43.527	Y-37.861
N5520 X-4.923	N5870 X-73.867	Y67.299 Z-	N6490 X32.814	N6910 X4.544
Y-55.859	Y-67.684 Z-	2.514	Y42.255	Y-38.429
N5530 X-7.718	2.502	N6150 X-38.849	N6500 X35.529	N6920 X1.831
Y-56.033	N5880 X-74.587	Y67.046 Z-	Y40.825	Y-38.946
N5540 X-10.516	Y-67.889 Z-	2.525	N6510 X38.158	N6930 X-.762
Y-56.184	2.491	N6160 X-38.13	Y39.24	Y-39.44
N5550 X-13.317	N5890 X-75.294	Y66.836 Z-	N6520 X40.692	N6940 X-3.226
Y-56.311	Y-68.139 Z-	2.536	Y37.506	Y-39.932
N5560 X-16.124	2.48	N6170 X-37.399	N6530 X43.125	N6950 X-5.56
Y-56.413	N5900 X-81.656	Y66.67 Z- 2.547	Y35.633	Y-40.439
N5570 X-17.798	Y-70.607 Z-	N6180 G2 X-	N6540 X45.453	N6960 X-7.764
Y-56.461	2.38	33.496 Y65.606	Y33.628	Y-40.975
N5580 G3 X-	N5910 X-82.981	I-5.131 J-	N6550 X47.67	N6970 X-9.839
20.367 Y-	Y-71.091 Z-	26.508	Y31.504	Y-41.548
57.196 I.155	2.359	N6190 G1 X-	N6560 X49.775	N6980 X-10.518
J-5.397	N5920 X-84.325	32.653 Y65.307	Y29.27	Y-41.753
N5590 X-21.483	Y-71.52 Z-	N6200 G2 X-	N6570 X51.765	N6990 G3 X-
Y-58.062	2.338	30.158 Y64.278	Y26.936	12.806 Y-
I2.724 J-4.662	N5930 X-85.685	I-9.034 J-	N6580 X53.637	43.134 I1.561
N5600 G1 X-	Y-71.896 Z-	25.444	Y24.505	J-5.169
21.898 Y-	2.318	N6210 X-27.778	N6590 X55.34	N7000 X-14.15
58.482	N5940 X-87.059	Y63.005 I-	Y22.001	Y-45.443
N5610 G2 X-	Y-72.216 Z-	11.529 J-	N6600 X56.769	I3.849 J-3.788
23.889 Y-	2.297	24.415	Y19.51	N7010 X-14.162
60.304 I-	N5950 G2 X-	N6220 X-27.073	N6610 X57.91	Y-45.485
19.199 J18.984	94.287 Y-	Y62.566 I-	Y17.03	I5.193 J-1.479
N5620 X-26.052	72.972 I-7.228	13.909 J-	N6620 X58.784	N7020 G2 X-
Y-61.918 I-	J34.16 F2500.	23.142	Y14.527	15.01 Y-48.048
17.208 J20.806	N5960 X-	N6230 G1 X-	N6630 X59.404	I-26.026
N5630 X-27.386	129.203 Y-	26.396 Y62.13	Y11.981	J7.186
Y-62.757 I-	38.056 I0.	N6240 G2 X-	N6640 X59.775	N7030 X-16.109
15.045 J22.42	J34.916	24.202 Y60.558	Y9.373	Y-50.512 I-
N5640 G1 X-	N5970 X-	I-14.613 J-	N6650 X59.894	25.178 J9.749
28.113 Y-	129.113 Y-	22.703	Y6.718	N7040 X-16.679
63.186	35.552 I34.916	N6250 X-22.703	N6660 X59.757	Y-51.577 I-
N5650 G2 X-	J0.	Y59.273 I-	Y4.01	24.079 J12.213
30.504 Y-	N5980 G1 X-	16.807 J-	N6670 X59.362	N7050 G1 X-
64.439 I-	123.591	21.131	Y1.283	17.047 Y-52.23
13.712 J23.259	Y41.248	N6260 G1 X-	N6680 X58.709	N7060 G2 X-
N5660 X-33.007	N5990 G2 X-	21.446 Y58.352	Y-1.451	18.491 Y-54.51
Y-65.446 I-	88.765 Y73.66	N6270 X-20.032	N6690 X57.802	I-23.51
11.321 J24.512	I34.826 J-	Y57.435	Y-4.17	J13.279
N5670 X-33.924	2.504	N6280 X-18.473	N6700 X56.649	N7070 X-20.154
Y-65.745 I-	N6000 X-88.394	Y56.536	Y-6.847	Y-56.635 I-
8.818 J25.519	Y73.658 I0. J-	N6290 X-16.784	N6710 X55.266	22.066 J15.559
N5680 G1 X-	34.916	Y55.667	Y-9.457	N7080 X-21.357
34.855 Y-66.03	N6010 G1 X-	N6300 X-14.978	N6720 X53.666	Y-57.935 I-
N5690 G2 X-	54.351 Y73.296	Y54.834	Y-11.984	20.403 J17.684
37.472 Y-66.69	N6020 G2 X-	N6310 X-13.067	N6730 X51.867	N7090 G1 X-
I-7.901	52.858 Y73.217	Y54.043	Y-14.411	21.898 Y-
J25.818	I-.186 J-	N6320 X-11.063	N6740 X49.891	58.482
N5700 X-40.141	17.529	Y53.297	Y-16.725	N7100 G2 X-
Y-67.085 I-	N6030 G1 X-	N6330 X-8.978	N6750 X47.757	23.889 Y-
5.284 J26.478	51.846 Y73.09	Y52.598	Y-18.916	60.304 I-
N5710 X-40.308	Z-2.312 F1623.	N6340 X-6.82	N6760 X45.486	19.199 J18.984
Y-67.1 I-2.615	N6040 X-50.844	Y51.945	Y-20.979	N7110 G1 X-
J26.873	Y72.904 Z-	N6350 X-4.599	N6770 X43.098	24.451 Y-
N5720 G1 X-	2.327	Y51.338	Y-22.91	60.799 Z- 2.536
41.451 Y-	N6050 X-49.854	N6360 X-2.322	N6780 X40.611	N7120 X-24.982
67.205	Y72.66 Z- 2.342	Y50.776	Y-24.711	Y-61.328 Z-
N5730 G2 X-	N6060 X-48.879	N6370 X.003	N6790 X38.04	2.525
43.899 Y-	Y72.36 Z- 2.357	Y50.256	Y-26.382	N7130 X-25.48
67.316 I-2.448	N6070 X-47.924	N6380 X2.373	N6800 X35.402	Y-61.889 Z-
J26.889	Y72.003 Z-	Y49.776	Y-27.929	2.514
N5740 G1 X-	2.372	N6390 X4.786	N6810 X32.709	N7140 X-25.941
46.599	N6080 X-46.991	Y49.333	Y-29.356	Y-62.479 Z-
N5750 X-49.299	Y71.591 Z-	N6400 X7.265	N6820 X29.973	2.502
N5760 X-51.999	2.387	Y48.916	Y-30.67	N7150 X-26.366
N5770 X-54.699	N6090 X-46.084	N6410 X9.84	N6830 X27.202	Y-63.097 Z-
N5780 X-57.399	Y71.125 Z-	Y48.511	Y-31.876	2.491
N5790 X-60.099	2.402	N6420 X12.547	N6840 X24.406	
N5800 X-62.799		Y48.091	Y-32.982	

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N7160 X-26.752
 Y-63.739 Z-
2.48
 N7170 X-28.702
 Y-67.228 Z-
2.421
 N7180 X-29.321
 Y-68.268 Z-
2.403
 N7190 X-29.996
 Y-69.272 Z-
2.386
 N7200 X-30.724
 Y-70.238 Z-
2.368
 N7210 X-31.504
 Y-71.163 Z-
2.35
 N7220 X-32.334
 Y-72.044 Z-
2.332
 N7230 X-33.21
 Y-72.878 Z-
2.315
 N7240 X-34.13
 Y-73.664 Z-
2.297
 N7250 G2 X-
 48.051 Y-
 78.581 I-
 13.921 J17.25
 F2500.
 N7260 X-51.137
 Y-78.365 I0.
 J22.167
 N7270 G1 X-
 99.27 Y-71.598
 N7280 G2 X-
 114.357 Y-
 62.34 I3.086
 J21.95
 N7290 X-
 121.468 Y-
 39.941 I32.363
 J22.602
 N7300 G1 X-
 121.907
 Y45.249
 N7310 G2 X-
 121.908
 Y45.453
 I39.474 J.204
 N7320 X-118.04
 Y62.493
 I39.475 J0.
 N7330 X-99.382
 Y75.023
 I19.946 J-
 9.545
 N7340 G1 X-
 50.9 Y77.853
 N7350 G2 X-
 49.611 Y77.891
 I1.289 J-
 22.075
 N7360 X-37.303
 Y74.149 I0. J-
 22.113
 N7370 G1 X-
 36.337 Y73.464
Z-2.314 F1623.
 N7380 X-35.409
 Y72.728 Z-
2.332
 N7390 X-34.522
 Y71.943 Z-
2.349
 N7400 X-33.678
 Y71.112 Z-
2.367
 N7410 X-32.88
 Y70.237 Z-
2.384
 N7420 X-32.13
 Y69.321 Z-
2.402
 N7430 X-31.431
 Y68.365 Z-
2.419
 N7440 X-29.053
 Y64.931 Z-**2.48**
 N7450 X-28.608
 Y64.328 Z-
2.491
 N7460 X-28.126
 Y63.754 Z-
2.502
 N7470 X-27.61
 Y63.211 Z-
2.514
 N7480 X-27.061
 Y62.701 Z-
2.525
 N7490 X-26.482
 Y62.225 Z-
2.536
 N7500 X-25.875
 Y61.786 Z-
2.547
 N7510 G2 X-
 22.703 Y59.273
 I-15.134 J-
 22.359
 N7520 X-21.701
 Y58.3 I-18.306
 J-19.846
 N7530 G1 X-
 21.296 Y57.885
 N7540 G2 X-
 19.508 Y55.863
 I-19.308 J-
 18.873
 N7550 X-17.931
 Y53.673 I-
 21.096 J-
 16.851
 N7560 X-17.909
 Y53.639 I-
 22.673 J-
 14.661
 N7570 G1 X-
 17.237 Y52.681
 N7580 X-16.415
 Y51.67
 N7590 X-15.444
 Y50.626
 N7600 X-14.328
 Y49.566
 N7610 X-13.073
 Y48.505
 N7620 X-11.683
 Y47.454
 N7630 X-10.168
 Y46.422
 N7640 X-8.531
 Y45.417
 N7650 X-6.773
 Y44.437
 N7660 X-4.887
 Y43.478
 N7670 X-2.862
 Y42.53
 N7680 X-.67
 Y41.57
 N7690 X1.673
 Y40.589
 N7700 X4.173
 Y39.557
 N7710 X6.782
 Y38.463
 N7720 X9.456
 Y37.291
 N7730 X12.153
 Y36.028
 N7740 X14.845
 Y34.661
 N7750 X17.5
 Y33.186
 N7760 X20.108
 Y31.594
 N7770 X22.198
 Y30.147
 N7780 X23.672
 Y28.874
 N7790 X24.908
 Y27.572
 N7800 X26.
 Y26.179
 N7810 X26.984
 Y24.645
 N7820 X27.846
 Y22.954
 N7830 X28.57
 Y21.073
 N7840 X29.118
 Y18.997
 N7850 X29.436
 Y16.748
 N7860 X29.477
 Y14.351
 N7870 X29.193
 Y11.846
 N7880 X28.543
 Y9.295
 N7890 X27.61
 Y6.733
 N7900 X26.431
 Y4.185
 N7910 X25.018
 Y1.681
 N7920 X23.384
 Y-.76
 N7930 X21.546
 Y-3.12
 N7940 X19.525
 Y-5.382
 N7950 X17.346
 Y-7.532
 N7960 X15.038
 Y-9.56
 N7970 X12.634
 Y-11.462
 N7980 X10.166
 Y-13.243
 N7990 X7.663
 Y-14.913
 N8000 X5.179
 Y-16.471
 N8010 X2.76 Y-
 17.933
 N8020 X.434 Y-
 19.321
 N8030 X-1.779
 Y-20.653
 N8040 X-3.868
 Y-21.948
 N8050 X-5.827
 Y-23.217
 N8060 X-7.653
 Y-24.472
 N8070 X-9.345
 Y-25.721
 N8080 X-10.905
 Y-26.968
 N8090 X-11.019
 Y-27.064
 N8100 G3 X-
 12.579 Y-
 29.234 I3.469
 J-4.138
 N8110 X-12.95
 Y-31.202
 I5.029 J-1.968
 N8120 G1 Y-
 33.902
 N8130 Y-36.602
 N8140 Y-37.003
 N8150 G2 X-
 13.015 Y-
 38.866 I-27.
 J0.
 N8160 G1 X-
 13.052 Y-
 39.407
 N8170 G2 X-
 13.373 Y-
 42.087 I-
 26.936 J1.863
 N8180 X-13.893
 Y-44.477 I-
 26.615 J4.543
 N8190 G1 X-
 14.094 Y-
 45.232
 N8200 G2 X-
 14.916 Y-
 47.802 I-
 26.094 J6.933
 N8210 G1 X-
 15.194 Y-
 48.631 Z-**2.534**
 N8220 X-15.412
 Y-49.477 Z-
2.521
 N8230 X-15.568
 Y-50.337 Z-
2.508
 N8240 X-15.662
 Y-51.206 Z-
2.495
 N8250 X-15.694
 Y-52.079 Z-
2.482
 N8260 X-15.693
 Y-52.206 Z-
2.48
 N8270 X-15.651
 Y-56.193 Z-
2.422
 N8280 X-15.606
 Y-57.134 Z-
2.408
 N8290 X-15.491
 Y-58.069 Z-
2.394
 N8300 X-15.308
 Y-58.993 Z-
2.38
 N8310 X-15.056
 Y-59.9 Z-**2.366**
 N8320 X-14.737
 Y-60.787 Z-
2.353
 N8330 X-14.354
 Y-61.647 Z-
2.339
 N8340 X-13.907
 Y-62.477 Z-
2.325
 N8350 X-13.4
 Y-63.271 Z-
2.311
 N8360 X-12.836
 Y-64.025 Z-
2.297
 N8370 G3 X-
 2.979 Y-68.733
 I9.857 J7.965
 F2500.
 N8380 X8.649
 Y-61.099 I0.
 J12.673
 N8390 G1
 X27.734 Y-
 17.05
 N8400 G3
 X33.331 Y9.946
 I-62.307
 J26.996
 N8410 X15.342
 Y55.985 I-
 67.904 J0.
 N8420 G1 X-
 7.605 Y80.863
 N8430 G3 X-
 15.654 Y84.389
 I-8.049 J-
 7.424
 N8440 X-26.604
 Y73.439 I0. J-
 10.95
 N8450 X-26.564
 Y72.511 I10.95
 J0.
 N8460 G1 X-
 26.478 Y71.784
Z-2.308 F1623.
 N8470 X-26.343
 Y71.064 Z-
2.319
 N8480 X-26.16
 Y70.355 Z-
2.329
 N8490 X-25.931
 Y69.66 Z-**2.34**
 N8500 X-24.041
 Y64.52 Z-**2.421**
 N8510 X-22.639
 Y60.708 Z-**2.48**
 N8520 X-22.359
 Y60.013 Z-
2.491
 N8530 X-22.036
 Y59.336 Z-
2.502
 N8540 X-21.673
 Y58.681 Z-
2.514
 N8550 X-21.269
 Y58.049 Z-
2.525
 N8560 X-20.828
 Y57.444 Z-
2.536
 N8570 X-20.35
 Y56.866 Z-
2.547
 N8580 G2 X-
 17.909 Y53.639
 I-20.254 J-
 17.854
 N8590 X-17.441
 Y52.885 I-
 22.695 J-
 14.627
 N8600 G1 X-
 17.052 Y52.236
 N8610 G2 X-
 15.782 Y49.854
 I-23.163 J-
 13.873
 N8620 X-14.757
 Y47.358 I-
 24.433 J-
 11.491
 N8630 X-14.709
 Y47.218 I-
 25.458 J-8.995
 N8640 G1 X-
 14.323 Y46.262
 N8650 X-13.809
 Y45.216
 N8660 X-13.154
 Y44.092
 N8670 X-12.348
 Y42.899
 N8680 X-11.383
 Y41.643
 N8690 X-10.251
 Y40.328
 N8700 X-8.947
 Y38.955
 N8710 X-7.782
 Y37.781
 N8720 X-6.839
 Y36.658

N8730 X-5.908	N9150 X-8.056	N9440 X-16.996	N9840 X-	N280 X-175.373
Y35.348	Y-46.749 Z-	Y52.468 Z-	144.493 Y-	Y-2.618
N8740 X-5.006	2.38	2.522	82.21 Z-5.001	N290 X-175.259
Y33.798	N9160 X-7.279	N9450 X-16.684	N9850 X-	Y.489
N8750 X-4.176	Y-47.282 Z-	Y51.687 Z-	144.858 Y-	N300 X-175.055
Y31.975	2.366	2.535	81.555 Z-5.02	Y3.593
N8760 X-3.488	N9170 X-6.463	N9460 X-16.319	N9860 X-	N310 X-174.761
Y29.862	Y-47.753 Z-	Y50.931 Z-	145.262 Y-	Y6.691
N8770 X-3.024	2.353	2.547	80.924 Z-5.038	N320 X-174.378
Y27.473	N9180 X-5.613	N9470 G2 X-	N9870 X-	Y9.779
N8780 X-2.872	Y-48.159 Z-	14.709 Y47.218	145.704 Y-	N330 X-173.906
Y24.856	2.339	I-23.897 J-	80.319 Z-5.056	Y12.856
N8790 X-3.09	N9190 X-4.734	12.568	N9880 X-	N340 X-173.344
Y22.086	Y-48.499 Z-	N9480 X-14.239	146.183 Y-	Y15.919
N8800 X-3.552	2.325	Y45.729 I-	79.742 Z-5.075	N350 X-172.693
Y19.223	N9200 X-3.831	25.506 J-8.855	N9890 X-	Y18.964
N8810 X-4.249	Y-48.769 Z-	N9490 G1 X-	146.696 Y-	N360 X-171.954
Y16.317	2.311	14.018 Y44.947	79.196 Z-5.093	Y21.989
N8820 X-5.161	N9210 X-2.91	N9500 G2 X-	N9900 X-	N370 X-171.128
Y13.413	Y-48.968 Z-	13.412 Y42.317	147.279 Y-	Y24.991
N8830 X-6.26	2.297	I-25.975 J-	78.47	N380 X-170.213
Y10.547	N9220 G3 X-.8	7.367	N9910 X-	Y27.968
N8840 X-7.51	Y-49.153 I2.11	N9510 X-13.072	148.606 Y-	N390 X-169.213
Y7.747	J11.965 F2500.	Y39.64 I-	76.872	Y30.917
N8850 X-8.855	N9230 X11.35	26.581 J-4.737	N9920 X-	N400 X-168.126
Y5.043	Y-37.003 I0.	N9520 X-13.067	150.171 Y-	Y33.834
N8860 X-10.24	J12.15	Y39.577 I-	74.967	N410 X-166.955
Y2.45	N9240 X11.334	26.921 J-2.06	N9930 X-	Y36.718
N8870 X-11.619	Y-36.385 I-	N9530 G1 X-	151.825 Y-	N420 X-165.7
Y-.027	12.15 J0.	13.024 Y38.999	72.881	Y39.566
N8880 X-12.252	N9250 G1	N9540 G2 X-	N9940 X-	N430 X-164.363
Y-1.146	X6.569 Y57.204	12.95 Y37.003	153.496 Y-	Y42.375
N8890 G3 X-	N9260 G3 X-	I-26.926 J-	70.679	N440 X-162.943
12.95 Y-3.725	5.565 Y68.736	1.996	N9950 X-	Y45.143
I4.702 J-2.656	I-12.134 J-	N9550 G1	155.155 Y-	N450 X-161.443
N8900 G1 Y-	.618	Y34.303	68.384	Y47.867
3.802	N9270 X-13.002	N9560 Y31.603	N9960 X-	N460 X-159.864
N8910 Y-6.502	Y66.194 I0. J-	N9570 Y28.903	156.784 Y-	Y50.545
N8920 Y-9.202	12.15	N9580 Y26.203	66.009	N470 X-158.208
N8930 Y-11.902	N9280 G1 X-	N9590 Y23.503	N9970 X-	Y53.174
N8940 Y-14.602	13.71 Y65.602	N9600 Y20.803	158.372 Y-	N480 X-156.475
N8950 Y-17.302	Z-2.311 F1623.	N9610 Y18.103	63.563	Y55.752
N8960 Y-20.002	N9290 X-14.371	N9620 Y15.403	N9980 X-	N490 X-154.668
N8970 Y-22.702	Y64.957 Z-	N9630 Y12.703	159.911 Y-	Y58.277
N8980 Y-25.402	2.324	N9640 Y10.003	61.052	N500 X-152.787
N8990 Y-28.102	N9300 X-14.981	N9650 Y7.303	N9990 X-	Y60.745
N9000 Y-30.802	Y64.264 Z-	N9660 Y4.603	161.394 Y-	N510 X-150.835
N9010 Y-33.502	2.338	N9670 Y1.903	58.482	Y63.157
N9020 Y-36.202	N9310 X-15.537	N9680 Y-.797	N100 X-162.818	N520 X-148.814
N9030 Y-37.003	Y63.527 Z-	N9690 Y-3.497	Y-55.856	Y65.508
N9040 X-12.913	2.351	N9700 Y-6.197	N110 X-164.177	N530 X-146.724
Y-37.945 Z-	N9320 X-16.036	N9710 Y-8.897	Y-53.178	Y67.796
2.533	Y62.75 Z-2.365	N9720 X-12.927	N120 X-165.47	N540 X-144.569
N9050 X-12.804	N9330 X-16.473	Y-9.646 Z-2.53	Y-50.451	Y70.021
Y-38.88 Z-	Y61.937 Z-	N9730 X-12.858	N130 X-166.692	N550 X-142.35
2.519	2.378	Y-10.393 Z-	Y-47.679	Y72.179
N9060 X-12.623	N9340 X-16.848	2.514	N140 X-167.841	N560 X-140.069
Y-39.805 Z-	Y61.093 Z-	N9740 X-12.742	Y-44.864	Y74.27
2.505	2.392	Y-11.133 Z-	N150 X-168.916	N570 X-137.728
N9070 X-12.37	N9350 X-17.158	2.497	Y-42.01	Y76.29
Y-40.713 Z-	Y60.223 Z-	N9750 X-12.582	N160 X-169.913	N580 X-135.33
2.491	2.406	Y-11.865 Z-	Y-39.119	Y78.239
N9080 X-12.048	N9360 X-17.401	2.48	N170 X-170.832	N590 X-132.876
Y-41.598 Z-	Y59.333 Z-	N9760 X-12.376	Y-36.195	N600 X-130.369
2.478	2.419	Y-12.586 Z-	N180 X-171.67	Y81.913
N9090 X-11.658	N9370 X-17.575	2.464	Y-33.24	N610 X-127.81
Y-42.456 Z-	Y58.426 Z-	N9770 X-12.127	N190 X-172.426	Y83.636
2.464	2.433	Y-13.293 Z-	Y-30.257	N620 X-125.204
N9100 X-11.202	N9380 X-17.68	2.447	N200 X-173.1	Y85.281
Y-43.281 Z-	Y57.509 Z-	N9780 X-9.659	Y-27.249	N630 X-122.551
2.45	2.446	Y-19.655 Z-	N210 X-173.688	Y86.846
N9110 X-10.685	N9390 X-17.715	2.297	Y-24.218	N640 X-119.854
Y-44.068 Z-	Y56.586 Z-2.46	N9790 G0 Z6.	N220 X-174.191	Y88.33
2.436	N9400 X-17.686	N9800 X-	Y-21.168	N650 X-117.116
N9120 X-10.108	Y55.746 Z-	141.873 Y-	N230 X-174.608	Y89.731
Y-44.813 Z-	2.472	88.095	Y-18.101	N660 X-114.339
2.422	N9410 X-17.599	N9810 Z.453	N240 X-174.938	Y91.049
N9130 X-9.474	Y54.911 Z-	N9820 G1 Z-	Y-15.021	N670 X-111.527
Y-45.511 Z-	2.485	4.843 F1000.	N250 X-175.18	Y92.282
2.408	N9420 X-17.454	N9830 X-144.17	Y-11.929	N680 X-108.68
N9140 X-8.789	Y54.083 Z-	Y-82.886 Z-	N260 X-175.333	Y93.429
Y-46.157 Z-	2.497	4.983 F1623.	N270 X-175.398	N690 X-105.803
2.394	N9430 X-17.253		Y-5.725	Y94.49
	Y53.267 Z-2.51			

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N700 X-102.897 Y95.462	N1120 X12.03 Y99.434	N1540 X117.06 Y82.012	N1960 X130.897 Y-34.563	N2380 X56.255 Y-97.273
N710 X-99.966 Y96.347	N1130 X14.68 Y99.355	N1550 X118.565 Y79.335	N1970 X130.909 Y-37.269	N2390 X53.489 Y-97.408
N720 X-97.012 Y97.142	N1140 X17.33 Y99.275	N1560 X119.925 Y76.583	N1980 X130.919 Y-39.974	N2400 X50.73 Y-97.529
N730 X-94.037 Y97.847	N1150 X19.981 Y99.196	N1570 X121.148 Y73.777	N1990 X130.928 Y-42.679	N2410 X47.977 Y-97.636
N740 X-91.045 Y98.462	N1160 X22.636 Y99.12	N1580 X122.242 Y70.934	N2000 X130.935 Y-45.384	N2420 X45.229 Y-97.731
N750 X-88.06 Y98.984	N1170 X25.297 Y99.053	N1590 X123.22 Y68.067	N2010 X130.942 Y-48.087	N2430 X42.486 Y-97.815
N760 X-85.11 Y99.419	N1180 X27.963 Y98.993	N1600 X124.091 Y65.187	N2020 X130.949 Y-50.791	N2440 X39.748 Y-97.891
N770 X-82.194 Y99.78	N1190 X30.632 Y98.939	N1610 X124.865 Y62.3	N2030 X130.954 Y-53.494	N2450 X37.013 Y-97.957
N780 X-79.31 Y100.077	N1200 X33.305 Y98.892	N1620 X125.553 Y59.414	N2040 X130.959 Y-56.197	N2460 X34.282 Y-98.017
N790 X-76.456 Y100.319	N1210 X35.981 Y98.849	N1630 X126.164 Y56.532	N2050 X130.964 Y-58.899	N2470 X31.555 Y-98.07
N800 X-73.628 Y100.515	N1220 X38.659 Y98.811	N1640 X126.706 Y53.657	N2060 X130.968 Y-61.603	N2480 X28.83 Y-98.117
N810 X-70.825 Y100.67	N1230 X41.34 Y98.777	N1650 X127.187 Y50.791	N2070 X130.874 Y-63.256	N2490 X26.108 Y-98.159
N820 X-68.044 Y100.79	N1240 X44.023 Y98.747	N1660 X127.613 Y47.935	N2080 X130.585 Y-65.159	N2500 X23.388 Y-98.196
N830 X-65.283 Y100.881	N1250 X46.708 Y98.72	N1670 X127.991 Y45.09	N2090 X130.024 Y-67.268	N2510 X20.671 Y-98.23
N840 X-62.538 Y100.945	N1260 X49.394 Y98.696	N1680 X128.327 Y42.255	N2100 X129.149 Y-69.505	N2520 X17.955 Y-98.259
N850 X-59.81 Y100.987	N1270 X52.082 Y98.675	N1690 X128.624 Y39.431	N2110 X127.956 Y-71.792	N2530 X15.241 Y-98.286
N860 X-57.094 Y101.009	N1280 X54.772 Y98.656	N1700 X128.888 Y36.617	N2120 X126.459 Y-74.063	N2540 X12.528 Y-98.309
N870 X-54.391 Y101.014	N1290 X57.462 Y98.639	N1710 X129.123 Y33.814	N2130 X124.687 Y-76.276	N2550 X9.817 Y-98.33
N880 X-51.698 Y101.004	N1300 X60.154 Y98.624	N1720 X129.331 Y31.02	N2140 X122.674 Y-78.396	N2560 X7.107 Y-98.349
N890 X-49.014 Y100.983	N1310 X62.847 Y98.61	N1730 X129.515 Y28.234	N2150 X120.452 Y-80.394	N2570 X4.398 Y-98.365
N900 X-46.336 Y100.952	N1320 X65.54 Y98.598	N1740 X129.679 Y25.456	N2160 X118.058 Y-82.253	N2580 X1.69 Y- 98.38
N910 X-43.665 Y100.913	N1330 X68.234 Y98.587	N1750 X129.825 Y22.686	N2170 X115.524 Y-83.964	N2590 X-1.017 Y-98.393
N920 X-40.998 Y100.867	N1340 X70.929 Y98.578	N1760 X129.955 Y19.923	N2180 X112.88 Y-85.524	N2600 X-3.724 Y-98.405
N930 X-38.336 Y100.815	N1350 X73.624 Y98.569	N1770 X130.07 Y17.166	N2190 X110.153 Y-86.936	N2610 X-6.429 Y-98.415
N940 X-35.676 Y100.759	N1360 X76.32 Y98.562	N1780 X130.172 Y14.415	N2200 X107.365 Y-88.209	N2620 X-9.134 Y-98.424
N950 X-33.019 Y100.699	N1370 X79.016 Y98.555	N1790 X130.263 Y11.669	N2210 X104.534 Y-89.35	N2630 X-11.839 Y-98.433
N960 X-30.365 Y100.635	N1380 X81.713 Y98.549	N1800 X130.344 Y8.928	N2220 X101.674 Y-90.37	N2640 X-14.543 Y-98.44
N970 X-27.711 Y100.569	N1390 X84.41 Y98.544	N1810 X130.416 Y6.191	N2230 X98.798 Y-91.279	N2650 X-17.246 Y-98.447
N980 X-25.059 Y100.501	N1400 X87.107 Y98.539	N1820 X130.48 Y3.458	N2240 X95.913 Y-92.088	N2660 X-19.949 Y-98.452
N990 X-22.409 Y100.431	N1410 X89.805 Y98.535	N1830 X130.537 Y.728	N2250 X93.026 Y-92.807	N2670 X-22.652 Y-98.458
N1000 X-19.758 Y100.359	N1420 X92.503 Y98.531	N1840 X130.588 Y-1.998	N2260 X90.142 Y-93.446	N2680 X-25.355 Y-98.462
N1010 X-17.109 Y100.285	N1430 X94.732 Y98.516	N1850 X130.633 Y-4.722	N2270 X87.265 Y-94.012	N2690 X-28.057 Y-98.466
N1020 X-14.46 Y100.211	N1440 X96.488 Y98.337	N1860 X130.673 Y-7.443	N2280 X84.395 Y-94.515	N2700 X-30.759 Y-98.47
N1030 X-11.811 Y100.136	N1450 X98.473 Y97.931	N1870 X130.709 Y-10.162	N2290 X81.535 Y-94.961	N2710 X-33.461 Y-98.473
N1040 X-9.162 Y100.06	N1460 X100.626 Y97.229	N1880 X130.741 Y-12.879	N2300 X78.686 Y-95.356	N2720 X-36.162 Y-98.476
N1050 X-6.514 Y99.983	N1470 X102.868 Y96.213	N1890 X130.769 Y-15.594	N2310 X75.847 Y-95.707	N2730 X-38.864 Y-98.479
N1060 X-3.865 Y99.906	N1480 X105.142 Y94.894	N1900 X130.795 Y-18.308	N2320 X73.019 Y-96.018	N2740 X-41.565 Y-98.481
N1070 X-1.216 Y99.828	N1490 X107.393 Y93.29	N1910 X130.817 Y-21.02	N2330 X70.202 Y-96.294	N2750 X-44.266 Y-98.483
N1080 X1.433 Y99.75	N1500 X109.575 Y91.425	N1920 X130.837 Y-23.73	N2340 X67.395 Y-96.539	N2760 X-46.992 N2770 X-49.756
N1090 X4.082 Y99.671	N1510 X111.653 Y89.33	N1930 X130.855 Y-26.44	N2350 X64.597 Y-96.756	Y-98.473
N1100 X6.731 Y99.592	N1520 X113.602 Y87.041	N1940 X130.871 Y-29.149	N2360 X61.808 Y-96.949	N2780 X-52.553 Y-98.444
N1110 X9.38 Y99.513	N1530 X115.406 Y84.591	N1950 X130.885 Y-31.856	N2370 X59.028 Y-97.121	N2790 X-55.377 Y-98.388

N2800 X-58.224	N3140 X-	N3440 X-150.21	N3760 X-74.685	N4180 X40.341
Y-98.298	144.425 Y-	Y32.554	Y84.231	Y85.377
N2810 X-61.089	53.861	N3450 X-	N3770 X-71.831	N4190 X43.03
Y-98.167	N3150 X-145.98	148.899	Y84.594	Y85.347
N2820 X-63.969	Y-51.29	Y35.268	N3780 X-68.986	N4200 X45.72
Y-97.99	N3160 X-	N3460 X-	Y84.913	Y85.319
N2830 X-66.86	147.452 Y-	147.497	N3790 X-66.149	N4210 X48.411
Y-97.761	48.668	Y37.936	Y85.191	Y85.293
N2840 X-69.759	N3170 X-	N3470 X-	N3800 X-63.32	N4220 X51.102
Y-97.476	148.837 Y-	146.005	Y85.432	Y85.269
N2850 X-72.662	45.999	Y40.554	N3810 X-60.5	N4230 X53.794
Y-97.13	N3180 X-	N3480 X-	Y85.64	Y85.246
N2860 X-75.566	150.134 Y-	144.425 Y43.12	N3820 X-57.689	N4240 X56.486
Y-96.721	43.286	N3490 X-	Y85.818	Y85.226
N2870 X-78.467	N3190 X-	142.756	N3830 X-54.887	N4250 X59.178
Y-96.244	151.341 Y-	Y45.632	Y85.969	Y85.207
N2880 X-81.364	40.533	N3500 X-	N3840 X-52.093	N4260 X61.871
Y-95.698	N3200 X-	141.002	Y86.096	Y85.189
N2890 X-84.253	152.458 Y-	Y48.086	N3850 X-49.307	N4270 X64.565
Y-95.08	37.742	N3510 X-	Y86.201	Y85.173
N2900 X-87.13	N3210 X-	139.165	N3860 X-46.528	N4280 X67.259
Y-94.389	153.483 Y-	Y50.478	Y86.286	Y85.158
N2910 X-89.992	34.916	N3520 X-	N3870 X-43.757	N4290 X70.106
Y-93.622	N3220 X-	137.247	Y86.354	Y85.081
N2920 X-92.838	154.415 Y-	Y52.805	N3880 X-40.991	N4300 X72.947
Y-92.778	32.058	N3530 X-135.25	Y86.406	Y84.774
N2930 X-95.663	N3230 X-	Y55.065	N3890 X-38.232	N4310 X75.734
Y-91.857	155.253 Y-	N3540 X-	Y86.443	Y84.223
N2940 X-98.465	29.17	133.176	N3900 X-35.479	N4320 X78.477
Y-90.858	N3240 X-	Y57.255	Y86.468	Y83.428
N2950 X-101.24	155.996 Y-	N3550 X-	N3910 X-32.731	N4330 X81.167
Y-89.779	26.256	131.025	Y86.482	Y82.39
N2960 X-	N3250 X-	Y59.373	N3920 X-29.987	N4340 X83.796
103.986 Y-	156.643 Y-	N3560 X-	Y86.485	Y81.115
88.622	23.319	128.803	N3930 X-27.248	N4350 X86.344
N2970 X-	N3260 X-	Y61.415	Y86.48	Y79.614
106.699 Y-	157.193 Y-	N3570 X-	N3940 X-24.513	N4360 X88.794
87.386	20.362	126.511	Y86.466	Y77.903
N2980 X-	N3270 X-	Y63.378	N3950 X-21.781	N4370 X91.135
109.378 Y-	157.646 Y-	N3580 X-	Y86.445	Y75.999
86.071	17.389	124.152	N3960 X-19.053	N4380 X93.354
N2990 X-	N3280 X-158.	Y65.261	Y86.418	Y73.92
112.019 Y-	Y-14.403	N3590 X-	N3970 X-16.328	N4390 X95.443
84.678	N3290 X-	121.728	Y86.384	Y71.688
N3000 X-	158.257 Y-	Y67.059	N3980 X-13.605	N4400 X97.397
114.645 Y-	11.406	N3600 X-	Y86.346	Y69.324
83.183	N3300 X-	119.242	N3990 X-10.885	N4410 X99.214
N3010 X-117.22	158.414 Y-	Y68.773	Y86.303	Y66.848
Y-81.586	8.402	N3610 X-	N4000 X-8.167	N4420 X100.895
N3020 X-	N3310 X-	116.697	Y86.255	Y64.279
119.729 Y-79.9	158.471 Y-	Y70.399	N4010 X-5.451	N4430 X102.444
N3030 X-	5.393	N3620 X-	Y86.204	Y61.633
122.173 Y-	N3320 X-	114.096	N4020 X-2.738	N4440 X103.865
78.129	158.429 Y-	Y71.935	Y86.15	Y58.926
N3040 X-	2.384	N3630 X-	N4030 X-.029	N4450 X105.165
124.552 Y-	N3330 X-	111.443	Y86.094	Y56.172
76.277	158.287 Y.622	Y73.377	N4040 X2.674	N4460 X106.35
N3050 X-	N3340 X-	N3640 X-	Y86.036	Y53.381
126.866 Y-	158.046 Y3.622	108.742	N4050 X5.373	N4470 X107.429
74.346	N3350 X-	Y74.725	Y85.978	Y50.563
N3060 X-	157.704 Y6.611	N3650 X-106.	N4060 X8.07	N4480 X108.408
129.112 Y-	N3360 X-	Y75.977	Y85.92	Y47.727
72.338	157.264 Y9.589	N3660 X-	N4070 X10.763	N4490 X109.296
N3070 X-	N3370 X-	103.222	Y85.863	Y44.879
131.288 Y-	156.723	Y77.135	N4080 X13.455	N4500 X110.1
70.258	Y12.552	N3670 X-	Y85.808	Y42.024
N3080 X-	N3380 X-	100.416	N4090 X16.145	N4510 X110.827
133.393 Y-	156.084	Y78.198	Y85.754	Y39.166
68.107	Y15.494	N3680 X-97.588	N4100 X18.834	N4520 X111.484
N3090 X-	N3390 X-	Y79.171	Y85.703	Y36.308
135.424 Y-	155.347	N3690 X-94.742	N4110 X21.523	N4530 X112.078
65.888	Y18.414	Y80.058	Y85.654	Y33.454
N3100 X-	N3400 X-	N3700 X-91.885	N4120 X24.211	N4540 X112.614
137.381 Y-	154.512	Y80.862	Y85.607	Y30.604
63.603	Y21.307	N3710 X-89.02	N4130 X26.899	N4550 X113.097
N3110 X-	N3410 X-153.58	Y81.589	Y85.563	Y27.76
139.262 Y-	Y24.171	N3720 X-86.15	N4140 X29.587	N4560 X113.533
61.255	N3420 X-	Y82.243	Y85.521	Y24.923
N3120 X-	152.552	N3730 X-83.28	N4150 X32.275	N4570 X113.926
141.064 Y-	Y27.001	Y82.83	Y85.482	Y22.094
58.847	N3430 X-	N3740 X-80.411	N4160 X34.963	N4580 X114.28
N3130 X-	151.428	Y83.353	Y85.445	Y19.272
142.785 Y-	Y29.798	N3750 X-77.545	N4170 X37.652	N4590 X114.599
56.381		Y83.819	Y85.41	Y16.458

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N4600 X114.887 Y13.652	N5020 X67.353 Y-79.241	N5440 X-48.694 Y-84.563	N5790 X- 134.397 Y-	N6090 X- 116.206 Y48.32
N4610 X115.146 Y10.854	N5030 X64.5 Y- 79.811	N5450 X-51.54 Y-84.417	35.151 N5800 X-	N6100 G3 X- 114.943
N4620 X115.38 Y8.063	N5040 X61.652 Y-80.325	N5460 X-54.4 Y-84.232	135.559 Y- 32.338	Y50.008 I-3.61 J4.015
N4630 X115.591 Y5.279	N5050 X58.811 Y-80.788	N5470 X-57.271 Y-84.001	N5810 X- 136.607 Y-	N6110 G2 X- 113.66 Y52.382
N4640 X115.78 Y2.502	N5060 X55.977 Y-81.206	N5480 X-60.15 Y-83.721	29.479 N5820 X-	I24.363 J- 11.636
N4650 X115.951 Y-.269	N5070 X53.15 Y-81.582	N5490 X-63.036 Y-83.387	137.537 Y- 26.578	N6120 X-112.74 Y53.797 I23.08
N4660 X116.105 Y-3.034	N5080 X50.331 Y-81.922	N5500 X-65.928 Y-82.993	N5830 X- 138.348 Y-	J-14.01 N6130 G1 X-
N4670 X116.244 Y-5.794	N5090 X47.521 Y-82.227	N5510 X-68.824 Y-82.537	23.643 N5840 X-	112.237 Y54.519
N4680 X116.369 Y-8.548	N5100 X44.718 Y-82.503	N5520 X-71.717 Y-82.014	139.038 Y- 20.676	N6140 G2 X- 110.587
N4690 X116.482 Y-11.298	N5110 X41.922 Y-82.751	N5530 X-74.606 Y-81.421	N5850 X- 139.606 Y-	Y56.654 I22.16 J-15.425
N4700 X116.583 Y-14.043	N5120 X39.134 Y-82.975	N5540 X-77.487 Y-80.754	17.683 N5860 X-140.05	N6150 X- 108.915
N4710 X116.675 Y-16.784	N5130 X36.353 Y-83.176	N5550 X-80.36 Y-80.01	Y-14.668 N5870 X-	Y58.437 I20.51 J-17.56
N4720 X116.757 Y-19.521	N5140 X33.578 Y-83.358	N5560 X-83.222 Y-79.185	140.368 Y- 11.637	N6160 G1 X- 108.53 Y58.811
N4730 X116.831 Y-22.255	N5150 X30.81 Y-83.521	N5570 X-86.071 Y-78.273	N5880 X- 140.561 Y-	N6170 G2 X- 106.505
N4740 X116.898 Y-24.986	N5160 X28.047 Y-83.668	N5580 X-88.899 Y-77.269	8.596 N5890 X-	Y60.595 I18.837 J-
N4750 X116.958 Y-27.714	N5170 X25.29 Y-83.801	N5590 X-91.702 Y-76.169	140.627 Y- 5.547	19.343 N6180 X-
N4760 X117.012 Y-30.44	N5180 X22.538 Y-83.921	N5600 X-94.47 Y-74.974	N5900 X- 140.565 Y-	104.435 Y62.088
N4770 X117.061 Y-33.163	N5190 X19.79 Y-84.028	N5610 X-97.198 Y-73.681	2.499 N5910 X-	I16.812 J- 21.127
N4780 X117.101 Y-35.917	N5200 X17.046 Y-84.125	N5620 X-99.884 Y-72.29	140.376 Y.544 N5920 X-140.06	N6190 G1 X- 103.736
N4790 X116.976 Y-38.771	N5210 X14.307 Y-84.213	N5630 X-102.52 Y-70.801	Y3.577 N5930 X-	Y62.544 N6200 G2 X-
N4800 X116.605 Y-41.563	N5220 X11.571 Y-84.291	N5640 X-105.1 Y-69.216	139.615 Y6.596 N5940 X-	101.404 Y63.903
N4810 X115.986 Y-44.32	N5230 X8.838 Y-84.362	N5650 X- 107.621 Y-	139.043 Y9.592 N5950 X-	I14.743 J- 22.62
N4820 X115.12 Y-47.031	N5240 X6.109 Y-84.426	N5660 X-110.08 Y-65.756	138.345 N5960 X-	N6210 X-98.948 Y65.022
N4830 X114.01 Y-49.694	N5250 X3.382 Y-84.483	N5670 X-112.47 Y-63.886	Y12.562 N5970 X-	I12.411 J- 23.979
N4840 X112.663 Y-52.291	N5260 X.657 Y- 84.535	N5680 X- 114.787 Y-	136.572 Y18.402	N6220 X-97.981 Y65.384 I9.955
N4850 X111.093 Y-54.804	N5270 X-2.065 Y-84.582	61.925 N5690 X-	N5980 X- 135.499	J-25.098 N6230 G1 X-
N4860 X109.316 Y-57.215	N5280 X-4.785 Y-84.624	N5700 X- 117.027 Y-	Y21.259 N5990 X-	97.161 Y65.674 N6240 G2 X-
N4870 X107.35 Y-59.513	N5290 X-7.503 Y-84.661	59.875 N5710 X-	N5990 X- 134.305	94.575 Y66.444 I8.988 J-25.46
N4880 X105.216 Y-61.686	N5300 X-10.219 Y-84.695	N5720 X- 119.187 Y-	Y24.068 N6000 X-132.99	N6250 X-91.981 Y66.944 I6.402
N4890 X102.935 Y-63.726	N5310 X-12.934 Y-84.726	57.737 N5730 X-	Y26.825 N6010 X-	J-26.23 N6260 G1 X-
N4900 X100.529 Y-65.63	N5320 X-15.647 Y-84.753	N5740 X- 121.263 Y-	131.557 Y29.522	89.215 Y67.453 N6270 X-86.439
N4910 X98.016 Y-67.397	N5330 X-18.359 Y-84.778	53.216 N5750 X-	N6020 X- 130.009	Y67.937 N6280 X-83.655
N4920 X95.416 Y-69.029	N5340 X-21.07 Y-84.801	N5760 X- 125.143 Y-	Y32.154 N6030 X-	Y68.392 N6290 X-80.866
N4930 X92.746 Y-70.53	N5350 X-23.782 Y-84.821	50.839 N5770 X-	128.346 Y34.717	Y68.82 N6300 X-78.074
N4940 X90.019 Y-71.904	N5360 X-26.497 Y-84.838	N5780 X- 126.943 Y-	N6040 X- 126.573	Y69.218 N6310 X-75.279
N4950 X87.249 Y-73.16	N5370 X-29.222 Y-84.851	48.386 N5790 X-	Y37.206 N6050 X-	Y69.587 N6320 X-72.484
N4960 X84.446 Y-74.303	N5380 X-31.958 Y-84.857	45.864 N5760 X-	124.692 Y39.614	Y69.929 N6330 X-69.689
N4970 X81.62 Y-75.342	N5390 X-34.708 Y-84.854	N5770 X- 130.242 Y-	N6060 X- 122.707	Y70.242 N6340 X-66.895
N4980 X78.778 Y-76.285	N5400 X-37.473 Y-84.838	43.276 N5770 X-	Y41.937 N6070 X-	Y70.53 N6350 X-64.102
N4990 X75.926 Y-77.139	N5410 X-40.254 Y-84.806	131.735 Y- 40.625	120.621 Y44.172	Y70.791 N6360 X-61.312
N5000 X73.069 Y-77.912	N5420 X-43.051 Y-84.752	N5780 X- 133.121 Y-	N6080 X- 118.439	Y71.028 N6370 X-58.525
N5010 X70.21 Y-78.611	N5430 X-45.865 Y-84.672	37.915	Y46.311	Y71.243

N6380 X-55.741	N6800 X59.936	N7220 X95.47	N7640 X-17.114	64.149 I9.402
Y71.435	Y69.796	Y-38.134	Y-70.854	J25.31
N6390 X-52.96	N6810 X62.757	N7230 X93.722	N7650 X-19.869	N8020 X-
Y71.606	Y68.777	Y-40.613	Y-70.899	103.277 Y-
N6400 X-50.183	N6820 X65.504	N7240 X91.8 Y-	N7660 X-22.632	62.842 I11.881
Y71.758	Y67.548	42.978	Y-70.932	J24.245
N6410 X-47.41	N6830 X68.163	N7250 X89.723	N7670 X-25.403	N8030 X-
Y71.892	Y66.121	Y-45.224	Y-70.949	104.058 Y-
N6420 X-44.641	N6840 X70.727	N7260 X87.506	N7680 X-28.185	62.338 I14.243
Y72.008	Y64.502	Y-47.343	Y-70.948	J22.938
N6430 X-41.876	N6850 X73.186	N7270 X85.167	N7690 X-30.978	N8040 G1 X-
Y72.109	Y62.705	Y-49.334	Y-70.928	104.749 Y-
N6440 X-39.115	N6860 X75.531	N7280 X82.724	N7700 X-33.783	61.875
Y72.195	Y60.744	Y-51.195	Y-70.884	N8050 G2 X-
N6450 X-36.357	N6870 X77.756	N7290 X80.192	N7710 X-36.6	106.914 Y-
Y72.267	Y58.636	Y-52.927	Y-70.813	60.263 I15.024
N6460 X-33.603	N6880 X79.855	N7300 X77.586	N7720 X-39.432	J22.434
Y72.327	Y56.397	Y-54.534	Y-70.711	N8060 X-
N6470 X-30.853	N6890 X81.827	N7310 X74.919	N7730 X-42.277	108.907 Y-
Y72.375	Y54.041	Y-56.019	Y-70.573	58.443 I17.189
N6480 X-28.106	N6900 X83.671	N7320 X72.202	N7740 X-45.134	J20.822
Y72.411	Y51.587	Y-57.387	Y-70.397	N8070 X-
N6490 X-25.363	N6910 X85.389	N7330 X69.447	N7750 X-48.002	109.619 Y-
Y72.438	Y49.047	Y-58.645	Y-70.176	57.695 I19.182
N6500 X-22.624	N6920 X86.983	N7340 X66.662	N7760 X-50.88	J19.002
Y72.456	Y46.437	Y-59.799	Y-69.906	N8080 G1 X-
N6510 X-19.888	N6930 X88.458	N7350 X63.855	N7770 X-53.765	110.201 Y-
Y72.465	Y43.767	Y-60.856	Y-69.583	57.062
N6520 X-17.156	N6940 X89.818	N7360 X61.031	N7780 X-56.663	N8090 G2 X-
Y72.467	Y41.051	Y-61.822	Y-69.2	111.924 Y-
N6530 X-14.427	N6950 X91.07	N7370 X58.197	N7790 X-59.567	54.984 I19.895
Y72.462	Y38.297	Y-62.704	Y-68.752	J18.255
N6540 X-11.703	N6960 X92.22	N7380 X55.355	N7800 X-62.474	N8100 X-
Y72.452	Y35.513	Y-63.508	Y-68.232	113.431 Y-
N6550 X-8.981	N6970 X93.274	N7390 X52.511	N7810 X-65.38	52.745 I21.618
Y72.437	Y32.708	Y-64.241	Y-67.635	J16.177
N6560 X-6.264	N6980 X94.239	N7400 X49.666	N7820 X-66.219	N8110 X-
Y72.417	Y29.886	Y-64.909	Y-67.447	113.865 Y-
N6570 X-3.549	N6990 X95.121	N7410 X46.823	N7830 G3 X-	51.998 I23.125
Y72.394	Y27.054	Y-65.516	67.401 Y-	J13.938
N6580 X-.837	N7000 X95.927	N7420 X43.983	67.316 I-1.182	N8120 G1 X-
Y72.368	Y24.215	Y-66.068	J-5.269	114.317 Y-
N6590 X1.873	N7010 X96.661	N7430 X41.147	N7840 G1 X-	51.191
Y72.34	Y21.372	Y-66.57	70.101	N8130 G2 X-
N6600 X4.58	N7020 X97.331	N7440 X38.318	N7850 X-72.801	115.516 Y-
Y72.31	Y18.529	Y-67.027	N7860 X-75.501	48.773 I23.559
N6610 X7.285	N7030 X97.941	N7450 X35.494	N7870 X-78.201	J13.19
Y72.279	Y15.687	Y-67.441	N7880 X-80.901	N8140 X-
N6620 X9.988	N7040 X98.496	N7460 X32.677	N7890 X-83.601	116.468 Y-
Y72.246	Y12.849	Y-67.818	N7900 X-86.301	46.248 I24.758
N6630 X12.69	N7050 X99.001	N7470 X29.866	N7910 X-87.24	J10.772
Y72.214	Y10.015	Y-68.159	N7920 G2 X-	N8150 G1 X-
N6640 X15.39	N7060 X99.461	N7480 X27.062	87.643 Y-	117.369 Y-
Y72.181	Y7.186	Y-68.47	67.313 IO.	43.632
N6650 X18.089	N7070 X99.879	N7490 X24.265	J27.	N8160 X-
Y72.148	Y4.363	Y-68.752	N7930 G1 X-	118.268 Y-
N6660 X20.787	N7080 X100.258	N7500 X21.474	87.778 Y-	40.945
Y72.115	Y1.546	Y-69.007	67.311	N8170 X-
N6670 X23.484	N7090 X100.604	N7510 X18.69	N7940 G2 X-	119.145 Y-
Y72.083	Y-1.265	Y-69.24	90.471 Y-	38.201
N6680 X26.181	N7100 X100.917	N7520 X15.912	67.136 I.403	N8180 X-
Y72.052	Y-4.068	Y-69.45	J26.997	119.982 Y-
N6690 X28.877	N7110 X101.202	N7530 X13.139	N7950 X-90.979	35.405
Y72.021	Y-6.866	Y-69.642	Y-67.072	N8190 X-
N6700 X31.572	N7120 X101.461	N7540 X10.372	I3.096 J26.822	120.764 Y-
Y71.991	Y-9.657	Y-69.815	N7960 G1 X-	32.556
N6710 X34.267	N7130 X101.698	N7550 X7.61 Y-	91.851 Y-	N8200 X-
Y71.962	Y-12.489	69.973	66.955	121.476 Y-
N6720 X36.962	N7140 X101.862	N7560 X4.853	N7970 G2 X-	29.667
Y71.935	Y-15.534	Y-70.115	94.504 Y-	N8210 X-
N6730 X39.656	N7150 X101.84	N7570 X2.101	66.461 I3.604	122.107 Y-
Y71.908	Y-18.563	Y-70.245	J26.759	26.735
N6740 X42.351	N7160 X101.602	N7580 X-.647	N7980 X-97.095	N8220 X-
Y71.882	Y-21.536	Y-70.363	Y-65.705	122.643 Y-
N6750 X45.062	N7170 X101.137	N7590 X-3.392	I6.257 J26.265	23.769
Y71.857	Y-24.457	Y-70.469	N7990 X-97.649	N8230 X-
N6760 X48.025	N7180 X100.445	N7600 X-6.135	Y-65.506	123.077 Y-
Y71.794	Y-27.325	Y-70.566	I8.848 J25.509	20.774
N6770 X51.081	N7190 X99.525	N7610 X-8.877	N8000 G1 X-	N8240 X-
Y71.592	Y-30.139	Y-70.652	98.436 Y-	123.398 Y-
N6780 X54.094	N7200 X98.383	N7620 X-11.62	65.214	17.752
Y71.201	Y-32.886	Y-70.73	N8010 G2 X-	N8250 X-
N6790 X57.046	N7210 X97.028	N7630 X-14.365	100.915 Y-	123.598 Y-
Y70.604	Y-35.555	Y-70.797		14.714

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N8260 X-123.67	N8570 X-	N8800 X-	N9070 Y-30.486	Y65.927 Z-
Y-11.661	113.256	117.193 Y-	N9080 Y-27.786	4.966
N8270 X-	Y54.238 Z-	63.94 Z- 4.871	N9090 Y-25.086	N9450 X-
123.608 Y-	5.043	N8810 X-	N9100 Y-22.386	100.379 Y65.6
8.604	N8580 X-	116.553 Y-	N9110 Y-19.686	Z-5.027
N8280 X-	113.108	63.241 Z- 4.885	N9120 Y-16.986	N9460 X-99.902
123.407 Y-	Y55.074 Z- 5.03	N8820 X-115.97	N9130 Y-14.286	Y65.572 Z-
5.549	N8590 X-	Y-62.494 Z-	N9140 Y-11.586	5.034
N8290 X-	113.019	4.899	N9150 Y-8.886	N9470 X-99.424
123.062 Y-	Y55.918 Z-	N8830 X-	N9160 Y-6.186	Y65.562 Z-
2.503	5.018	115.447 Y-	N9170 Y-3.486	5.041
N8300 X-	N8600 X-112.99	61.704 Z- 4.913	N9180 Y-.786	N9480 X-98.716
122.568 Y.524	Y56.766 Z-	N8840 X-	N9190 Y1.914	Y65.583 Z-
N8310 X-	5.005	114.987 Y-	N9200 Y4.614	5.051
121.925 Y3.525	N8610 X-	60.876 Z- 4.927	N9210 Y7.314	N9490 X-98.011
N8320 X-	113.024	N8850 X-	N9220 Y10.014	Y65.645 Z-
121.128 Y6.489	Y57.684 Z-	114.593 Y-	N9230 Y12.714	5.062
N8330 X-	4.992	60.015 Z- 4.941	N9240 Y15.414	N9500 X-97.31
120.178 Y9.409	N8620 X-	N8860 X-	N9250 Y18.114	Y65.748 Z-
N8340 X-	113.128	114.268 Y-	N9260 X-	5.072
119.075	Y58.596 Z-	59.125 Z- 4.955	118.181	N9510 X-96.617
Y12.275	4.978	N8870 X-	Y18.863 Z-	Y65.891 Z-
N8350 X-	N8630 X-	114.012 Y-	5.082	5.083
118.588	113.301	58.213 Z- 4.969	N9270 X-118.25	N9520 X-95.933
Y13.419	Y59.498 Z-	N8880 X-	Y19.609 Z-	Y66.075 Z-
N8360 G3 X-	4.965	113.829 Y-	5.071	5.093
118.158	N8640 X-	57.283 Z- 4.983	N9280 X-	N9530 G2 X-
Y15.532 I-4.97	113.541	N8890 X-	118.365 Y20.35	91.981 Y66.944
J2.113	Y60.384 Z-	113.718 Y-	Z-5.06	I7.76 J-25.861
N8370 G1	4.951	56.343 Z- 4.997	N9290 X-	N9540 X-91.105
Y18.232	N8650 X-	N8900 X-	118.526	Y67.054 I3.808
N8380 Y20.932	113.847 Y61.25	113.681 Y-	Y21.081 Z-	J-26.73
N8390 Y23.632	Z-4.938	55.396 Z- 5.011	5.049	N9550 G1 X-
N8400 Y26.332	N8660 X-	N8910 X-	N9300 X-	90.171 Y67.156
N8410 Y29.032	114.218 Y62.09	113.708 Y-	118.731	N9560 G2 X-
N8420 Y31.732	Z-4.924	54.597 Z- 5.023	Y21.802 Z-	87.477 Y67.315
N8430 Y34.432	N8670 X-	N8920 X-	5.038	I2.931 J-26.84
N8440 Y35.886	114.652 Y62.9	113.786 Y-	N9310 X-118.98	N9570 X-87.24
N8450 G2 X-	Z-4.91	53.802 Z- 5.034	Y22.509 Z-	Y67.316 I.237
118.126	N8680 X-	N8930 X-	5.027	J-26.999
Y37.197 I27.	115.145	113.917 Y-	N9320 X-	N9580 G1 X-
J0.	Y63.674 Z-	53.014 Z- 5.046	121.449	84.54
N8460 G1 X-	4.897	N8940 X-	Y28.871 Z-	N9590 X-81.84
118.096	N8690 X-	114.099 Y-	4.926	N9600 X-79.14
Y37.817	115.695	52.236 Z- 5.058	N9330 X-123.49	N9610 X-76.44
N8470 G2 X-	Y64.409 Z-	N8950 X-	Y34.132 Z-	N9620 X-73.74
117.83 Y40.502	4.883	114.333 Y-	4.843	N9630 X-71.04
I26.969 J-	N8700 X-	51.472 Z- 5.07	N9340 X-125.1	N9640 X-68.34
1.311	116.299	N8960 X-	Y38.28 F2500.	N9650 X-65.64
N8480 X-117.64	Y65.101 Z- 4.87	114.615 Y-	N9350 G2 X-	N9660 X-62.94
Y41.612	N8710 X-	50.724 Z- 5.081	126.478	N9670 X-60.24
I26.703 J-	116.954	N8970 X-	Y45.642 I18.97	N9680 X-57.54
3.996	Y65.745 Z-	114.947 Y-	J7.362	N9690 X-54.84
N8490 G1 X-	4.856	49.997 Z- 5.093	N9360 X-	N9700 X-52.14
117.448	N8720 X-	N8980 G2 X-	112.711	N9710 X-49.44
Y42.611	117.656	116.468 Y-	Y64.896	N9720 X-46.74
N8500 G2 X-	Y66.337 Z-	46.248 I24.188	I20.348 J0.	N9730 X-44.04
116.805	4.843	J11.996	N9370 G1 X-	N9740 X-43.899
Y45.233	N8730 G3 X-	N8990 X-	111.645	N9750 G2 X-
I26.513 J-	125.139	116.611 Y-	Y65.228 Z-	43.19 Y67.306
5.106	Y68.916 I-	45.785 I25.71	4.859 F1623.	I0. J-27.
N8510 X-	7.484 J-9.572	J8.247	N9380 X-	N9760 G1 X-
115.917	F2500.	N9000 G1 X-	110.562	42.832 Y67.297
Y47.748 I25.87	N8740 X-	116.906 Y-	Y65.501 Z-	N9770 G2 X-
J-7.728	137.289	44.808	4.876	40.141 Y67.091
N8520 G1 X-	Y56.841 I0. J-	N9010 G2 X-	N9390 X-	I-.709 J-
115.561	12.15	117.554 Y-	109.466	26.991
Y48.615	N8750 G1 X-	42.188 I25.854	Y65.714 Z-	N9780 X-39.737
N8530 G2 X-	137.981 Y-	J7.785	4.893	Y67.037 I-3.4
114.414	55.321	N9020 X-	N9400 X-	J-26.785
Y51.058	N8760 Y-55.396	117.937 Y-	108.359	N9790 G1 X-
I24.981 J-	N8770 G3 X-	39.516 I26.502	Y65.867 Z-	38.726 Y66.893
10.243	125.831 Y-	J5.165	4.909	N9800 G2 X-
N8540 G1 X-	67.546 I12.15	N9030 G1 Y-	N9410 X-	36.076 Y66.38
114.042	J0.	39.513	107.246	I-3.804 J-
Y51.821 Z- 5.08	N8780 X-	N9040 X-	Y65.959 Z-	26.731
N8550 X-	118.625 Y-	118.042 Y-	4.926	N9810 X-33.496
113.724	65.178 I0.	38.377	N9420 X-106.13	Y65.606 I-
Y52.607 Z-	J12.15	N9050 G2 X-	Y65.99 Z- 4.942	6.454 J-26.218
5.068	N8790 G1 X-	118.158 Y-	N9430 X-105.33	N9820 G1 X-
N8560 X-	117.885 Y-	35.886 I26.884	Y65.974 Z-	31.451 Y64.971
113.461	64.587 Z- 4.857	J2.491	4.954	N9830 X-29.314
Y53.415 Z-	F1623.	N9060 G1 Y-	N9440 X-	Y64.382
5.055		33.186	104.531	

N9840 X-27.098	N360 X76.044	N780 X11.87 Y-	N1130 X-65.499	N1420 X-45.206
Y63.839	Y24.471	54.285	N1140 X-68.199	Y70.607 Z-
N9850 X-24.816	N370 X77.255	N790 X9.063 Y-	N1150 X-70.899	4.964
Y63.341	Y21.716	54.616	N1160 X-71.648	N1430 X-41.558
N9860 X-22.476	N380 X78.373	N800 X6.261 Y-	Y-67.339 Z-	Y68.314 Z-
Y62.885	Y18.936	54.918	5.082	5.027
N9870 X-20.088	N390 X79.402	N810 X3.462 Y-	N1170 X-72.394	N1440 X-40.912
Y62.469	Y16.137	55.191	Y-67.408 Z-	Y67.935 Z-
N9880 X-17.659	N400 X80.349	N820 X.666 Y-	5.071	5.038
Y62.09	Y13.323	55.439	N1180 X-73.135	N1450 X-40.243
N9890 X-15.194	N410 X81.22	N830 X-2.128	Y-67.523 Z-	Y67.596 Z-
Y61.745	Y10.49	Y-55.661	5.06	5.049
N9900 X-12.699	N420 X82.02	N840 X-4.923	N1190 X-73.867	N1460 X-39.555
Y61.43	Y7.592	Y-55.859	Y-67.684 Z-	Y67.299 Z- 5.06
N9910 X-10.178	N430 X82.71	N850 X-7.718	5.049	N1470 X-38.849
Y61.145	Y4.608	Y-56.033	N1200 X-74.587	Y67.046 Z-
N9920 X-7.635	N440 X83.212	N860 X-10.516	Y-67.889 Z-	5.071
Y60.885	Y1.617	Y-56.184	5.038	N1480 X-38.13
N9930 X-5.073	N450 X83.488	N870 X-13.317	N1210 X-75.294	Y66.836 Z-
Y60.649	Y-1.343	Y-56.311	Y-68.139 Z-	5.082
N9940 X-2.494	N460 X83.529	N880 X-16.124	5.027	N1490 X-37.399
Y60.433	Y-4.279	Y-56.413	N1220 X-81.656	Y66.67 Z- 5.093
N9950 X.099	N470 X83.332	N890 X-17.798	Y-70.607 Z-	N1500 G2 X-
Y60.237	Y-7.187	Y-56.461	4.926	33.496 Y65.606
N9960 X2.705	N480 X82.896	N900 G3 X-	N1230 X-82.981	I-5.131 J-
Y60.058	Y-10.072	20.367 Y-	Y-71.091 Z-	26.508
N9970 X5.321	N490 X82.223	57.196 I.155	4.905	N1510 G1 X-
Y59.895	Y-12.921	J-5.397	N1240 X-84.325	32.653 Y65.307
N9980 X7.946	N500 X81.316	N910 X-21.483	Y-71.52 Z-	N1520 G2 X-
Y59.746	Y-15.729	Y-58.062	4.885	30.158 Y64.278
N9990 X10.58	N510 X80.184	I2.724 J-4.662	N1250 X-85.685	I-9.034 J-
Y59.609	Y-18.474	N920 G1 X-	Y-71.896 Z-	25.444
N100 X13.22	N520 X78.835	21.898 Y-	4.864	N1530 X-27.778
Y59.484	Y-21.146	58.482	N1260 X-87.059	Y63.005 I-
N110 X15.867	N530 X77.282	N930 G2 X-	Y-72.216 Z-	11.529 J-
Y59.37	Y-23.732	23.889 Y-	4.843	24.415
N120 X18.52	N540 X75.54 Y-	60.304 I-	N1270 G2 X-	N1540 X-27.073
Y59.265	26.217	19.199 J18.984	94.287 Y-	Y62.566 I-
N130 X21.177	N550 X73.625	N940 X-26.052	72.972 I-7.228	13.909 J-
Y59.169	Y-28.591	Y-61.918 I-	J34.16 F2500.	23.142
N140 X23.853	N560 X71.556	17.208 J20.806	N1280 X-	N1550 G1 X-
Y59.078	Y-30.847	N950 X-27.386	129.203 Y-	26.396 Y62.13
N150 X26.624	N570 X69.348	Y-62.757 I-	38.056 I0.	N1560 G2 X-
Y58.981	Y-32.978	15.045 J22.42	J34.916	24.202 Y60.558
N160 X29.547	N580 X67.021	N960 G1 X-	N1290 X-	I-14.613 J-
Y58.839	Y-34.982	28.113 Y-	129.113 Y-	22.703
N170 X32.572	N590 X64.589	63.186	35.552 I34.916	N1570 X-22.703
Y58.598	Y-36.858	N970 G2 X-	J0.	Y59.273 I-
N180 X35.616	N600 X62.07 Y-	30.504 Y-	N1300 G1 X-	16.807 J-
Y58.215	38.607	64.439 I-	123.591	21.131
N190 X38.631	N610 X59.477	13.712 J23.259	Y41.248	N1580 G1 X-
Y57.661	Y-40.232	N980 X-33.007	N1310 G2 X-	21.446 Y58.352
N200 X41.595	N620 X56.824	Y-65.446 I-	88.765 Y73.66	N1590 X-20.032
Y56.925	Y-41.738	11.321 J24.512	I34.826 J-	Y57.435
N210 X44.499	N630 X54.121	N990 X-33.924	2.504	N1600 X-18.473
Y56.	Y-43.128	Y-65.745 I-	N1320 X-88.394	Y56.536
N220 X47.333	N640 X51.378	8.818 J25.519	Y73.658 I0. J-	N1610 X-16.784
Y54.885	Y-44.41	N1000 G1 X-	34.916	Y55.667
N230 X50.087	N650 X48.605	34.855 Y-66.03	N1330 G1 X-	N1620 X-14.978
Y53.584	Y-45.589	N1010 G2 X-	54.351 Y73.296	Y54.834
N240 X52.754	N660 X45.809	37.472 Y-66.69	N1340 G2 X-	N1630 X-13.067
Y52.102	Y-46.671	I-7.901	52.858 Y73.217	Y54.043
N250 X55.325	N670 X42.995	J25.818	I-.186 J-	N1640 X-11.063
Y50.449	Y-47.664	N1020 X-40.141	17.529	Y53.297
N260 X57.793	N680 X40.169	Y-67.085 I-	N1350 G1 X-	N1650 X-8.978
Y48.634	Y-48.573	5.284 J26.478	51.846 Y73.09	Y52.598
N270 X60.149	N690 X37.335	N1030 X-40.308	Z-4.858 F1623.	N1660 X-6.82
Y46.67	Y-49.405	Y-67.1 I-2.615	N1360 X-50.844	Y51.945
N280 X62.39	N700 X34.497	J26.873	Y72.904 Z-	N1670 X-4.599
Y44.571	Y-50.165	N1040 G1 X-	4.873	Y51.338
N290 X64.511	N710 X31.658	41.451 Y-	N1370 X-49.854	N1680 X-2.322
Y42.35	Y-50.859	67.205	Y72.66 Z- 4.888	Y50.776
N300 X66.511	N720 X28.819	N1050 G2 X-	N1380 X-48.879	N1690 X.003
Y40.02	Y-51.494	43.899 Y-	Y72.36 Z- 4.904	Y50.256
N310 X68.39	N730 X25.983	67.316 I-2.448	N1390 X-47.924	N1700 X2.373
Y37.596	Y-52.072	J26.889	Y72.003 Z-	Y49.776
N320 X70.149	N740 X23.151	N1060 G1 X-	4.919	N1710 X4.786
Y35.089	Y-52.6	46.599	N1400 X-46.991	Y49.333
N330 X71.789	N750 X20.323	N1070 X-49.299	Y71.591 Z-	N1720 X7.265
Y32.513	Y-53.081	N1080 X-51.999	4.934	Y48.916
N340 X73.316	N760 X17.5 Y-	N1090 X-54.699	N1410 X-46.084	N1730 X9.84
Y29.878	53.52	N1100 X-57.399	Y71.125 Z-	Y48.511
N350 X74.732	N770 X14.682	N1110 X-60.099	4.949	N1740 X12.547
Y27.194	Y-53.92	N1120 X-62.799		Y48.091

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N1750 X15.388 Y47.622	N2170 X21.59 Y-33.993	N2480 X-26.752 Y-63.739 Z-	N2740 X-32.13 Y69.321 Z-	N3070 X17.5 Y33.186
N1760 X18.32 Y47.068	N2180 X18.759 Y-34.918	5.027	4.948	N3080 X20.108 Y31.594
N1770 X21.286 Y46.399	N2190 X15.918 Y-35.762	N2490 X-28.702 Y-67.228 Z-	N2750 X-31.431 Y68.365 Z-	N3090 X22.198 Y30.147
N1780 X24.241 Y45.594	N2200 X13.071 Y-36.53	4.968	4.966	N3100 X23.672 Y28.874
N1790 X27.159 Y44.639	N2210 X10.218 Y-37.228	N2500 X-29.321 Y-68.268 Z-	N2760 X-29.053 Y64.931 Z-	N3110 X24.908 Y27.572
N1800 X30.02 Y43.527	N2220 X7.362 Y-37.861	4.95	5.027	N3120 X26. Y26.179
N1810 X32.814 Y42.255	N2230 X4.544 Y-38.429	N2510 X-29.996 Y-69.272 Z-	N2770 X-28.608 Y64.328 Z-	N3130 X26.984 Y24.645
N1820 X35.529 Y40.825	N2240 X1.831 Y-38.946	4.932	5.038	N3140 X27.846 Y22.954
N1830 X38.158 Y39.24	N2250 X-.762 Y-39.44	N2520 X-30.724 Y-70.238 Z-	N2780 X-28.126 Y63.754 Z-	N3150 X28.57 Y21.073
N1840 X40.692 Y37.506	N2260 X-3.226 Y-39.932	4.914	5.049	N3160 X29.118 Y18.997
N1850 X43.125 Y35.633	N2270 X-5.56 Y-40.439	N2530 X-31.504 Y-71.163 Z-	N2790 X-27.61 Y63.211 Z-5.06	N3170 X29.436 Y16.748
N1860 X45.453 Y33.628	N2280 X-7.764 Y-40.975	4.897	N2800 X-27.061 Y62.701 Z-	N3180 X29.477 Y14.351
N1870 X47.67 Y31.504	N2290 X-9.839 Y-41.548	N2540 X-32.334 Y-72.044 Z-	5.071	N3190 X29.193 Y11.846
N1880 X49.775 Y29.27	N2270 X-9.839 Y-41.548	4.879	N2810 X-26.482 Y62.225 Z-	N3200 X28.543 Y9.295
N1890 X51.765 Y26.936	N2300 X-10.518 Y-41.753	4.861	N2820 X-25.875 Y61.786 Z-	N3210 X27.61 Y6.733
N1900 X53.637 Y24.505	N2310 G3 X- 12.806 Y- 43.134 I1.561	N2550 X-33.21 Y-72.878 Z-	5.082	N3220 X26.431 Y4.185
N1910 X55.34 Y22.001	N2320 X-14.15 Y-45.443	4.843	N2830 G2 X- 22.703 Y59.273	N3230 X25.018 Y1.681
N1920 X56.769 Y19.51	I3.849 J-3.788	N2560 X-34.13 Y-73.664 Z-	5.093	N3240 X23.384 Y-.76
N1930 X57.91 Y17.03	N2330 X-14.162 Y-45.485	N2570 G2 X- 48.051 Y- 78.581 I-	N2830 G2 X- 19.508 Y55.863	N3250 X21.546 Y-3.12
N1940 X58.784 Y14.527	I5.193 J-1.479	N2580 X-51.137 Y-78.365 I0.	I-19.308 J- 18.873	N3260 X19.525 Y-5.382
N1950 X59.404 Y11.981	N2340 G2 X- 15.01 Y-48.048	J22.167	N2840 X-21.701 Y58.3 I-18.306	N3270 X17.346 Y-7.532
N1960 X59.775 Y9.373	I-26.026	N2590 G1 X- 99.27 Y-71.598	J-19.846	N3280 X15.038 Y-9.56
N1970 X59.894 Y6.718	J7.186	N2600 G2 X- 114.357 Y- 62.34 I3.086	N2850 G1 X- 21.296 Y57.885	N3290 X12.634 Y-11.462
N1980 X59.757 Y4.01	N2350 X-16.109 Y-50.512 I-	J21.95	N2860 G2 X- 19.508 Y55.863	N3300 X10.166 Y-13.243
N1990 X59.362 Y1.283	25.178 J9.749	N2610 X- 121.468 Y- 39.941 I32.363	I-19.308 J- 18.873	N3310 X7.663 Y-14.913
N2000 X58.709 Y-1.451	N2360 X-16.679 Y-51.577 I-	J22.602	21.096 J- 16.851	N3320 X5.179 Y-16.471
N2010 X57.802 Y-4.17	24.079 J12.213	N2620 G1 X- 121.907	N2870 X-17.931 Y53.673 I-	N3330 X2.76 Y- 17.933
N2020 X56.649 Y-6.847	N2370 G1 X- 17.047 Y-52.23	Y45.249	21.096 J- 16.851	N3340 X.434 Y- 19.321
N2030 X55.266 Y-9.457	N2380 G2 X- 18.491 Y-54.51	N2630 G2 X- 121.908	22.673 J- 14.661	N3350 X-1.779 Y-20.653
N2040 X53.666 Y-11.984	I-23.51	Y45.453	17.237 Y52.681	N3360 X-3.868 Y-21.948
N2050 X51.867 Y-14.411	J13.279	I39.474 J.204	N2900 X-16.415 Y51.67	N3370 X-5.827 Y-23.217
N2060 X49.891 Y-16.725	N2390 X-20.154 Y-56.635 I-	N2640 X-118.04 Y62.493	N2910 X-15.444 Y50.626	N3380 X-7.653 Y-24.472
N2070 X47.757 Y-18.916	22.066 J15.559	J13.279	N2920 X-14.328 Y49.566	N3390 X-9.345 Y-25.721
N2080 X45.486 Y-20.979	N2400 X-21.357 Y-57.935 I-	N2650 X-99.382 Y75.023	N2930 X-13.073 Y48.505	N3400 X-10.905 Y-26.968
N2090 X43.098 Y-22.91	20.403 J17.684	I19.946 J- 9.545	N2940 X-11.683 Y47.454	N3410 X-11.019 Y-27.064
N2100 X40.611 Y-24.711	N2410 G1 X- 21.898 Y-	N2660 G1 X- 50.9 Y77.853	N2950 X-10.168 Y46.422	N3420 G3 X- 12.579 Y-
N2110 X38.04 Y-26.382	58.482	N2670 G2 X- 49.611 Y77.891	N2960 X-8.531 Y45.417	29.234 I3.469 J-4.138
N2120 X35.402 Y-27.929	N2420 G2 X- 23.889 Y-	I1.289 J- 22.075	N2970 X-6.773 Y44.437	N3430 X-12.95 Y-31.202
N2130 X32.709 Y-29.356	60.304 I-	N2680 X-37.303 Y74.149 I0. J-	N2980 X-4.887 Y43.478	I5.029 J-1.968
N2140 X29.973 Y-30.67	19.199 J18.984	22.113	N2990 X-2.862 Y42.53	N3440 G1 Y- 33.902
N2150 X27.202 Y-31.876	N2430 G1 X- 24.451 Y-	N2690 G1 X- 36.337 Y73.464	N3000 X-.67 Y41.57	N3450 Y-36.602
N2160 X24.406 Y-32.982	Y-61.328 Z-	Z-4.861 F1623.	N3010 X1.673 Y40.589	N3460 Y-37.003
	5.071	N2700 X-35.409 Y72.728 Z-	N3020 X4.173 Y39.557	N3470 G2 X- 13.015 Y-
	5.06	4.878	N3030 X6.782 Y38.463	
	5.049	4.878	N3040 X9.456 Y37.291	
	5.038	4.913	N3050 X12.153 Y36.028	
		4.931	N3060 X14.845 Y34.661	

38.866 I-27.	N3740 G1 X-	N4050 X-5.908	N4470 X-8.056	N4750 X-17.253
J0.	7.605 Y80.863	Y35.348	Y-46.749 Z-	Y53.267 Z-
N3480 G1 X-	N3750 G3 X-	N4060 X-5.006	4.926	5.056
13.052 Y-	15.654 Y84.389	Y33.798	N4480 X-7.279	N4760 X-16.996
39.407	I-8.049 J-	N4070 X-4.176	Y-47.282 Z-	Y52.468 Z-
N3490 G2 X-	7.424	Y31.975	4.912	5.068
13.373 Y-	N3760 X-26.604	N4080 X-3.488	N4490 X-6.463	N4770 X-16.684
42.087 I-	Y73.439 I0. J-	Y29.862	Y-47.753 Z-	Y51.687 Z-
26.936 J1.863	10.95	N4090 X-3.024	4.899	5.081
N3500 X-13.893	N3770 X-26.564	Y27.473	N4500 X-5.613	N4780 X-16.319
Y-44.477 I-	Y72.511 I10.95	N4100 X-2.872	Y-48.159 Z-	Y50.931 Z-
26.615 J4.543	J0.	Y24.856	4.885	5.093
N3510 G1 X-	N3780 G1 X-	N4110 X-3.09	N4510 X-4.734	N4790 G2 X-
14.094 Y-	26.478 Y71.784	Y22.086	Y-48.499 Z-	14.709 Y47.218
45.232	Z-4.854 F1623.	N4120 X-3.552	4.871	I-23.897 J-
N3520 G2 X-	N3790 X-26.343	Y19.223	N4520 X-3.831	12.568
14.916 Y-	Y71.064 Z-	N4130 X-4.249	Y-48.769 Z-	N4800 X-14.239
47.802 I-	4.864	Y16.317	4.857	Y45.729 I-
26.094 J6.933	N3800 X-26.16	N4140 X-5.161	N4530 X-2.91	25.506 J-8.855
N3530 G1 X-	Y70.355 Z-	Y13.413	Y-48.968 Z-	N4810 G1 X-
15.194 Y-	4.875	N4150 X-6.26	4.843	14.018 Y44.947
48.631 Z-5.08	N3810 X-25.931	Y10.547	N4540 G3 X-.8	N4820 G2 X-
N3540 X-15.412	Y69.66 Z-4.886	N4160 X-7.51	Y-49.153 I2.11	13.412 Y42.317
Y-49.477 Z-	N3820 X-24.041	Y7.747	J11.965 F2500.	I-25.975 J-
5.067	Y64.52 Z-4.967	N4170 X-8.855	N4550 X11.35	7.367
N3550 X-15.568	N3830 X-22.639	Y5.043	Y-37.003 I0.	N4830 X-13.072
Y-50.337 Z-	Y60.708 Z-	N4180 X-10.24	J12.15	Y39.64 I-
5.055	5.027	Y2.45	N4560 X11.334	26.581 J-4.737
N3560 X-15.662	N3840 X-22.359	N4190 X-11.619	Y-36.385 I-	N4840 X-13.067
Y-51.206 Z-	Y60.013 Z-	Y-.027	12.15 J0.	Y39.577 I-
5.042	5.038	N4200 X-12.252	N4570 G1	26.921 J-2.06
N3570 X-15.694	N3850 X-22.036	Y-1.146	X6.569 Y57.204	N4850 G1 X-
Y-52.079 Z-	Y59.336 Z-	N4210 G3 X-	N4580 G3 X-	13.024 Y38.999
5.029	5.049	12.95 Y-3.725	5.565 Y68.736	N4860 G2 X-
N3580 X-15.693	N3860 X-21.673	14.702 J-2.656	I-12.134 J-	12.95 Y37.003
Y-52.206 Z-	Y58.681 Z-5.06	N4220 G1 Y-	.618	I-26.926 J-
5.027	N3870 X-21.269	3.802	N4590 X-13.002	1.996
N3590 X-15.651	Y58.049 Z-	N4230 Y-6.502	Y66.194 I0. J-	N4870 G1
Y-56.193 Z-	5.071	N4240 Y-9.202	12.15	Y34.303
4.968	N3880 X-20.828	N4250 Y-11.902	N4600 G1 X-	N4880 Y31.603
N3600 X-15.606	Y57.444 Z-	N4260 Y-14.602	13.71 Y65.602	N4890 Y28.903
Y-57.134 Z-	5.082	N4270 Y-17.302	Z-4.857 F1623.	N4900 Y26.203
4.954	N3890 X-20.35	N4280 Y-20.002	N4610 X-14.371	N4910 Y23.503
N3610 X-15.491	Y56.866 Z-	N4290 Y-22.702	Y64.957 Z-4.87	N4920 Y20.803
Y-58.069 Z-	5.093	N4300 Y-25.402	N4620 X-14.981	N4930 Y18.103
4.94	N3900 G2 X-	N4310 Y-28.102	Y64.264 Z-	N4940 Y15.403
N3620 X-15.308	17.909 Y53.639	N4320 Y-30.802	4.884	N4950 Y12.703
Y-58.993 Z-	I-20.254 J-	N4330 Y-33.502	N4630 X-15.537	N4960 Y10.003
4.926	17.854	N4340 Y-36.202	Y63.527 Z-	N4970 Y7.303
N3630 X-15.056	N3910 X-17.441	N4350 Y-37.003	4.897	N4980 Y4.603
Y-59.9 Z-4.912	Y52.885 I-	N4360 X-12.913	N4640 X-16.036	N4990 Y1.903
N3640 X-14.737	22.695 J-	Y-37.945 Z-	Y62.75 Z-4.911	N5000 Y-.797
Y-60.787 Z-	14.627	5.079	N4650 X-16.473	N5010 Y-3.497
4.899	N3920 G1 X-	N4370 X-12.804	Y61.937 Z-	N5020 Y-6.197
N3650 X-14.354	17.052 Y52.236	Y-38.88 Z-	4.925	N5030 Y-8.897
Y-61.647 Z-	N3930 G2 X-	5.065	N4660 X-16.848	N5040 X-12.927
4.885	15.782 Y49.854	N4380 X-12.623	Y61.093 Z-	Y-9.646 Z-
N3660 X-13.907	I-23.163 J-	Y-39.805 Z-	4.938	5.077
Y-62.477 Z-	13.873	5.051	N4670 X-17.158	N5050 X-12.858
4.871	N3940 X-14.757	N4390 X-12.37	Y60.223 Z-	Y-10.393 Z-
N3670 X-13.4	Y47.358 I-	Y-40.713 Z-	4.952	5.06
Y-63.271 Z-	24.433 J-	5.037	N4680 X-17.401	N5060 X-12.742
4.857	11.491	N4400 X-12.048	Y59.333 Z-	Y-11.133 Z-
N3680 X-12.836	N3950 X-14.709	Y-41.598 Z-	4.965	5.043
Y-64.025 Z-	Y47.218 I-	5.024	N4690 X-17.575	N5070 X-12.582
4.843	25.458 J-8.995	N4410 X-11.658	Y58.426 Z-	Y-11.865 Z-
N3690 G3 X-	N3960 G1 X-	Y-42.456 Z-	4.979	5.027
2.979 Y-68.733	14.323 Y46.262	5.01	N4700 X-17.68	N5080 X-12.376
I9.857 J7.965	N3970 X-13.809	N4420 X-11.202	Y57.509 Z-	Y-12.586 Z-
F2500.	Y45.216	Y-43.281 Z-	4.992	5.01
N3700 X8.649	N3980 X-13.154	4.996	N4710 X-17.715	N5090 X-12.127
Y-61.099 I0.	Y44.092	N4430 X-10.685	Y56.586 Z-	Y-13.293 Z-
J12.673	N3990 X-12.348	Y-44.068 Z-	5.006	4.994
N3710 G1	Y42.899	4.982	N4720 X-17.686	N5100 X-9.659
X27.734 Y-	N4000 X-11.383	N4440 X-10.108	Y55.746 Z-	Y-19.655 Z-
17.05	Y41.643	Y-44.813 Z-	5.018	4.843
N3720 G3	N4010 X-10.251	4.968	N4730 X-17.599	N5110 G0 Z6.
X33.331 Y9.946	Y40.328	N4450 X-9.474	Y54.911 Z-	N5120 X-
I-62.307	N4020 X-8.947	Y-45.511 Z-	5.031	141.873 Y-
J26.996	Y38.955	4.954	N4740 X-17.454	88.095
N3730 X15.342	N4030 X-7.782	N4460 X-8.789	Y54.083 Z-	N5130 Z-2.093
Y55.985 I-	Y37.781	Y-46.157 Z-	5.043	N5140 G1 Z-
67.904 J0.	N4040 X-6.839	4.94		7.39 F1000.
	Y36.658			

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N5150 X-144.17	N5440 X-	N5740 X-	N6100 X-51.698	N6520 X60.154
Y-82.886 Z-	174.191 Y-	148.814	Y101.004	Y98.624
7.53 F1623.	21.168	Y65.508	N6110 X-49.014	N6530 X62.847
N5160 X-	N5450 X-	N5750 X-	Y100.983	Y98.61
144.493 Y-	174.608 Y-	146.724	N6120 X-46.336	N6540 X65.54
82.21 Z-7.548	18.101	Y67.796	Y100.952	Y98.598
N5170 X-	N5460 X-	N5760 X-	N6130 X-43.665	N6550 X68.234
144.858 Y-	174.938 Y-	144.569	Y100.913	Y98.587
81.555 Z-7.567	15.021	Y70.021	N6140 X-40.998	N6560 X70.929
N5180 X-	N5470 X-175.18	N5770 X-142.35	Y100.867	Y98.578
145.262 Y-	Y-11.929	Y72.179	N6150 X-38.336	N6570 X73.624
80.924 Z-7.585	N5480 X-	N5780 X-	Y100.815	Y98.569
N5190 X-	175.333 Y-8.83	140.069 Y74.27	N6160 X-35.676	N6580 X76.32
145.704 Y-	N5490 X-	N5790 X-	Y100.759	Y98.562
80.319 Z-7.603	175.398 Y-	137.728 Y76.29	N6170 X-33.019	N6590 X79.016
N5200 X-	5.725	N5800 X-135.33	Y100.699	Y98.555
146.183 Y-	N5500 X-	Y78.239	N6180 X-30.365	N6600 X81.713
79.742 Z-7.622	175.373 Y-	N5810 X-	Y100.635	Y98.549
N5210 X-	2.618	132.876	N6190 X-27.711	N6610 X84.41
146.696 Y-	N5510 X-	Y80.113	Y100.569	Y98.544
79.196 Z-7.64	175.259 Y.489	N5820 X-	N6200 X-25.059	N6620 X87.107
N5220 X-	N5520 X-	130.369	Y100.501	Y98.539
147.279 Y-	175.055 Y3.593	Y81.913	N6210 X-22.409	N6630 X89.805
78.47	N5530 X-	N5830 X-127.81	Y100.431	Y98.535
N5230 X-	174.761 Y6.691	Y83.636	N6220 X-19.758	N6640 X92.503
148.606 Y-	N5540 X-	N5840 X-	Y100.359	Y98.531
76.872	174.378 Y9.779	125.204	N6230 X-17.109	N6650 X94.732
N5240 X-	N5550 X-	Y85.281	Y100.285	Y98.516
150.171 Y-	173.906	N5850 X-	N6240 X-14.46	N6660 X96.488
74.967	Y12.856	122.551	Y100.211	Y98.337
N5250 X-	N5560 X-	Y86.846	N6250 X-11.811	N6670 X98.473
151.825 Y-	173.344	N5860 X-	Y100.136	Y97.931
72.881	Y15.919	119.854 Y88.33	N6260 X-9.162	N6680 X100.626
N5260 X-	N5570 X-	N5870 X-	Y100.06	Y97.229
153.496 Y-	172.693	117.116	N6270 X-6.514	N6690 X102.868
70.679	Y18.964	Y89.731	Y99.983	Y96.213
N5270 X-	N5580 X-	N5880 X-	N6280 X-3.865	N6700 X105.142
155.155 Y-	171.954	114.339	Y99.906	Y94.894
68.384	Y21.989	Y91.049	N6290 X-1.216	N6710 X107.393
N5280 X-	N5590 X-	N5890 X-	Y99.828	Y93.29
156.784 Y-	171.128	111.527	N6300 X1.433	N6720 X109.575
66.009	Y24.991	Y92.282	Y99.75	Y91.425
N5290 X-	N5600 X-	N5900 X-108.68	N6310 X4.082	N6730 X111.653
158.372 Y-	170.213	Y93.429	Y99.671	Y89.33
63.563	Y27.968	N5910 X-	N6320 X6.731	N6740 X113.602
N5300 X-	N5610 X-	105.803 Y94.49	Y99.592	Y87.041
159.911 Y-	169.213	N5920 X-	N6330 X9.38	N6750 X115.406
61.052	Y30.917	102.897	Y99.513	Y84.591
N5310 X-	N5620 X-	Y95.462	N6340 X12.03	N6760 X117.06
161.394 Y-	168.126	N5930 X-99.966	Y99.434	Y82.012
58.482	Y33.834	Y96.347	N6350 X14.68	N6770 X118.565
N5320 X-	N5630 X-	N5940 X-97.012	Y99.355	Y79.335
162.818 Y-	166.955	Y97.142	N6360 X17.33	N6780 X119.925
55.856	Y36.718	N5950 X-94.037	Y99.275	Y76.583
N5330 X-	N5640 X-165.7	Y97.847	N6370 X19.981	N6790 X121.148
164.177 Y-	Y39.566	N5960 X-91.045	Y99.196	Y73.777
53.178	N5650 X-	Y98.462	N6380 X22.636	N6800 X122.242
N5340 X-165.47	164.363	N5970 X-88.06	Y99.12	Y70.934
Y-50.451	Y42.375	Y98.984	N6390 X25.297	N6810 X123.22
N5350 X-	N5660 X-	N5980 X-85.11	Y99.053	Y68.067
166.692 Y-	162.943	Y99.419	N6400 X27.963	N6820 X124.091
47.679	Y45.143	N5990 X-82.194	Y98.993	Y65.187
N5360 X-	N5670 X-	Y99.78	N6410 X30.632	N6830 X124.865
167.841 Y-	161.443	N6000 X-79.31	Y98.939	Y62.3
44.864	Y47.867	Y100.077	N6420 X33.305	N6840 X125.553
N5370 X-	N5680 X-	N6010 X-76.456	Y98.892	Y59.414
168.916 Y-	159.864	Y100.319	N6430 X35.981	N6850 X126.164
42.01	Y50.545	N6020 X-73.628	Y98.849	Y56.532
N5380 X-	N5690 X-	Y100.515	N6440 X38.659	N6860 X126.706
169.913 Y-	158.208	N6030 X-70.825	Y98.811	Y53.657
39.119	Y53.174	Y100.67	N6450 X41.34	N6870 X127.187
N5390 X-	N5700 X-	N6040 X-68.044	Y98.777	Y50.791
170.832 Y-	156.475	Y100.79	N6460 X44.023	N6880 X127.613
36.195	Y55.752	N6050 X-65.283	Y98.747	Y47.935
N5400 X-171.67	N5710 X-	Y100.881	N6470 X46.708	N6890 X127.991
Y-33.24	154.668	N6060 X-62.538	Y98.72	Y45.09
N5410 X-	Y58.277	Y100.945	N6480 X49.394	N6900 X128.327
172.426 Y-	N5720 X-	N6070 X-59.81	Y98.696	Y42.255
30.257	152.787	Y100.987	N6490 X52.082	N6910 X128.624
N5420 X-173.1	Y60.745	N6080 X-57.094	Y98.675	Y39.431
Y-27.249	N5730 X-	Y101.009	N6500 X54.772	N6920 X128.888
N5430 X-	150.835	N6090 X-54.391	Y98.656	Y36.617
173.688 Y-	Y63.157	Y101.014	N6510 X57.462	N6930 X129.123
24.218			Y98.639	Y33.814

N6940 X129.331	N7360 X122.674	N7780 X7.107	N8190 X-	N8480 X-
Y31.02	Y-78.396	Y-98.349	106.699 Y-	157.193 Y-
N6950 X129.515	N7370 X120.452	N7790 X4.398	87.386	20.362
Y28.234	Y-80.394	Y-98.365	N8200 X-	N8490 X-
N6960 X129.679	N7380 X118.058	N7800 X1.69 Y-	109.378 Y-	157.646 Y-
Y25.456	Y-82.253	98.38	86.071	17.389
N6970 X129.825	N7390 X115.524	N7810 X-1.017	N8210 X-	N8500 X-158.
Y22.686	Y-83.964	Y-98.393	112.019 Y-	Y-14.403
N6980 X129.955	N7400 X112.88	N7820 X-3.724	84.678	N8510 X-
Y19.923	Y-85.524	Y-98.405	N8220 X-	158.257 Y-
N6990 X130.07	N7410 X110.153	N7830 X-6.429	114.645 Y-	11.406
Y17.166	Y-86.936	Y-98.415	83.183	N8520 X-
N7000 X130.172	N7420 X107.365	N7840 X-9.134	N8230 X-117.22	158.414 Y-
Y14.415	Y-88.209	Y-98.424	Y-81.586	8.402
N7010 X130.263	N7430 X104.534	N7850 X-11.839	N8240 X-	N8530 X-
Y11.669	Y-89.35	Y-98.433	119.729 Y-79.9	158.471 Y-
N7020 X130.344	N7440 X101.674	N7860 X-14.543	N8250 X-	5.393
Y8.928	Y-90.37	Y-98.44	122.173 Y-	N8540 X-
N7030 X130.416	N7450 X98.798	N7870 X-17.246	78.129	158.429 Y-
Y6.191	Y-91.279	Y-98.447	N8260 X-	2.384
N7040 X130.48	N7460 X95.913	N7880 X-19.949	124.552 Y-	N8550 X-
Y3.458	Y-92.088	Y-98.452	76.277	158.287 Y.622
N7050 X130.537	N7470 X93.026	N7890 X-22.652	N8270 X-	N8560 X-
Y.728	Y-92.807	Y-98.458	126.866 Y-	158.046 Y3.622
N7060 X130.588	N7480 X90.142	N7900 X-25.355	74.346	N8570 X-
Y-1.998	Y-93.446	Y-98.462	N8280 X-	157.704 Y6.611
N7070 X130.633	N7490 X87.265	N7910 X-28.057	129.112 Y-	N8580 X-
Y-4.722	Y-94.012	Y-98.466	72.338	157.264 Y9.589
N7080 X130.673	N7500 X84.395	N7920 X-30.759	N8290 X-	N8590 X-
Y-7.443	Y-94.515	Y-98.47	131.288 Y-	156.723
N7090 X130.709	N7510 X81.535	N7930 X-33.461	70.258	Y12.552
Y-10.162	Y-94.961	Y-98.473	N8300 X-	N8600 X-
N7100 X130.741	N7520 X78.686	N7940 X-36.162	133.393 Y-	156.084
Y-12.879	Y-95.356	Y-98.476	68.107	Y15.494
N7110 X130.769	N7530 X75.847	N7950 X-38.864	N8310 X-	N8610 X-
Y-15.594	Y-95.707	Y-98.479	135.424 Y-	155.347
N7120 X130.795	N7540 X73.019	N7960 X-41.565	65.888	Y18.414
Y-18.308	Y-96.018	Y-98.481	N8320 X-	N8620 X-
N7130 X130.817	N7550 X70.202	N7970 X-44.266	137.381 Y-	154.512
Y-21.02	Y-96.294	Y-98.483	63.603	Y21.307
N7140 X130.837	N7560 X67.395	N7980 X-46.992	N8330 X-	N8630 X-153.58
Y-23.73	Y-96.539	N7990 X-49.756	139.262 Y-	Y24.171
N7150 X130.855	N7570 X64.597	Y-98.473	61.255	N8640 X-
Y-26.44	Y-96.756	N8000 X-52.553	N8340 X-	152.552
N7160 X130.871	N7580 X61.808	Y-98.444	141.064 Y-	Y27.001
Y-29.149	Y-96.949	N8010 X-55.377	58.847	N8650 X-
N7170 X130.885	N7590 X59.028	Y-98.388	N8350 X-	151.428
Y-31.856	Y-97.121	N8020 X-58.224	142.785 Y-	Y29.798
N7180 X130.897	N7600 X56.255	Y-98.298	56.381	N8660 X-150.21
Y-34.563	Y-97.273	N8030 X-61.089	N8360 X-	Y32.554
N7190 X130.909	N7610 X53.489	Y-98.167	144.425 Y-	N8670 X-
Y-37.269	Y-97.408	N8040 X-63.969	53.861	148.899
N7200 X130.919	N7620 X50.73	Y-97.99	N8370 X-145.98	Y35.268
Y-39.974	Y-97.529	N8050 X-66.86	Y-51.29	N8680 X-
N7210 X130.928	N7630 X47.977	Y-97.761	N8380 X-	147.497
Y-42.679	Y-97.636	N8060 X-69.759	147.452 Y-	Y37.936
N7220 X130.935	N7640 X45.229	Y-97.476	48.668	N8690 X-
Y-45.384	Y-97.731	N8070 X-72.662	N8390 X-	146.005
N7230 X130.942	N7650 X42.486	Y-97.13	148.837 Y-	Y40.554
Y-48.087	Y-97.815	N8080 X-75.566	45.999	N8700 X-
N7240 X130.949	N7660 X39.748	Y-96.721	N8400 X-	144.425 Y43.12
Y-50.791	Y-97.891	N8090 X-78.467	150.134 Y-	N8710 X-
N7250 X130.954	N7670 X37.013	Y-96.244	43.286	142.756
Y-53.494	Y-97.957	N8100 X-81.364	N8410 X-	Y45.632
N7260 X130.959	N7680 X34.282	Y-95.698	151.341 Y-	N8720 X-
Y-56.197	Y-98.017	N8110 X-84.253	40.533	141.002
N7270 X130.964	N7690 X31.555	Y-95.08	N8420 X-	Y48.086
Y-58.899	Y-98.07	N8120 X-87.13	152.458 Y-	N8730 X-
N7280 X130.968	N7700 X28.83	Y-94.389	37.742	139.165
Y-61.603	Y-98.117	N8130 X-89.992	N8430 X-	Y50.478
N7290 X130.874	N7710 X26.108	Y-93.622	153.483 Y-	N8740 X-
Y-63.256	Y-98.159	N8140 X-92.838	34.916	137.247
N7300 X130.585	N7720 X23.388	Y-92.778	N8440 X-	Y52.805
Y-65.159	Y-98.196	N8150 X-95.663	154.415 Y-	N8750 X-135.25
N7310 X130.024	N7730 X20.671	Y-91.857	32.058	Y55.065
Y-67.268	Y-98.23	N8160 X-98.465	N8450 X-	N8760 X-
N7320 X129.149	N7740 X17.955	Y-90.858	155.253 Y-	133.176
Y-69.505	Y-98.259	N8170 X-101.24	29.17	Y57.255
N7330 X127.956	N7750 X15.241	Y-89.779	N8460 X-	N8770 X-
Y-71.792	Y-98.286	N8180 X-	155.996 Y-	131.025
N7340 X126.459	N7760 X12.528	103.986 Y-	26.256	Y59.373
Y-74.063	Y-98.309	88.622	N8470 X-	N8780 X-
N7350 X124.687	N7770 X9.817		156.643 Y-	128.803
Y-76.276	Y-98.33		23.319	Y61.415

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N8790 X-	N9160 X-24.513	N9580 X88.794	N100 X117.101	N520 X17.046
126.511	Y86.466	Y77.903	Y-35.917	Y-84.125
Y63.378	N9170 X-21.781	N9590 X91.135	N110 X116.976	N530 X14.307
N8800 X-	Y86.445	Y75.999	Y-38.771	Y-84.213
124.152	N9180 X-19.053	N9600 X93.354	N120 X116.605	N540 X11.571
Y65.261	Y86.418	Y73.92	Y-41.563	Y-84.291
N8810 X-	N9190 X-16.328	N9610 X95.443	N130 X115.986	N550 X8.838 Y-
121.728	Y86.384	Y71.688	Y-44.32	84.362
Y67.059	N9200 X-13.605	N9620 X97.397	N140 X115.12	N560 X6.109 Y-
N8820 X-	Y86.346	Y69.324	Y-47.031	84.426
119.242	N9210 X-10.885	N9630 X99.214	N150 X114.01	N570 X3.382 Y-
Y68.773	Y86.303	Y66.848	Y-49.694	84.483
N8830 X-	N9220 X-8.167	N9640 X100.895	N160 X112.663	N580 X.657 Y-
116.697	Y86.255	Y64.279	Y-52.291	84.535
Y70.399	N9230 X-5.451	N9650 X102.444	N170 X111.093	N590 X-2.065
N8840 X-	Y86.204	Y61.633	Y-54.804	Y-84.582
114.096	N9240 X-2.738	N9660 X103.865	N180 X109.316	N600 X-4.785
Y71.935	Y86.15	Y58.926	Y-57.215	Y-84.624
N8850 X-	N9250 X-.029	N9670 X105.165	N190 X107.35	N610 X-7.503
111.443	Y86.094	Y56.172	Y-59.513	Y-84.661
Y73.377	N9260 X2.674	N9680 X106.35	N200 X105.216	N620 X-10.219
N8860 X-	Y86.036	Y53.381	Y-61.686	Y-84.695
108.742	N9270 X5.373	N9690 X107.429	N210 X102.935	N630 X-12.934
Y74.725	Y85.978	Y50.563	Y-63.726	Y-84.726
N8870 X-106.	N9280 X8.07	N9700 X108.408	N220 X100.529	N640 X-15.647
Y75.977	Y85.92	Y47.727	Y-65.63	Y-84.753
N8880 X-	N9290 X10.763	N9710 X109.296	N230 X98.016	N650 X-18.359
103.222	Y85.863	Y44.879	Y-67.397	Y-84.778
Y77.135	N9300 X13.455	N9720 X110.1	N240 X95.416	N660 X-21.07
N8890 X-	Y85.808	Y42.024	Y-69.029	Y-84.801
100.416	N9310 X16.145	N9730 X110.827	N250 X92.746	N670 X-23.782
Y78.198	Y85.754	Y39.166	Y-70.53	Y-84.821
N8900 X-97.588	N9320 X18.834	N9740 X111.484	N260 X90.019	N680 X-26.497
Y79.171	Y85.703	Y36.308	Y-71.904	Y-84.838
N8910 X-94.742	N9330 X21.523	N9750 X112.078	N270 X87.249	N690 X-29.222
Y80.058	Y85.654	Y33.454	Y-73.16	Y-84.851
N8920 X-91.885	N9340 X24.211	N9760 X112.614	N280 X84.446	N700 X-31.958
Y80.862	Y85.607	Y30.604	Y-74.303	Y-84.857
N8930 X-89.02	N9350 X26.899	N9770 X113.097	N290 X81.62 Y-	N710 X-34.708
Y81.589	Y85.563	Y27.76	75.342	Y-84.854
N8940 X-86.15	N9360 X29.587	N9780 X113.533	N300 X78.778	N720 X-37.473
Y82.243	Y85.521	Y24.923	Y-76.285	Y-84.838
N8950 X-83.28	N9370 X32.275	N9790 X113.926	N310 X75.926	N730 X-40.254
Y82.83	Y85.482	Y22.094	Y-77.139	Y-84.806
N8960 X-80.411	N9380 X34.963	N9800 X114.28	N320 X73.069	N740 X-43.051
Y83.353	Y85.445	Y19.272	Y-77.912	Y-84.752
N8970 X-77.545	N9390 X37.652	N9810 X114.599	N330 X70.21 Y-	N750 X-45.865
Y83.819	Y85.41	Y16.458	78.611	Y-84.672
N8980 X-74.685	N9400 X40.341	N9820 X114.887	N340 X67.353	N760 X-48.694
Y84.231	Y85.377	Y13.652	Y-79.241	Y-84.563
N8990 X-71.831	N9410 X43.03	N9830 X115.146	N350 X64.5 Y-	N770 X-51.54
Y84.594	Y85.347	Y10.854	79.811	Y-84.417
N9000 X-68.986	N9420 X45.72	N9840 X115.38	N360 X61.652	N780 X-54.4 Y-
Y84.913	Y85.319	Y8.063	Y-80.325	84.232
N9010 X-66.149	N9430 X48.411	N9850 X115.591	N370 X58.811	N790 X-57.271
Y85.191	Y85.293	Y5.279	Y-80.788	Y-84.001
N9020 X-63.32	N9440 X51.102	N9860 X115.78	N380 X55.977	N800 X-60.15
Y85.432	Y85.269	Y2.502	Y-81.206	Y-83.721
N9030 X-60.5	N9450 X53.794	N9870 X115.951	N390 X53.15 Y-	N810 X-63.036
Y85.64	Y85.246	Y-.269	81.582	Y-83.387
N9040 X-57.689	N9460 X56.486	N9880 X116.105	N400 X50.331	N820 X-65.928
Y85.818	Y85.226	Y-3.034	Y-81.922	Y-82.993
N9050 X-54.887	N9470 X59.178	N9890 X116.244	N410 X47.521	N830 X-68.824
Y85.969	Y85.207	Y-5.794	Y-82.227	Y-82.537
N9060 X-52.093	N9480 X61.871	N9900 X116.369	N420 X44.718	N840 X-71.717
Y86.096	Y85.189	Y-8.548	Y-82.503	Y-82.014
N9070 X-49.307	N9490 X64.565	N9910 X116.482	N430 X41.922	N850 X-74.606
Y86.201	Y85.173	Y-11.298	Y-82.751	Y-81.421
N9080 X-46.528	N9500 X67.259	N9920 X116.583	N440 X39.134	N860 X-77.487
Y86.286	Y85.158	Y-14.043	Y-82.975	Y-80.754
N9090 X-43.757	N9510 X70.106	N9930 X116.675	N450 X36.353	N870 X-80.36
Y86.354	Y85.081	Y-16.784	Y-83.176	Y-80.01
N9100 X-40.991	N9520 X72.947	N9940 X116.757	N460 X33.578	N880 X-83.222
Y86.406	Y84.774	Y-19.521	Y-83.358	Y-79.185
N9110 X-38.232	N9530 X75.734	N9950 X116.831	N470 X30.81 Y-	N890 X-86.071
Y86.443	Y84.223	Y-22.255	83.521	Y-78.273
N9120 X-35.479	N9540 X78.477	N9960 X116.898	N480 X28.047	N900 X-88.899
Y86.468	Y83.428	Y-24.986	Y-83.668	Y-77.269
N9130 X-32.731	N9550 X81.167	N9970 X116.958	N490 X25.29 Y-	N910 X-91.702
Y86.482	Y82.39	Y-27.714	83.801	Y-76.169
N9140 X-29.987	N9560 X83.796	N9980 X117.012	N500 X22.538	N920 X-94.47
Y86.485	Y81.115	Y-30.44	Y-83.921	Y-74.974
N9150 X-27.248	N9570 X86.344	N9990 X117.061	N510 X19.79 Y-	N930 X-97.198
Y86.48	Y79.614	Y-33.163	84.028	Y-73.681

N940 X-99.884	N1250 X-	N1520 G2 X-	N1900 X-.837	N2320 X95.927
Y-72.29	139.615 Y6.596	101.404	Y72.368	Y24.215
N950 X-102.52	N1260 X-	Y63.903	N1910 X1.873	N2330 X96.661
Y-70.801	139.043 Y9.592	I14.743 J-	Y72.34	Y21.372
N960 X-105.1	N1270 X-	22.62	N1920 X4.58	N2340 X97.331
Y-69.216	138.345	N1530 X-98.948	Y72.31	Y18.529
N970 X-107.621	Y12.562	Y65.022	N1930 X7.285	N2350 X97.941
Y-67.534	N1280 X-	I12.411 J-	Y72.279	Y15.687
N980 X-110.08	137.521 Y15.5	23.979	N1940 X9.988	N2360 X98.496
Y-65.756	N1290 X-	N1540 X-97.981	Y72.246	Y12.849
N990 X-112.47	136.572	Y65.384 I9.955	N1950 X12.69	N2370 X99.001
Y-63.886	Y18.402	J-25.098	Y72.214	Y10.015
N1000 X-	N1300 X-	N1550 G1 X-	N1960 X15.39	N2380 X99.461
114.787 Y-	135.499	97.161 Y65.674	Y72.181	Y7.186
61.925	Y21.259	N1560 G2 X-	N1970 X18.089	N2390 X99.879
N1010 X-	N1310 X-	94.575 Y66.444	Y72.148	Y4.363
117.027 Y-	134.305	I8.988 J-25.46	N1980 X20.787	N2400 X100.258
59.875	Y24.068	N1570 X-91.981	Y72.115	Y1.546
N1020 X-	N1320 X-132.99	Y66.944 I6.402	N1990 X23.484	N2410 X100.604
119.187 Y-	Y26.825	J-26.23	Y72.083	Y-1.265
57.737	N1330 X-	N1580 G1 X-	N2000 X26.181	N2420 X100.917
N1030 X-	131.557	89.215 Y67.453	Y72.052	Y-4.068
121.263 Y-	Y29.522	N1590 X-86.439	N2010 X28.877	N2430 X101.202
55.517	N1340 X-	Y67.937	Y72.021	Y-6.866
N1040 X-	130.009	N1600 X-83.655	N2020 X31.572	N2440 X101.461
123.249 Y-	Y32.154	Y68.392	Y71.991	Y-9.657
53.216	N1350 X-	N1610 X-80.866	N2030 X34.267	N2450 X101.698
N1050 X-	128.346	Y68.82	Y71.962	Y-12.489
125.143 Y-	Y34.717	N1620 X-78.074	N2040 X36.962	N2460 X101.862
50.839	N1360 X-	Y69.218	Y71.935	Y-15.534
N1060 X-	126.573	N1630 X-75.279	N2050 X39.656	N2470 X101.84
126.943 Y-	Y37.206	Y69.587	Y71.908	Y-18.563
48.386	N1370 X-	N1640 X-72.484	N2060 X42.351	N2480 X101.602
N1070 X-	124.692	Y69.929	Y71.882	Y-21.536
128.643 Y-	Y39.614	N1650 X-69.689	N2070 X45.062	N2490 X101.137
45.864	N1380 X-	Y70.242	Y71.857	Y-24.457
N1080 X-	122.707	N1660 X-66.895	N2080 X48.025	N2500 X100.445
130.242 Y-	Y41.937	Y70.53	Y71.794	Y-27.325
43.276	N1390 X-	N1670 X-64.102	N2090 X51.081	N2510 X99.525
N1090 X-	120.621	Y70.791	Y71.592	Y-30.139
131.735 Y-	Y44.172	N1680 X-61.312	N2100 X54.094	N2520 X98.383
40.625	N1400 X-	Y71.028	Y71.201	Y-32.886
N1100 X-	118.439	N1690 X-58.525	N2110 X57.046	N2530 X97.028
133.121 Y-	Y46.311	Y71.243	Y70.604	Y-35.555
37.915	N1410 X-	N1700 X-55.741	N2120 X59.936	N2540 X95.47
N1110 X-	116.206 Y48.32	Y71.435	Y69.796	Y-38.134
134.397 Y-	N1420 G3 X-	N1710 X-52.96	N2130 X62.757	N2550 X93.722
35.151	114.943	Y71.606	Y68.777	Y-40.613
N1120 X-	Y50.008 I-3.61	N1720 X-50.183	N2140 X65.504	N2560 X91.8 Y-
135.559 Y-	J4.015	Y71.758	Y67.548	42.978
32.338	N1430 G2 X-	N1730 X-47.41	N2150 X68.163	N2570 X89.723
N1130 X-	113.66 Y52.382	Y71.892	Y66.121	Y-45.224
136.607 Y-	I24.363 J-	N1740 X-44.641	N2160 X70.727	N2580 X87.506
29.479	11.636	Y72.008	Y64.502	Y-47.343
N1140 X-	N1440 X-112.74	N1750 X-41.876	N2170 X73.186	N2590 X85.167
137.537 Y-	Y53.797 I23.08	Y72.109	Y62.705	Y-49.334
26.578	J-14.01	N1760 X-39.115	N2180 X75.531	N2600 X82.724
N1150 X-	N1450 G1 X-	Y72.195	Y60.744	Y-51.195
138.348 Y-	112.237	N1770 X-36.357	N2190 X77.756	N2610 X80.192
23.643	Y54.519	Y72.267	Y58.636	Y-52.927
N1160 X-	N1460 G2 X-	N1780 X-33.603	N2200 X79.855	N2620 X77.586
139.038 Y-	110.587	Y72.327	Y56.397	Y-54.534
20.676	Y56.654 I22.16	N1790 X-30.853	N2210 X81.827	N2630 X74.919
N1170 X-	J-15.425	Y72.375	Y54.041	Y-56.019
139.606 Y-	N1470 X-	N1800 X-28.106	N2220 X83.671	N2640 X72.202
17.683	108.915	Y72.411	Y51.587	Y-57.387
N1180 X-140.05	Y58.437 I20.51	N1810 X-25.363	N2230 X85.389	N2650 X69.447
Y-14.668	J-17.56	Y72.438	Y49.047	Y-58.645
N1190 X-	N1480 G1 X-	N1820 X-22.624	N2240 X86.983	N2660 X66.662
140.368 Y-	108.53 Y58.811	Y72.456	Y46.437	Y-59.799
11.637	N1490 G2 X-	N1830 X-19.888	N2250 X88.458	N2670 X63.855
N1200 X-	106.505	Y72.465	Y43.767	Y-60.856
140.561 Y-	Y60.595	N1840 X-17.156	N2260 X89.818	N2680 X61.031
8.596	I18.837 J-	Y72.467	Y41.051	Y-61.822
N1210 X-	19.343	N1850 X-14.427	N2270 X91.07	N2690 X58.197
140.627 Y-	N1500 X-	Y72.462	Y38.297	Y-62.704
5.547	104.435	N1860 X-11.703	N2280 X92.22	N2700 X55.355
N1220 X-	Y62.088	Y72.452	Y35.513	Y-63.508
140.565 Y-	I16.812 J-	N1870 X-8.981	N2290 X93.274	N2710 X52.511
2.499	21.127	Y72.437	Y32.708	Y-64.241
N1230 X-	N1510 G1 X-	N1880 X-6.264	N2300 X94.239	N2720 X49.666
140.376 Y.544	103.736	Y72.417	Y29.886	Y-64.909
N1240 X-140.06	Y62.544	N1890 X-3.549	N2310 X95.121	N2730 X46.823
Y3.577		Y72.394	Y27.054	Y-65.516

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N2740 X43.983	67.316 I-1.182	N3440 G1 X-	Y37.197 I27.	N4000 X-
Y-66.068	J-5.269	114.317 Y-	J0.	115.145
N2750 X41.147	N3160 G1 X-	51.191	N3780 G1 X-	Y63.674 Z-
Y-66.57	70.101	N3450 G2 X-	118.096	7.444
N2760 X38.318	N3170 X-72.801	115.516 Y-	Y37.817	N4010 X-
Y-67.027	N3180 X-75.501	48.773 I23.559	N3790 G2 X-	115.695
N2770 X35.494	N3190 X-78.201	J13.19	117.83 Y40.502	Y64.409 Z-7.43
Y-67.441	N3200 X-80.901	N3460 X-	I26.969 J-	N4020 X-
N2780 X32.677	N3210 X-83.601	116.468 Y-	1.311	116.299
Y-67.818	N3220 X-86.301	46.248 I24.758	N3800 X-117.64	Y65.101 Z-
N2790 X29.866	N3230 X-87.24	J10.772	Y41.612	7.417
Y-68.159	N3240 G2 X-	N3470 G1 X-	I26.703 J-	N4030 X-
N2800 X27.062	87.643 Y-	117.369 Y-	3.996	116.954
Y-68.47	67.313 I0.	43.632	N3810 G1 X-	Y65.745 Z-
N2810 X24.265	J27.	N3480 X-	117.448	7.403
Y-68.752	N3250 G1 X-	118.268 Y-	Y42.611	N4040 X-
N2820 X21.474	87.778 Y-	40.945	N3820 G2 X-	117.656
Y-69.007	67.311	N3490 X-	116.805	Y66.337 Z-7.39
N2830 X18.69	N3260 G2 X-	119.145 Y-	Y45.233	N4050 G3 X-
Y-69.24	90.471 Y-	38.201	I26.513 J-	125.139
N2840 X15.912	67.136 I.403	N3500 X-	5.106	Y68.916 I-
Y-69.45	J26.997	119.982 Y-	N3830 X-	7.484 J-9.572
N2850 X13.139	N3270 X-90.979	35.405	115.917	F2500.
Y-69.642	Y-67.072	N3510 X-	Y47.748 I25.87	N4060 X-
N2860 X10.372	I3.096 J26.822	120.764 Y-	J-7.728	137.289
Y-69.815	N3280 G1 X-	32.556	N3840 G1 X-	Y56.841 I0. J-
N2870 X7.61 Y-	91.851 Y-	N3520 X-	115.561	12.15
69.973	66.955	121.476 Y-	Y48.615	N4070 G1 X-
N2880 X4.853	N3290 G2 X-	29.667	N3850 G2 X-	137.981 Y-
Y-70.115	94.504 Y-	N3530 X-	114.414	55.321
N2890 X2.101	66.461 I3.604	122.107 Y-	Y51.058	N4080 Y-55.396
Y-70.245	J26.759	26.735	I24.981 J-	N4090 G3 X-
N2900 X-.647	N3300 X-97.095	N3540 X-	10.243	125.831 Y-
Y-70.363	Y-65.705	122.643 Y-	N3860 G1 X-	67.546 I12.15
N2910 X-3.392	I6.257 J26.265	23.769	114.042	J0.
Y-70.469	N3310 X-97.649	N3550 X-	Y51.821 Z-	N4100 X-
N2920 X-6.135	Y-65.506	123.077 Y-	7.627	118.625 Y-
Y-70.566	I8.848 J25.509	20.774	N3870 X-	65.178 I0.
N2930 X-8.877	N3320 G1 X-	N3560 X-	113.724	J12.15
Y-70.652	98.436 Y-	123.398 Y-	Y52.607 Z-	N4110 G1 X-
N2940 X-11.62	65.214	17.752	7.615	117.885 Y-
Y-70.73	N3330 G2 X-	N3570 X-	N3880 X-	64.587 Z-7.404
N2950 X-14.365	100.915 Y-	123.598 Y-	113.461	F1623.
Y-70.797	64.149 I9.402	14.714	Y53.415 Z-	N4120 X-
N2960 X-17.114	J25.31	N3580 X-123.67	7.602	117.193 Y-
Y-70.854	N3340 X-	Y-11.661	N3890 X-	63.94 Z-7.418
N2970 X-19.869	103.277 Y-	N3590 X-	113.256	N4130 X-
Y-70.899	62.842 I11.881	123.608 Y-	Y54.238 Z-7.59	116.553 Y-
N2980 X-22.632	J24.245	8.604	N3900 X-	63.241 Z-7.432
Y-70.932	N3350 X-	N3600 X-	113.108	N4140 X-115.97
N2990 X-25.403	104.058 Y-	123.407 Y-	Y55.074 Z-	Y-62.494 Z-
Y-70.949	62.338 I14.243	5.549	7.577	7.446
N3000 X-28.185	J22.938	N3610 X-	N3910 X-	N4150 X-
Y-70.948	N3360 G1 X-	123.062 Y-	113.019	115.447 Y-
N3010 X-30.978	104.749 Y-	2.503	Y55.918 Z-	61.704 Z-7.46
Y-70.928	61.875	N3620 X-	7.565	N4160 X-
N3020 X-33.783	N3370 G2 X-	122.568 Y.524	N3920 X-112.99	114.987 Y-
Y-70.884	106.914 Y-	N3630 X-	Y56.766 Z-	60.876 Z-7.474
N3030 X-36.6	60.263 I15.024	121.925 Y3.525	7.552	N4170 X-
Y-70.813	J22.434	N3640 X-	N3930 X-	114.593 Y-
N3040 X-39.432	N3380 X-	121.128 Y6.489	113.024	60.015 Z-7.488
Y-70.711	108.907 Y-	N3650 X-	Y57.684 Z-	N4180 X-
N3050 X-42.277	58.443 I17.189	120.178 Y9.409	7.538	114.268 Y-
Y-70.573	J20.822	N3660 X-	N3940 X-	59.125 Z-7.502
N3060 X-45.134	N3390 X-	119.075	113.128	N4190 X-
Y-70.397	109.619 Y-	Y12.275	Y58.596 Z-	114.012 Y-
N3070 X-48.002	57.695 I19.182	N3670 X-	7.525	58.213 Z-7.516
Y-70.176	J19.002	118.588	N3950 X-	N4200 X-
N3080 X-50.88	N3400 G1 X-	Y13.419	113.301	113.829 Y-
Y-69.906	110.201 Y-	N3680 G3 X-	Y59.498 Z-	57.283 Z-7.53
N3090 X-53.765	57.062	118.158	7.511	N4210 X-
Y-69.583	N3410 G2 X-	Y15.532 I-4.97	N3960 X-	113.718 Y-
N3100 X-56.663	111.924 Y-	J2.113	113.541	56.343 Z-7.544
Y-69.2	54.984 I19.895	N3690 G1	Y60.384 Z-	N4220 X-
N3110 X-59.567	J18.255	Y18.232	7.498	113.681 Y-
Y-68.752	N3420 X-	N3700 Y20.932	N3970 X-	55.396 Z-7.558
N3120 X-62.474	113.431 Y-	N3710 Y23.632	113.847 Y61.25	N4230 X-
Y-68.232	52.745 I21.618	N3720 Y26.332	Z-7.484	113.708 Y-
N3130 X-65.38	J16.177	N3730 Y29.032	N3980 X-	54.597 Z-7.57
Y-67.635	N3430 X-	N3740 Y31.732	114.218 Y62.09	N4240 X-
N3140 X-66.219	113.865 Y-	N3750 Y34.432	Z-7.471	113.786 Y-
Y-67.447	51.998 I23.125	N3760 Y35.886	N3990 X-	53.802 Z-7.581
N3150 G3 X-	J13.938	N3770 G2 X-	114.652 Y62.9	
67.401 Y-		118.126	Z-7.457	

N4250 X-	N4630 X-118.98	N4900 G1 X-	N5360 X23.853	N5780 X71.556
113.917 Y-	Y22.509 Z-	84.54	Y59.078	Y-30.847
53.014 Z-7.593	7.574	N4910 X-81.84	N5370 X26.624	N5790 X69.348
N4260 X-	N4640 X-	N4920 X-79.14	Y58.981	Y-32.978
114.099 Y-	121.449	N4930 X-76.44	N5380 X29.547	N5800 X67.021
52.236 Z-7.605	Y28.871 Z-	N4940 X-73.74	Y58.839	Y-34.982
N4270 X-	7.473	N4950 X-71.04	N5390 X32.572	N5810 X64.589
114.333 Y-	N4650 X-123.49	N4960 X-68.34	Y58.598	Y-36.858
51.472 Z-7.617	Y34.132 Z-7.39	N4970 X-65.64	N5400 X35.616	N5820 X62.07
N4280 X-	N4660 X-125.1	N4980 X-62.94	Y58.215	Y-38.607
114.615 Y-	Y38.28 F2500.	N4990 X-60.24	N5410 X38.631	N5830 X59.477
50.724 Z-7.628	N4670 G2 X-	N5000 X-57.54	Y57.661	Y-40.232
N4290 X-	126.478	N5010 X-54.84	N5420 X41.595	N5840 X56.824
114.947 Y-	Y45.642 I18.97	N5020 X-52.14	Y56.925	Y-41.738
49.997 Z-7.64	J7.362	N5030 X-49.44	N5430 X44.499	N5850 X54.121
N4300 G2 X-	N4680 X-	N5040 X-46.74	Y56.	Y-43.128
116.468 Y-	112.711	N5050 X-44.04	N5440 X47.333	N5860 X51.378
46.248 I24.188	Y64.896	N5060 X-43.899	Y54.885	Y-44.41
J11.996	I20.348 J0.	N5070 G2 X-	N5450 X50.087	N5870 X48.605
N4310 X-	N4690 G1 X-	43.19 Y67.306	Y53.584	Y-45.589
116.611 Y-	111.645	I0. J-27.	N5460 X52.754	N5880 X45.809
45.785 I25.71	Y65.228 Z-	N5080 G1 X-	Y52.102	Y-46.671
J8.247	7.406 F1623.	42.832 Y67.297	N5470 X55.325	N5890 X42.995
N4320 G1 X-	N4700 X-	N5090 G2 X-	Y50.449	Y-47.664
116.906 Y-	110.562	40.141 Y67.091	N5480 X57.793	N5900 X40.169
44.808	Y65.501 Z-	I-.709 J-	Y48.634	Y-48.573
N4330 G2 X-	7.423	26.991	N5490 X60.149	N5910 X37.335
117.554 Y-	N4710 X-	N5100 X-39.737	Y46.67	Y-49.405
42.188 I25.854	109.466	Y67.037 I-3.4	N5500 X62.39	N5920 X34.497
J7.785	Y65.714 Z-	J-26.785	Y44.571	Y-50.165
N4340 X-	7.439	N5110 G1 X-	N5510 X64.511	N5930 X31.658
117.937 Y-	N4720 X-	38.726 Y66.893	Y42.35	Y-50.859
39.516 I26.502	108.359	N5120 G2 X-	N5520 X66.511	N5940 X28.819
J5.165	Y65.867 Z-	36.076 Y66.38	Y40.02	Y-51.494
N4350 G1 Y-	7.455	I-3.804 J-	N5530 X68.39	N5950 X25.983
39.513	N4730 X-	26.731	Y37.596	Y-52.072
N4360 X-	107.246	N5130 X-33.496	N5540 X70.149	N5960 X23.151
118.042 Y-	Y65.959 Z-	Y65.606 I-	Y35.089	Y-52.6
38.377	7.472	6.454 J-26.218	N5550 X71.789	N5970 X20.323
N4370 G2 X-	N4740 X-106.13	N5140 G1 X-	Y32.513	Y-53.081
118.158 Y-	Y65.99 Z-7.488	31.451 Y64.971	N5560 X73.316	N5980 X17.5 Y-
35.886 I26.884	N4750 X-105.33	N5150 X-29.314	Y29.878	53.52
J2.491	Y65.974 Z-7.5	Y64.382	N5570 X74.732	N5990 X14.682
N4380 G1 Y-	N4760 X-	N5160 X-27.098	Y27.194	Y-53.92
33.186	104.531	Y63.839	N5580 X76.044	N6000 X11.87
N4390 Y-30.486	Y65.927 Z-	N5170 X-24.816	Y24.471	Y-54.285
N4400 Y-27.786	7.512	Y63.341	N5590 X77.255	N6010 X9.063
N4410 Y-25.086	N4770 X-	N5180 X-22.476	Y21.716	Y-54.616
N4420 Y-22.386	100.379 Y65.6	Y62.885	N5600 X78.373	N6020 X6.261
N4430 Y-19.686	Z-7.574	N5190 X-20.088	Y18.936	Y-54.918
N4440 Y-16.986	N4780 X-99.902	Y62.469	N5610 X79.402	N6030 X3.462
N4450 Y-14.286	Y65.572 Z-	N5200 X-17.659	Y16.137	Y-55.191
N4460 Y-11.586	7.581	Y62.09	N5620 X80.349	N6040 X.666 Y-
N4470 Y-8.886	N4790 X-99.424	N5210 X-15.194	Y13.323	55.439
N4480 Y-6.186	Y65.562 Z-	Y61.745	N5630 X81.22	N6050 X-2.128
N4490 Y-3.486	7.588	N5220 X-12.699	Y10.49	Y-55.661
N4500 Y-.786	N4800 X-98.716	Y61.43	N5640 X82.02	N6060 X-4.923
N4510 Y1.914	Y65.583 Z-	N5230 X-10.178	Y7.592	Y-55.859
N4520 Y4.614	7.598	Y61.145	N5650 X82.71	N6070 X-7.718
N4530 Y7.314	N4810 X-98.011	N5240 X-7.635	Y4.608	Y-56.033
N4540 Y10.014	Y65.645 Z-	N5250 X-5.073	N5660 X83.212	N6080 X-10.516
N4550 Y12.714	7.609	Y60.649	Y1.617	Y-56.184
N4560 Y15.414	N4820 X-97.31	N5260 X-2.494	N5670 X83.488	N6090 X-13.317
N4570 Y18.114	Y65.748 Z-	Y60.433	Y-1.343	Y-56.311
N4580 X-	7.619	N5270 X.099	N5680 X83.529	N6100 X-16.124
118.181	N4830 X-96.617	Y60.237	Y-4.279	Y-56.413
Y18.863 Z-	Y65.891 Z-7.63	N5280 X2.705	N5690 X83.332	N6110 X-17.798
7.629	N4840 X-95.933	Y60.058	Y-7.187	Y-56.461
N4590 X-118.25	Y66.075 Z-7.64	N5290 X5.321	N5700 X82.896	N6120 G3 X-
Y19.609 Z-	N4850 G2 X-	Y59.895	Y-10.072	20.367 Y-
7.618	91.981 Y66.944	N5300 X7.946	N5710 X82.223	57.196 I.155
N4600 X-	I7.76 J-25.861	Y59.746	Y-12.921	J-5.397
118.365 Y20.35	N4860 X-91.105	N5310 X10.58	N5720 X81.316	N6130 X-21.483
Z-7.607	Y67.054 I3.808	Y59.609	Y-15.729	Y-58.062
N4610 X-	J-26.73	N5320 X13.22	N5730 X80.184	I2.724 J-4.662
118.526	N4870 G1 X-	Y59.484	Y-18.474	N6140 G1 X-
Y21.081 Z-	90.171 Y67.156	N5330 X15.867	N5740 X78.835	21.898 Y-
7.596	N4880 G2 X-	Y59.37	Y-21.146	58.482
N4620 X-	87.477 Y67.315	N5340 X18.52	N5750 X77.282	N6150 G2 X-
118.731	I2.931 J-26.84	Y59.265	Y-23.732	23.889 Y-
Y21.802 Z-	N4890 X-87.24	N5350 X21.177	N5760 X75.54	60.304 I-
7.585	Y67.316 I.237	Y59.169	Y-26.217	19.199 J18.984
	J-26.999		N5770 X73.625	
			Y-28.591	

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N6160 X-26.052	72.972 I-7.228	N6770 G1 X-	N7170 X59.404	I-26.026
Y-61.918 I-	J34.16 F2500.	26.396 Y62.13	Y11.981	J7.186
17.208 J20.806	N6500 X-	N6780 G2 X-	N7180 X59.775	N7570 X-16.109
N6170 X-27.386	129.203 Y-	24.202 Y60.558	Y9.373	Y-50.512 I-
Y-62.757 I-	38.056 I0.	I-14.613 J-	N7190 X59.894	25.178 J9.749
15.045 J22.42	J34.916	22.703	Y6.718	N7580 X-16.679
N6180 G1 X-	N6510 X-	N6790 X-22.703	N7200 X59.757	Y-51.577 I-
28.113 Y-	129.113 Y-	Y59.273 I-	Y4.01	24.079 J12.213
63.186	35.552 I34.916	16.807 J-	N7210 X59.362	N7590 G1 X-
N6190 G2 X-	J0.	21.131	Y1.283	17.047 Y-52.23
30.504 Y-	N6520 G1 X-	N6800 G1 X-	N7220 X58.709	N7600 G2 X-
64.439 I-	123.591	21.446 Y58.352	Y-1.451	18.491 Y-54.51
13.712 J23.259	Y41.248	N6810 X-20.032	N7230 X57.802	I-23.51
N6200 X-33.007	N6530 G2 X-	Y57.435	Y-4.17	J13.279
Y-65.446 I-	88.765 Y73.66	N6820 X-18.473	N7240 X56.649	N7610 X-20.154
11.321 J24.512	I34.826 J-	Y56.536	Y-6.847	Y-56.635 I-
N6210 X-33.924	2.504	N6830 X-16.784	N7250 X55.266	22.066 J15.559
Y-65.745 I-	N6540 X-88.394	Y55.667	Y-9.457	N7620 X-21.357
8.818 J25.519	Y73.658 I0. J-	N6840 X-14.978	N7260 X53.666	Y-57.935 I-
N6220 G1 X-	34.916	Y54.834	Y-11.984	20.403 J17.684
34.855 Y-66.03	N6550 G1 X-	N6850 X-13.067	N7270 X51.867	N7630 G1 X-
N6230 G2 X-	54.351 Y73.296	Y54.043	Y-14.411	21.898 Y-
37.472 Y-66.69	N6560 G2 X-	N6860 X-11.063	N7280 X49.891	58.482
I-7.901	52.858 Y73.217	Y53.297	Y-16.725	N7640 G2 X-
J25.818	I-.186 J-	N6870 X-8.978	N7290 X47.757	23.889 Y-
N6240 X-40.141	17.529	Y52.598	Y-18.916	60.304 I-
Y-67.085 I-	N6570 G1 X-	N6880 X-6.82	N7300 X45.486	19.199 J18.984
5.284 J26.478	51.846 Y73.09	Y51.945	Y-20.979	N7650 G1 X-
N6250 X-40.308	Z-7.405 F1623.	N6890 X-4.599	N7310 X43.098	24.451 Y-
Y-67.1 I-2.615	N6580 X-50.844	Y51.338	Y-22.91	60.799 Z-7.629
J26.873	Y72.904 Z-7.42	N6900 X-2.322	N7320 X40.611	N7660 X-24.982
N6260 G1 X-	N6590 X-49.854	Y50.776	Y-24.711	Y-61.328 Z-
41.451 Y-	Y72.66 Z-7.435	N6910 X.003	N7330 X38.04	7.618
67.205	N6600 X-48.879	Y50.256	Y-26.382	N7670 X-25.48
N6270 G2 X-	Y72.36 Z-7.45	N6920 X2.373	N7340 X35.402	Y-61.889 Z-
43.899 Y-	N6610 X-47.924	Y49.776	Y-27.929	7.607
67.316 I-2.448	Y72.003 Z-	N6930 X4.786	N7350 X32.709	N7680 X-25.941
J26.889	7.465	Y49.333	Y-29.356	Y-62.479 Z-
N6280 G1 X-	N6620 X-46.991	N6940 X7.265	N7360 X29.973	7.596
46.599	Y71.591 Z-7.48	Y48.916	Y-30.67	N7690 X-26.366
N6290 X-49.299	N6630 X-46.084	N6950 X9.84	N7370 X27.202	Y-63.097 Z-
N6300 X-51.999	Y71.125 Z-	Y48.511	Y-31.876	7.585
N6310 X-54.699	7.495	N6960 X12.547	N7380 X24.406	N7700 X-26.752
N6320 X-57.399	N6640 X-45.206	Y48.091	Y-32.982	Y-63.739 Z-
N6330 X-60.099	Y70.607 Z-7.51	N6970 X15.388	N7390 X21.59	7.574
N6340 X-62.799	N6650 X-41.558	Y47.622	Y-33.993	N7710 X-28.702
N6350 X-65.499	Y68.314 Z-	N6980 X18.32	N7400 X18.759	Y-67.228 Z-
N6360 X-68.199	7.574	Y47.068	Y-34.918	7.515
N6370 X-70.899	N6660 X-40.912	N6990 X21.286	N7410 X15.918	N7720 X-29.321
N6380 X-71.648	Y67.935 Z-	Y46.399	Y-35.762	Y-68.268 Z-
Y-67.339 Z-	7.585	N7000 X24.241	N7420 X13.071	7.497
7.629	N6670 X-40.243	Y45.594	Y-36.53	N7730 X-29.996
N6390 X-72.394	Y67.596 Z-	N7010 X27.159	N7430 X10.218	Y-69.272 Z-
Y-67.408 Z-	7.596	Y44.639	Y-37.228	7.479
7.618	N6680 X-39.555	N7020 X30.02	N7440 X7.362	N7740 X-30.724
N6400 X-73.135	Y67.299 Z-	Y43.527	Y-37.861	Y-70.238 Z-
Y-67.523 Z-	7.607	N7030 X32.814	N7450 X4.544	7.461
7.607	N6690 X-38.849	Y42.255	Y-38.429	N7750 X-31.504
N6410 X-73.867	Y67.046 Z-	N7040 X35.529	N7460 X1.831	Y-71.163 Z-
Y-67.684 Z-	7.618	Y40.825	Y-38.946	7.444
7.596	N6700 X-38.13	N7050 X38.158	N7470 X-.762	N7760 X-32.334
N6420 X-74.587	Y66.836 Z-	Y39.24	Y-39.44	Y-72.044 Z-
Y-67.889 Z-	7.629	N7060 X40.692	N7480 X-3.226	7.426
7.585	N6710 X-37.399	Y37.506	Y-39.932	N7770 X-33.21
N6430 X-75.294	Y66.67 Z-7.64	N7070 X43.125	N7490 X-5.56	Y-72.878 Z-
Y-68.139 Z-	N6720 G2 X-	Y35.633	Y-40.439	7.408
7.574	33.496 Y65.606	N7080 X45.453	N7500 X-7.764	N7780 X-34.13
N6440 X-81.656	I-5.131 J-	Y33.628	Y-40.975	Y-73.664 Z-
Y-70.607 Z-	26.508	N7090 X47.67	N7510 X-9.839	7.39
7.473	N6730 G1 X-	Y31.504	Y-41.548	N7790 G2 X-
N6450 X-82.981	32.653 Y65.307	N7100 X49.775	N7520 X-10.518	48.051 Y-
Y-71.091 Z-	N6740 G2 X-	Y29.27	Y-41.753	78.581 I-
7.452	30.158 Y64.278	N7110 X51.765	N7530 G3 X-	13.921 J17.25
N6460 X-84.325	I-9.034 J-	Y26.936	12.806 Y-	F2500.
Y-71.52 Z-	25.444	N7120 X53.637	43.134 I1.561	N7800 X-51.137
7.431	N6750 X-27.778	Y24.505	J-5.169	Y-78.365 I0.
N6470 X-85.685	Y63.005 I-	N7130 X55.34	N7540 X-14.15	J22.167
Y-71.896 Z-	11.529 J-	Y22.001	Y-45.443	N7810 G1 X-
7.411	24.415	N7140 X56.769	I3.849 J-3.788	99.27 Y-71.598
N6480 X-87.059	N6760 X-27.073	Y19.51	N7550 X-14.162	N7820 G2 X-
Y-72.216 Z-	Y62.566 I-	N7150 X57.91	Y-45.485	114.357 Y-
7.39	13.909 J-	Y17.03	I5.193 J-1.479	62.34 I3.086
N6490 G2 X-	23.142	N7160 X58.784	N7560 G2 X-	J21.95
94.287 Y-		Y14.527	15.01 Y-48.048	

N7830 X-	N8100 X-17.909	N8510 X12.634	N8830 X-15.491	N9110 X-20.35
121.468 Y-	Y53.639 I-	Y-11.462	Y-58.069 Z-	Y56.866 Z-7.64
39.941 I32.363	22.673 J-	N8520 X10.166	7.487	N9120 G2 X-
J22.602	14.661	Y-13.243	N8840 X-15.308	17.909 Y53.639
N7840 G1 X-	N8110 G1 X-	N8530 X7.663	Y-58.993 Z-	I-20.254 J-
121.907	17.237 Y52.681	Y-14.913	7.473	17.854
Y45.249	N8120 X-16.415	N8540 X5.179	N8850 X-15.056	N9130 X-17.441
N7850 G2 X-	Y51.67	Y-16.471	Y-59.9 Z-7.459	Y52.885 I-
121.908	N8130 X-15.444	N8550 X2.76 Y-	N8860 X-14.737	22.695 J-
Y45.453	Y50.626	17.933	Y-60.787 Z-	14.627
I39.474 J.204	N8140 X-14.328	N8560 X.434 Y-	7.446	N9140 G1 X-
N7860 X-118.04	Y49.566	19.321	N8870 X-14.354	17.052 Y52.236
Y62.493	N8150 X-13.073	N8570 X-1.779	Y-61.647 Z-	N9150 G2 X-
I39.475 J0.	Y48.505	Y-20.653	7.432	15.782 Y49.854
N7870 X-99.382	N8160 X-11.683	N8580 X-3.868	N8880 X-13.907	I-23.163 J-
Y75.023	Y47.454	Y-21.948	Y-62.477 Z-	13.873
I19.946 J-	N8170 X-10.168	N8590 X-5.827	7.418	N9160 X-14.757
9.545	Y46.422	Y-23.217	N8890 X-13.4	Y47.358 I-
N7880 G1 X-	N8180 X-8.531	N8600 X-7.653	Y-63.271 Z-	24.433 J-
50.9 Y77.853	Y45.417	Y-24.472	7.404	11.491
N7890 G2 X-	N8190 X-6.773	N8610 X-9.345	N8900 X-12.836	N9170 X-14.709
49.611 Y77.891	Y44.437	Y-25.721	Y-64.025 Z-	Y47.218 I-
I1.289 J-	N8200 X-4.887	N8620 X-10.905	7.399	25.458 J-8.995
22.075	Y43.478	Y-26.968	N8910 G3 X-	N9180 G1 X-
N7900 X-37.303	N8210 X-2.862	N8630 X-11.019	2.979 Y-68.733	14.323 Y46.262
Y74.149 I0. J-	Y42.53	Y-27.064	I9.857 J7.965	N9190 X-13.809
22.113	N8220 X-.67	N8640 G3 X-	F2500.	Y45.216
N7910 G1 X-	Y41.57	12.579 Y-	N8920 X8.649	N9200 X-13.154
36.337 Y73.464	N8230 X1.673	29.234 I3.469	Y-61.099 I0.	Y44.092
Z-7.407 F1623.	Y40.589	J-4.138	J12.673	N9210 X-12.348
N7920 X-35.409	N8240 X4.173	N8650 X-12.95	N8930 G1	Y42.899
Y72.728 Z-	Y39.557	Y-31.202	X27.734 Y-	N9220 X-11.383
7.425	N8250 X6.782	I5.029 J-1.968	17.05	Y41.643
N7930 X-34.522	Y38.463	N8660 G1 Y-	N8940 G3	N9230 X-10.251
Y71.943 Z-	N8260 X9.456	33.902	X33.331 Y9.946	Y40.328
7.442	Y37.291	N8670 Y-36.602	I-62.307	N9240 X-8.947
N7940 X-33.678	N8270 X12.153	N8680 Y-37.003	J26.996	Y38.955
Y71.112 Z-7.46	Y36.028	N8690 G2 X-	N8950 X15.342	N9250 X-7.782
N7950 X-32.88	N8280 X14.845	13.015 Y-	Y55.985 I-	Y37.781
Y70.237 Z-	Y34.661	38.866 I-27.	67.904 J0.	N9260 X-6.839
7.477	N8290 X17.5	J0.	N8960 G1 X-	Y36.658
N7960 X-32.13	Y33.186	N8700 G1 X-	7.605 Y80.863	N9270 X-5.908
Y69.321 Z-	N8300 X20.108	13.052 Y-	N8970 G3 X-	Y35.348
7.495	Y31.594	39.407	15.654 Y84.389	N9280 X-5.006
N7970 X-31.431	N8310 X22.198	N8710 G2 X-	I-8.049 J-	Y33.798
Y68.365 Z-	Y30.147	13.373 Y-	7.424	N9290 X-4.176
7.512	N8320 X23.672	42.087 I-	N8980 X-26.604	Y31.975
N7980 X-29.053	Y28.874	26.936 J1.863	Y73.439 I0. J-	N9300 X-3.488
Y64.931 Z-	N8330 X24.908	N8720 X-13.893	10.95	Y29.862
7.574	Y27.572	Y-44.477 I-	N8990 X-26.564	N9310 X-3.024
N7990 X-28.608	N8340 X26.	26.615 J4.543	Y72.511 I10.95	Y27.473
Y64.328 Z-	Y26.179	N8730 G1 X-	J0.	N9320 X-2.872
7.585	N8350 X26.984	14.094 Y-	N9000 G1 X-	Y24.856
N8000 X-28.126	Y24.645	45.232	26.478 Y71.784	N9330 X-3.09
Y63.754 Z-	N8360 X27.846	N8740 G2 X-	Z-7.401 F1623.	Y22.086
7.596	Y22.954	14.916 Y-	N9010 X-26.343	N9340 X-3.552
N8010 X-27.61	N8370 X28.57	47.802 I-	Y71.064 Z-	Y19.223
Y63.211 Z-	Y21.073	26.094 J6.933	7.412	N9350 X-4.249
7.607	N8380 X29.118	N8750 G1 X-	N9020 X-26.16	Y16.317
N8020 X-27.061	Y18.997	15.194 Y-	Y70.355 Z-	N9360 X-5.161
Y62.701 Z-	N8390 X29.436	48.631 Z-7.627	7.422	Y13.413
7.618	Y16.748	N8760 X-15.412	N9030 X-25.931	N9370 X-6.26
N8030 X-26.482	N8400 X29.477	Y-49.477 Z-	Y69.66 Z-7.433	Y10.547
Y62.225 Z-	Y14.351	7.614	N9040 X-24.041	N9380 X-7.51
7.629	N8410 X29.193	N8770 X-15.568	Y64.52 Z-7.514	Y7.747
N8040 X-25.875	Y11.846	Y-50.337 Z-	N9050 X-22.639	N9390 X-8.855
Y61.786 Z-7.64	N8420 X28.543	7.602	Y60.708 Z-	Y5.043
N8050 G2 X-	Y9.295	N8780 X-15.662	7.574	N9400 X-10.24
22.703 Y59.273	N8430 X27.61	Y-51.206 Z-	N9060 X-22.359	Y2.45
I-15.134 J-	Y6.733	7.589	Y60.013 Z-	N9410 X-11.619
22.359	N8440 X26.431	N8790 X-15.694	7.585	Y-.027
N8060 X-21.701	Y4.185	Y-52.079 Z-	N9070 X-22.036	N9420 X-12.252
Y58.3 I-18.306	N8450 X25.018	7.576	Y59.336 Z-	Y-1.146
J-19.846	Y1.681	N8800 X-15.693	7.596	N9430 G3 X-
N8070 G1 X-	N8460 X23.384	Y-52.206 Z-	N9080 X-21.673	12.95 Y-3.725
21.296 Y57.885	Y-.76	7.574	Y58.681 Z-	I4.702 J-2.656
N8080 G2 X-	N8470 X21.546	N8810 X-15.651	7.607	N9440 G1 Y-
19.508 Y55.863	Y-3.12	Y-56.193 Z-	N9090 X-21.269	3.802
I-19.308 J-	N8480 X19.525	7.515	Y58.049 Z-	N9450 Y-6.502
18.873	Y-5.382	N8820 X-15.606	7.618	N9460 Y-9.202
N8090 X-17.931	N8490 X17.346	Y-57.134 Z-	N9100 X-20.828	N9470 Y-11.902
Y53.673 I-	Y-7.532	7.501	Y57.444 Z-	N9480 Y-14.602
21.096 J-	N8500 X15.038		7.629	N9490 Y-17.302
16.851	Y-9.56			N9500 Y-20.002

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N9510 Y-22.702	N9830 X-14.371	N260 Y15.403	N690 X-20.09	N1110 X-35.102
N9520 Y-25.402	Y64.957 Z-	N270 Y12.703	Y34.666 Z.24	Y-56.231
N9530 Y-28.102	7.417	N280 Y10.003	N700 X-21.286	N1120 X-36.098
N9540 Y-30.802	N9840 X-14.981	N290 Y7.303	Y36.617 Z.16	Y-56.834
N9550 Y-33.502	Y64.264 Z-	N300 Y4.603	N710 X-22.299	N1130 X-37.12
N9560 Y-36.202	7.431	N310 Y1.903	Y38.67 Z.08	Y-57.395
N9570 Y-37.003	N9850 X-15.537	N320 Y-.797	N720 X-23.121	N1140 X-37.608
N9580 X-12.913	Y63.527 Z-	N330 Y-3.497	Y40.806 Z0.	Y-57.653
Y-37.945 Z-	7.444	N340 Y-6.197	N730 X-22.859	N1150 X-38.652
7.626	N9860 X-16.036	N350 Y-8.897	Y40.02	Y-58.169
N9590 X-12.804	Y62.75 Z-7.458	N360 X-12.927	N740 X-22.538	N1160 X-39.718
Y-38.88 Z-	N9870 X-16.473	Y-9.646 Z-	Y38.9	Y-58.64
7.612	Y61.937 Z-	7.623	N750 X-22.266	N1170 X-40.827
N9600 X-12.623	7.471	N370 X-12.858	Y37.768	Y-59.075
Y-39.805 Z-	N9880 X-16.848	Y-10.393 Z-	N760 X-22.042	N1180 X-41.929
7.598	Y61.093 Z-	7.607	Y36.624	Y-59.452
N9610 X-12.37	7.485	N380 X-12.742	N770 X-21.868	N1190 X-43.047
Y-40.713 Z-	N9890 X-17.158	Y-11.133 Z-	Y35.472	Y-59.782
7.584	Y60.223 Z-	7.591	N780 X-21.82	N1200 X-44.177
N9620 X-12.048	7.499	N390 X-12.582	Y35.078	Y-60.064
Y-41.598 Z-	N9900 X-17.401	Y-11.865 Z-	N790 X-21.694	N1210 X-45.319
7.571	Y59.333 Z-	7.574	Y33.909	Y-60.297
N9630 X-11.658	7.512	N400 X-12.376	N800 X-21.62	N1220 X-45.927
Y-42.456 Z-	N9910 X-17.575	Y-12.586 Z-	Y32.746	Y-60.411
7.557	Y58.426 Z-	7.558	N810 X-21.595	N1230 X-47.077
N9640 X-11.202	7.526	N410 X-12.127	Y31.616	Y-60.595
Y-43.281 Z-	N9920 X-17.68	Y-13.293 Z-	N820 X-21.609	N1240 X-48.241
7.543	Y57.509 Z-	7.541	Y15.974	Y-60.73
N9650 X-10.685	7.539	N420 X-9.659	N830 X-21.595	N1250 X-49.431
Y-44.068 Z-	N9930 X-17.715	Y-19.655 Z-	Y-31.583	Y-60.817
7.529	Y56.586 Z-	7.39	N840 X-21.599	N1260 X-50.596
N9660 X-10.108	7.553	N430 G0 Z6.	Y-32.044	Y-60.852
Y-44.813 Z-	N9940 X-17.686	(PLATO 54	N850 X-21.643	N1270 X-83.636
7.515	Y55.746 Z-	ACERO)	Y-33.204	Y-60.853
N9670 X-9.474	7.565	N440 M9	N860 X-21.738	N1280 X-84.834
Y-45.511 Z-	N9950 X-17.599	N450 X22.162	Y-34.366	Y-60.838
7.501	Y54.911 Z-	Y36.044 Z27.	N870 X-21.828	N1290 X-85.99
N9680 X-8.789	7.578	N460 Z7.	Y-35.133	Y-60.773
Y-46.157 Z-	N9960 X-17.454	N470 G1 Z2.	N880 X-21.934	N1300 X-87.15
7.487	Y54.083 Z-7.59	F1000.	Y-35.946	Y-60.658
N9690 X-8.056	N9970 X-17.253	N480 X20.915	N890 X-22.128	N1310 X-88.303
Y-46.749 Z-	Y53.267 Z-	Y34.125 Z1.92	Y-37.094	Y-60.494
7.473	7.603	F1623.	N900 X-22.372	N1320 X-88.827
N9700 X-7.279	N9980 X-16.996	N490 X19.497	Y-38.234	Y-60.411
Y-47.282 Z-	Y52.468 Z-	Y32.328 Z1.84	N910 X-22.664	N1330 X-89.084
7.459	7.615	N500 X17.92	Y-39.361	Y-60.365
N9710 X-6.463	N9990 X-16.684	Y30.668 Z1.76	N920 X-23.005	N1340 X-89.973
Y-47.753 Z-	Y51.687 Z-	N510 X16.199	Y-40.476	Y-60.197
7.446	7.628	Y29.16 Z1.68	N930 X-23.175	N1350 X-91.108
N9720 X-5.613	N100 X-16.319	N520 X14.347	Y-40.992	Y-59.933
Y-48.159 Z-	Y50.931 Z-7.64	Y27.815 Z1.6	N940 X-23.563	N1360 X-92.23
7.432	N110 G2 X-	N530 X12.379	Y-42.091	Y-59.622
N9730 X-4.734	14.709 Y47.218	Y26.645 Z1.52	N950 X-23.998	N1370 X-93.338
Y-48.499 Z-	I-23.897 J-	N540 X10.313	Y-43.172	Y-59.263
7.418	12.568	Y25.661 Z1.44	N960 X-24.479	N1380 X-94.43
N9740 X-3.831	N120 X-14.239	N550 X8.165	Y-44.233	Y-58.856
Y-48.769 Z-	Y45.729 I-	Y24.869 Z1.36	N970 X-25.005	N1390 X-94.903
7.404	25.506 J-8.855	N560 X5.954	Y-45.272	Y-58.666
N9750 X-2.91	N130 G1 X-	Y24.277 Z1.28	N980 X-25.574	N1400 X-95.977
Y-48.968 Z-	14.018 Y44.947	N570 X3.698	Y-46.289	Y-58.213
7.39	N140 G2 X-	Y23.89 Z1.2	N990 X-26.187	N1410 X-97.029
N9760 G3 X-.8	13.412 Y42.317	N580 X1.416	Y-47.279	Y-57.714
Y-49.153 I2.11	I-25.975 J-	Y23.711 Z1.12	N1000 X-26.48	N1420 X-98.06
J11.965 F2500.	7.367	N590 X-.873	Y-47.728	Y-57.171
N9770 X11.35	N150 X-13.072	Y23.741 Z1.04	N1010 X-27.135	N1430 X-99.066
Y-37.003 I0.	Y39.64 I-	N600 X-3.149	Y-48.692	Y-56.584
J12.15	26.581 J-4.737	Y23.98 Z.96	N1020 X-27.83	N1440 X-
N9780 X11.334	N160 X-13.067	N610 X-5.394	Y-49.626	100.046 Y-
Y-36.385 I-	Y39.577 I-	Y24.427 Z.88	N1030 X-28.565	55.954
12.15 J0.	26.921 J-2.06	N620 X-7.589	Y-50.53	N1450 X-
N9790 G1	N170 G1 X-	Y25.077 Z.8	N1040 X-29.339	100.999 Y-
X6.569 Y57.204	13.024 Y38.999	N630 X-9.715	Y-51.402	55.283
N9800 G3 X-	N180 G2 X-	Y25.925 Z.72	N1050 X-30.149	N1460 X-
5.565 Y68.736	12.95 Y37.003	N640 X-11.754	Y-52.239	101.412 Y-
I-12.134 J-	I-26.926 J-	Y26.964 Z.64	N1060 X-30.994	54.985
.618	1.996	N650 X-13.69	Y-53.041	N1470 X-
N9810 X-13.002	N190 G1	Y28.185 Z.56	N1070 X-31.402	102.335 Y-
Y66.194 I0. J-	Y34.303	N660 X-15.506	Y-53.406	54.273
12.15	N200 Y31.603	Y29.578 Z.48	N1080 X-32.28	N1480 X-
N9820 G1 X-	N210 Y28.903	N670 X-17.188	Y-54.171	103.226 Y-
13.71 Y65.602	N220 Y26.203	Y31.132 Z.4	N1090 X-33.191	53.523
Z-7.404 F1623.	N230 Y23.503	N680 X-18.72	Y-54.898	N1490 X-
	N240 Y20.803	Y32.832 Z.32	N1100 X-34.132	104.084 Y-
	N250 Y18.103		Y-55.585	52.735

N1500 X-	N1790 X-	N2100 X-95.539	N2520 X-23.399	N2940 X-20.374
104.908 Y-	113.092	Y58.404	Y41.642	Y-35.529
51.911	Y33.116	N2110 X-93.985	N2530 X-23.121	N2950 X-20.53
N1510 X-	N1800 X-	Y59.028	Y40.806	Y-36.629
105.695 Y-	113.008	N2120 X-92.886	N2540 X-23.085	N2960 X-20.564
51.052	Y34.231	Y59.416	Y40.818 Z-.023	Y-36.841
N1520 X-	N1810 X-	N2130 X-91.771	N2550 X-23.04	N2970 X-20.777
106.783 Y-	112.873	Y59.755	Y40.833 Z-.042	Y-37.989
49.763	Y35.388	N2140 X-90.643	N2560 X-23.02	N2980 X-21.04
N1530 X-	N1820 X-	Y60.047	Y40.84 Z-.054	Y-39.132
107.494 Y-	112.688	N2150 X-89.504	N2570 X-22.926	N2990 X-21.063
48.84	Y36.538	Y60.29	Y40.871 Z-.095	Y-39.216
N1540 X-	N1830 X-	N2160 X-88.355	N2580 X-22.814	N3000 X-21.141
108.164 Y-	112.584	Y60.484	Y40.908 Z-.151	Y-39.523
47.887	Y37.121	N2170 X-87.849	N2590 X-22.737	N3010 X-21.452
N1550 X-	N1840 X-112.35	Y60.565	Y40.934 Z-.202	Y-40.649
108.794 Y-	Y38.262	N2180 X-86.702	N2600 X-22.722	N3020 X-21.81
46.907	N1850 X-	Y60.708	Y40.939 Z-.21	Y-41.761
N1560 X-	112.068	N2190 X-85.541	N2610 X-22.655	N3030 X-22.311
108.931 Y-	Y39.392	Y60.804	Y40.961 Z-.256	Y-43.111
46.676	N1860 X-	N2200 X-84.377	N2620 X-22.626	N3040 X-22.763
N1570 X-109.38	111.737	Y60.849	Y40.97 Z-.271	Y-44.188
Y-45.9	Y40.509	N2210 X-51.338	N2630 X-22.57	N3050 X-23.263
N1580 X-109.51	N1870 X-	Y60.85	Y40.989 Z-.311	Y-45.249
Y-45.662	111.359	N2220 X-50.134	N2640 X-22.53	N3060 X-23.308
N1590 X-	Y41.611	Y60.844	Y41.003 Z-.334	Y-45.335
110.109 Y-	N1880 X-	N2230 X-48.954	N2650 X-22.484	N3070 X-23.388
44.51	110.934	Y60.789	Y41.018 Z-.368	Y-45.5
N1600 X-	Y42.696	N2240 X-47.794	N2660 X-22.432	N3080 X-23.93
110.607 Y-	N1890 X-110.88	Y60.684	Y41.035 Z-.4	Y-46.534
43.457	Y42.826	N2250 X-46.605	N2670 X-22.397	N3090 X-24.517
N1610 X-	N1900 X-	Y60.525	Y41.047 Z-.427	Y-47.544
111.114 Y-	110.408	N2260 X-45.458	N2680 X-22.294	N3100 X-25.353
42.254	Y43.892	Y60.321	Y41.081 Z-.494	Y-48.854
N1620 X-111.52	N1910 X-	N2270 X-44.849	N2690 X-22.285	N3110 X-26.023
Y-41.162	109.892	Y60.208	Y41.084 Z-.498	Y-49.811
N1630 X-	Y44.936	N2280 X-43.712	N2700 X-22.241	N3120 X-26.736
111.878 Y-	N1920 X-	Y59.955	Y41.099 Z-.528	Y-50.74
40.053	109.656 Y45.39	N2290 X-42.587	N2710 Z-.531	N3130 X-27.591
N1640 X-	N1930 X-	Y59.653	N2720 X-22.236	Y-51.762
112.189 Y-	109.145	N2300 X-41.475	Y41.1 Z-.535	N3140 X-28.379
38.93	Y46.316	Y59.303	N2730 X-22.224	Y-52.625
N1650 X-	N1940 X-	N2310 X-40.38	Y41.104 Z-.539	N3150 X-28.738
112.452 Y-	108.541	Y58.906	N2740 X-22.21	Y-52.989
37.795	Y47.312	N2320 X-39.303	Y41.109 Z-.549	N3160 X-29.562
N1660 X-	N1950 X-	Y58.463	N2750 Z-.553	Y-53.817
112.665 Y-	107.894	N2330 X-38.221	F1000.	N3170 X-30.421
36.65	Y48.281	Y57.963	N2760 X-22.205	Y-54.609
N1670 X-112.77	N1960 X-	N2340 X-37.186	Y41.11 F1623.	N3180 X-31.312
Y-36.068	107.207	Y57.428	N2770 X-22.183	Y-55.364
N1680 X-	Y49.222	N2350 X-36.698	Y41.118 Z-.574	N3190 X-32.236
112.934 Y-	N1970 X-106.48	Y57.17	N2780 X-21.815	Y-56.079
34.914	Y50.132	N2360 X-35.686	Y41.24 Z-.854	N3200 X-33.206
N1690 X-	N1980 X-	Y56.592	N2790 X-21.66	Y-56.768
113.049 Y-	106.143 Y50.53	N2370 X-34.701	Y41.292 Z-.955	N3210 X-33.25
33.755	N1990 X-	Y55.971	N2800 X-21.511	Y-56.796
N1700 X-	105.377	N2380 X-33.743	Y40.843	N3220 X-33.662
113.062 Y-	Y51.408	Y55.308	N2810 X-21.19	Y-57.083
33.58	N2000 X-	N2390 X-32.814	Y39.72	N3230 X-34.643
N1710 X-	104.575	Y54.605	N2820 X-21.101	Y-57.718
113.101 Y-	Y52.253	N2400 X-31.916	Y39.365	N3240 X-35.65
32.872	N2010 X-	Y53.862	N2830 X-20.828	Y-58.309
N1720 X-	103.737	N2410 X-30.643	Y38.229	N3250 X-35.765
113.123 Y-	Y53.062	Y52.717	N2840 X-20.604	Y-58.372
32.415	N2020 X-	N2420 X-29.812	Y37.083	N3260 X-36.796
N1730 X-	102.865	Y51.9	N2850 X-20.401	Y-58.92
113.132 Y-	Y53.835	N2430 X-29.017	Y35.739	N3270 X-37.86
31.707	N2030 X-101.96	Y51.048	N2860 X-20.277	Y-59.428
N1740 X-	Y54.57	N2440 X-28.259	Y34.577	N3280 X-37.946
113.134 Y-	N2040 X-	Y50.163	N2870 X-20.242	Y-59.464
31.249	101.025	N2450 X-27.54	Y34.068	N3290 X-38.277
N1750 X-	Y55.265	Y49.247	N2880 X-20.167	Y-59.613
113.117	N2050 X-	N2460 X-26.861	Y32.902	N3300 X-39.352
Y10.751	100.612	Y48.3	N2890 X-20.143	Y-60.07
N1760 X-	Y55.563	N2470 X-25.931	Y31.769	N3310 X-40.41
113.133	N2060 X-99.648	Y46.876	N2900 X-20.142	Y-60.468
Y23.644	Y56.217	N2480 X-25.336	Y-31.734	N3320 X-40.711
N1770 X-	N2070 X-98.657	Y45.875	N2910 X-20.157	Y-60.572
113.134	Y56.83	N2490 X-24.784	Y-32.629	N3330 X-41.799
Y31.907	N2080 X-97.64	Y44.849	N2920 X-20.22	Y-60.928
N1780 X-	Y57.399	N2500 X-24.276	Y-33.788	N3340 X-42.925
113.113	N2090 X-96.6	Y43.8	N2930 X-20.26	Y-61.246
Y32.597	Y57.924	N2510 X-23.814	Y-34.367	N3350 X-43.271
		Y42.73		Y-61.337

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N3360 X-44.403	N3760 X-	N4050 X-	N4350 X-	N4760 X-35.98
Y-61.604	102.484 Y-	114.576 Y-	102.626	Y58.491
N3370 X-45.641	55.994	31.129	Y55.889	N4770 X-34.822
Y-61.839	N3770 X-	N4060 X-	N4360 X-	Y57.825
N3380 X-47.01	103.401 Y-	114.564 Y-	101.685 Y56.58	N4780 X-33.835
Y-62.04	55.271	13.941	N4370 X-	Y57.2
N3390 X-47.257	N3780 X-	N4070 X-	101.426	N4790 X-32.433
Y-62.066	104.287 Y-	114.573 Y4.615	Y56.759	Y56.225
N3400 X-47.367	54.51	N4080 X-	N4380 X-	N4800 X-31.504
Y-62.079	N3790 X-	114.576 Y32.04	101.297 Y56.85	Y55.517
N3410 X-48.529	105.139 Y-	N4090 X-	N4390 X-	N4810 X-30.605
Y-62.2	53.711	114.528 Y33.29	100.327 Y57.5	Y54.771
N3420 X-49.695	N3800 X-105.53	N4100 X-	N4400 X-99.33	N4820 X-29.736
Y-62.27	Y-53.326	114.433	Y58.109	Y53.983
N3430 X-50.906	N3810 X-	Y34.473	N4410 X-98.192	N4830 X-28.904
Y-62.292	106.347 Y-	N4110 X-	Y58.739	Y53.162
N3440 X-54.209	52.492	114.361	N4420 X-97.146	N4840 X-28.872
Y-62.29	N3820 X-	Y35.085	Y59.26	Y53.127
N3450 X-56.477	107.128 Y-	N4120 X-	N4430 X-96.962	N4850 X-28.516
Y-62.292	51.623	114.216	Y59.343	Y52.766
N3460 X-83.968	N3830 X-	Y36.244	N4440 X-96.78	N4860 X-27.72
N3470 X-85.136	107.871 Y-	N4130 X-	Y59.433	Y51.911
Y-62.262	50.722	114.022	N4450 X-95.713	N4870 X-26.962
N3480 X-85.212	N3840 X-	Y37.396	Y59.909	Y51.022
Y-62.257	108.575 Y-	N4140 X-	N4460 X-94.627	N4880 X-26.17
N3490 X-85.361	49.789	113.779	Y60.338	Y50.008
Y-62.253	N3850 X-	Y38.538	N4470 X-93.389	N4890 X-25.49
N3500 X-86.526	108.907 Y-	N4150 X-	Y60.769	Y49.058
Y-62.174	49.34	113.487	N4480 X-91.893	N4900 X-24.852
N3510 X-87.687	N3860 X-109.57	Y39.674	Y61.217	Y48.079
Y-62.045	Y-48.379	N4160 X-	N4490 X-90.76	N4910 X-24.816
N3520 X-87.884	N3870 X-	113.147	Y61.504	Y48.017
Y-62.02	109.629 Y-	Y40.792	N4500 X-89.808	N4920 X-24.622
N3530 X-88.771	48.289	N4170 X-112.97	Y61.703	Y47.712
Y-61.884	N3880 X-110.13	Y41.351	N4510 X-89.526	N4930 X-24.027
N3540 X-89.375	Y-47.489	N4180 X-	Y61.76	Y46.707
Y-61.787	N3890 X-	112.583	N4520 X-88.384	N4940 X-23.475
N3550 X-89.504	110.247 Y-	Y42.453	Y61.947	Y45.678
Y-61.764	47.297	N4190 X-	N4530 X-88.347	N4950 X-22.864
N3560 X-90.521	N3900 X-	112.149	Y61.951	Y44.412
Y-61.559	110.581 Y-	Y43.537	N4540 X-88.127	N4960 X-22.402
N3570 X-90.649	46.712	N4200 X-	Y61.986	Y43.339
Y-61.529	N3910 X-	111.669	N4550 X-86.771	N4970 X-21.986
N3580 X-91.656	110.823 Y-	Y44.602	Y62.151	Y42.247
Y-61.282	46.28	N4210 X-	N4560 X-85.606	N4980 X-21.961
N3590 X-91.733	N3920 X-	111.511	Y62.241	Y42.169
Y-61.261	111.404 Y-	Y44.929	N4570 X-84.214	N4990 X-21.88
N3600 X-92.855	45.15	N4220 X-	Y62.289	Y41.952
Y-60.935	N3930 X-	110.986	N4580 X-80.987	N5000 X-21.66
N3610 X-93. Y-	111.562 Y-	Y45.972	Y62.288	Y41.292
60.887	44.823	N4230 X-	N4590 X-74.904	N5010 X-20.399
N3620 X-93.29	N3940 X-	110.869	Y62.29	Y41.711 Z-1.91
Y-60.796	112.052 Y-	Y46.195	N4600 X-51.228	N5020 X-20.359
N3630 X-94.397	43.762	N4240 X-	N4610 X-49.983	Y41.591
Y-60.423	N3950 X-	110.541	Y62.28	N5030 X-20.038
N3640 X-95.487	112.496 Y-	Y46.783	N4620 X-48.779	Y40.467
Y-60.003	42.682	N4250 X-	Y62.219	N5040 X-19.962
N3650 X-96.558	N3960 X-	110.297	N4630 X-47.592	Y40.166
Y-59.536	112.893 Y-	Y47.214	Y62.107	N5050 X-19.69
N3660 X-96.758	41.584	N4260 X-	N4640 X-47.041	Y39.03
Y-59.445	N3970 X-	109.704	Y62.039	N5060 X-19.466
N3670 X-97.808	113.419 Y-	Y48.173	N4650 X-45.884	Y37.884
Y-58.933	39.91	N4270 X-109.05	Y61.879	N5070 X-19.292
N3680 X-97.949	N3980 X-	Y49.141	N4660 X-44.65	Y36.729
Y-58.857	113.721 Y-	N4280 X-	Y61.655	N5080 X-19.277
N3690 X-98.09	38.782	108.022	N4670 X-43.511	Y36.586
Y-58.788	N3990 X-	Y50.528	Y61.398	N5090 X-19.258
N3700 X-99.117	113.975 Y-	N4290 X-	N4680 X-43.184	Y36.462
Y-58.231	37.637	107.287	Y61.312	N5100 X-19.133
N3710 X-	N4000 X-114.18	Y51.436	N4690 X-42.079	Y35.301
100.119 Y-	Y-36.487	N4300 X-	Y61.012	N5110 X-19.104
57.632	N4010 X-	106.515	N4700 X-40.966	Y34.869
N3720 X-	114.334 Y-	Y52.312	Y60.659	N5120 X-19.029
101.095 Y-	35.329	N4310 X-	N4710 X-40.655	Y33.703
56.99	N4020 X-	105.705	Y60.553	N5130 X-19.004
N3730 X-	114.406 Y-	Y53.154	N4720 X-39.558	Y32.536
101.356 Y-	34.717	N4320 X-	Y60.152	N5140 Y-32.536
56.811	N4030 X-	105.314	N4730 X-38.514	N5150 X-19.019
N3740 X-	114.512 Y-	Y53.538	Y59.718	Y-33.458
102.303 Y-	33.553	N4330 X-	N4740 X-38.075	N5160 X-19.084
56.128	N4040 X-	104.469	Y59.523	Y-34.624
N3750 X-	114.571 Y-	Y54.345	N4750 X-37.016	N5170 X-19.095
102.355 Y-	32.297	N4340 X-103.59	Y59.029	Y-34.748
56.087		Y55.114		

N5180 X-19.126	N5600 X-42.202	N5980 X-	N6280 X-	N6580 X-
Y-35.192	Y-62.151	104.039 Y-	115.394 Y-	106.183
N5190 X-19.24	N5610 X-43.339	56.007	32.315	Y54.044
Y-36.354	Y-62.419	N5990 X-	N6290 X-	N6590 X-
N5200 X-19.404	N5620 X-44.367	104.898 Y-	115.399 Y-	105.781
Y-37.511	Y-62.615	55.262	32.106	Y54.432
N5210 X-19.426	N5630 X-44.867	N6000 X-	N6300 X-	N6600 X-105.12
Y-37.642	Y-62.705	105.046 Y-	115.392 Y3.096	Y55.059
N5220 X-19.639	N5640 X-45.205	55.128	N6310 X-	N6610 X-
Y-38.79	Y-62.76	N6010 X-105.75	115.399	104.941
N5230 X-19.904	N5650 X-45.92	Y-54.463	Y14.409	Y55.226
Y-39.945	Y-62.861	N6020 X-	N6320 Y31.043	N6620 X-
N5240 X-19.99	N5660 X-46.41	106.239 Y-	N6330 X-	104.135
Y-40.255	Y-62.926	53.987	115.396	Y55.929
N5250 X-20.017	N5670 X-47.839	N6030 X-106.82	Y32.213	N6630 X-
Y-40.363	Y-63.061	Y-53.389	N6340 X-	104.058
N5260 X-20.328	N5680 X-49.577	N6040 X-	115.391	Y55.993
Y-41.489	Y-63.147	107.052 Y-	Y32.421	N6640 X-
N5270 X-20.687	N5690 X-50.664	53.145	N6350 X-	103.159
Y-42.601	Y-63.156	N6050 X-	115.335	Y56.713
N5280 X-21.173	N5700 X-84.475	107.828 Y-	Y33.676	N6650 X-
Y-43.912	N5710 X-85.644	52.27	N6360 X-	103.076
N5290 X-21.625	Y-63.115	N6060 X-	115.323	Y56.776
Y-44.989	N5720 X-86.139	108.585 Y-	Y33.841	N6660 X-
N5300 X-22.129	Y-63.087	51.339	N6370 X-	102.189
Y-46.059	N5730 X-87.306	N6070 X-	115.221	Y57.425
N5310 X-22.824	Y-62.997	108.928 Y-	Y35.007	N6670 X-
Y-47.385	N5740 X-88.607	50.885	N6380 X-	101.731
N5320 X-23.41	Y-62.838	N6080 X-	115.064	Y57.737
Y-48.395	N5750 X-89.762	109.626 Y-	Y36.207	N6680 X-
N5330 X-24.215	Y-62.648	49.945	N6390 X-	100.858 Y58.32
Y-49.656	N5760 X-90.165	N6090 X-	115.001 Y36.61	N6690 X-
N5340 X-24.885	Y-62.566	110.283 Y-	N6400 X-114.8	100.769
Y-50.612	N5770 X-91.311	48.977	Y37.764	Y58.376
N5350 X-25.602	Y-62.327	N6100 X-	N6410 X-	N6700 X-99.861
Y-51.546	N5780 X-92.445	110.947 Y-	114.491	Y58.929
N5360 X-26.352	Y-62.039	47.904	Y39.171	N6710 X-99.754
Y-52.442	N5790 X-92.659	N6110 X-	N6420 X-	Y58.99
N5370 X-26.437	Y-61.978	111.519 Y-	114.205	N6720 X-98.694
Y-52.534	N5800 X-93.78	46.883	Y40.255	Y59.575
N5380 X-26.507	Y-61.642	N6120 X-111.57	N6430 X-	N6730 X-98.595
Y-52.619	N5810 X-94.863	Y-46.785	114.098	Y59.627
N5390 X-27.295	Y-61.267	N6130 X-	Y40.629	N6740 X-97.778
Y-53.481	N5820 X-95.01	111.749 Y-	N6440 X-	Y60.032
N5400 X-28.424	Y-61.21	46.453	113.751	N6750 X-97.546
Y-54.618	N5830 X-95.194	N6140 X-	Y41.747	Y60.145
N5410 X-29.283	Y-61.143	112.277 Y-	N6450 X-113.38	N6760 X-97.359
Y-55.41	N5840 X-96.258	45.408	Y42.784	Y60.229
N5420 X-30.174	Y-60.722	N6150 X-	N6460 X-	N6770 X-97.185
Y-56.165	N5850 X-97.156	112.718 Y-	113.235	Y60.31
N5430 X-31.153	Y-60.326	44.433	Y43.183	N6780 X-96.129
Y-56.923	N5860 X-97.627	N6160 X-	N6470 X-	Y60.776
N5440 X-32.106	Y-60.107	112.836 Y-	112.794	N6790 X-95.024
Y-57.598	N5870 X-98.477	44.169	Y44.267	Y61.209
N5450 X-32.245	Y-59.688	N6170 X-	N6480 X-	N6800 X-94.786
Y-57.688	N5880 X-98.65	113.273 Y-	112.204	Y61.295
N5460 X-32.542	Y-59.598	43.083	Y45.556	N6810 X-93.679
Y-57.894	N5890 X-99.504	N6180 X-	N6490 X-	Y61.675
N5470 X-33.523	Y-59.132	113.407 Y-	111.672	N6820 X-92.556
Y-58.528	N5900 X-99.889	42.711	Y46.599	Y62.007
N5480 X-34.53	Y-58.907	N6190 X-	N6500 X-	N6830 X-92.449
Y-59.12	N5910 X-	113.797 Y-	111.469	Y62.033
N5490 X-34.627	100.726 Y-	41.607	Y46.977	N6840 X-92.276
Y-59.173	58.403	N6200 X-	N6510 X-	Y62.083
N5500 X-35.658	N5920 X-	114.119 Y-	110.893	N6850 X-91.14
Y-59.721	100.889 Y-	40.554	Y47.996	Y62.366
N5510 X-36.751	58.299	N6210 X-	N6520 X-	N6860 X-90.117
Y-60.243	N5930 X-	114.221 Y-40.2	110.274 Y48.99	Y62.576
N5520 X-37.093	101.702 Y-	N6220 X-	N6530 X-	N6870 X-89.657
Y-60.389	57.761	114.516 Y-	109.524	Y62.667
N5530 X-37.18	N5940 X-	39.067	Y50.087	N6880 X-88.501
Y-60.428	102.181 Y-	N6230 X-	N6540 X-	Y62.853
N5540 X-38.254	57.429	114.824 Y-	108.895	N6890 X-87.142
Y-60.885	N5950 X-	37.641	Y50.927	Y63.011
N5550 X-39.348	102.964 Y-	N6240 X-	N6550 X-	N6900 X-85.975
Y-61.297	56.862	115.015 Y-	108.519	Y63.097
N5560 X-39.573	N5960 X-	36.517	Y51.423	N6910 X-85.538
Y-61.373	103.125 Y-	N6250 X-115.08	N6560 X-	Y63.121
N5570 X-40.683	56.738	Y-36.101	107.778	N6920 X-84.368
Y-61.737	N5970 X-	N6260 X-115.23	Y52.329	Y63.157
N5580 X-41.829	103.881 Y-	Y-34.922	N6570 X-	N6930 X-50.641
Y-62.06	56.139	N6270 X-	107.008	N6940 X-49.471
N5590 X-42.086		115.342 Y-	Y53.193	Y63.144
Y-62.12		33.569		

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N6950 X-48.811	N7360 X-19.132	N7780 X-31.006	N8200 X-95.794	N8500 X-112.07
Y63.111	Y42.073 Z-	Y-58.428	Y-61.922	Y-47.685
N6960 X-47.643	2.865	N7790 X-31.24	N8210 X-96.882	N8510 X-
Y63.047	N7370 X-18.887	Y-58.579	Y-61.491	112.129 Y-
N6970 X-46.478	Y41.215	N7800 X-31.421	N8220 X-97.756	47.576
Y62.934	N7380 X-18.824	Y-58.705	Y-61.104	N8520 X-
N6980 X-46.304	Y40.968	N7810 X-32.402	N8230 X-98.179	112.201 Y-
Y62.913	N7390 X-18.552	Y-59.339	Y-60.908	47.433
N6990 X-45.114	Y39.832	N7820 X-33.409	N8240 X-99.028	N8530 X-
Y62.746	N7400 X-18.328	Y-59.931	Y-60.49	112.314 Y-
N7000 X-43.458	Y38.685	N7830 X-34.52	N8250 X-99.226	47.224
Y62.443	N7410 X-18.154	Y-60.522	Y-60.387	N8540 X-
N7010 X-42.319	Y37.53	N7840 X-35.642	N8260 X-	112.842 Y-
Y62.185	N7420 X-18.123	Y-61.059	100.055 Y-	46.179
N7020 X-42.045	Y37.241	N7850 X-36.717	59.933	N8550 X-
Y62.114	N7430 X-18.115	Y-61.516	N8270 X-	113.387 Y-
N7030 X-40.918	Y37.186	N7860 X-36.785	100.196 Y-	44.97
Y61.808	N7440 X-17.99	Y-61.542	59.852	N8560 X-
N7040 X-39.805	Y36.025	N7870 X-37.157	N8280 X-	113.824 Y-
Y61.453	N7450 X-17.891	Y-61.7	101.058 Y-	43.884
N7050 X-38.358	Y34.505	N7880 X-38.25	59.334	N8570 X-
Y60.925	N7460 X-17.866	Y-62.112	N8290 X-	114.363 Y-
N7060 X-37.279	Y33.337	N7890 X-38.435	101.117 Y-	42.358
Y60.477	N7470 Y-33.337	Y-62.174	59.296	N8580 X-
N7070 X-36.937	N7480 X-17.881	N7900 X-39.545	N8300 X-	114.705 Y-
Y60.324	Y-34.259	Y-62.539	101.334 Y-	41.239
N7080 X-35.878	N7490 X-17.946	N7910 X-40.709	59.165	N8590 X-
Y59.831	Y-35.426	Y-62.866	N8310 X-	114.773 Y-
N7090 X-34.842	N7500 X-17.966	N7920 X-41.846	101.467 Y-	41.002
Y59.292	Y-35.653	Y-63.134	59.08	N8600 X-
N7100 X-33.772	N7510 X-17.991	N7930 X-41.891	N8320 X-102.31	115.067 Y-
Y58.676	Y-36.017	Y-63.143	Y-58.523	39.869
N7110 X-33.653	N7520 X-18.106	N7940 X-42.269	N8330 X-	N8610 X-
Y58.6	Y-37.179	Y-63.232	102.703 Y-	115.313 Y-
N7120 X-33.616	N7530 X-18.27	N7950 X-43.416	58.251	38.724
Y58.579	Y-38.336	Y-63.451	N8340 X-	N8620 X-115.33
N7130 X-32.63	N7540 X-18.288	N7960 X-43.729	103.515 Y-	Y-38.633
Y57.954	Y-38.443	Y-63.507	57.663	N8630 X-
N7140 X-31.295	N7550 X-18.501	N7970 X-44.113	N8350 X-	115.386 Y-
Y57.026	Y-39.592	Y-63.569	103.648 Y-	38.369
N7150 X-30.366	N7560 X-18.769	N7980 X-44.885	57.561	N8640 X-
Y56.319	Y-40.758	Y-63.677	N8360 X-	115.583 Y-
N7160 X-29.467	N7570 X-19.079	N7990 X-45.272	104.432 Y-	37.215
Y55.572	Y-41.884	Y-63.727	56.94	N8650 X-
N7170 X-28.588	N7580 X-19.096	N8000 X-46.438	N8370 X-	115.636 Y-
Y54.776	Y-41.936	Y-63.836	104.613 Y-	36.873
N7180 X-27.757	N7590 X-19.204	N8010 X-46.546	56.789	N8660 X-
Y53.956	Y-42.329	Y-63.843	N8380 X-	115.783 Y-
N7190 X-27.653	N7600 X-19.563	N8020 X-46.801	105.318 Y-	35.712
Y53.844	Y-43.441	Y-63.867	56.178	N8670 X-
N7200 X-27.366	N7610 X-20.035	N8030 X-48.439	N8390 X-	115.902 Y-
Y53.553	Y-44.714	Y-63.949	105.679 Y-	34.284
N7210 X-26.571	N7620 X-20.487	N8040 X-49.61	55.852	N8680 X-
Y52.698	Y-45.79	Y-63.958	N8400 X-	115.969 Y-
N7220 X-25.813	N7630 X-20.995	N8050 X-85.026	106.362 Y-	32.66
Y51.809	Y-46.87	N8060 X-86.196	55.206	N8690 Y31.596
N7230 X-25.031	N7640 X-21.538	Y-63.917	N8410 X-	N8700 X-
Y50.809	Y-47.904	N8070 X-86.345	106.811 Y-	115.967
N7240 X-24.352	N7650 X-21.591	Y-63.906	54.769	Y32.766
Y49.859	Y-47.995	N8080 X-86.715	N8420 X-	N8710 X-
N7250 X-23.714	N7660 X-21.717	Y-63.886	107.457 Y-	115.889
Y48.881	Y-48.236	N8090 X-87.882	54.102	Y34.508
N7260 X-23.605	N7670 X-22.304	Y-63.795	N8430 X-	N8720 X-
Y48.697	Y-49.246	N8100 X-89.158	107.623 Y-	115.803
N7270 X-23.468	N7680 X-23.076	Y-63.639	53.926	Y35.482
Y48.481	Y-50.457	N8110 X-90.313	N8440 X-	N8730 X-
N7280 X-22.873	N7690 X-23.747	Y-63.449	108.399 Y-	115.772
Y47.476	Y-51.413	N8120 X-91.552	53.049	Y35.818
N7290 X-22.321	N7700 X-24.468	Y-63.192	N8450 X-	N8740 X-115.62
Y46.447	Y-52.352	N8130 X-91.591	109.136 Y-	Y36.979
N7300 X-21.726	N7710 X-25.218	Y-63.182	52.14	N8750 X-
Y45.213	Y-53.248	N8140 X-91.9	N8460 X-	115.592
N7310 X-21.264	N7720 X-26.212	Y-63.118	109.216 Y-	Y37.141
Y44.14	Y-54.338	N8150 X-93.034	52.037	N8760 X-
N7320 X-20.848	N7730 X-27.286	Y-62.83	N8470 X-	115.542
Y43.048	Y-55.42	N8160 X-93.211	110.186 Y-	Y37.458
N7330 X-20.768	N7740 X-28.145	Y-62.78	50.733	N8770 X-
Y42.808	Y-56.212	N8170 X-94.332	N8480 X-	115.341
N7340 X-20.728	N7750 X-29.036	Y-62.444	110.843 Y-	Y38.611
Y42.699	Y-56.966	N8180 X-95.438	49.765	N8780 X-
N7350 X-20.399	N7760 X-29.959	Y-62.06	N8490 X-	115.042
Y41.711	Y-57.682	N8190 X-95.731	111.498 Y-	Y39.973
	N7770 X-30.053	Y-61.944	48.706	N8790 X-
	Y-57.753			114.731 Y41.15

N8800 X-114.651	N9110 X-100.386	N9530 X-34.74	N9950 X-17.135	N470 X-41.199
Y41.408	Y59.745	Y60.632	Y-39.16	Y-64.046
N8810 X-114.628	N9120 X-100.28	N9540 X-33.703	N9960 X-17.149	N480 X-42.347
Y41.489	Y59.806	Y60.093	Y-39.245	Y-64.265
N8820 X-114.281	N9130 X-99.246	N9550 X-32.591	N9970 X-17.363	N490 X-42.591
Y42.607	Y60.376	Y59.452	Y-40.393	Y-64.308
N8830 X-113.786	N9140 X-99.164	N9560 X-31.605	N9980 X-17.633	N500 X-42.974
Y43.984	Y60.419	Y58.827	Y-41.571	Y-64.37
N8840 X-113.345	N9150 X-98.2	N9570 X-31.54	N9990 X-17.944	N510 X-43.746
Y45.068	Y60.897	Y58.782	Y-42.697	Y-64.478
N8850 X-112.813	N9160 X-97.982	N9580 X-31.424	N100 X-17.996	N520 X-44.134
Y46.227	Y60.999	Y58.709	Y-42.862	Y-64.529
N8860 X-112.78	N9170 X-96.624	N9590 X-30.157	N110 X-18.081	N530 X-45.299
Y46.292	Y61.599	Y57.827	Y-43.17	Y-64.637
N8870 X-112.72	N9180 X-95.534	N9600 X-29.228	N120 X-18.439	N540 X-45.562
Y46.424	N9190 X-95.338	Y57.12	Y-44.281	Y-64.654
N8880 X-112.188	Y62.025	N9610 X-28.329	N130 X-18.896	N550 X-45.763
Y47.467	N9200 X-94.23	Y56.373	Y-45.515	Y-64.673
N8890 X-112.02	Y62.097	N9620 X-27.441	N140 X-19.349	N560 X-47.301
Y47.779	N9210 X-93.108	Y55.57	Y-46.592	Y-64.75
N8900 X-111.444	Y62.476	N9630 X-26.61	N150 X-19.861	N570 X-48.471
Y48.797	N9220 X-92.854	Y54.749	Y-47.68	Y-64.759
N8910 X-110.825	Y62.808	N9640 X-26.435	N160 X-20.404	N580 X-48.577
Y49.791	Y62.871	Y54.561	Y-48.715	N590 X-48.747
N8920 X-110.132	N9230 X-92.768	N9650 X-26.217	N170 X-20.521	Y-64.718
Y50.806	Y62.896	Y54.34	Y-48.916	N600 X-48.7
N8930 X-110.065	N9240 X-91.632	N9660 X-25.422	N180 X-20.61	Y-64.7
Y50.895	Y63.179	Y53.485	Y-49.087	N610 X-48.291
N8940 X-110.022	N9250 X-90.209	N9670 X-24.664	N190 X-21.197	Y-64.684
Y50.959	Y63.469	Y52.596	Y-50.097	N620 X-48.458
N8950 X-109.504	N9260 X-89.053	N9680 X-23.893	N200 X-21.938	Y-64.593
Y51.651	Y63.654	Y51.611	Y-51.258	N630 X-48.71
N8960 X-109.071	N9270 X-87.89	N9690 X-23.214	N210 X-22.609	Y-64.441
Y52.224	Y63.79	Y50.66	Y-52.215	N640 X-49.865
N8970 X-108.33	N9280 X-87.758	N9700 X-22.576	N220 X-23.333	Y-64.251
Y53.13	Y63.8	Y49.682	Y-53.159	N650 X-49.015
N8980 X-107.551	N9290 X-87.617	N9710 X-22.395	N230 X-24.083	Y-64.221
Y54.004	Y63.817	Y49.376	Y-54.054	N660 X-49.161
N8990 X-106.732	N9300 X-86.45	N9720 X-22.315	N240 X-24.871	Y-63.982
Y54.849	Y63.903	Y49.25	Y-54.917	N670 X-49.28
N9000 X-106.321	N9310 X-86.089	N9730 X-21.719	N250 X-24.942	Y-63.952
Y55.242	Y63.922	Y48.245	Y-54.991	N680 X-49.489
N9010 X-105.494	N9320 X-84.919	N9740 X-21.167	N260 X-25.128	Y-63.908
Y56.025	Y63.959	Y47.215	Y-55.195	N690 X-49.623
N9020 X-104.674	N9330 X-84.503	N9750 X-20.588	N270 X-26.148	Y-63.62
Y56.793	Y63.945	Y46.014	Y-56.221	N700 X-49.762
N9040 X-103.71	N9340 X-84.333	Y43.85	N280 X-27.006	Y-63.581
Y57.514	Y63.845	Y44.941	Y-57.013	N710 X-49.883
N9050 X-102.769	N9350 X-84.474	N9770 X-19.71	N290 X-27.898	Y-63.245
Y58.206	Y63.731	Y43.85	Y-57.768	N720 X-49.989
N9060 X-102.64	N9360 X-84.309	N9780 X-19.207	N300 X-28.821	Y-62.861
Y58.297	Y63.731	Y42.338	Y-58.483	N730 X-49.875
N9070 X-101.739	N9370 X-84.166	N9790 X-19.132	N310 X-28.953	Y-62.513
Y58.927	Y63.715	Y42.073	Y-58.583	N740 X-49.482
N9090 X-101.383	N9380 X-83.981	N9800 X-17.87	N320 X-29.906	Y-62.27
Y59.136	Y63.548	Y42.434	Y-59.258	N750 X-49.356
N9100 X-101.31	N9390 X-83.822	N9810 X-17.735	N330 X-30.235	Y-61.883
Y59.182	Y63.338	Y41.962	Y-59.471	N760 X-49.73
	N9400 X-82.637	N9820 X-17.686	N340 X-30.3	Y-61.71
	Y63.301	Y41.769	Y-59.516	N770 X-49.579
	N9410 X-82.564	N9830 X-17.414	N350 X-31.281	Y-61.291
	Y63.285	Y40.633	Y-60.15	N780 X-49.778
	N9420 X-82.271	N9840 X-17.19	N360 X-32.288	Y-61.188
	Y63.232	Y39.487	Y-60.742	N790 X-100.607
	N9430 X-81.131	N9850 X-17.016	N370 X-33.382	Y-60.735
	Y62.974	Y38.332	Y-61.324	N800 X-100.802
	N9440 X-80.907	N9860 X-16.846	N380 X-34.533	Y-60.622
	Y62.915	Y36.749	Y-61.874	N810 X-101.609
	N9450 X-80.78	N9870 X-16.752	N390 X-35.608	Y-60.135
	Y62.609	Y35.306	Y-62.332	N820 X-101.802
	N9460 X-80.667	N9880 X-16.727	N400 X-35.782	Y-60.013
	Y62.255	Y34.138	Y-62.397	N830 X-101.942
	N9470 X-80.579	N9890 X-16.538	N410 X-36.059	Y-59.928
	Y62.225	N9900 X-16.743	Y-62.515	N840 X-102.128
	N9480 X-80.482	Y-35.061	N420 X-37.152	Y-59.809
	Y61.823	N9910 X-16.808	Y-62.927	N850 X-102.918
	N9490 X-80.366	Y-36.227	N430 X-38.407	Y-59.286
	Y61.775	N9920 X-16.838	Y-63.34	N860 X-103.308
	N9500 X-80.159	Y-36.557	N440 X-39.589	Y-59.015
	Y61.699	N9930 X-16.857	Y-63.673	N870 X-104.066
	N9510 X-80.08	Y-36.841	N450 X-40.726	Y-58.464
	Y61.251	N9940 X-16.972	Y-63.941	N880 X-104.252
	N9520 X-80.00	Y-38.004	N460 X-40.904	Y-58.323
	Y61.126		Y-63.976	

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N890 X-104.984	N1210 X-	N1500 X-	N1820 X-93.659	N2240 X-25.068
Y-57.741	115.904 Y-	113.235	Y63.609	Y55.127
N900 X-105.165	39.305	Y47.292	N1830 X-92.125	N2250 X-24.272
Y-57.591	N1220 X-	N1510 X-	Y63.992	Y54.272
N910 X-105.869	115.949 Y-	112.703	N1840 X-90.76	N2260 X-23.514
Y-56.98	39.097	Y48.334	Y64.27	Y53.383
N920 X-106.046	N1230 X-	N1520 X-	N1850 X-89.604	N2270 X-22.755
Y-56.82	116.146 Y-	112.571 Y48.58	Y64.456	Y52.412
N930 X-106.159	37.944	N1530 X-	N1860 X-88.442	N2280 X-22.076
Y-56.714	N1240 X-	111.995	Y64.592	Y51.462
N940 X-106.291	116.187 Y-	Y49.599	N1870 X-88.197	N2290 X-21.438
Y-56.594	37.675	N1540 X-	Y64.61	Y50.483
N950 X-106.974	N1250 X-	111.376	N1880 X-88.091	N2300 X-20.565
Y-55.948	116.335 Y-	Y50.592	Y64.622	Y49.014
N960 X-107.363	36.513	N1550 X-	N1890 X-86.924	N2310 X-20.013
Y-55.57	N1260 X-	111.325	Y64.708	Y47.984
N970 X-108.008	116.432 Y-	Y50.671	N1900 X-86.641	N2320 X-19.45
Y-54.903	35.347	N1560 X-	Y64.724	Y46.816
N980 X-108.175	N1270 X-	110.664	N1910 X-85.471	N2330 X-18.988
Y-54.727	116.442 Y-	Y51.637	Y64.76	Y45.743
N990 X-108.95	35.175	N1570 X-	N1920 X-48.365	N2340 X-18.572
Y-53.85	N1280 X-	109.818	N1930 X-47.194	Y44.651
N1000 X-	116.458 Y-	Y52.767	Y64.747	N2350 X-18.203
109.688 Y-	34.988	N1580 X-	N1940 X-45.305	Y43.543
52.941	N1290 X-	109.622	Y64.643	N2360 X-18.16
N1010 X-	116.521 Y-	Y53.025	N1950 X-44.141	Y43.4
109.814 Y-	33.461	N1590 X-	Y64.529	N2370 X-18.056
52.779	N1300 Y32.397	108.881	N1960 X-44.028	Y43.085
N1020 X-	N1310 X-	Y53.932	Y64.516	N2380 X-17.87
110.511 Y-	116.518	N1600 X-	N1970 X-42.849	Y42.434
51.84	Y33.568	108.064	Y64.35	N2390 X-16.607
N1030 X-	N1320 X-	Y54.847	N1980 X-41.684	Y42.794 Z-
110.531 Y-	116.466	N1610 X-	Y64.139	4.775
51.81	Y34.737	107.248	N1990 X-41.4	N2400 X-16.583
N1040 X-	N1330 X-	Y55.687	Y64.083	Y42.709
110.746 Y-	116.456	N1620 X-	N2000 X-41.273	N2410 X-16.548
51.521	Y34.915	106.047	Y64.054	Y42.57
N1050 X-	N1340 X-	Y56.824	N2010 X-41.084	N2420 X-16.276
111.403 Y-	116.437 Y35.34	N1630 X-	Y64.02	Y41.434
50.552	N1350 X-	105.214	N2020 X-39.944	N2430 X-16.052
N1060 X-112.05	116.323	Y57.551	Y63.762	Y40.288
Y-49.507	Y36.619	N1640 X-	N2030 X-39.769	N2440 X-15.878
N1070 X-	N1360 X-	104.262	Y63.717	Y39.133
112.622 Y-	116.172 Y37.78	Y58.316	N2040 X-38.642	N2450 X-15.753
48.486	N1370 X-	N1650 X-103.32	Y63.41	Y37.972
N1080 X-	116.114	Y59.007	N2050 X-37.529	N2460 X-15.732
112.716 Y-	Y38.107	N1660 X-	Y63.056	Y37.748
48.311	N1380 X-	103.175	N2060 X-37.4	N2470 X-15.703
N1090 X-	116.083	Y59.111	Y63.012	Y37.473
112.832 Y-	Y38.306	N1670 X-	N2070 X-36.303	N2480 X-15.614
48.08	N1390 X-	102.259	Y62.611	Y36.107
N1100 X-	115.882	Y59.724	N2080 X-36.064	N2490 X-15.589
112.878 Y-	Y39.459	N1680 X-	Y62.512	Y34.94
47.995	N1400 X-	102.121 Y59.81	N2090 X-35.959	N2500 Y-34.94
N1110 X-	115.594	N1690 X-	Y62.473	N2510 X-15.605
113.406 Y-	Y40.774	101.909	N2100 X-34.88	Y-35.862
46.95	N1410 X-	Y59.952	Y62.025	N2520 X-15.669
N1120 X-	115.272	N1700 X-	N2110 X-34.66	Y-37.028
113.939 Y-	Y41.988	100.912	Y61.927	N2530 X-15.709
45.771	N1420 X-	Y60.561	N2120 X-33.602	Y-37.462
N1130 X-	114.925	N1710 X-	Y61.433	N2540 X-15.723
114.375 Y-	Y43.106	100.805	N2130 X-32.565	Y-37.666
44.686	N1430 X-	Y60.622	Y60.895	N2550 X-15.837
N1140 X-	114.905	N1720 X-99.797	N2140 X-31.41	Y-38.829
114.833 Y-	Y43.164	Y61.178	Y60.229	N2560 X-16.001
43.387	N1440 X-	N1730 X-99.733	N2150 X-30.424	Y-39.985
N1150 X-	114.811	Y61.211	Y59.603	N2570 X-16.235
114.855 Y-	Y43.467	N1740 X-98.752	N2160 X-30.259	Y-41.246
43.317	N1450 X-	Y61.699	Y59.489	N2580 X-16.497
N1160 X-	114.338	N1750 X-98.478	N2170 X-30.219	Y-42.384
114.929 Y-	Y44.785	Y61.826	Y59.463	N2590 X-16.808
43.109	N1460 X-	N1760 X-97.458	N2180 X-29.019	Y-43.51
N1170 X-	113.896	Y62.277	Y58.629	N2600 X-16.896
115.271 Y-	Y45.869	N1770 X-97.342	N2190 X-28.089	Y-43.788
41.989	N1470 X-	Y62.324	Y57.921	N2610 X-16.957
N1180 X-	113.409	N1780 X-97.133	N2200 X-27.191	Y-44.01
115.324 Y-	Y46.934	Y62.416	Y57.175	N2620 X-17.316
41.803	N1480 X-	N1790 X-96.043	N2210 X-26.293	Y-45.121
N1190 X-	113.334	Y62.842	Y56.363	N2630 X-17.758
115.619 Y-	Y47.093	N1800 X-95.889	N2220 X-25.462	Y-46.316
40.67	N1490 X-	Y62.898	Y55.542	N2640 X-18.211
N1200 X-	113.258	N1810 X-94.782	N2230 X-25.217	Y-47.393
115.865 Y-	Y47.242	Y63.277	Y55.278	N2650 X-18.727
39.526				Y-48.491

N2660 X-19.27	N3080 X-86.129	N3430 X-	N3710 X-	N3990 X-
Y-49.525	N3090 X-87.298	106.421 Y-	116.479 Y-	113.306
N2670 X-19.451	Y-65.519	57.781	39.977	Y49.032
Y-49.837	N3100 X-87.655	N3440 X-	N3720 X-	N4000 X-
N2680 X-19.504	Y-65.494	106.597 Y-	116.512 Y-	113.219
Y-49.938	N3110 X-87.867	57.622	39.826	Y49.202
N2690 X-20.09	Y-65.482	N3450 X-	N3730 X-	N4010 X-
Y-50.948	N3120 X-89.034	106.807 Y-	116.709 Y-	113.123
N2700 X-20.8	Y-65.391	57.424	38.672	Y49.381
Y-52.06	N3130 X-90.261	N3460 X-	N3740 X-	N4020 X-
N2710 X-21.471	Y-65.242	106.903 Y-	116.739 Y-	112.547 Y50.4
Y-53.016	N3140 X-91.416	57.337	38.476	N4030 X-
N2720 X-22.199	Y-65.052	N3470 X-	N3750 X-	111.928
Y-53.965	N3150 X-91.624	107.586 Y-	116.886 Y-	Y51.394
N2730 X-22.949	Y-65.011	56.691	37.315	N4040 X-
Y-54.86	N3160 X-92.77	N3480 X-	N3760 X-	111.857
N2740 X-23.736	Y-64.772	107.914 Y-	116.984 Y-	Y51.502
Y-55.723	N3170 X-92.969	56.371	36.148	N4050 X-
N2750 X-23.911	Y-64.722	N3490 X-	N3770 X-	111.196
Y-55.905	N3180 X-93.078	108.559 Y-	117.002 Y-	Y52.468
N2760 X-24.045	Y-64.699	55.705	35.829	N4060 X-
Y-56.052	N3190 X-94.212	N3500 X-	N3780 X-	110.494
N2770 X-25.01	Y-64.411	108.726 Y-	117.013 Y-	Y53.405
Y-57.022	N3200 X-94.313	55.528	35.693	N4070 X-110.43
N2780 X-25.868	Y-64.382	N3510 X-	N3790 X-	Y53.487
Y-57.814	N3210 X-95.435	109.502 Y-	117.072 Y-	N4080 X-
N2790 X-26.76	Y-64.046	54.652	34.262	110.173
Y-58.569	N3220 X-96.54	N3520 X-	N3800 X-117.07	Y53.827
N2800 X-27.683	Y-63.663	110.239 Y-	Y34.369	N4090 X-
Y-59.285	N3230 X-97.695	53.743	N3810 X-	109.433
N2810 X-27.854	Y-63.209	N3530 X-	117.017	Y54.733
Y-59.413	N3240 X-97.889	110.411 Y-	Y35.538	N4100 X-
N2820 X-28.806	Y-63.129	53.522	N3820 X-	108.601
Y-60.088	N3250 X-97.967	N3540 X-	116.999	Y55.664
N2830 X-29.787	Y-63.095	111.108 Y-	Y35.862	N4110 X-
Y-60.722	N3260 X-98.082	52.582	N3830 X-	107.786
N2840 X-29.834	Y-63.048	N3550 X-	116.985	Y56.504
Y-60.75	N3270 X-98.956	111.164 Y-	Y36.172	N4120 X-
N2850 X-30.16	Y-62.662	52.499	N3840 X-	107.018
Y-60.961	N3280 X-99.281	N3560 X-	116.875	Y57.232
N2860 X-31.168	Y-62.511	111.306 Y-	Y37.421	N4130 X-
Y-61.553	N3290 X-	52.309	N3850 X-	106.877
N2870 X-32.244	100.131 Y-	N3570 X-	116.723	Y57.361
Y-62.125	62.092	111.963 Y-	Y38.581	N4140 X-
N2880 X-33.425	N3300 X-	51.34	N3860 X-	106.633
Y-62.69	100.329 Y-	N3580 X-	116.637	Y57.592
N2890 X-34.499	61.989	112.601 Y-	Y39.073	N4150 X-106.55
Y-63.147	N3310 X-	50.308	N3870 X-	Y57.668
N2900 X-34.779	101.158 Y-	N3590 X-	116.624	N4160 X-
Y-63.253	61.536	113.173 Y-	Y39.154	105.754
N2910 X-34.962	N3320 X-	49.287	N3880 X-	Y58.362
Y-63.33	101.354 Y-	N3600 X-	116.423	N4170 X-
N2920 X-36.055	61.423	113.303 Y-	Y40.307	105.666
Y-63.742	N3330 X-102.16	49.046	N3890 X-	Y58.435
N2930 X-37.269	Y-60.937	N3610 X-	116.145	N4180 X-
Y-64.141	N3340 X-	113.971 Y-	Y41.575	104.775
N2940 X-38.47	102.466 Y-	47.721	N3900 X-	Y59.146
Y-64.479	60.741	N3620 X-114.49	115.814	N4190 X-
N2950 X-39.607	N3350 X-	Y-46.573	Y42.826	103.872
Y-64.747	102.549 Y-	N3630 X-	N3910 X-	Y59.808
N2960 X-39.917	60.69	114.927 Y-	115.467	N4200 X-103.71
Y-64.809	N3360 X-	45.487	Y43.944	Y59.925
N2970 X-40.129	102.735 Y-	N3640 X-	N3920 X-	N4210 X-
Y-64.859	60.572	115.412 Y-	115.409	102.779
N2980 X-41.277	N3370 X-	44.109	Y44.106	Y60.548
Y-65.078	103.525 Y-	N3650 X-	N3930 X-	N4220 X-
N2990 X-41.453	60.048	115.454 Y-	115.341	102.563
Y-65.109	N3380 X-	43.974	Y44.327	Y60.682
N3000 X-41.836	103.859 Y-	N3660 X-	N3940 X-	N4230 X-
Y-65.171	59.816	115.494 Y-	114.889	102.393
N3010 X-42.608	N3390 X-	43.859	Y45.587	Y60.794
Y-65.279	104.618 Y-	N3670 X-	N3950 X-	N4240 X-
N3020 X-42.996	59.266	115.837 Y-	114.448	101.437
Y-65.33	N3400 X-	42.74	Y46.671	Y61.376
N3030 X-44.161	104.803 Y-	N3680 X-	N3960 X-	N4250 X-
Y-65.439	59.124	115.875 Y-	113.961	101.331
N3040 X-44.579	N3410 X-	42.604	Y47.735	Y61.438
Y-65.466	105.535 Y-	N3690 X-116.17	N3970 X-	N4260 X-
N3050 X-44.725	58.543	Y-41.472	113.855	100.349
Y-65.479	N3420 X-	N3700 X-	Y47.959	Y61.979
N3060 X-46.163	105.716 Y-	116.416 Y-	N3980 X-	N4270 X-
Y-65.551	58.392	40.327	113.323	100.235
N3070 X-47.333			Y49.001	Y62.039
Y-65.56				

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N4280 X-99.255	N4700 X-30.23	N5120 X-14.867	N5540 X-40.315	N5910 X-
Y62.523	Y61.005	Y-40.81	Y-65.911	106.268 Y-
N4290 X-98.974	N4710 X-29.243	N5130 X-15.099	N5550 X-40.698	59.193
Y62.653	Y60.379	Y-42.059	Y-65.973	N5920 X-
N4300 X-97.903	N4720 X-28.284	N5140 X-15.362	N5560 X-41.47	106.972 Y-
Y63.125	Y59.713	Y-43.198	Y-66.081	58.582
N4310 X-97.754	N4730 X-28.241	N5150 X-15.672	N5570 X-41.858	N5930 X-
Y63.184	Y59.68	Y-44.324	Y-66.131	107.149 Y-
N4320 X-97.643	N4740 X-27.881	N5160 X-15.796	N5580 X-43.023	58.423
Y63.232	Y59.43	Y-44.715	Y-66.24	N5940 X-
N4330 X-96.553	N4750 X-26.951	N5170 X-15.833	N5590 X-43.595	107.455 Y-
Y63.659	Y58.723	Y-44.85	Y-66.277	58.134
N4340 X-96.44	N4760 X-26.053	N5180 X-16.192	N5600 X-43.687	N5950 X-
Y63.699	Y57.976	Y-45.961	Y-66.285	107.515 Y-
N4350 X-95.333	N4770 X-25.146	N5190 X-16.62	N5610 X-45.025	58.079
Y64.079	Y57.156	Y-47.118	Y-66.353	N5960 X-
N4360 X-94.211	N4780 X-24.315	N5200 X-17.095	N5620 X-46.195	108.198 Y-
Y64.411	Y56.336	Y-48.245	Y-66.362	57.433
N4370 X-92.791	N4790 X-24.024	N5210 X-17.593	N5630 X-86.68	N5970 X-
Y64.765	Y56.023	Y-49.301	N5640 X-87.85	108.465 Y-
N4380 X-92.727	N4800 X-23.919	N5220 X-18.136	Y-66.321	57.173
Y64.778	Y55.914	Y-50.336	N5650 X-88.31	N5980 X-
N4390 X-92.617	N4810 X-23.123	N5230 X-18.381	Y-66.287	109.111 Y-
Y64.805	Y55.059	Y-50.758	N5660 X-88.443	56.506
N4400 X-91.311	N4820 X-22.365	N5240 X-18.397	Y-66.28	N5990 X-
Y65.071	Y54.17	Y-50.789	N5670 X-89.61	109.278 Y-
N4410 X-90.156	N4830 X-21.617	N5250 X-18.983	Y-66.189	56.33
Y65.257	Y53.213	Y-51.799	N5680 X-90.813	N6000 X-
N4420 X-88.993	N4840 X-20.938	N5260 X-19.662	Y-66.043	110.053 Y-
Y65.393	Y52.263	Y-52.861	N5690 X-91.967	55.453
N4430 X-88.637	N4850 X-20.3	N5270 X-20.333	Y-65.853	N6010 X-110.79
Y65.419	Y51.285	Y-53.817	N5700 X-92.233	Y-54.544
N4440 X-88.566	N4860 X-19.704	N5280 X-21.064	Y-65.802	N6020 X-
Y65.428	Y50.28	Y-54.771	N5710 X-93.379	111.008 Y-
N4450 X-87.399	N4870 X-19.642	N5290 X-21.814	Y-65.562	54.264
Y65.514	Y50.171	Y-55.667	N5720 X-94.801	N6030 X-
N4460 X-87.192	N4880 X-19.411	N5300 X-22.602	Y-65.202	111.706 Y-
Y65.525	Y49.782	Y-56.529	N5730 X-95.986	53.324
N4470 X-86.022	N4890 X-18.859	N5310 X-22.88	Y-64.848	N6040 X-
Y65.561	Y48.753	Y-56.819	N5740 X-97.092	111.798 Y-
N4480 X-47.227	N4900 X-18.312	N5320 X-22.962	Y-64.464	53.188
N4490 X-46.056	Y47.617	Y-56.908	N5750 X-98.316	N6050 X-
Y65.548	N4910 X-17.85	N5330 X-23.872	Y-63.982	111.866 Y-
N4500 X-44.888	Y46.544	Y-57.824	N5760 X-98.51	53.097
Y65.484	N4920 X-17.434	N5340 X-24.73	Y-63.903	N6060 X-
N4510 X-44.58	Y45.452	Y-58.616	N5770 X-99.556	112.523 Y-
Y65.465	N4930 X-17.065	N5350 X-25.622	Y-63.441	52.128
N4520 X-44.137	Y44.344	Y-59.37	N5780 X-99.833	N6070 X-
Y65.44	N4940 X-16.979	N5360 X-26.545	Y-63.313	113.152 Y-
N4530 X-42.972	Y44.059	Y-60.086	N5790 X-	51.11
Y65.327	N4950 X-16.904	N5370 X-26.754	100.682 Y-	N6080 X-
N4540 X-42.89	Y43.832	Y-60.243	62.894	113.724 Y-
Y65.317	N4960 X-16.607	N5380 X-27.707	N5800 X-100.88	50.089
N4550 X-41.716	Y42.794	Y-60.918	Y-62.791	N6090 X-113.89
Y65.152	N4970 X-15.345	N5390 X-28.688	N5810 X-	Y-49.781
N4560 X-40.546	Y43.098 Z-5.73	Y-61.552	101.709 Y-	N6100 X-
Y64.94	N4980 X-15.137	N5400 X-28.84	62.337	114.418 Y-
N4570 X-40.164	Y42.236	Y-61.643	N5820 X-	48.736
Y64.865	N4990 X-14.914	N5410 X-29.04	101.905 Y-	N6110 X-
N4580 X-39.983	Y41.089	Y-61.772	62.225	114.464 Y-
Y64.824	N5000 X-14.74	N5420 X-30.047	N5830 X-	48.634
N4590 X-39.896	Y39.934	Y-62.364	102.712 Y-	N6120 X-
Y64.809	N5010 X-14.615	N5430 X-31.106	61.738	114.536 Y-
N4600 X-38.757	Y38.773	Y-62.926	N5840 X-	48.492
Y64.551	N5020 X-14.578	N5440 X-32.316	103.124 Y-	N6130 X-
N4610 X-37.504	Y38.365	Y-63.505	61.473	115.041 Y-
Y64.212	N5030 X-14.56	N5450 X-33.39	N5850 X-	47.374
N4620 X-36.391	Y38.196	Y-63.963	103.343 Y-	N6140 X-
Y63.857	N5040 X-14.476	N5460 X-33.775	61.335	115.478 Y-
N4630 X-36.22	Y36.909	Y-64.108	N5860 X-	46.288
Y63.8	N5050 X-14.451	N5470 X-33.864	104.133 Y-	N6150 X-
N4640 X-35.123	Y35.741	Y-64.146	60.811	115.991 Y-
Y63.398	N5060 Y-35.741	N5480 X-34.957	N5870 X-	44.832
N4650 X-33.68	N5070 X-14.467	Y-64.557	104.411 Y-	N6160 X-
Y62.799	Y-36.663	N5490 X-36.131	60.618	116.403 Y-
N4660 X-33.522	N5080 X-14.531	Y-64.943	N5880 X-	43.491
Y62.728	Y-37.83	N5500 X-37.35	105.169 Y-	N6170 X-
N4670 X-32.464	N5090 X-14.58	Y-65.286	60.067	116.427 Y-
Y62.235	Y-38.366	N5510 X-38.487	N5890 X-	43.406
N4680 X-31.427	N5100 X-14.589	Y-65.554	105.354 Y-	N6180 X-
Y61.696	Y-38.491	N5520 X-38.93	59.925	116.721 Y-
N4690 X-30.415	N5110 X-14.703	Y-65.642	N5900 X-	42.273
Y61.113	Y-39.654	N5530 X-39.06	106.087 Y-	
		Y-65.673	59.344	

N6190 X-	N6500 X-	N6810 X-95.884	N7230 X-21.216	N7650 X-19.195
116.967 Y-	113.674	Y64.88	Y54.957	Y-54.619
41.128	Y50.183	N6820 X-94.762	N7240 X-20.496	N7660 X-19.93
N6200 X-	N6510 X-	Y65.212	Y54.037	Y-55.577
117.054 Y-	113.098	N6830 X-93.267	N7250 X-19.8	N7670 X-20.68
40.649	Y51.201	Y65.585	Y53.064	Y-56.473
N6210 X-	N6520 X-	N6840 X-91.863	N7260 X-19.162	N7680 X-21.468
117.074 Y-	112.479	Y65.873	Y52.086	Y-57.335
40.554	Y52.195	N6850 X-90.707	N7270 X-18.566	N7690 X-21.878
N6220 X-	N6530 X-	Y66.058	Y51.081	Y-57.765
117.271 Y-39.4	112.389	N6860 X-89.544	N7280 X-18.398	N7700 X-22.733
N6230 X-117.29	Y52.333	Y66.194	Y50.789	Y-58.625
Y-39.277	N6540 X-	N6870 X-89.076	N7290 X-18.258	N7710 X-23.592
N6240 X-	111.728	Y66.229	Y50.551	Y-59.417
117.438 Y-	Y53.299	N6880 X-89.041	N7300 X-17.706	N7720 X-24.484
38.116	N6550 X-	Y66.233	Y49.522	Y-60.172
N6250 X-	111.026	N6890 X-87.873	N7310 X-17.173	N7730 X-25.407
117.535 Y-	Y54.236	Y66.319	Y48.418	Y-60.887
36.95	N6560 X-	N6900 X-87.743	N7320 X-16.711	N7740 X-25.654
N6260 X-	110.886	Y66.326	Y47.345	Y-61.073
117.562 Y-	Y54.414	N6910 X-86.573	N7330 X-16.296	N7750 X-26.607
36.483	N6570 X-	Y66.363	Y46.254	Y-61.748
N6270 X-	110.725	N6920 X-46.089	N7340 X-15.927	N7760 X-27.588
117.569 Y-	Y54.628	N6930 X-44.918	Y45.145	Y-62.382
36.397	N6580 X-	Y66.349	N7350 X-15.798	N7770 X-27.847
N6280 X-	109.984	N6940 X-43.749	Y44.718	Y-62.536
117.623 Y-	Y55.534	Y66.286	N7360 X-15.752	N7780 X-27.919
35.064	N6590 X-	N6950 X-43.247	Y44.58	Y-62.583
N6290 Y34.367	109.138	Y66.253	N7370 X-15.431	N7790 X-28.926
N6300 X-	Y56.481	N6960 X-42.968	Y43.457	Y-63.174
117.621 Y35.17	N6600 X-	Y66.238	N7380 X-15.345	N7800 X-29.968
N6310 X-	108.323 Y57.32	N6970 X-41.803	Y43.098	Y-63.728
117.569 Y36.34	N6610 X-	Y66.125	N7390 X-14.087	N7810 X-31.207
N6320 X-	107.555	N6980 X-40.584	Y43.4 Z-6.685	Y-64.321
117.542 Y36.81	Y58.049	Y65.954	N7400 X-13.999	N7820 X-32.281
N6330 X-	N6620 X-107.32	N6990 X-39.408	Y43.037	Y-64.778
117.534	Y58.263	Y65.742	N7410 X-13.776	N7830 X-33.86
Y37.004	N6630 X-	N7000 X-38.927	Y41.891	Y-65.372
N6340 X-	107.089	Y65.647	N7420 X-13.601	N7840 X-34.992
117.426	Y58.479	N7010 X-37.57	Y40.736	Y-65.744
Y38.222	N6640 X-	Y65.339	N7430 X-13.477	N7850 X-36.231
N6350 X-	106.294	N7020 X-36.366	Y39.574	Y-66.093
117.274	Y59.172	Y65.013	N7440 X-13.416	N7860 X-37.368
Y39.383	N6650 X-	N7030 X-35.253	Y38.92	Y-66.361
N6360 X-	106.205	Y64.659	N7450 X-13.338	N7870 X-37.943
116.964	Y59.246	N7040 X-35.041	Y37.71	Y-66.475
Y41.155	N6660 X-	Y64.587	N7460 X-13.313	N7880 X-37.99
N6370 X-	105.364	N7050 X-33.944	Y36.542	Y-66.486
116.697	Y59.918	Y64.186	N7470 Y-36.542	N7890 X-39.137
Y42.377	N6670 X-105.27	N7060 X-32.865	N7480 X-13.329	Y-66.705
N6380 X-	Y59.99	Y63.738	Y-37.465	N7900 X-39.56
116.398	N6680 X-	N7070 X-32.705	N7490 X-13.393	Y-66.774
Y43.508	104.246	Y63.666	Y-38.631	N7910 X-40.332
N6390 X-	Y60.738	N7080 X-32.481	N7500 X-13.455	Y-66.882
116.355	N6690 X-	Y63.573	Y-39.316	N7920 X-40.72
Y43.664	103.299	N7090 X-32.384	N7510 X-13.569	Y-66.933
N6400 X-	Y61.373	Y63.53	Y-40.479	N7930 X-41.885
116.008	N6700 X-	N7100 X-31.325	N7520 X-13.733	Y-67.041
Y44.782	103.005	Y63.036	Y-41.635	N7940 X-42.649
N6410 X-	Y61.554	N7110 X-30.289	N7530 X-13.964	Y-67.091
115.914	N6710 X-	Y62.497	Y-42.872	N7950 X-43.887
Y45.048	102.858	N7120 X-29.277	N7540 X-14.226	Y-67.154
N6420 X-	Y61.648	Y61.915	Y-44.011	N7960 X-45.057
115.871	N6720 X-	N7130 X-29.049	N7550 X-14.536	Y-67.163
Y45.187	101.963	Y61.781	Y-45.137	N7970 X-87.231
N6430 X-115.44	Y62.192	N7140 X-28.062	N7560 X-14.696	N7980 X-88.401
Y46.388	N6730 X-	Y61.156	Y-45.641	Y-67.122
N6440 X-	101.856	N7150 X-27.103	N7570 X-14.709	N7990 X-88.965
114.999	Y62.253	Y60.489	Y-45.69	Y-67.081
Y47.472	N6740 X-100.9	N7160 X-26.963	N7580 X-15.068	N8000 X-90.185
N6450 X-	Y62.78	Y60.385	Y-46.802	Y-66.988
114.512	N6750 X-	N7170 X-26.743	N7590 X-15.474	N8010 X-91.347
Y48.536	100.786 Y62.84	Y60.231	Y-47.897	Y-66.847
N6460 X-	N6760 X-99.825	N7180 X-25.813	N7600 X-15.961	N8020 X-92.519
114.376	Y63.315	Y59.524	Y-49.055	Y-66.655
Y48.824	N6770 X-99.47	N7190 X-24.864	N7610 X-16.459	N8030 X-92.842
N6470 X-	Y63.48	Y58.734	Y-50.112	Y-66.592
113.844	N6780 X-98.399	N7200 X-23.999	N7620 X-17.001	N8040 X-93.987
Y49.867	Y63.952	Y57.95	Y-51.146	Y-66.352
N6480 X-	N6790 X-97.062	N7210 X-23.167	N7630 X-17.877	N8050 X-95.122
113.782	Y64.475	Y57.129	Y-52.65	Y-66.064
Y49.976	N6800 X-96.992	N7220 X-21.974	N7640 X-18.524	N8060 X-95.268
N6490 X-	Y64.501	Y55.846	Y-53.662	Y-66.023
113.735 Y50.07				

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N8070 X-95.391	N8370 X-	N8680 X-	N8990 X-	N9400 X-25.922
Y-65.992	113.704 Y-	116.418	101.337	Y61.265
N8080 X-96.537	51.911	Y45.991	Y63.641	N9410 X-25.685
Y-65.649	N8380 X-	N8690 X-	N9000 X-	Y61.089
N8090 X-97.643	114.276 Y-	116.401	100.406	N9420 X-25.605
Y-65.265	50.89	Y46.047	Y64.103	Y61.033
N8100 X-98.937	N8390 X-	N8700 X-	N9010 X-	N9430 X-24.675
Y-64.756	114.477 Y-	115.992	100.288	Y60.325
N8110 X-99.131	50.516	Y47.189	Y64.159	N9440 X-23.777
Y-64.677	N8400 X-	N8710 X-	N9020 X-99.966	Y59.579
N8120 X-	115.005 Y-	115.551	Y64.306	N9450 X-23.717
100.008 Y-	49.471	Y48.273	N9030 X-98.895	Y59.527
64.29	N8410 X-	N8720 X-	Y64.779	N9460 X-22.851
N8130 X-	115.584 Y-	115.064	N9040 X-97.805	Y58.743
100.351 Y-	48.196	Y49.338	Y65.205	N9470 X-22.02
64.129	N8420 X-116.03	N8730 X-	N9050 X-97.674	Y57.922
N8140 X-	Y-47.09	114.897 Y49.69	Y65.252	N9480 X-21.225
101.234 Y-	N8430 X-116.42	N8740 X-	N9060 X-97.571	Y57.067
63.695	Y-45.986	114.365	Y65.292	N9490 X-20.825
N8150 X-	N8440 X-116.57	Y50.733	N9070 X-96.436	Y56.633
101.432 Y-	Y-45.554	N8750 X-113.65	Y65.681	N9500 X-20.067
63.592	N8450 X-	Y52.003	N9080 X-95.313	Y55.744
N8160 X-	116.913 Y-	N8760 X-113.03	Y66.013	N9510 X-19.347
102.261 Y-	44.435	Y52.996	N9090 X-93.742	Y54.824
63.139	N8460 X-	N8770 X-	Y66.405	N9520 X-18.662
N8170 X-	116.937 Y-	112.921	N9100 X-92.595	Y53.866
102.456 Y-	44.343	Y53.164	Y66.64	N9530 X-18.023
63.026	N8470 X-	N8780 X-112.26	N9110 X-92.531	Y52.887
N8180 X-	116.968 Y-	Y54.13	Y66.65	N9540 X-17.428
103.263 Y-	44.241	N8790 X-	N9120 X-92.414	Y51.883
62.539	N8480 X-	111.558	Y66.674	N9550 X-17.155
N8190 X-	117.273 Y-	Y55.067	N9130 X-91.258	Y51.406
103.951 Y-	43.074	N8800 X-	Y66.86	N9560 X-17.104
62.097	N8490 X-	111.342	N9140 X-90.096	Y51.32
N8200 X-	117.519 Y-	Y55.342	Y66.996	N9570 X-16.552
104.741 Y-	41.93	N8810 X-	N9150 X-88.348	Y50.29
61.573	N8500 X-	111.276 Y55.43	Y67.125	N9580 X-16.044
N8210 X-	117.637 Y-	N8820 X-	N9160 X-87.125	Y49.238
104.962 Y-	41.282	110.535	Y67.164	N9590 X-15.573
61.419	N8510 X-	Y56.336	N9170 X-44.95	Y48.147
N8220 X-105.72	117.842 Y-	N8830 X-	N9180 X-43.78	N9600 X-15.158
Y-60.868	40.079	109.829	Y67.151	Y47.055
N8230 X-	N8520 X-	Y57.128	N9190 X-42.611	N9610 X-14.789
105.906 Y-	117.989 Y-	N8840 X-	Y67.087	Y45.947
60.727	38.917	109.676	N9200 X-41.8	N9620 X-14.617
N8240 X-	N8530 X-	Y57.297	Y67.036	Y45.377
106.638 Y-	118.086 Y-	N8850 X-108.86	N9210 X-40.635	N9630 X-14.6
60.145	37.751	Y58.137	Y66.923	Y45.327
N8250 X-	N8540 X-	N8860 X-	N9220 X-39.451	N9640 X-14.28
106.819 Y-	118.124 Y-	108.092	Y66.756	Y44.204
59.995	37.101	Y58.866	N9230 X-38.269	N9650 X-14.087
N8260 X-	N8550 X-	N8870 X-	Y66.543	Y43.4
107.524 Y-	118.175 Y-	107.629	N9240 X-37.69	N9660 X-14.009
59.384	35.865	Y59.289	Y66.429	Y43.419 Z-
N8270 X-107.7	N8560 Y34.801	N8880 X-	N9250 X-36.551	6.766
Y-59.224	N8570 X-	106.833	Y66.171	N9670 X-13.439
N8280 X-108.81	118.172	Y59.983	N9260 X-36.451	Y43.555 Z-
Y-58.176	Y35.972	N8890 X-	Y66.144	7.201
N8290 X-	N8580 X-118.12	106.745	N9270 X-36.383	N9680 X-13.432
109.017 Y-	Y37.141	Y60.056	Y66.128	Y43.557
57.974	N8590 X-	N8900 X-	N9280 X-35.228	N9690 X-13.391
N8300 X-	118.082	105.916 Y60.72	Y65.814	Y43.566 Z-
109.662 Y-	Y37.836	N8910 X-	N9290 X-34.114	7.226
57.307	N8600 X-117.98	105.821	Y65.46	N9700 Y43.567
N8310 X-	Y39.002	Y60.791	N9300 X-33.861	Z-7.236
109.829 Y-	N8610 X-	N8920 X-104.79	Y65.374	N9710 X-13.387
57.131	117.826	Y61.546	N9310 X-32.764	Z-7.24
N8320 X-	Y40.184	N8930 X-	Y64.973	N9720 X-13.384
110.604 Y-	N8620 X-	104.693	N9320 X-31.686	Y43.568 Z-
56.254	117.624	Y61.612	Y64.525	7.231
N8330 X-	Y41.337	N8940 X-	N9330 X-31.363	N9730 Z-7.247
111.342 Y-	N8630 X-	103.819	Y64.381	N9740 X-13.322
55.345	117.505	Y62.197	N9340 X-31.281	Y43.583 Z-
N8340 X-	Y42.003	N8950 X-	Y64.347	7.289
111.605 Y-	N8640 X-	103.718 Y62.26	N9350 X-30.187	N9750 X-13.218
55.006	117.248	N8960 X-	Y63.837	Y43.608 Z-
N8350 X-	Y43.178	102.488	N9360 X-29.151	7.449
112.303 Y-	N8650 X-	Y63.008	Y63.299	N9760 X-13.186
54.067	116.949 Y44.31	N8970 X-	N9370 X-28.138	Y43.615 Z-
N8360 X-	N8660 X-	102.382	Y62.716	7.617
113.083 Y-	116.896	Y63.069	N9380 X-27.868	N9770 X-13.164
52.916	Y44.502	N8980 X-	Y62.557	Y43.621 Z-7.64
	N8670 X-	101.451	N9390 X-26.881	N9780 X-13.139
	116.549 Y45.62	Y63.582	Y61.932	Y43.518

N9790 X-12.916	N310 X-33.668	N730 X-112.898	N1100 X-	N1430 X-88.602
Y42.367	Y-66.202	Y-54.485	114.165	Y67.782
N9800 X-12.741	N320 X-33.788	N740 X-113.55	Y52.504	N1440 X-87.43
Y41.208	Y-66.241	Y-53.511	N1110 X-	Y67.815
N9810 X-12.617	N330 X-34.909	N750 X-114.253	114.045	N1450 X-44.159
Y40.042	Y-66.585	Y-52.353	Y52.709	N1460 X-42.917
N9820 X-12.55	N340 X-36.043	N760 X-114.82	N1120 X-113.3	Y67.798
Y39.346	Y-66.881	Y-51.327	Y53.894	N1470 X-41.746
N9830 X-12.475	N350 X-37.19	N770 X-115.047	N1130 X-	Y67.731
Y38.175	Y-67.129	Y-50.909	112.634	N1480 X-40.917
N9840 X-12.45	N360 X-37.84	N780 X-115.569	Y54.858	Y67.675
Y37.003	Y-67.258	Y-49.86	N1140 X-	N1490 X-39.75
N9850 Y-36.884	N370 X-38.996	N790 X-116.046	111.927	Y67.558
N9860 X-12.453	Y-67.456	Y-48.789	Y55.794	N1500 X-38.59
Y-37.414	N380 X-40.159	N800 X-116.124	N1150 X-	Y67.392
N9870 X-12.496	Y-67.605	Y-48.6	111.659	N1510 X-37.437
Y-38.586	N390 X-41.327	N810 X-116.554	Y56.136	Y67.177
N9880 X-12.588	Y-67.705	Y-47.509	N1160 X-	N1520 X-36.802
Y-39.755	N400 X-42.155	N820 X-116.726	110.913	Y67.051
N9890 X-12.658	Y-67.76	Y-47.028	Y57.041	N1530 X-35.659
Y-40.449	N410 X-43.328	N830 X-117.11	N1170 X-	Y66.787
N9900 X-12.8	Y-67.81	Y-45.92	110.129	N1540 X-34.529
Y-41.613	N420 X-87.841	N840 X-117.447	Y57.913	Y66.474
N9910 X-13.004	Y-67.809	Y-44.797	N1180 X-	N1550 X-34.392
Y-42.855	N430 X-88.038	N850 X-117.78	110.039	Y66.432
N9920 X-13.245	Y-67.804	Y-43.483	Y58.012	N1560 X-32.997
Y-44.002	N440 X-89.245	N860 X-118.019	N1190 X-	Y65.98
N9930 X-13.535	Y-67.752	Y-42.335	109.218	N1570 X-31.898
Y-45.139	N450 X-90.413	N870 X-118.148	Y58.849	Y65.572
N9940 X-13.872	Y-67.652	Y-41.641	N1200 X-	N1580 X-30.817
Y-46.261	N460 X-90.809	N880 X-118.338	108.363	Y65.117
N9950 X-14.057	Y-67.604	Y-40.484	Y59.651	N1590 X-30.401
Y-46.826	N470 X-91.972	N890 X-118.479	N1210 X-	Y64.931
N9960 X-14.442	Y-67.453	Y-39.32	107.981	N1600 X-29.34
Y-47.934	N480 X-93.127	N900 X-118.57	Y59.992	Y64.431
N9970 X-14.467	Y-67.254	Y-38.151	N1220 X-	N1610 X-28.302
Y-48.001	N490 X-93.494	N910 X-118.611	107.093	Y63.886
N9980 X-14.899	Y-67.189	Y-37.477	Y60.757	N1620 X-26.991
Y-49.091	N500 X-94.639	N920 X-118.655	N1230 X-	Y63.126
N9990 X-15.378	Y-66.94	Y-36.267	106.172	N1630 X-26.003
Y-50.162	N510 X-95.774	N930 Y35.391	Y61.483	Y62.494
N100 X-15.901	Y-66.642	N940 X-118.646	N1240 X-105.97	N1640 X-25.042
Y-51.211	N520 X-96.894	Y36.678	Y61.632	Y61.821
N110 X-16.469	Y-66.297	N950 X-118.587	N1250 X-	N1650 X-24.749
Y-52.237	N530 X-97.144	Y37.849	105.019	Y61.604
N120 X-16.774	Y-66.218	N960 X-118.544	Y62.318	N1660 X-23.818
Y-52.753	N540 X-98.248	Y38.562	N1260 X-104.04	Y60.891
N130 X-17.385	Y-65.825	N970 X-118.435	Y62.963	N1670 X-22.918
Y-53.754	N550 X-98.701	Y39.729	N1270 X-	Y60.138
N140 X-18.062	Y-65.655	N980 X-118.277	102.702	N1680 X-22.853
Y-54.764	N560 X-99.787	Y40.891	Y63.763	Y60.082
N150 X-18.755	Y-65.215	N990 X-118.069	N1280 X-	N1690 X-21.987
Y-55.71	N570 X-100.855	Y42.045	101.672	Y59.292
N160 X-19.489	Y-64.73	N1000 X-117.94	Y64.323	N1700 X-21.155
Y-56.624	N580 X-101.9	Y42.738	N1290 X-	Y58.466
N170 X-20.261	Y-64.199	N1010 X-	100.619	N1710 X-20.359
Y-57.507	N590 X-102.033	117.684	Y64.838	Y57.605
N180 X-21.507	Y-64.127	Y43.882	N1300 X-	N1720 X-19.963
Y-58.815	N600 X-103.055	N1020 X-	100.259	Y57.164
N190 X-22.352	Y-63.552	117.626	Y65.002	N1730 X-19.205
Y-59.63	N610 X-104.051	Y44.104	N1310 X-99.184	Y56.27
N200 X-23.23	Y-62.934	N1030 X-	Y65.472	N1740 X-18.485
Y-60.407	N620 X-104.588	117.321	N1320 X-98.091	Y55.344
N210 X-24.141	Y-62.592	Y45.236	Y65.895	N1750 X-17.805
Y-61.145	N630 X-105.558	N1040 X-	N1330 X-96.98	Y54.389
N220 X-25.352	Y-61.933	116.968	Y66.271	N1760 X-17.167
Y-62.046	N640 X-106.498	Y46.354	N1340 X-96.752	Y53.405
N230 X-26.322	Y-61.232	N1050 X-	Y66.345	N1770 X-16.571
Y-62.705	N650 X-107.408	116.812	N1350 X-95.627	Y52.395
N240 X-27.319	Y-60.493	Y46.796	Y66.674	N1780 X-16.239
Y-63.321	N660 X-108.285	N1060 X-	N1360 X-95.144	Y51.813
N250 X-28.669	Y-59.715	116.411	Y66.803	N1790 X-15.687
Y-64.078	N670 X-108.734	Y47.898	N1370 X-94.006	Y50.778
N260 X-28.865	Y-59.298	N1070 X-	Y67.083	N1800 X-15.179
Y-64.18	N680 X-109.6	115.964	N1380 X-92.857	Y49.722
N270 X-29.911	Y-58.461	Y48.982	Y67.315	N1810 X-14.717
Y-64.709	N690 X-110.408	N1080 X-	N1390 X-91.698	Y48.644
N280 X-30.979	Y-57.611	115.285	Y67.497	N1820 X-14.301
Y-65.194	N700 X-111.179	Y50.444	N1400 X-91.567	Y47.548
N290 X-32.067	Y-56.728	N1090 X-	Y67.515	N1830 X-13.933
Y-65.632	N710 X-111.912	114.747	N1410 X-90.402	Y46.435
N300 X-32.563	Y-55.812	Y51.486	Y67.648	N1840 X-13.733
Y-65.811	N720 X-112.205		N1420 X-89.797	Y45.786
	Y-55.431		Y67.697	

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N1850 X-13.412	N2280 X-84.703	N2720 X-48.435	N3160 X-86.635	N3590 X-47.737
Y44.659	Y-33.432	Y33.059	Y-32.367	Y33.155 F2560.
N1860 X-13.164	N2290 X-84.872	N2730 Z24.608	N3170 X-86.645	N3600 X-47.689
Y43.621	Y-33.335	N2740 Z4.608	Y-32.333	Y33.064
N1870 G0 Z-	N2300 X-85.229	N2750 G1 Z-	N3180 X-86.693	N3610 X-47.635
2.64	Y-33.062	.392 F1000.	Y-32.057	Y32.946
N1880 Z17.36	N2310 X-85.4	N2760 X-48.27	N3190 X-86.707	N3620 X-47.567
N1890 M5	Y-32.909	Y32.796 F2560.	Y-31.939	Y32.772
N1900 G91 G28	N2320 X-85.511	N2770 X-48.149	N3200 X-86.744	N3630 X-47.397
Z0.	Y-32.759	Y32.529	Y-31.726	Y32.105
N1910 M01	N2330 X-85.534	N2780 X-48.078	N3210 X-86.746	N3640 X-47.376
(FRESA	Y-32.723	Y32.255	Y31.705	Y32.016
ESFÉRICA 12)	N2340 X-85.553	N2790 X-48.066	N3220 X-86.701	N3650 X-47.351
N1920 T3 M6	Y-32.687	Y32.202	Y32.009	Y31.712
N1930 G0 G90	N2350 X-85.656	N2800 X-48.01	N3230 X-86.657	N3660 X-47.346
X-49.155	Y-32.465	Y31.867	Y32.266	Y31.573
Y32.605 S8000	N2360 X-85.736	N2810 X-47.985	N3240 X-86.644	N3670 Y-31.573
M3	Y-32.272	Y31.585	Y32.337	N3680 X-47.352
N1940 G43 H3	N2370 X-85.843	N2820 X-47.987	N3250 X-86.544	Y-31.723
Z24.804	Y-32.003	Y31.553	Y32.624	N3690 X-47.377
N1950 Z4.804	N2380 X-85.899	N2830 Y-31.554	N3260 X-86.406	Y-32.018
N1960 G1 Z-	Y-31.765	N2840 X-47.985	Y32.874	N3700 X-47.572
.196 F1000.	N2390 Y-31.74	Y-31.574	N3270 X-86.145	Y-32.787
N1970 X-49.069	N2400 X-85.901	N2850 X-48.006	Y33.294	N3710 X-47.643
Y32.462 F2560.	Y-31.73	Y-31.84	N3280 X-85.96	Y-32.96
N1980 X-48.95	N2410 X-85.907	N2860 X-48.068	Y33.531	N3720 X-47.696
Y32.249	Y-31.503	Y-32.208	N3290 X-85.863	Y-33.079
N1990 X-48.876	N2420 X-85.867	N2870 X-48.145	Y33.626	N3730 X-47.731
Y32.016	Y11.826	Y-32.517	N3300 X-85.766	Y-33.144
N2000 X-48.843	N2430 X-85.907	N2880 X-48.264	Y33.713	N3740 X-48.076
Y31.845	Y27.01	Y-32.786	N3310 X-85.381	Y-33.681
N2010 X-48.817	N2440 Y31.672	N2890 X-48.507	Y33.997	N3750 X-48.142
Y31.587	N2450 X-85.904	Y-33.173	N3320 X-85.271	Y-33.781
N2020 X-48.831	Y31.708	N2900 X-48.696	Y34.068	N3760 X-48.179
Y31.4	N2460 X-85.86	Y-33.459	N3330 X-85.154	Y-33.833
N2030 X-48.865	Y31.948	N2910 X-48.898	Y34.14	N3770 X-48.268
Y31.271	N2470 X-85.581	Y-33.673	N3340 X-84.905	Y-33.934
N2040 Y3.29	Y32.638	N2920 X-49.11	Y34.238	N3780 X-48.351
N2050 X-48.817	N2480 X-85.537	Y-33.831	N3350 X-84.848	Y-34.021
Y-31.582	Y32.715	N2930 X-49.242	Y34.257	N3790 X-48.498
N2060 X-48.833	N2490 X-85.434	Y-33.927	N3360 X-84.408	Y-34.154
Y-31.79	Y32.87	N2940 X-49.53	Y34.374	N3800 X-48.869
N2070 X-48.863	N2500 X-85.27	Y-34.12	N3370 X-84.394	Y-34.455
Y-31.924	Y33.03	N2950 X-49.781	Y34.38	N3810 X-49.018
N2080 X-48.866	N2510 X-84.914	Y-34.25	N3380 X-84.107	Y-34.566
Y-31.96	Y33.303	N2960 X-50.052	Y34.442	N3820 X-49.121
N2090 X-48.929	N2520 X-84.75	Y-34.334	N3390 X-83.813	Y-34.634
Y-32.196	Y33.409	N2970 X-50.494	Y34.455	N3830 X-49.286
N2100 X-49.038	N2530 X-84.718	Y-34.423	N3400 X-58.848	Y-34.718
Y-32.415	Y33.426	N2980 X-50.787	Y34.448	N3840 X-49.398
N2110 X-49.291	N2540 X-84.536	Y-34.463	N3410 X-50.805	Y-34.77
Y-32.838	Y33.496	N2990 X-76.423	Y34.463	N3850 X-49.714
N2120 X-49.443	N2550 X-84.5	Y-34.452	N3420 X-50.514	Y-34.881
Y-33.03	Y33.505	N3000 X-77.944	Y34.427	N3860 X-50.127
N2130 X-49.63	N2560 X-84.209	Y-34.449	N3430 X-50.39	Y-35.01
Y-33.187	Y33.553	N3010 X-81.208	Y34.391	N3870 X-50.309
N2140 X-49.848	N2570 X-83.935	Y-34.455	N3440 X-50.1	Y-35.048
Y-33.31	Y33.587	N3020 X-83.779	Y34.343	N3880 X-50.619
N2150 X-50.063	N2580 X-78.751	N3030 X-84.094	N3450 X-50.021	Y-35.09
Y-33.427	N2590 X-57.636	Y-34.443	Y34.325	N3890 X-50.779
N2160 X-50.296	Y33.623	N3040 X-84.382	N3460 X-49.802	Y-35.1
Y-33.519	N2600 X-50.948	Y-34.383	Y34.258	N3900 X-83.76
N2170 X-50.474	N2610 X-50.639	N3050 X-84.836	N3470 X-49.548	N3910 X-83.867
Y-33.573	Y33.61	Y-34.261	Y34.132	Y-35.099
N2180 X-50.583	N2620 X-50.36	N3060 X-84.994	N3480 X-49.253	N3920 X-84.067
Y-33.601	Y33.541	Y-34.206	Y33.934	Y-35.091
N2190 X-50.826	N2630 X-50.304	N3070 X-85.122	N3490 X-48.907	N3930 X-84.296
Y-33.622	Y33.523	Y-34.156	Y33.681	Y-35.069
N2200 X-50.89	N2640 X-50.116	N3080 X-85.235	N3500 X-48.704	N3940 X-84.463
Y-33.626	Y33.447	Y-34.09	Y33.469	Y-35.042
N2210 X-66.51	N2650 X-49.895	N3090 X-85.352	N3510 X-48.556	N3950 X-84.606
Y-33.589	Y33.341	Y-34.019	Y33.25	Y-35.012
N2220 X-83.879	N2660 X-49.678	N3100 X-85.736	N3520 X-48.435	N3960 X-84.767
N2230 X-84.122	Y33.218	Y-33.735	Y33.059	Y-34.96
Y-33.56	N2670 X-49.483	N3110 X-85.936	N3530 G0	N3970 X-85.235
N2240 X-84.164	Y33.069	Y-33.558	Z4.608	Y-34.797
Y-33.548	N2680 X-49.323	N3120 X-86.018	N3540 Z24.608	N3980 X-85.321
N2250 X-84.449	Y32.885	Y-33.457	N3550 X-47.896	Y-34.763
Y-33.516	N2690 X-49.155	N3130 X-86.138	Y33.403	N3990 X-85.466
N2260 X-84.485	Y32.605	Y-33.304	N3560 Z24.412	Y-34.695
Y-33.51	N2700 G0	N3140 X-86.383	N3570 Z4.412	N4000 X-85.527
N2270 X-84.67	Z4.804	Y-32.911	N3580 G1 Z-	Y-34.661
Y-33.448	N2710 Z24.804	N3150 X-86.539	.588 F1000.	N4010 X-85.717
		Y-32.635		Y-34.542

N4020 X-86.117	N4440 X-50.298	N4860 X-50.734	N5280 X-84.02	N5700 X-48.401
Y-34.251	Y35.045	Y-35.636	Y35.63	Y-35.349
N4030 X-86.179	N4450 X-50.139	N4870 X-70.179	N5290 X-66.29	N5710 X-48.497
Y-34.202	Y35.013	Y-35.626	Y35.628	Y-35.411
N4040 X-86.293	N4460 X-49.725	N4880 X-71.486	N5300 X-64.609	N5720 X-48.713
Y-34.1	Y34.886	Y-35.628	Y35.624	Y-35.525
N4050 X-86.415	N4470 X-49.392	N4890 X-83.722	N5310 X-60.157	N5730 X-49.069
Y-33.984	Y34.768	Y-35.632	Y35.634	Y-35.703
N4060 X-86.476	N4480 X-49.115	N4900 X-84.057	N5320 X-51.031	N5740 X-49.29
Y-33.908	Y34.631	Y-35.627	Y35.635	Y-35.806
N4070 X-86.614	N4490 X-49.013	N4910 X-84.168	N5330 X-50.696	N5750 X-49.385
Y-33.732	Y34.561	Y-35.611	Y35.633	Y-35.84
N4080 X-86.887	N4500 X-48.864	N4920 X-84.442	N5340 X-50.576	N5760 X-49.619
Y-33.368	Y34.451	Y-35.585	Y35.615	Y-35.909
N4090 X-87.04	N4510 X-48.484	N4930 X-84.772	N5350 X-50.285	N5770 X-50.033
Y-33.096	Y34.143	Y-35.53	Y35.593	Y-35.996
N4100 X-87.093	N4520 X-48.339	N4940 X-85.091	N5360 X-49.953	N5780 X-50.351
Y-32.957	Y34.008	Y-35.428	Y35.542	Y-36.049
N4110 X-87.148	N4530 X-48.255	N4950 X-85.562	N5370 X-49.596	N5790 X-50.598
Y-32.803	Y33.921	Y-35.262	Y35.431	Y-36.083
N4120 X-87.287	N4540 X-48.187	N4960 X-85.863	N5380 X-49.093	N5800 X-50.693
Y-32.391	Y33.842	Y-35.113	Y35.212	Y-36.09
N4130 X-87.338	N4550 X-48.132	N4970 X-86.122	N5390 X-48.791	N5810 X-50.777
Y-32.1	Y33.766	Y-34.933	Y35.066	Y-36.093
N4140 X-87.352	N4560 X-48.065	N4980 X-86.539	N5400 X-48.515	N5820 X-83.768
Y-31.889	Y33.667	Y-34.629	Y34.877	N5830 X-83.958
N4150 X-87.364	N4570 X-47.896	N4990 X-86.782	N5410 X-48.094	Y-36.091
Y-31.823	Y33.403	Y-34.398	Y34.531	N5840 X-84.136
N4160 X-87.377	N4580 X-47.426	N5000 X-86.988	N5420 X-47.849	Y-36.083
Y-31.629	Y33.705 Z-.784	Y-34.134	Y34.303	N5850 X-84.611
N4170 X-87.365	N4590 X-47.355	N5010 X-87.299	N5430 X-47.643	Y-36.019
Y-11.193	Y33.595	Y-33.727	Y34.043	N5860 X-84.743
N4180 X-87.371	N4600 X-47.193	N5020 X-87.464	N5440 X-47.426	Y-35.998
Y31.638	Y33.314	Y-33.435	Y33.705	N5870 X-84.961
N4190 X-87.34	N4610 X-47.066	N5030 X-87.671	N5450 X-47.051	Y-35.956
Y32.082	Y32.993	Y-32.936	Y33.951 Z-.979	N5880 X-85.299
N4200 X-87.291	N4620 X-46.923	N5040 X-87.79	N5460 X-46.972	Y-35.844
Y32.373	Y32.469	Y-32.623	Y33.83	N5890 X-85.755
N4210 X-87.145	N4630 X-46.849	N5050 X-87.854	N5470 X-46.829	Y-35.661
Y32.813	Y32.142	Y-32.33	Y33.581	N5900 X-86.109
N4220 X-87.091	N4640 X-46.84	N5060 X-87.878	N5480 X-46.805	Y-35.487
Y32.967	Y32.043	Y-32.203	Y33.534	N5910 X-86.384
N4230 X-87.035	N4650 X-46.815	N5070 X-87.896	N5490 X-46.7	Y-35.295
Y33.106	Y31.709	Y-31.934	Y33.266	N5920 X-86.803
N4240 X-86.956	N4660 X-46.808	N5080 X-87.906	N5500 X-46.52	Y-34.993
Y33.248	Y31.584	Y-31.889	Y32.729	N5930 X-87.051
N4250 X-86.881	N4670 X-46.809	N5090 X-87.928	N5510 X-46.483	Y-34.761
Y33.377	Y-15.211	Y-31.554	Y32.606	N5940 X-87.516
N4260 X-86.602	N4680 X-46.812	N5100 X-87.926	N5520 X-46.452	Y-34.213
Y33.75	Y-20.068	N5110 X-87.927	Y32.469	N5950 X-87.608
N4270 X-86.4	N4690 X-46.809	Y31.594	N5530 X-46.408	Y-34.094
Y34.	Y-31.614	N5120 X-87.873	Y32.259	N5960 X-87.719
N4280 X-86.235	N4700 X-46.82	Y32.233	N5540 X-46.378	Y-33.922
Y34.151	Y-31.747	N5130 X-87.861	Y31.926	N5970 X-87.793
N4290 X-86.145	N4710 X-46.824	Y32.306	N5550 X-46.353	Y-33.792
Y34.229	Y-31.847	N5140 X-87.779	Y31.582	N5980 X-88.051
N4300 X-85.727	N4720 X-46.855	Y32.66	N5560 X-46.36	Y-33.251
Y34.535	Y-32.181	N5150 X-87.667	Y21.167	N5990 X-88.147
N4310 X-85.586	N4730 X-46.935	Y32.938	N5570 X-46.353	Y-33.
Y34.624	Y-32.506	N5160 X-87.447	Y-31.583	N6000 X-88.168
N4320 X-85.477	N4740 X-47.078	Y33.47	N5580 X-46.356	Y-32.93
Y34.69	Y-33.03	N5170 X-87.277	Y-31.671	N6010 X-88.226
N4330 X-85.299	N4750 X-47.205	Y33.759	N5590 X-46.401	Y-32.668
Y34.772	Y-33.34	N5180 X-86.966	Y-32.178	N6020 X-88.303
N4340 X-85.214	N4760 X-47.371	Y34.167	N5600 X-46.431	Y-32.241
Y34.806	Y-33.617	N5190 X-86.756	Y-32.391	N6030 X-88.364
N4350 X-84.754	N4770 X-47.663	Y34.427	N5610 X-46.465	Y-31.892
Y34.965	Y-34.072	N5200 X-86.509	Y-32.528	N6040 X-88.376
N4360 X-84.592	N4780 X-47.873	Y34.653	N5620 X-46.532	Y-31.706
Y35.014	Y-34.327	N5210 X-86.097	Y-32.766	N6050 X-88.381
N4370 X-84.45	N4790 X-48.125	Y34.953	N5630 X-46.701	Y-31.541
Y35.045	Y-34.555	N5220 X-85.829	Y-33.276	N6060 X-88.373
N4380 X-84.283	N4800 X-48.546	Y35.133	N5640 X-46.832	Y21.291
Y35.07	Y-34.901	N5230 X-85.526	Y-33.59	N6070 X-88.381
N4390 X-84.065	N4810 X-48.825	Y35.276	N5650 X-47.007	Y31.641
Y35.091	Y-35.085	N5240 X-85.055	Y-33.882	N6080 X-88.365
N4400 X-83.865	N4820 X-49.129	Y35.442	N5660 X-47.301	Y31.839
Y35.1	Y-35.226	N5250 X-84.734	Y-34.331	N6090 X-88.348
N4410 X-50.784	N4830 X-49.632	Y35.539	N5670 X-47.517	Y32.003
N4420 X-50.608	Y-35.445	N5260 X-84.278	Y-34.595	N6100 X-88.287
Y35.089	N4840 X-49.979	Y35.604	N5680 X-47.564	Y32.357
N4430 X-50.447	Y-35.548	N5270 X-84.071	Y-34.639	N6110 X-88.228
Y35.068	N4850 X-50.323	Y35.623	N5690 X-48.171	Y32.666
	Y-35.596		Y-35.184	

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N6120 X-88.148 Y32.999	N6540 X-46.255 Y33.276	N6960 X-87.886 Y-34.429	N7380 X-48.31 Y35.784	N7790 X-49.614 Y-36.716
N6130 X-88.022 Y33.317	N6550 X-46.084 Y32.76	N6970 X-88.086 Y-34.117	N7390 X-47.996 Y35.587	N7800 X-50.108 Y-36.824
N6140 X-87.827 Y33.725	N6560 X-46.009 Y32.397	N6980 X-88.336 Y-33.634	N7400 X-47.722 Y35.362	N7810 X-50.572 Y-36.861
N6150 X-87.727 Y33.904	N6570 X-45.98 Y32.156	N6990 X-88.492 Y-33.298	N7410 X-47.371 Y35.047	N7820 X-50.842 Y-36.877
N6160 X-87.651 Y34.033	N6580 X-45.962 Y31.978	N7000 X-88.619 Y-32.884	N7420 X-47.317 Y34.995	N7830 X-53.827 Y-36.875
N6170 X-87.528 Y34.197	N6590 X-45.955 Y31.946	N7010 X-88.713 Y-32.362	N7430 X-47.053 Y34.71	N7840 X-69.669 Y-36.88
N6180 X-87.434 Y34.313	N6600 X-45.93 Y31.577	N7020 X-88.774 Y-31.997	N7440 X-46.85 Y34.418	N7850 X-83.826 Y-36.881
N6190 X-87.128 Y34.678	N6610 X-45.933 Y28.727	N7030 X-88.779 Y-31.86	N7450 X-46.696 Y34.184	N7860 X-84.124 Y-36.868
N6200 X-87.023 Y34.788	N6620 X-45.93 Y6.055	N7040 X-88.782 Y-31.843	N7460 X-46.392 Y34.385	N7870 X-84.407 Y-36.853
N6210 X-86.936 Y34.872	N6630 Y-31.577 N6640 X-45.938	N7050 X-88.793 Y-31.473	1.371 N7470 X-46.24 Y34.155	N7880 X-84.5 Y-36.837
N6220 X-86.776 Y35.015	N6650 X-45.968 Y-32.001	N7060 X-88.78 Y-1.644	N7480 X-46.071 Y33.823	N7890 X-84.778 Y-36.784
N6230 X-86.349 Y35.323	N6660 X-45.992 Y-32.231	N7070 X-88.793 Y13.985	N7490 X-45.884 Y33.324	N7900 X-85.227 Y-36.693
N6240 X-86.081 Y35.503	N6670 X-46.044 Y-32.598	N7080 Y31.678 N7090 X-88.786	N7500 X-45.761 Y32.975	N7910 X-85.347 Y-36.659
N6250 X-85.936 Y35.578	N6680 X-46.149 Y-32.967	N7100 X-88.785 Y31.83	N7510 X-45.734 Y32.858	N7920 X-85.698 Y-36.541
N6260 X-85.861 Y35.613	N6690 X-46.315 Y-33.466	N7110 X-88.746 Y32.199	N7520 X-45.699 Y32.686	N7930 X-86.178 Y-36.333
N6270 X-85.17 Y35.892	N6700 X-46.465 Y-33.81	N7120 X-88.652 Y32.721	N7530 X-45.66 Y32.479	N7940 X-86.51 Y-36.168
N6280 X-85.042 Y35.931	N6710 X-46.657 Y-34.127	N7130 X-88.574 Y33.041	N7540 X-45.592 Y32.014	N7950 X-86.817 Y-35.961
N6290 X-84.827 Y35.986	N6720 X-46.953 Y-34.576	N7140 X-88.547 Y33.141	N7550 X-45.567 Y31.64	N7960 X-87.244 Y-35.655
N6300 X-84.694 Y36.005	N6730 X-47.186 Y-34.864	N7150 X-88.412 Y33.485	N7560 X-45.576 Y-6.244	N7970 X-87.52 Y-35.408
N6310 X-84.157 Y36.077	N6740 X-47.478 Y-35.139	N7160 X-88.161 Y33.969	N7570 X-45.567 Y-31.578	N7980 X-87.878 Y-35.011
N6320 X-84.049 Y36.09	N6750 X-47.856 Y-35.48	N7170 X-87.981 Y34.292	N7580 X-45.574 Y-31.837	N7990 X-88.118 Y-34.729
N6330 X-50.819 N6340 X-50.612	N6760 X-48.165 Y-35.7	N7180 X-87.758 Y34.588	N7590 X-45.582 Y-31.903	N8000 X-88.191 Y-34.631
Y36.086	N6770 X-49.005 Y-36.144	N7190 X-87.419 Y34.988	N7600 X-45.689 Y-32.661	N8010 X-88.299 Y-34.463
N6350 X-50.271 Y36.033	N6780 X-49.353 Y-36.271	N7200 X-87.159 Y35.251	N7610 X-45.721 Y-32.813	N8020 X-88.393 Y-34.304
N6360 X-49.86 Y35.963	N6790 X-49.485 Y-36.308	N7210 X-86.885 Y35.464	N7620 X-45.822 Y-33.169	N8030 X-88.622 Y-33.907
N6370 X-49.635 Y35.914	N6800 X-49.847 Y-36.387	N7220 X-86.449 Y35.777	N7630 X-46.019 Y-33.689	N8040 X-88.754 Y-33.623
N6380 X-49.306 Y35.813	N6810 X-50.347 Y-36.481	N7230 X-86.128 Y35.961	N7640 X-46.157 Y-34.005	N8050 X-88.779 Y-33.566
N6390 X-49.214 Y35.772	N6820 X-50.833 Y-36.519	N7240 X-85.31 Y36.292	N7650 X-46.17 Y-34.03	N8060 X-88.932 Y-33.067
N6400 X-48.995 Y35.665	N6830 X-78.559 Y-36.51	N7250 X-84.951 Y36.384	N7660 X-46.349 Y-34.324	N8070 X-89.037 Y-32.7
N6410 X-48.58 Y35.46	N6840 X-80.256 Y-36.513	N7260 X-84.436 Y36.466	N7670 X-46.667 Y-34.803	N8080 X-89.064 Y-32.587
N6420 X-48.373 Y35.33	N6850 X-83.828 Y-36.514	N7270 X-84.069 Y36.509	N7680 X-46.878 Y-35.063	N8090 X-89.126 Y-32.212
N6430 X-48.279 Y35.266	N6860 X-83.902 Y-36.512	N7280 X-84.03 Y36.511	N7690 X-46.904 Y-35.091	N8100 X-89.142 Y-31.924
N6440 X-48.14 Y35.16	N6870 X-84.271 Y-36.491	N7290 X-56.118 Y36.507	N7700 X-47.131 Y-35.31	N8110 X-89.155 Y-31.848
N6450 X-47.718 Y34.781	N6880 X-84.786 Y-36.41	N7300 X-51.009 Y36.516	N7710 X-47.556 Y-35.711	N8120 X-89.167 Y-31.474
N6460 X-47.515 Y34.592	N6890 X-85.149 Y-36.339	N7310 X-50.63 Y36.509	N7720 X-47.858 Y-35.926	N8130 Y31.673 N8140 X-89.15
N6470 X-47.472 Y34.545	N6900 X-85.5 Y-36.221	N7320 X-50.576 Y36.502	N7730 X-48.003 Y-36.016	Y31.84
N6480 X-47.3 Y34.328	N6910 X-85.976 Y-36.03	N7330 X-50.513 Y36.5	N7740 X-48.413 Y-36.263	N8150 X-89.139 Y32.023
N6490 X-47.263 Y34.275	N6920 X-86.312 Y-35.863	N7340 X-50.147 Y36.443	N7750 X-48.656 Y-36.391	N8160 X-89.127 Y32.156
N6500 X-47.051 Y33.951	N6930 X-86.587 Y-35.677	N7350 X-49.647 Y36.35	N7760 X-48.749 Y-36.437	N8170 X-89.101 Y32.401
N6510 X-46.696 Y34.184	N6940 X-87.034 Y-35.356	N7360 X-49.16 Y36.207	N7770 X-49.105 Y-36.565	N8180 X-89.073 Y32.532
1.175 N6520 X-46.548 Y33.959	N6950 X-87.306 Y-35.111	N7370 X-48.822 Y36.055	N7780 X-49.326 Y-36.634	N8190 X-88.983 Y32.896
N6530 X-46.379 Y33.629				N8200 X-88.836 Y33.399

N8210 X-88.816	N8630 X-46.557	N9040 X-50.034	N9460 X-88.894	N9880 X-46.106
Y33.457	Y34.636	Y-37.157	Y34.119	Y34.574
N8220 X-88.701	N8640 X-46.392	N9050 X-50.09	N9470 X-88.778	N9890 X-45.841
Y33.749	Y34.385	Y-37.164	Y34.322	Y34.75 Z-1.763
N8230 X-88.674	N8650 X-46.106	N9060 X-50.451	N9480 X-88.616	N9900 X-45.834
Y33.804	Y34.574 Z-	Y-37.195	Y34.597	Y34.74
N8240 X-88.521	1.567	N9070 X-50.816	N9490 X-88.394	N9910 X-45.62
Y34.077	N8660 X-46.068	Y-37.219	Y34.931	Y34.4
N8250 X-88.3	Y34.515	N9080 X-83.795	N9500 X-88.296	N9920 X-45.382
Y34.466	N8670 X-45.9	Y-37.222	Y35.055	Y33.89
N8260 X-88.198	Y34.247	N9090 X-84.398	N9510 X-88.171	N9930 X-45.339
Y34.619	N8680 X-45.864	Y-37.197	Y35.199	Y33.761
N8270 X-88.078	Y34.178	N9100 X-84.776	N9520 X-87.799	N9940 X-45.245
Y34.78	N8690 X-45.73	Y-37.135	Y35.608	Y33.531
N8280 X-87.991	Y33.891	N9110 X-85.295	N9530 X-87.705	N9950 X-45.122
Y34.888	N8700 X-45.549	Y-37.026	Y35.703	Y33.149
N8290 X-87.632	Y33.417	N9120 X-85.609	N9540 X-87.515	N9960 X-45.094
Y35.284	N8710 X-45.499	Y-36.935	Y35.875	Y33.028
N8300 X-87.372	Y33.274	N9130 X-85.778	N9550 X-87.409	N9970 X-44.952
Y35.548	N8720 X-45.426	Y-36.878	Y35.957	Y32.287
N8310 X-87.079	Y33.048	N9140 X-86.472	N9560 X-86.769	N9980 X-44.94
Y35.774	N8730 X-45.405	Y-36.574	Y36.411	Y32.207
N8320 X-86.652	Y32.957	N9150 X-86.587	N9570 X-86.658	N9990 X-44.915
Y36.08	N8740 X-45.331	Y-36.517	Y36.475	Y31.807
N8330 X-86.33	Y32.563	N9160 X-86.812	N9580 X-86.426	N100 X-44.903
Y36.264	N8750 X-45.251	Y-36.383	Y36.597	Y31.573
N8340 X-85.85	Y32.037	N9170 X-86.918	N9590 X-85.963	N110 Y-31.573
Y36.472	N8760 X-45.226	Y-36.311	Y36.799	N120 X-44.907
N8350 X-85.507	Y31.64	N9180 X-87.348	N9600 X-85.798	Y-31.741
Y36.612	N8770 X-45.23	Y-36.003	Y36.866	N130 X-44.915
N8360 X-85.42	Y10.496	N9190 X-87.551	N9610 X-85.604	Y-31.805
Y36.639	N8780 X-45.235	Y-35.845	Y36.94	N140 X-44.919
N8370 X-85.241	Y.958	N9200 X-87.65	N9620 X-85.52	Y-31.974
Y36.685	N8790 X-45.225	Y-35.756	Y36.966	N150 X-44.965
N8380 X-85.046	Y-31.578	N9210 X-87.831	N9630 X-85.131	Y-32.373
Y36.732	N8800 X-45.231	Y-35.574	Y37.06	N160 X-44.977
N8390 X-84.587	Y-31.811	N9220 X-88.166	N9640 X-84.627	Y-32.452
Y36.826	N8810 X-45.271	Y-35.206	Y37.165	N170 X-45.073
N8400 X-84.212	Y-32.164	N9230 X-88.273	N9650 X-84.23	Y-32.921
Y36.869	N8820 X-45.298	Y-35.08	Y37.21	N180 X-45.168
N8410 X-83.997	Y-32.351	N9240 X-88.409	N9660 X-84.015	Y-33.31
Y36.878	N8830 X-45.356	Y-34.907	Y37.219	N190 X-45.217
N8420 X-79.647	Y-32.729	N9250 X-88.492	N9670 X-81.408	Y-33.45
Y36.873	N8840 X-45.371	Y-34.796	Y37.216	N200 X-45.36
N8430 X-51.009	Y-32.8	N9260 X-88.858	N9680 X-51.025	Y-33.825
N8440 X-50.639	N8850 X-45.437	Y-34.176	N9690 X-50.635	N210 X-45.429
Y36.867	Y-33.077	N9270 X-88.954	Y37.21	Y-33.978
N8450 X-50.576	N8860 X-45.478	Y-34.01	N9700 X-50.572	N220 X-45.516
Y36.857	Y-33.223	N9280 X-89.113	Y37.202	Y-34.19
N8460 X-50.493	N8870 X-45.769	Y-33.646	N9710 X-50.323	N230 X-45.704
Y36.855	Y-33.98	N9290 X-89.351	Y37.19	Y-34.545
N8470 X-50.296	N8880 X-45.8	Y-32.856	N9720 X-49.869	N240 X-45.865
Y36.846	Y-34.051	N9300 X-89.397	Y37.128	Y-34.8
N8480 X-50.163	N8890 X-45.949	Y-32.662	N9730 X-49.646	N250 X-46.235
Y36.827	Y-34.331	N9310 X-89.456	Y37.079	Y-35.325
N8490 X-49.919	N8900 X-45.989	Y-32.3	N9740 X-49.46	N260 X-46.505
Y36.79	Y-34.398	N9320 X-89.468	Y37.029	Y-35.622
N8500 X-49.776	N8910 X-46.285	Y-32.208	N9750 X-49.276	N270 X-46.896
Y36.758	Y-34.845	N9330 X-89.484	Y36.974	Y-36.011
N8510 X-49.318	N8920 X-46.473	Y-31.947	N9760 X-48.87	N280 X-47.2 Y-
Y36.625	Y-35.112	N9340 X-89.494	Y36.849	36.272
N8520 X-48.921	N8930 X-46.516	Y-31.883	N9770 X-48.506	N290 X-48.01
Y36.505	Y-35.166	N9350 X-89.509	Y36.701	Y-36.81
N8530 X-48.824	N8940 X-46.736	Y-31.487	N9780 X-48.157	N300 X-48.374
Y36.465	Y-35.407	N9360 Y31.66	Y36.506	Y-36.991
N8540 X-48.574	N8950 X-47.2	N9370 X-89.488	N9790 X-47.665	N310 X-48.417
Y36.353	Y-35.853	Y31.896	Y36.208	Y-37.009
N8550 X-48.483	N8960 X-47.4	N9380 X-89.483	N9800 X-47.572	N320 X-48.941
Y36.302	Y-36.024	Y31.975	Y36.147	Y-37.202
N8560 X-47.978	N8970 X-47.503	N9390 X-89.451	N9810 X-47.359	N330 X-49.32
Y35.999	Y-36.098	Y32.333	Y35.991	Y-37.334
N8570 X-47.85	N8980 X-47.724	N9400 X-89.441	N9820 X-47.262	N340 X-49.753
Y35.918	Y-36.243	Y32.432	Y35.91	Y-37.428
N8580 X-47.689	N8990 X-48.288	N9410 X-89.363	N9830 X-47.071	N350 X-49.907
Y35.813	Y-36.586	Y32.791	Y35.728	Y-37.455
N8590 X-47.404	N9000 X-48.653	N9420 X-89.302	N9840 X-46.662	N360 X-50.329
Y35.577	Y-36.767	Y33.038	Y35.332	Y-37.504
N8600 X-46.999	N9010 X-49.031	N9430 X-89.183	N9850 X-46.616	N370 X-50.773
Y35.187	Y-36.899	Y33.431	Y35.281	Y-37.543
N8610 X-46.772	N9020 X-49.453	N9440 X-89.067	N9860 X-46.409	N380 X-74.248
Y34.94	Y-37.031	Y33.762	Y35.029	Y-37.533
N8620 X-46.748	N9030 X-49.642	N9450 X-89.05	N9870 X-46.37	N390 X-83.786
Y34.911	Y-37.073	Y33.806	Y34.972	Y-37.539

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N400 X-84.187	N820 X-86.908	N1240 X-44.62	N1660 X-86.337	N2080 X-87.051
Y-37.523	Y36.701	Y31.576	Y-37.302	Y36.952
N410 X-84.261	N830 X-86.553	N1250 X-44.623	N1670 X-86.782	N2090 X-86.69
Y-37.514	Y36.888	Y-25.079	Y-37.095	Y37.141
N420 X-84.561	N840 X-86.073	N1260 X-44.62	N1680 X-86.882	N2100 X-86.218
Y-37.502	Y37.107	Y-31.576	Y-37.047	Y37.36
N430 X-84.957	N850 X-85.698	N1270 X-44.623	N1690 X-87.137	N2110 X-85.839
Y-37.437	Y37.249	Y-31.684	Y-36.895	Y37.502
N440 X-85.023	N860 X-85.249	N1280 X-44.645	N1700 X-87.231	N2120 X-85.336
Y-37.423	Y37.362	Y-32.093	Y-36.835	Y37.63
N450 X-85.472	N870 X-84.859	N1290 X-44.665	N1710 X-87.666	N2130 X-84.862
Y-37.309	Y37.456	Y-32.261	Y-36.526	Y37.743
N460 X-85.856	N880 X-84.793	N1300 X-44.73	N1720 X-87.904	N2140 X-84.448
Y-37.195	Y37.47	Y-32.71	Y-36.34	Y37.793
N470 X-86.224	N890 X-84.394	N1310 X-44.887	N1730 X-87.986	N2150 X-84.044
Y-37.035	Y37.515	Y-33.367	Y-36.273	Y37.823
N480 X-86.704	N900 X-84.02	N1320 X-44.916	N1740 X-88.199	N2160 X-71.417
Y-36.815	Y37.536	Y-33.472	Y-36.059	Y37.817
N490 X-87.048	N910 X-67.274	N1330 X-45.105	N1750 X-88.636	N2170 X-50.795
Y-36.61	N920 X-59.926	Y-33.978	Y-35.605	Y37.818
N500 X-87.48	Y37.532	N1340 X-45.163	N1760 X-88.856	N2180 X-50.414
Y-36.302	N930 X-53.066	Y-34.122	Y-35.321	Y37.81
N510 X-87.797	Y37.54	N1350 X-45.281	N1770 X-88.904	N2190 X-50.317
Y-36.055	N940 X-51.014	Y-34.366	Y-35.255	Y37.799
N520 X-88.08	N950 X-50.606	N1360 X-45.465	N1780 X-89.222	N2200 X-50.01
Y-35.771	Y37.535	Y-34.713	Y-34.765	Y37.757
N530 X-88.451	N960 X-50.139	N1370 X-45.687	N1790 X-89.434	N2210 X-49.643
Y-35.38	Y37.481	Y-35.064	Y-34.408	Y37.692
N540 X-88.696	N970 X-49.742	N1380 X-45.912	N1800 X-89.601	N2220 X-49.275
Y-35.063	Y37.426	Y-35.385	Y-34.029	Y37.612
N550 X-88.884	N980 X-49.63	N1390 X-46.004	N1810 X-89.783	N2230 X-48.975
Y-34.775	Y37.406	Y-35.502	Y-33.568	Y37.531
N560 X-89.195	N990 X-49.547	N1400 X-46.268	N1820 X-89.898	N2240 X-48.884
Y-34.249	Y37.388	Y-35.792	Y-33.18	Y37.499
N570 X-89.355	N1000 X-49.16	N1410 X-46.653	N1830 X-89.933	N2250 X-48.205
Y-33.881	Y37.284	Y-36.183	Y-33.033	Y37.221
N580 X-89.552	N1010 X-48.636	N1420 X-46.979	N1840 X-89.993	N2260 X-47.952
Y-33.339	Y37.091	Y-36.464	Y-32.717	Y37.095
N590 X-89.665	N1020 X-48.23	N1430 X-47.435	N1850 X-90.086	N2270 X-47.624
Y-32.954	Y36.926	Y-36.776	Y-32.157	Y36.908
N600 X-89.682	N1030 X-47.879	N1440 X-47.762	N1860 X-90.093	N2280 X-47.131
Y-32.87	Y36.73	Y-36.992	Y-32.048	Y36.572
N610 X-89.758	N1040 X-47.392	N1450 X-48.086	N1870 X-90.104	N2290 X-46.91
Y-32.406	Y36.406	Y-37.162	Y-31.749	Y36.408
N620 X-89.811	N1050 X-47.069	N1460 X-48.208	N1880 Y31.854	N2300 X-46.807
Y-31.954	Y36.167	Y-37.223	N1890 X-90.099	Y36.322
N630 X-89.826	N1060 X-46.779	N1470 X-48.698	Y31.962	N2310 X-46.538
Y-31.553	Y35.891	Y-37.427	N1900 X-90.073	Y36.065
N640 X-89.811	N1070 X-46.388	N1480 X-48.788	Y32.26	N2320 X-46.147
Y5.668	Y35.502	Y-37.462	N1910 X-89.958	Y35.668
N650 X-89.826	N1080 X-46.134	N1490 X-49.082	Y32.916	N2330 X-45.899
Y21.15	Y35.192	Y-37.564	N1920 X-89.937	Y35.364
N660 Y31.72	N1090 X-46.076	N1500 X-49.175	Y33.014	N2340 X-45.816
N670 X-89.79	Y35.117	Y-37.588	N1930 X-89.864	Y35.259
Y32.12	N1100 X-45.921	N1510 X-49.613	Y33.312	N2350 X-45.594
N680 X-89.738	Y34.871	Y-37.687	N1940 X-89.849	Y34.906
Y32.572	N1110 X-45.841	N1520 X-50.12	Y33.364	N2360 X-45.353
N690 X-89.713	Y34.75	Y-37.776	N1950 X-89.733	Y35.057 Z-
Y32.713	N1120 X-45.594	N1530 X-50.216	Y33.695	2.155
N700 X-89.639	Y34.906 Z-	Y-37.789	N1960 X-89.586	N2370 X-45.142
Y33.055	1.959	N1540 X-50.525	Y34.064	Y34.721
N710 X-89.624	N1130 X-45.383	Y-37.815	N1970 X-89.5	N2380 X-45.036
Y33.116	Y34.571	N1550 X-50.949	Y34.269	Y34.502
N720 X-89.518	N1140 X-45.27	Y-37.821	N1980 X-89.414	N2390 X-44.871
Y33.417	Y34.338	N1560 X-54.715	Y34.441	Y34.148
N730 X-89.293	N1150 X-45.102	Y-37.819	N1990 X-89.305	N2400 X-44.795
Y34.037	Y33.978	N1570 X-83.858	Y34.635	Y33.96
N740 X-89.115	N1160 X-45.074	Y-37.827	N2000 X-88.96	N2410 X-44.702
Y34.396	Y33.908	N1580 X-84.134	Y35.168	Y33.708
N750 X-89.008	N1170 X-44.981	Y-37.816	N2010 X-88.774	N2420 X-44.579
Y34.576	Y33.656	N1590 X-84.468	Y35.437	Y33.301
N760 X-88.823	N1180 X-44.889	Y-37.79	N2020 X-88.539	N2430 X-44.499
Y34.864	Y33.372	N1600 X-84.72	Y35.709	Y32.966
N770 X-88.599	N1190 X-44.858	Y-37.765	N2030 X-88.128	N2440 X-44.424
Y35.199	Y33.267	N1610 X-84.881	Y36.138	Y32.553
N780 X-88.337	N1200 X-44.777	Y-37.738	N2040 X-87.904	N2450 X-44.388
Y35.503	Y32.932	N1620 X-85.11	Y36.34	Y32.305
N790 X-87.966	N1210 X-44.703	Y-37.69	N2050 X-87.823	N2460 X-44.368
Y35.894	Y32.537	N1630 X-85.634	Y36.409	Y32.029
N800 X-87.668	N1220 X-44.689	Y-37.558	N2060 X-87.387	N2470 X-44.341
Y36.163	Y32.424	N1640 X-85.964	Y36.72	Y31.581
N810 X-87.237	N1230 X-44.659	Y-37.46	N2070 X-87.144	N2480 X-44.35
Y36.471	Y32.237	N1650 X-86.021	Y36.89	Y-13.628
		Y-37.44		

N2490 X-44.341	N2910 X-87.078	N3330 X-85.918	N3740 X-44.088	N4160 X-85.442
Y-31.576	Y-37.259	Y37.77	Y19.5	Y-38.172
N2500 X-44.357	N2920 X-87.119	N3340 X-85.427	N3750 X-44.086	N4170 X-85.957
Y-31.92	Y-37.234	Y37.895	Y14.246	Y-38.025
N2510 X-44.379	N2930 X-87.437	N3350 X-84.956	N3760 Y-31.574	N4180 X-86.361
Y-32.225	Y-37.032	Y38.008	N3770 X-44.114	Y-37.884
N2520 X-44.47	N2940 X-87.872	N3360 X-84.531	Y-32.155	N4190 X-87.23
Y-32.838	Y-36.722	Y38.06	N3780 X-44.131	Y-37.468
N2530 X-44.569	N2950 X-88.201	N3370 X-84.188	Y-32.398	N4200 X-87.591
Y-33.252	Y-36.454	Y38.093	N3790 X-44.196	Y-37.238
N2540 X-44.669	N2960 X-88.86	N3380 X-84.091	Y-32.817	N4210 X-88.029
Y-33.614	Y-35.772	Y38.1	N3800 X-44.223	Y-36.926
N2550 X-44.766	N2970 X-89.117	N3390 X-83.692	Y-32.982	N4220 X-88.361
Y-33.878	Y-35.439	Y38.102	N3810 X-44.321	Y-36.655
N2560 X-44.932	N2980 X-89.443	N3400 X-74.619	Y-33.368	N4230 X-88.744
Y-34.293	Y-34.936	Y38.095	N3820 X-44.433	Y-36.267
N2570 X-44.961	N2990 X-89.662	N3410 X-50.679	Y-33.771	N4240 X-89.042
Y-34.347	Y-34.568	Y38.096	N3830 X-44.534	Y-35.959
N2580 X-45.054	N3000 X-89.801	N3420 X-50.444	Y-34.046	N4250 X-89.302
Y-34.541	Y-34.257	Y38.092	N3840 X-44.699	Y-35.619
N2590 X-45.242	N3010 X-89.919	N3430 X-50.083	Y-34.457	N4260 X-89.621
Y-34.895	Y-33.985	Y38.051	N3850 X-44.745	Y-35.162
N2600 X-45.453	N3020 X-90.035	N3440 X-50.023	Y-34.546	N4270 X-89.842
Y-35.228	Y-33.692	Y38.043	N3860 X-44.827	Y-34.791
N2610 X-45.684	N3030 X-90.13	N3450 X-49.926	Y-34.715	N4280 X-90.028
Y-35.556	Y-33.386	Y38.026	N3870 X-45.015	Y-34.38
N2620 X-45.714	N3040 X-90.159	N3460 X-49.455	Y-35.069	N4290 X-90.246
Y-35.59	Y-33.289	Y37.935	N3880 X-45.22	Y-33.875
N2630 X-45.782	N3050 X-90.173	N3470 X-49.028	Y-35.393	N4300 X-90.374
Y-35.677	Y-33.23	Y37.838	N3890 X-45.45	Y-33.466
N2640 X-46.038	N3060 X-90.337	N3480 X-48.969	Y-35.721	N4310 X-90.483
Y-35.959	Y-32.365	Y37.822	N3900 X-45.498	Y-33.043
N2650 X-46.42	N3070 X-90.356	N3490 X-48.628	Y-35.774	N4320 X-90.592
Y-36.347	Y-32.25	Y37.699	N3910 X-45.56	Y-32.464
N2660 X-46.789	N3080 X-90.382	N3500 X-48.433	Y-35.853	N4330 X-90.651
Y-36.67	Y-31.876	Y37.62	N3920 X-45.808	Y-31.619
N2670 X-47.37	N3090 X-90.384	N3510 X-48.077	Y-36.127	N4340 X-90.65
Y-37.068	Y-31.827	Y37.464	N3930 X-46.186	Y28.348
N2680 X-47.583	N3100 Y31.753	N3520 X-47.694	Y-36.511	N4350 X-90.651
Y-37.211	N3110 X-90.366	Y37.273	N3940 X-46.56	Y31.534
N2690 X-48.051	Y32.151	N3530 X-47.578	Y-36.839	N4360 X-90.631
Y-37.456	N3120 X-90.362	Y37.206	N3950 X-47.029	Y31.962
N2700 X-48.148	Y32.201	N3540 X-47.346	Y-37.165	N4370 X-90.619
Y-37.495	N3130 X-90.276	Y37.055	N3960 X-47.378	Y32.082
N2710 X-48.36	Y32.707	N3550 X-46.841	Y-37.404	N4380 X-90.602
Y-37.587	N3140 X-90.192	Y36.709	N3970 X-47.502	Y32.384
N2720 X-48.532	Y33.151	N3560 X-46.533	Y-37.472	N4390 X-90.532
Y-37.659	N3150 X-90.162	Y36.452	N3980 X-47.877	Y32.807
N2730 X-48.87	Y33.271	N3570 X-46.309	Y-37.669	N4400 X-90.502
Y-37.789	N3160 X-90.073	Y36.234	N3990 X-48.096	Y32.964
N2740 X-48.928	Y33.579	N3580 X-45.911	Y-37.767	N4410 X-90.392
Y-37.809	N3170 X-90.04	Y35.83	N4000 X-48.217	Y33.388
N2750 X-49.279	Y33.674	N3590 X-45.67	Y-37.815	N4420 X-90.274
Y-37.899	N3180 X-89.946	Y35.535	N4010 X-48.303	Y33.799
N2760 X-49.376	Y33.909	N3600 X-45.583	Y-37.853	N4430 X-89.922
Y-37.921	N3190 X-89.699	Y35.423	N4020 X-48.703	Y34.627
N2770 X-49.846	Y34.496	N3610 X-45.353	Y-38.006	N4440 X-89.879
Y-38.011	N3200 X-89.488	Y35.057	N4030 X-48.851	Y34.718
N2780 X-49.98	Y34.868	N3620 X-45.111	Y-38.052	N4450 X-89.665
Y-38.035	N3210 X-89.186	Y35.208 Z-	N4040 X-49.265	Y35.095
N2790 X-50.341	Y35.334	2.351	Y-38.157	N4460 X-89.347
Y-38.083	N3220 X-89.148	N3630 X-44.905	N4050 X-49.316	Y35.552
N2800 X-50.401	Y35.389	Y34.879	Y-38.167	N4470 X-89.094
Y-38.089	N3230 X-88.939	N3640 X-44.803	N4060 X-49.619	Y35.898
N2810 X-51.026	Y35.678	Y34.666	Y-38.245	N4480 X-88.803
Y-38.098	N3240 X-88.867	N3650 X-44.64	N4070 X-49.734	Y36.212
N2820 X-84.027	Y35.761	Y34.318	Y-38.267	N4490 X-88.42
Y-38.103	N3250 X-88.656	N3660 X-44.563	N4080 X-50.158	Y36.6
N2830 X-84.272	Y35.989	Y34.127	Y-38.324	N4500 X-88.094
Y-38.081	N3260 X-88.275	N3670 X-44.457	N4090 X-50.588	Y36.878
N2840 X-84.876	Y36.385	Y33.841	Y-38.356	N4510 X-87.655
Y-38.022	N3270 X-88.236	N3680 X-44.337	N4100 X-51.001	Y37.19
N2850 X-85.279	Y36.42	Y33.441	Y-38.364	N4520 X-87.3
Y-37.935	N3280 X-87.952	N3690 X-44.241	N4110 X-80.634	Y37.428
N2860 X-85.806	Y36.662	Y33.061	Y-38.361	N4530 X-86.918
Y-37.802	N3290 X-87.516	N3700 X-44.167	N4120 X-84.057	Y37.623
N2870 X-85.897	Y36.973	Y32.645	Y-38.363	N4540 X-86.435
Y-37.775	N3300 X-87.164	N3710 X-44.139	N4130 X-84.372	Y37.853
N2880 X-86.206	Y37.21	Y32.472	Y-38.335	N4550 X-86.034
Y-37.667	N3310 X-86.786	N3720 X-44.123	N4140 X-84.798	Y38.002
N2890 X-86.292	Y37.404	Y32.235	Y-38.292	N4560 X-85.519
Y-37.629	N3320 X-86.314	N3730 X-44.086	N4150 X-85.01	Y38.149
N2900 X-86.678	Y37.622	Y31.574	Y-38.266	N4570 X-85.103
Y-37.451				Y38.25

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N4580 X-85.033	N4990 X-43.86	N5410 X-87.353	N5830 X-87.039	N6250 X-43.636
Y38.261	Y-32.018	Y-37.673	Y37.829	Y32.27
N4590 X-84.453	N5000 X-43.898	N5420 X-87.721	N5840 X-86.561	N6260 X-43.612
Y38.331	Y-32.567	Y-37.439	Y38.061	Y31.863
N4600 X-84.179	N5010 X-43.99	N5430 X-88.161	N5850 X-86.155	N6270 X-43.611
Y38.354	Y-33.147	Y-37.126	Y38.213	Y-31.842
N4610 X-84.138	N5020 X-44.091	N5440 X-88.5	N5860 X-85.653	N6280 X-43.626
Y38.359	Y-33.54	Y-36.852	Y38.36	Y-32.172
N4620 X-63.559	N5030 X-44.205	N5450 X-88.887	N5870 X-85.237	N6290 X-43.666
Y38.362	Y-33.953	Y-36.465	Y38.462	Y-32.736
N4630 X-54.133	N5040 X-44.3	N5460 X-89.189	N5880 X-84.868	N6300 X-43.756
Y38.36	Y-34.21	Y-36.156	Y38.516	Y-33.311
N4640 X-50.685	N5050 X-44.465	N5470 X-89.243	N5890 X-84.235	N6310 X-43.788
Y38.362	Y-34.621	Y-36.089	Y38.59	Y-33.428
N4650 X-50.54	N5060 X-44.53	N5480 X-89.454	N5900 X-84.066	N6320 X-43.86
Y38.347	Y-34.745	Y-35.813	Y38.596	Y-33.712
N4660 X-50.239	N5070 X-44.6	N5490 X-89.771	N5910 X-83.7	N6330 X-43.974
Y38.329	Y-34.89	Y-35.362	Y38.599	Y-34.125
N4670 X-49.813	N5080 X-44.788	N5500 X-90.014	N5920 X-55.561	N6340 X-44.067
Y38.281	Y-35.244	Y-34.959	Y38.593	Y-34.374
N4680 X-49.698	N5090 X-44.986	N5510 X-90.137	N5930 X-50.685	N6350 X-44.232
Y38.259	Y-35.557	Y-34.708	Y38.595	Y-34.786
N4690 X-49.281	N5100 X-45.217	N5520 X-90.302	N5940 X-50.032	N6360 X-44.314
Y38.162	Y-35.885	Y-34.356	Y38.544	Y-34.943
N4700 X-48.78	N5110 X-45.282	N5530 X-90.431	N5950 X-49.803	N6370 X-44.373
Y38.03	Y-35.958	Y-34.068	Y38.519	Y-35.064
N4710 X-48.377	N5120 X-45.337	N5540 X-90.471	N5960 X-49.599	N6380 X-44.561
Y37.885	Y-36.029	Y-33.956	Y38.48	Y-35.418
N4720 X-48.17	N5130 X-45.607	N5550 X-90.565	N5970 X-48.901	N6390 X-44.753
Y37.799	Y-36.326	Y-33.655	Y38.318	Y-35.722
N4730 X-47.954	N5140 X-45.953	N5560 X-90.708	N5980 X-48.824	N6400 X-44.983
Y37.703	Y-36.676	Y-33.106	Y38.295	Y-36.05
N4740 X-47.574	N5150 X-46.327	N5570 X-90.763	N5990 X-48.559	N6410 X-45.066
Y37.514	Y-37.003	Y-32.865	Y38.206	Y-36.141
N4750 X-47.444	N5160 X-46.799	N5580 X-90.808	N6000 X-48.14	N6420 X-45.115
Y37.442	Y-37.331	Y-32.627	Y38.054	Y-36.205
N4760 X-47.091	N5170 X-47.153	N5590 X-90.832	N6010 X-47.721	N6430 X-45.385
Y37.211	Y-37.573	Y-32.433	Y37.868	Y-36.501
N4770 X-46.624	N5180 X-47.268	N5600 X-90.886	N6020 X-47.352	N6440 X-45.719
Y36.888	Y-37.636	Y-31.635	Y37.684	Y-36.84
N4780 X-46.297	N5190 X-47.647	N5610 X-90.88	N6030 X-47.197	N6450 X-46.066
Y36.615	Y-37.835	Y17.281	Y37.597	Y-37.144
N4790 X-46.08	N5200 X-48.071	N5620 X-90.886	N6040 X-46.854	N6460 X-46.116
Y36.403	Y-38.024	Y31.553	Y37.373	Y-37.185
N4800 X-45.676	N5210 X-48.462	N5630 X-90.867	N6050 X-46.391	N6470 X-46.923
Y35.991	Y-38.174	Y31.951	Y37.052	Y-37.739
N4810 X-45.442	N5220 X-48.822	N5640 X-90.839	N6060 X-46.066	N6480 X-47.035
Y35.705	Y-38.295	Y32.347	Y36.781	Y-37.801
N4820 X-45.349	N5230 X-49.163	N5650 X-90.82	N6070 X-45.851	N6490 X-47.414
Y35.588	Y-38.382	Y32.542	Y36.572	Y-38.
N4830 X-45.111	N5240 X-49.357	N5660 X-90.78	N6080 X-45.788	N6500 X-47.468
Y35.208	Y-38.427	Y32.781	Y36.506	Y-38.022
N4840 X-44.87	N5250 X-49.412	N5670 X-90.735	N6090 X-45.44	N6510 X-47.846
Y35.359 Z-	Y-38.438	Y32.994	Y36.153	Y-38.191
2.547	N5260 X-49.481	N5680 X-90.585	N6100 X-45.213	N6520 X-48.225
N4850 X-44.668	Y-38.455	Y33.573	Y35.876	Y-38.336
Y35.037	N5270 X-49.718	N5690 X-90.498	N6110 X-45.116	N6530 X-48.506
N4860 X-44.569	Y-38.505	Y33.876	Y35.752	Y-38.433
Y34.831	N5280 X-49.946	N5700 X-90.46	N6120 X-44.87	N6540 X-48.843
N4870 X-44.41	Y-38.535	Y33.989	Y35.359	Y-38.542
Y34.488	N5290 X-50.154	N5710 X-90.338	N6130 X-44.63	N6550 X-48.955
N4880 X-44.332	Y-38.556	Y34.28	Y35.51 Z-2.743	Y-38.57
Y34.297	N5300 X-50.604	N5720 X-90.055	N6140 X-44.432	N6560 X-49.265
N4890 X-44.316	Y-38.59	Y34.881	Y35.194	Y-38.643
Y34.249	N5310 X-51.006	N5730 X-89.975	N6150 X-44.336	N6570 X-49.747
N4900 X-44.221	Y-38.597	Y35.023	Y34.995	Y-38.744
Y33.994	N5320 X-70.165	N5740 X-89.815	N6160 X-44.166	N6580 X-50.201
N4910 X-44.104	Y-38.593	Y35.295	Y34.632	Y-38.79
Y33.606	N5330 X-83.914	N5750 X-89.5	N6170 X-44.1	N6590 X-50.654
N4920 X-44.007	Y-38.599	Y35.744	Y34.467	Y-38.825
Y33.225	N5340 X-84.149	N5760 X-89.295	N6180 X-44.077	N6600 X-50.773
N4930 X-43.936	Y-38.596	Y36.024	Y34.394	Y-38.827
Y32.822	N5350 X-84.416	N5770 X-89.243	N6190 X-43.985	N6610 X-69.979
N4940 X-43.93	Y-38.569	Y36.092	Y34.148	Y-38.824
Y32.774	N5360 X-85.086	N5780 X-88.948	N6200 X-43.862	N6620 X-83.728
N4950 X-43.905	Y-38.488	Y36.409	Y33.738	Y-38.83
Y32.62	N5370 X-85.157	N5790 X-88.562	N6210 X-43.774	N6630 X-84.213
N4960 X-43.869	Y-38.475	Y36.794	Y33.39	Y-38.824
Y32.105	N5380 X-85.571	N5800 X-88.23	N6220 X-43.699	N6640 X-84.779
N4970 X-43.845	Y-38.384	Y37.076	Y32.968	Y-38.756
Y31.686	N5390 X-86.075	N5810 X-87.789	N6230 X-43.695	N6650 X-85.215
N4980 X-43.844	Y-38.237	Y37.389	Y32.917	Y-38.7
Y-31.678	N5400 X-86.484	N5820 X-87.427	N6240 X-43.67	N6660 X-85.416
	Y-38.094	Y37.63	Y32.769	Y-38.656

N6670 X-85.663	N7090 X-87.918	N7500 X-43.749	N7920 X-55.48	N8340 X-90.956
Y-38.598	Y37.581	Y34.301	Y-39.048	Y33.897
N6680 X-86.163	N7100 X-87.544	N7510 X-43.625	N7930 X-60.858	N8350 X-90.813
Y-38.452	Y37.829	Y33.891	Y-39.05	Y34.326
N6690 X-86.583	N7110 X-87.19	N7520 X-43.541	N7940 X-83.677	N8360 X-90.625
Y-38.302	Y38.012	Y33.554	N7950 X-84.154	Y34.736
N6700 X-87.464	N7120 X-86.667	N7530 X-43.466	Y-39.044	N8370 X-90.408
Y-37.875	Y38.266	Y33.133	N7960 X-84.194	Y35.183
N6710 X-87.844	N7130 X-86.249	N7540 X-43.459	Y-39.04	N8380 X-90.374
Y-37.635	Y38.425	Y33.061	N7970 X-84.334	Y35.247
N6720 X-88.284	N7140 X-85.748	N7550 X-43.435	Y-39.038	N8390 X-90.138
Y-37.322	Y38.572	Y32.917	N7980 X-85.123	Y35.64
N6730 X-88.634	N7150 X-85.502	N7560 X-43.402	Y-38.941	N8400 X-89.806
Y-37.042	Y38.636	Y32.434	N7990 X-85.318	Y36.089
N6740 X-89.259	N7160 X-85.32	N7570 X-43.377	Y-38.909	N8410 X-89.532
Y-36.418	Y38.681	Y32.007	N8000 X-85.803	Y36.448
N6750 X-89.336	N7170 X-84.832	N7580 Y-32.007	Y-38.793	N8420 X-89.219
Y-36.339	Y38.752	N7590 X-43.393	N8010 X-85.873	Y36.774
N6760 X-89.545	N7180 X-84.305	Y-32.326	Y-38.769	N8430 X-88.829
Y-36.077	Y38.817	N7600 X-43.433	N8020 X-86.27	Y37.159
N6770 X-89.612	N7190 X-83.829	Y-32.906	Y-38.645	N8440 X-88.438
Y-35.99	Y38.832	N7610 X-43.523	N8030 X-86.696	Y37.485
N6780 X-89.929	N7200 X-72.131	Y-33.476	Y-38.493	N8450 X-88.221
Y-35.541	Y38.83	N7620 X-43.568	N8040 X-86.856	Y37.634
N6790 X-90.049	N7210 X-61.795	Y-33.64	Y-38.42	N8460 X-88.041
Y-35.351	Y38.824	N7630 X-43.63	N8050 X-87.262	Y37.761
N6800 X-90.179	N7220 X-50.743	Y-33.885	Y-38.222	N8470 X-87.665
Y-35.137	Y38.828	N7640 X-43.744	N8060 X-87.412	Y38.011
N6810 X-90.498	N7230 X-49.855	Y-34.297	Y-38.142	N8480 X-87.568
Y-34.482	Y38.759	N7650 X-43.833	N8070 X-87.584	Y38.066
N6820 X-90.615	N7240 X-49.407	Y-34.539	Y-38.058	N8490 X-87.166
Y-34.228	Y38.675	N7660 X-43.998	N8080 X-87.966	Y38.273
N6830 X-90.739	N7250 X-48.93	Y-34.95	Y-37.817	N8500 X-87.012
Y-33.881	Y38.565	N7670 X-44.099	N8090 X-88.184	Y38.342
N6840 X-90.763	N7260 X-48.615	Y-35.142	Y-37.666	N8510 X-86.782
Y-33.806	Y38.468	N7680 X-44.146	N8100 X-88.269	Y38.456
N6850 X-90.902	N7270 X-48.364	Y-35.239	Y-37.602	N8520 X-86.36
Y-33.28	Y38.384	N7690 X-44.334	N8110 X-88.407	Y38.617
N6860 X-91.019	N7280 X-47.884	Y-35.593	Y-37.504	N8530 X-86.252
Y-32.773	Y38.209	N7700 X-44.519	N8120 X-88.76	Y38.655
N6870 X-91.074	N7290 X-47.488	Y-35.886	Y-37.222	N8540 X-86.174
Y-32.325	Y38.032	N7710 X-44.75	N8130 X-89.15	Y38.675
N6880 X-91.112	N7300 X-47.104	Y-36.214	Y-36.838	N8550 X-85.848
Y-31.764	Y37.841	N7720 X-44.85	N8140 X-89.47	Y38.778
N6890 X-91.115	N7310 X-47.047	Y-36.325	Y-36.518	N8560 X-85.41
Y-31.483	Y37.805	N7730 X-44.893	N8150 X-89.752	Y38.892
N6900 X-91.11	N7320 X-46.95	Y-36.38	Y-36.166	N8570 X-85.364
Y5.73	Y37.752	N7740 X-45.163	N8160 X-90.085	Y38.9
N6910 X-91.108	N7330 X-46.617	Y-36.677	Y-35.717	N8580 X-84.768
Y12.146	Y37.535	N7750 X-45.486	N8170 X-90.326	Y38.988
N6920 X-91.115	N7340 X-46.157	Y-37.005	Y-35.335	N8590 X-84.428
Y31.675	Y37.216	N7760 X-45.86	N8180 X-90.363	Y39.03
N6930 X-91.107	N7350 X-45.834	Y-37.332	Y-35.266	N8600 X-83.771
Y31.836	Y36.947	N7770 X-45.89	N8190 X-90.778	Y39.053
N6940 X-91.08	N7360 X-45.594	Y-37.355	Y-34.412	N8610 X-78.346
Y32.223	Y36.713	N7780 X-46.693	N8200 X-90.93	Y39.05
N6950 X-91.035	N7370 X-45.541	Y-37.906	Y-33.987	N8620 X-66.545
Y32.675	Y36.656	N7790 X-46.801	N8210 X-91.074	Y39.055
N6960 X-90.931	N7380 X-45.204	Y-37.965	Y-33.531	N8630 X-50.704
Y33.165	Y36.314	N7800 X-47.2	N8220 X-91.092	N8640 X-50.2
N6970 X-90.787	N7390 X-44.985	Y-38.174	Y-33.462	Y39.016
Y33.718	Y36.046	N7810 X-47.258	N8230 X-91.207	N8650 X-49.592
N6980 X-90.765	N7400 X-44.882	Y-38.196	Y-32.981	Y38.939
Y33.793	Y35.916	N7820 X-47.621	N8240 X-91.333	N8660 X-49.148
N6990 X-90.649	N7410 X-44.698	Y-38.358	Y-31.93	Y38.855
Y34.143	Y35.623	N7830 X-48.021	N8250 X-91.339	N8670 X-48.825
N7000 X-90.619	N7420 X-44.641	Y-38.512	Y-31.474	Y38.77
Y34.216	Y35.528	N7840 X-48.273	N8260 X-91.336	N8680 X-48.399
N7010 X-90.465	N7430 X-44.63	Y-38.597	Y-24.59	Y38.639
Y34.551	Y35.51	N7850 X-48.726	N8270 X-91.327	N8690 X-48.106
N7020 X-90.224	N7440 X-44.389	Y-38.744	Y-12.43	Y38.539
Y35.055	Y35.662 z-	N7860 X-49.057	N8280 X-91.337	N8700 X-47.638
N7030 X-89.978	2.938	Y-38.831	Y13.172	Y38.368
Y35.469	N7450 X-44.195	N7870 X-49.499	N8290 X-91.339	N8710 X-47.254
N7040 X-89.599	Y35.352	Y-38.926	Y31.826	Y38.196
Y36.004	N7460 X-44.102	N7880 X-49.763	N8300 X-91.294	N8720 X-46.871
N7050 X-89.395	Y35.16	Y-38.964	Y32.276	Y38.006
Y36.271	N7470 X-43.933	N7890 X-49.954	N8310 X-91.222	N8730 X-46.788
N7060 X-89.088	Y34.796	Y-38.983	Y32.888	Y37.954
Y36.594	N7480 X-43.86	N7900 X-50.107	N8320 X-91.128	N8740 X-46.703
N7070 X-88.702	Y34.615	Y-39.002	Y33.33	Y37.907
Y36.98	N7490 X-43.837	N7910 X-50.61	N8330 X-91.1	N8750 X-46.381
N7080 X-88.358	Y34.539	Y-39.052	Y33.441	Y37.696
Y37.268				

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N8760 X-45.924	N9180 X-45.626	N9600 X-91.177	N120 X-83.793	N540 X-42.927
Y37.381	Y-37.496	Y-33.882	Y39.256	Y-32.683
N8770 X-45.603	N9190 X-45.665	N9610 X-91.261	N130 X-50.831	N550 X-42.936
Y37.113	Y-37.525	Y-33.616	Y39.255	Y-32.781
N8780 X-45.358	N9200 X-46.463	N9620 X-91.37	N140 X-50.487	N560 X-42.968
Y36.876	Y-38.072	Y-33.165	Y39.241	Y-33.244
N8790 X-45.294	N9210 X-46.568	N9630 X-91.407	N150 X-49.939	N570 X-43.056
Y36.806	Y-38.129	Y-32.969	Y39.199	Y-33.804
N8800 X-44.968	N9220 X-46.972	N9640 X-91.455	N160 X-49.814	N580 X-43.127
Y36.476	Y-38.341	Y-32.667	Y39.184	Y-34.064
N8810 X-44.757	N9230 X-47.049	N9650 X-91.521	N170 X-49.349	N590 X-43.169
Y36.217	Y-38.37	Y-32.128	Y39.101	Y-34.229
N8820 X-44.649	N9240 X-47.396	N9660 X-91.535	N180 X-48.919	N600 X-43.283
Y36.081	Y-38.525	Y-31.83	Y39.019	Y-34.642
N8830 X-44.435	N9250 X-47.795	N9670 X-91.54	N190 X-48.591	N610 X-43.366
Y35.741	Y-38.679	Y-31.433	Y38.935	Y-34.867
N8840 X-44.397	N9260 X-48.039	N9680 X-91.539	N200 X-48.179	N620 X-43.531
Y35.675	Y-38.761	Y31.771	Y38.808	Y-35.279
N8850 X-44.389	N9270 X-48.5	N9690 X-91.529	N210 X-47.86	N630 X-43.668
Y35.662	Y-38.911	Y31.885	Y38.698	Y-35.54
N8860 X-44.148	N9280 X-48.546	N9700 X-91.526	N220 X-47.392	N640 X-43.692
Y35.813 Z-	Y-38.921	Y32.035	Y38.526	Y-35.588
3.134	N9290 X-48.838	N9710 X-91.481	N230 X-47.021	N650 X-43.88
N8870 X-43.958	Y-38.998	Y32.484	Y38.361	Y-35.942
Y35.51	N9300 X-49.266	N9720 X-91.471	N240 X-46.637	N660 X-44.052
N8880 X-43.869	Y-39.09	Y32.574	Y38.17	Y-36.215
Y35.324	N9310 X-49.718	N9730 X-91.404	N250 X-46.6	N670 X-44.283
N8890 X-43.7	Y-39.17	Y32.994	Y38.148	Y-36.543
Y34.96	N9320 X-50.363	N9740 X-91.349	N260 X-46.53	N680 X-44.418
N8900 X-43.627	Y-39.236	Y33.249	Y38.102	Y-36.693
Y34.779	N9330 X-50.681	N9750 X-91.286	N270 X-46.455	N690 X-44.448
N8910 X-43.598	Y-39.251	Y33.526	Y38.061	Y-36.732
Y34.685	N9340 X-79.029	N9760 X-91.202	N280 X-46.097	N700 X-44.718
N8920 X-43.512	Y-39.25	Y33.792	Y37.827	Y-37.029
Y34.454	N9350 X-83.673	N9770 X-91.06	N290 X-45.691	N710 X-45.019
N8930 X-43.389	Y-39.253	Y34.221	Y37.545	Y-37.333
Y34.044	N9360 X-84.128	N9780 X-90.971	N300 X-45.362	N720 X-45.393
N8940 X-43.307	Y-39.249	Y34.481	Y37.271	Y-37.661
Y33.719	N9370 X-84.378	N9790 X-90.779	N310 X-45.123	N730 X-45.439
N8950 X-43.232	Y-39.237	Y34.895	Y37.039	Y-37.695
Y33.297	N9380 X-84.992	N9800 X-90.641	N320 X-45.047	N740 X-46.233
N8960 X-43.224	Y-39.164	Y35.162	Y36.956	Y-38.238
Y33.205	N9390 X-85.438	N9810 X-90.589	N330 X-44.733	N750 X-46.334
N8970 X-43.201	Y-39.088	Y35.252	Y36.637	Y-38.294
Y33.066	N9400 X-85.877	N9820 X-90.495	N340 X-44.528	N760 X-46.745
N8980 X-43.169	Y-38.984	Y35.428	Y36.387	Y-38.508
Y32.598	N9410 X-86.109	N9830 X-90.263	N350 X-44.415	N770 X-46.839
N8990 X-43.144	Y-38.92	Y35.815	Y36.245	Y-38.544
Y32.171	N9420 X-86.536	N9840 X-90.092	N360 X-44.202	N780 X-47.171
N9000 Y-32.171	Y-38.769	Y36.046	Y35.905	Y-38.693
N9010 X-43.159	N9430 X-86.815	N9850 X-89.66	N370 X-44.154	N790 X-47.57
Y-32.48	Y-38.667	Y36.613	Y35.821	Y-38.846
N9020 X-43.2	N9440 X-87.127	N9860 X-89.342	N380 X-44.148	N800 X-47.806
Y-33.075	Y-38.521	Y36.946	Y35.813	Y-38.926
N9030 X-43.289	N9450 X-87.528	N9870 X-88.946	N390 X-43.908	N810 X-48.267
Y-33.64	Y-38.326	Y37.331	Y35.964 Z-3.33	Y-39.075
N9040 X-43.347	N9460 X-87.707	N9880 X-88.605	N400 X-43.722	N820 X-48.342
Y-33.852	Y-38.226	Y37.617	Y35.668	Y-39.092
N9050 X-43.399	N9470 X-88.083	N9890 X-88.525	N410 X-43.636	N830 X-48.619
Y-34.057	Y-37.988	Y37.681	Y35.488	Y-39.165
N9060 X-43.513	N9480 X-88.45	N9900 X-88.157	N420 X-43.466	N840 X-49.033
Y-34.47	Y-37.736	Y37.934	Y35.125	Y-39.254
N9070 X-43.6	N9490 X-88.884	N9910 X-87.786	N430 X-43.393	N850 X-49.484
Y-34.703	Y-37.388	Y38.181	Y34.944	Y-39.335
N9080 X-43.765	N9500 X-89.272	N9920 X-87.615	N440 X-43.359	N860 X-49.74
Y-35.115	Y-37.011	Y38.277	Y34.83	Y-39.367
N9090 X-43.884	N9510 X-89.589	N9930 X-87.219	N450 X-43.276	N870 X-50.321
Y-35.341	Y-36.694	Y38.481	Y34.608	Y-39.427
N9100 X-43.919	N9520 X-89.87	N9940 X-86.898	N460 X-43.153	N880 X-50.666
Y-35.413	Y-36.346	Y38.631	Y34.198	Y-39.443
N9110 X-44.107	N9530 X-90.209	N9950 X-86.477	N470 X-43.074	N890 X-78.065
Y-35.768	Y-35.892	Y38.792	Y33.883	Y-39.442
N9120 X-44.286	N9540 X-90.491	N9960 X-86.207	N480 X-42.999	N900 X-83.659
Y-36.05	Y-35.444	Y38.89	Y33.461	Y-39.445
N9130 X-44.516	N9550 X-90.6	N9970 X-86.097	N490 X-42.989	N910 X-84.123
Y-36.378	Y-35.23	Y38.921	Y33.349	Y-39.442
N9140 X-44.634	N9560 X-90.764	N9980 X-85.53	N500 X-42.966	N920 X-84.373
Y-36.509	Y-34.922	Y39.07	Y33.214	Y-39.43
N9150 X-44.671	N9570 X-90.918	N9990 X-85.261	N510 X-42.935	N930 X-84.76
Y-36.556	Y-34.605	Y39.119	Y32.763	Y-39.387
N9160 X-44.94	N9580 X-90.959	N100 X-84.532	N520 X-42.91	N940 X-85.121
Y-36.853	Y-34.509	Y39.224	Y32.335	Y-39.343
N9170 X-45.252	N9590 X-91.077	N110 X-84.328	N530 Y-32.335	N950 X-85.456
Y-37.169	Y-34.178	Y39.237		Y-39.28

N960 X-85.662	N1380 X-91.689	N1800 X-47.145	N2220 X-43.819	N2640 X-88.338
Y-39.235	Y32.387	Y38.685	Y-36.379	Y-38.297
N970 X-85.906	N1390 X-91.663	N1810 X-46.787	N2230 X-44.05	N2650 X-88.676
Y-39.177	Y32.587	Y38.525	Y-36.707	Y-38.065
N980 X-86.126	N1400 X-91.584	N1820 X-46.404	N2240 X-44.202	N2660 X-89.029
Y-39.115	Y33.08	Y38.335	Y-36.877	Y-37.783
N990 X-86.225	N1410 X-91.452	N1830 X-46.358	N2250 X-44.226	N2670 X-89.065
Y-39.084	Y33.659	Y38.307	Y-36.908	Y-37.748
N1000 X-86.372	N1420 X-91.25	N1840 X-46.271	N2260 X-44.496	N2680 X-89.135
Y-39.033	Y34.261	Y38.251	Y-37.204	Y-37.692
N1010 X-86.718	N1430 X-91.137	N1850 X-46.208	N2270 X-44.785	N2690 X-89.498
Y-38.909	Y34.583	Y38.216	Y-37.498	Y-37.34
N1020 X-86.933	N1440 X-90.938	N1860 X-45.85	N2280 X-45.159	N2700 X-89.817
Y-38.829	Y35.006	Y37.982	Y-37.825	Y-37.021
N1030 X-87.241	N1450 X-90.696	N1870 X-45.457	N2290 X-45.213	N2710 X-90.06
Y-38.686	Y35.474	Y37.709	Y-37.866	Y-36.731
N1040 X-87.647	N1460 X-90.541	N1880 X-45.128	N2300 X-45.567	N2720 X-90.404
Y-38.488	Y35.731	Y37.435	Y-38.108	Y-36.278
N1050 X-87.676	N1470 X-90.408	N1890 X-44.888	N2310 X-45.593	N2730 X-90.645
Y-38.469	Y35.947	Y37.201	Y-38.123	Y-35.935
N1060 X-87.832	N1480 X-90.087	N1900 X-44.8	N2320 X-46.003	N2740 X-90.719
Y-38.382	Y36.371	Y37.105	Y-38.405	Y-35.817
N1070 X-88.196	N1490 X-89.804	N1910 X-44.497	N2330 X-46.101	N2750 X-90.919
Y-38.152	Y36.74	Y36.799	Y-38.458	Y-35.458
N1080 X-88.563	N1500 X-89.768	N1920 X-44.3	N2340 X-46.518	N2760 X-91.168
Y-37.901	Y36.783	Y36.558	Y-38.675	Y-34.977
N1090 X-88.899	N1510 X-89.462	N1930 X-44.182	N2350 X-46.629	N2770 X-91.375
Y-37.632	Y37.103	Y36.409	Y-38.718	Y-34.489
N1100 X-88.937	N1520 X-89.057	N1940 X-43.969	N2360 X-46.945	N2780 X-91.395
Y-37.598	Y37.497	Y36.07	Y-38.86	Y-34.428
N1110 X-89.009	N1530 X-88.726	N1950 X-43.91	N2370 X-47.345	N2790 X-91.461
Y-37.54	Y37.774	Y35.968	Y-39.013	Y-34.248
N1120 X-89.385	N1540 X-88.638	N1960 X-43.908	N2380 X-47.572	N2800 X-91.548
Y-37.176	Y37.845	Y35.964	Y-39.09	Y-33.988
N1130 X-89.704	N1550 X-88.264	N1970 X-43.666	N2390 X-48.033	N2810 X-91.659
Y-36.856	Y38.102	Y36.114 Z-	Y-39.24	Y-33.624
N1140 X-89.853	N1560 X-87.888	3.526	N2400 X-48.138	N2820 X-91.682
Y-36.678	Y38.352	N1980 X-43.485	Y-39.263	Y-33.533
N1150 X-89.963	N1570 X-87.728	Y35.825	N2410 X-48.399	N2830 X-91.771
Y-36.541	Y38.442	N1990 X-43.402	Y-39.332	Y-33.069
N1160 X-90.31	N1580 X-87.345	Y35.653	N2420 X-48.841	N2840 X-91.87
Y-36.082	Y38.639	N2000 X-43.233	Y-39.426	Y-32.506
N1170 X-90.415	N1590 X-87.002	Y35.289	N2430 X-49.251	N2850 X-91.911
Y-35.933	Y38.798	N2010 X-43.16	Y-39.499	Y-32.037
N1180 X-90.618	N1600 X-86.585	Y35.108	N2440 X-49.797	N2860 X-91.923
Y-35.611	Y38.959	N2020 X-43.12	Y-39.567	Y-31.716
N1190 X-90.695	N1610 X-86.315	Y34.976	N2450 X-50.306	N2870 Y18.773
Y-35.472	Y39.057	N2030 X-43.04	Y-39.618	N2880 X-91.921
N1200 X-90.857	N1620 X-85.874	Y34.761	N2460 X-50.661	Y25.657
Y-35.156	Y39.183	N2040 X-42.917	Y-39.629	N2890 X-91.923
N1210 X-90.988	N1630 X-85.632	Y34.351	N2470 X-69.485	Y31.432
Y-34.907	Y39.246	N2050 X-42.84	Y-39.628	N2900 X-91.913
N1220 X-91.043	N1640 X-85.143	Y34.047	N2480 X-78.069	Y31.905
Y-34.795	Y39.337	N2060 X-42.766	Y-39.633	N2910 X-91.908
N1230 X-91.176	N1650 X-84.808	Y33.626	N2490 X-83.647	Y31.95
Y-34.481	Y39.385	N2070 X-42.753	N2500 X-84.12	N2920 X-91.902
N1240 X-91.219	N1660 X-84.691	Y33.492	Y-39.631	Y32.205
Y-34.362	Y39.398	N2080 X-42.732	N2510 X-84.448	N2930 X-91.844
N1250 X-91.407	N1670 X-84.623	Y33.363	Y-39.614	Y32.673
Y-33.803	Y39.408	N2090 X-42.702	N2520 X-85.127	N2940 X-91.741
N1260 X-91.449	N1680 X-84.235	Y32.927	Y-39.537	Y33.255
Y-33.666	Y39.435	N2100 X-42.677	N2530 X-85.44	N2950 X-91.625
N1270 X-91.528	N1690 X-83.873	Y32.5	Y-39.478	Y33.753
Y-33.343	Y39.449	N2110 Y-32.5	N2540 X-85.9	N2960 X-91.55
N1280 X-91.611	N1700 X-50.912	N2120 X-42.693	Y-39.378	Y33.978
Y-32.915	Y39.447	Y-32.847	N2550 X-86.153	N2970 X-91.393
N1290 X-91.667	N1710 X-50.29	N2130 X-42.704	Y-39.307	Y34.424
Y-32.561	Y39.423	Y-32.966	N2560 X-86.332	N2980 X-91.285
N1300 X-91.698	N1720 X-50.038	N2140 X-42.735	Y-39.25	Y34.718
Y-32.304	Y39.403	Y-33.413	N2570 X-86.6	N2990 X-91.081
N1310 X-91.716	N1730 X-49.599	N2150 X-42.822	Y-39.158	Y35.145
Y-32.102	Y39.351	Y-33.969	N2580 X-86.874	N3000 X-90.854
N1320 X-91.731	N1740 X-49.105	N2160 X-42.906	Y-39.058	Y35.585
Y-31.765	Y39.263	Y-34.275	N2590 X-87.05	N3010 X-90.565
N1330 X-91.733	N1750 X-48.661	N2170 X-42.938	Y-38.991	Y36.056
Y-31.594	Y39.178	Y-34.402	N2600 X-87.354	N3020 X-90.398
N1340 Y31.553	N1760 X-48.358	N2180 X-43.052	Y-38.85	Y36.279
N1350 X-91.727	Y39.099	Y-34.814	N2610 X-87.76	N3030 X-89.944
Y31.847	N1770 X-47.926	N2190 X-43.133	Y-38.653	Y36.872
N1360 X-91.718	Y38.966	Y-35.032	N2620 X-87.81	N3040 X-89.883
Y31.945	N1780 X-47.744	N2200 X-43.298	Y-38.621	Y36.945
N1370 X-91.714	Y38.901	Y-35.443	N2630 X-87.956	N3050 X-89.583
Y32.13	N1790 X-47.614	N2210 X-43.653	Y-38.539	Y37.261
	Y38.857	Y-36.117		

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N3060 X-89.168	N3480 X-43.666	N3900 X-47.8	N4320 X-91.68	N4740 X-85.466
Y37.663	Y36.114	Y-39.404	Y-34.165	Y39.661
N3070 X-88.751	N3490 X-43.423	N3910 X-47.935	N4330 X-91.818	N4750 X-85.008
Y38.01	Y36.26 Z-3.722	Y-39.434	Y-33.713	Y39.741
N3080 X-88.372	N3500 X-43.248	N3920 X-48.18	N4340 X-91.845	N4760 X-84.843
Y38.269	Y35.983	Y-39.499	Y-33.61	Y39.763
N3090 X-87.996	N3510 X-43.169	N3930 X-48.622	N4350 X-91.86	N4770 X-84.376
Y38.519	Y35.817	Y-39.593	Y-33.529	Y39.795
N3100 X-87.841	N3520 X-42.999	N3940 X-49.017	N4360 X-91.901	N4780 X-84.131
Y38.606	Y35.454	Y-39.663	Y-33.355	Y39.808
N3110 X-87.44	N3530 X-42.926	N3950 X-49.415	N4370 X-91.99	N4790 X-83.931
Y38.813	Y35.272	Y-39.714	Y-32.891	Y39.817
N3120 X-87.389	N3540 X-42.881	N3960 X-49.645	N4380 X-92.031	N4800 X-50.946
Y38.834	Y35.121	Y-39.739	Y-32.66	Y39.816
N3130 X-87.107	N3550 X-42.804	N3970 X-50.102	N4390 X-92.071	N4810 X-50.38
Y38.966	Y34.914	Y-39.785	Y-32.189	Y39.796
N3140 X-86.696	N3560 X-42.68	N3980 X-50.569	N4400 X-92.105	N4820 X-49.903
Y39.124	Y34.504	Y-39.809	Y-31.722	Y39.772
N3150 X-86.424	N3570 X-42.607	N3990 X-50.662	N4410 X-92.092	N4830 X-49.11
Y39.223	Y34.212	Y-39.811	Y2.138	Y39.677
N3160 X-85.731	N3580 X-42.532	N4000 X-83.647	N4420 X-92.105	N4840 X-48.869
Y39.421	Y33.79	Y-39.812	Y31.436	Y39.631
N3170 X-85.436	N3590 X-42.518	N4010 X-84.119	N4430 X-92.095	N4850 X-48.618
Y39.477	Y33.636	Y-39.81	Y31.896	Y39.586
N3180 X-85.009	N3600 X-42.497	N4020 X-84.319	N4440 X-92.083	N4860 X-48.174
Y39.553	Y33.511	Y-39.801	Y32.055	Y39.502
N3190 X-84.899	N3610 X-42.469	N4030 X-84.566	N4450 X-92.061	N4870 X-47.891
Y39.569	Y33.092	Y-39.788	Y32.377	Y39.428
N3200 X-84.731	N3620 X-42.444	N4040 X-85.031	N4460 X-92.001	N4880 X-47.421
Y39.588	Y32.664	Y-39.736	Y32.846	Y39.282
N3210 X-84.26	N3630 Y-32.664	N4050 X-85.187	N4470 X-91.96	N4890 X-46.653
Y39.621	N3640 X-42.46	Y-39.716	Y33.077	Y39.003
N3220 X-83.932	Y-33.011	N4060 X-85.571	N4480 X-91.878	N4900 X-46.32
Y39.638	N3650 X-42.473	Y-39.64	Y33.436	Y38.854
N3230 X-62.883	Y-33.152	N4070 X-86.019	N4490 X-91.769	N4910 X-45.937
Y39.632	N3660 X-42.502	Y-39.541	Y33.895	Y38.663
N3240 X-50.945	Y-33.582	N4080 X-86.266	N4500 X-91.671	N4920 X-45.873
Y39.633	N3670 X-42.589	Y-39.472	Y34.183	Y38.626
N3250 X-50.646	Y-34.133	N4090 X-86.44	N4510 X-91.514	N4930 X-45.754
Y39.626	N3680 X-42.707	Y-39.416	Y34.629	Y38.548
N3260 X-50.108	Y-34.574	N4100 X-86.704	N4520 X-91.446	N4940 X-45.713
Y39.604	N3690 X-42.822	Y-39.325	Y34.805	Y38.526
N3270 X-49.343	Y-34.987	N4110 X-86.997	N4530 X-91.407	N4950 X-45.355
Y39.513	N3700 X-42.9	Y-39.218	Y34.893	Y38.292
N3280 X-48.862	Y-35.196	N4120 X-87.186	N4540 X-91.205	N4960 X-44.99
Y39.424	N3710 X-43.072	Y-39.145	Y35.318	Y38.038
N3290 X-48.418	Y-35.626	N4130 X-87.467	N4550 X-90.982	N4970 X-44.661
Y39.34	N3720 X-43.426	Y-39.015	Y35.732	Y37.764
N3300 X-48.124	Y-36.291	N4140 X-87.873	N4560 X-90.741	N4980 X-44.417
Y39.263	N3730 X-43.585	Y-38.817	Y36.126	Y37.527
N3310 X-47.692	Y-36.543	N4150 X-87.944	N4570 X-90.673	N4990 X-44.306
Y39.13	N3740 X-43.816	Y-38.772	Y36.231	Y37.405
N3320 X-47.368	Y-36.872	N4160 X-88.081	N4580 X-90.343	N5000 X-44.025
Y39.015	N3750 X-43.986	Y-38.695	Y36.665	Y37.121
N3330 X-46.899	Y-37.06	N4170 X-88.463	N4590 X-90.066	N5010 X-43.772
Y38.844	N3760 X-44.004	Y-38.454	Y37.025	Y36.811
N3340 X-46.554	Y-37.083	N4180 X-88.789	N4600 X-89.998	N5020 X-43.715
Y38.69	N3770 X-44.274	Y-38.23	Y37.107	Y36.738
N3350 X-46.17	Y-37.38	N4190 X-89.142	N4610 X-89.671	N5030 X-43.502
Y38.499	N3780 X-44.552	Y-37.947	Y37.451	Y36.399
N3360 X-46.115	Y-37.662	N4200 X-89.193	N4620 X-89.632	N5040 X-43.423
Y38.467	N3790 X-44.926	Y-37.899	Y37.486	Y36.26
N3370 X-46.012	Y-37.99	N4210 X-89.26	N4630 X-89.278	N5050 X-43.179
Y38.399	N3800 X-44.988	Y-37.845	Y37.83	Y36.407 Z-
N3380 X-45.961	Y-38.036	N4220 X-89.611	N4640 X-88.865	3.918
Y38.371	N3810 X-45.341	Y-37.504	Y38.174	N5060 X-43.012
N3390 X-45.602	Y-38.278	N4230 X-89.931	N4650 X-88.48	Y36.141
Y38.137	N3820 X-45.376	Y-37.185	Y38.436	N5070 X-42.935
N3400 X-45.224	Y-38.299	N4240 X-90.165	N4660 X-88.104	Y35.981
Y37.874	N3830 X-45.773	Y-36.906	Y38.686	N5080 X-42.766
N3410 X-44.895	Y-38.571	N4250 X-90.514	N4670 X-87.954	Y35.618
Y37.6	N3840 X-45.867	Y-36.447	Y38.77	N5090 X-42.693
N3420 X-44.652	Y-38.622	N4260 X-90.779	N4680 X-87.553	Y35.437
Y37.364	N3850 X-46.29	Y-36.07	Y38.977	N5100 X-42.642
N3430 X-44.553	Y-38.843	N4270 X-90.839	N4690 X-87.482	Y35.267
Y37.255	N3860 X-46.42	Y-35.977	Y39.007	N5110 X-42.567
N3440 X-44.261	Y-38.892	N4280 X-91.064	N4700 X-87.211	Y35.067
Y36.96	N3870 X-46.72	Y-35.573	Y39.133	N5120 X-42.444
N3450 X-44.071	Y-39.027	N4290 X-91.292	N4710 X-86.814	Y34.657
Y36.728	N3880 X-47.12	Y-35.149	Y39.286	N5130 X-42.373
N3460 X-43.948	Y-39.18	N4300 X-91.55	N4720 X-86.537	Y34.376
Y36.574	N3890 X-47.339	Y-34.542	Y39.387	N5140 X-42.299
N3470 X-43.735	Y-39.254	N4310 X-91.614	N4730 X-85.832	Y33.955
Y36.234		Y-34.346	Y39.588	

N5150 X-42.283	N5580 X-85.3	N6000 X-91.902	N6420 X-47.225	N6840 X-42.795
Y33.78	Y-39.88	Y34.033	Y39.459	Y-36.313
N5160 X-42.263	N5590 X-85.692	N6010 X-91.734	N6430 X-46.718	N6850 X-42.82
Y33.66	Y-39.802	Y34.511	Y39.277	Y-36.354
N5170 X-42.235	N5600 X-86.153	N6020 X-91.604	N6440 X-46.695	N6860 X-42.972
Y33.256	Y-39.7	Y34.866	Y39.267	Y-36.64
N5180 X-42.21	N5610 X-86.379	N6030 X-91.513	N6450 X-46.407	N6870 X-43.119
Y32.829	Y-39.636	Y35.071	Y39.161	Y-36.872
N5190 Y-32.829	N5620 X-86.547	N6040 X-91.317	N6460 X-46.087	N6880 X-43.358
N5200 X-42.227	Y-39.582	Y35.482	Y39.018	Y-37.212
Y-33.176	N5630 X-86.809	N6050 X-91.095	N6470 X-45.703	N6890 X-43.829
N5210 X-42.241	Y-39.493	Y35.896	Y38.828	Y-37.732
Y-33.337	N5640 X-87.309	N6060 X-90.848	N6480 X-45.631	N6900 X-44.085
N5220 X-42.27	Y-39.305	Y36.299	Y38.785	Y-37.991
Y-33.752	N5650 X-87.58	N6070 X-90.826	N6490 X-45.495	N6910 X-44.459
N5230 X-42.319	Y-39.179	Y36.33	Y38.697	Y-38.318
Y-34.07	N5660 X-87.986	N6080 X-90.775	N6500 X-45.466	N6920 X-44.537
N5240 X-42.36	Y-38.981	Y36.41	Y38.681	Y-38.377
Y-34.318	N5670 X-88.078	N6090 X-90.456	N6510 X-45.108	N6930 X-44.89
N5250 X-42.591	Y-38.923	Y36.829	Y38.447	Y-38.618
Y-35.159	N5680 X-88.206	N6100 X-90.189	N6520 X-44.757	N6940 X-44.944
N5260 X-42.666	Y-38.851	Y37.177	Y38.203	Y-38.65
Y-35.361	N5690 X-88.588	N6110 X-90.113	N6530 X-44.411	N6950 X-45.313
N5270 X-42.84	Y-38.61	Y37.269	Y37.914	Y-38.904
Y-35.792	N5700 X-88.902	N6120 X-89.781	N6540 X-44.182	N6960 X-45.4
N5280 X-43.199	Y-38.394	Y37.619	Y37.69	Y-38.951
Y-36.466	N5710 X-89.255	N6130 X-89.73	N6550 X-44.059	N6970 X-45.779
N5290 X-43.352	Y-38.112	Y37.665	Y37.555	Y-39.15
Y-36.708	N5720 X-89.321	N6140 X-89.389	N6560 X-43.79	N6980 X-45.835
N5300 X-43.583	Y-38.049	Y37.996	Y37.283	Y-39.177
Y-37.036	N5730 X-89.386	N6150 X-89.043	N6570 X-43.536	N6990 X-46. Y-
N5310 X-43.77	Y-37.997	Y38.286	Y36.972	39.241
Y-37.244	N5740 X-89.724	N6160 X-88.949	N6580 X-43.482	N7000 X-46.27
N5320 X-43.782	Y-37.669	Y38.359	Y36.903	Y-39.361
Y-37.259	N5750 X-90.044	N6170 X-88.768	N6590 X-43.268	N7010 X-46.67
N5330 X-44.051	Y-37.349	Y38.48	Y36.563	Y-39.515
Y-37.556	N5760 X-90.288	N6180 X-88.588	N6600 X-43.179	N7020 X-46.872
N5340 X-44.318	Y-37.058	Y38.604	Y36.407	Y-39.583
Y-37.826	N5770 X-90.629	N6190 X-88.212	N6610 X-42.935	N7030 X-47.358
N5350 X-44.692	Y-36.608	Y38.854	Y36.553 Z-	Y-39.74
Y-38.154	N5780 X-90.885	N6200 X-88.067	4.114	N7040 X-47.527
N5360 X-44.762	Y-36.244	Y38.935	N6620 X-42.775	Y-39.776
Y-38.206	N5790 X-90.952	N6210 X-87.666	Y36.298	N7050 X-47.741
N5370 X-45.115	Y-36.141	Y39.142	N6630 X-42.702	Y-39.832
Y-38.448	N5800 X-91.169	N6220 X-87.615	Y36.146	N7060 X-48.183
N5380 X-45.16	Y-35.751	Y39.165	N6640 X-42.532	Y-39.927
Y-38.475	N5810 X-91.408	N6230 X-87.574	Y35.782	N7070 X-48.55
N5390 X-45.543	Y-35.307	Y39.181	N6650 X-42.459	Y-39.992
Y-38.737	N5820 X-91.488	N6240 X-87.316	Y35.601	N7080 X-48.92
N5400 X-45.634	Y-35.125	Y39.301	N6660 X-42.402	Y-40.039
Y-38.787	N5830 X-91.667	N6250 X-86.933	Y35.412	N7090 X-49.689
N5410 X-46.063	Y-34.702	Y39.448	N6670 X-42.331	Y-40.118
Y-39.01	N5840 X-91.818	N6260 X-86.65	Y35.221	N7100 X-50.268
N5420 X-46.21	Y-34.288	Y39.552	N6680 X-42.208	Y-40.145
Y-39.067	N5850 X-91.938	N6270 X-85.933	Y34.811	N7110 X-83.838
N5430 X-46.495	Y-33.897	Y39.755	N6690 X-42.14	N7120 X-84.31
Y-39.194	N5860 X-92.014	N6280 X-85.579	Y34.54	Y-40.143
N5440 X-46.895	Y-33.614	Y39.825	N6700 X-42.065	N7130 X-84.803
Y-39.348	N5870 X-92.055	N6290 X-85.114	Y34.119	Y-40.115
N5450 X-47.106	Y-33.402	Y39.907	N6710 X-42.047	N7140 X-85.237
Y-39.419	N5880 X-92.103	N6300 X-85.083	Y33.924	Y-40.067
N5460 X-47.587	Y-33.19	Y39.909	N6720 X-42.028	N7150 X-85.413
Y-39.574	N5890 X-92.167	N6310 X-84.94	Y33.808	Y-40.045
N5470 X-47.731	Y-32.858	Y39.928	N6730 X-42.002	N7160 X-85.813
Y-39.605	N5900 X-92.191	N6320 X-84.489	Y33.42	Y-39.964
N5480 X-47.96	Y-32.721	Y39.959	N6740 X-41.977	N7170 X-86.274
Y-39.666	N5910 X-92.219	N6330 X-84.008	Y32.993	Y-39.862
N5490 X-48.402	Y-32.384	Y39.986	N6750 Y-32.993	N7180 X-86.492
Y-39.76	N5920 X-92.268	N6340 X-50.786	N6760 X-41.993	Y-39.801
N5500 X-48.784	Y-31.713	N6350 X-50.324	Y-33.34	N7190 X-86.654
Y-39.828	N5930 X-92.263	Y39.968	N6770 X-42.01	Y-39.749
N5510 X-49.167	Y-21.381	N6360 X-49.663	Y-33.523	N7200 X-86.913
Y-39.876	N5940 X-92.268	Y39.936	N6780 X-42.037	Y-39.66
N5520 X-49.902	Y31.44	N6370 X-48.876	Y-33.921	N7210 X-87.432
Y-39.952	N5950 X-92.257	Y39.841	N6790 X-42.084	Y-39.465
N5530 X-50.502	Y31.914	N6380 X-48.56	Y-34.227	N7220 X-87.693
Y-39.981	N5960 X-92.217	Y39.781	N6800 X-42.127	Y-39.343
N5540 X-83.724	Y32.471	N6390 X-48.375	Y-34.485	N7230 X-88.099
N5550 X-84.186	N5970 X-92.155	Y39.748	N6810 X-42.361	Y-39.146
Y-39.979	Y32.945	N6400 X-47.931	Y-35.331	N7240 X-88.212
N5560 X-84.685	N5980 X-92.098	Y39.664	N6820 X-42.433	Y-39.074
Y-39.952	Y33.225	N6410 X-47.657	Y-35.525	N7250 X-88.33
N5570 X-85.134	N5990 X-91.939	Y39.592	N6830 X-42.607	Y-39.008
Y-39.902	Y33.894		Y-35.958	

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N7260 X-88.712	N7680 X-90.877	N8100 X-45.219	N8520 X-44.311	N8940 X-90.479
Y-38.767	Y36.589	Y38.835	Y-38.547	Y-37.429
N7270 X-89.015	N7690 X-90.569	N8110 X-44.86	N8530 X-44.664	N8950 X-90.554
Y-38.558	Y36.994	Y38.601	Y-38.789	Y-37.336
N7280 X-89.368	N7700 X-90.281	N8120 X-44.523	N8540 X-44.728	N8960 X-90.583
Y-38.276	Y37.368	Y38.367	Y-38.826	Y-37.294
N7290 X-89.449	N7710 X-90.218	N8130 X-44.176	N8550 X-45.084	N8970 X-90.859
Y-38.2	Y37.443	Y38.077	Y-39.07	Y-36.931
N7300 X-89.511	N7720 X-89.891	N8140 X-43.946	N8560 X-45.167	N8980 X-91.131
Y-38.149	Y37.786	Y37.852	Y-39.116	Y-36.545
N7310 X-89.837	N7730 X-89.828	N8150 X-43.812	N8570 X-45.546	N8990 X-91.178
Y-37.833	Y37.843	Y37.705	Y-39.315	Y-36.47
N7320 X-90.157	N7740 X-89.5	N8160 X-43.554	N8580 X-45.608	N9000 X-91.435
Y-37.514	Y38.162	Y37.444	Y-39.344	Y-36.007
N7330 X-90.401	N7750 X-89.091	N8170 X-43.3	N8590 X-45.791	N9010 X-91.444
Y-37.222	Y38.503	Y37.134	Y-39.415	Y-35.985
N7340 X-90.744	N7760 X-89.056	N8180 X-43.248	N8600 X-46.045	N9020 X-91.639
Y-36.77	Y38.529	Y37.067	Y-39.528	Y-35.624
N7350 X-91.016	N7770 X-88.834	N8190 X-43.035	N8610 X-46.445	N9030 X-91.714
Y-36.384	Y38.676	Y36.727	Y-39.682	Y-35.454
N7360 X-91.065	N7780 X-88.696	N8200 X-42.935	N8620 X-46.639	N9040 X-91.899
Y-36.306	Y38.771	Y36.553	Y-39.748	Y-35.019
N7370 X-91.295	N7790 X-88.319	N8210 X-42.691	N8630 X-47.128	N9050 X-92.035
Y-35.893	Y39.021	Y36.7 Z-4.31	Y-39.905	Y-34.641
N7380 X-91.321	N7800 X-88.181	N8220 X-42.538	N8640 X-47.324	N9060 X-92.15
Y-35.84	Y39.099	Y36.456	Y-39.947	Y-34.309
N7390 X-91.523	N7810 X-87.779	N8230 X-42.468	N8650 X-47.522	N9070 X-92.348
Y-35.466	Y39.306	Y36.31	Y-39.999	Y-33.599
N7400 X-91.601	N7820 X-87.717	N8240 X-42.299	N8660 X-47.963	N9080 X-92.388
Y-35.289	Y39.334	Y35.947	Y-40.094	Y-33.384
N7410 X-91.786	N7830 X-87.666	N8250 X-42.226	N8670 X-48.317	N9090 X-92.418
Y-34.854	Y39.354	Y35.765	Y-40.157	Y-33.253
N7420 X-91.919	N7840 X-87.42	N8260 X-42.163	N8680 X-48.732	N9100 X-92.501
Y-34.487	Y39.468	Y35.558	Y-40.209	Y-32.77
N7430 X-91.987	N7850 X-87.052	N8270 X-42.095	N8690 X-49.476	N9110 X-92.513
Y-34.288	Y39.61	Y35.374	Y-40.283	Y-32.678
N7440 X-92.043	N7860 X-86.763	N8280 X-41.972	N8700 X-50.035	N9120 X-92.528
Y-34.106	Y39.716	Y34.964	Y-40.31	Y-32.53
N7450 X-92.181	N7870 X-86.309	N8290 X-41.906	N8710 X-83.951	N9130 X-92.588
Y-33.608	Y39.847	Y34.705	N8720 X-84.423	Y-31.669
N7460 X-92.227	N7880 X-86.247	N8300 X-41.832	Y-40.307	N9140 X-92.585
Y-33.37	Y39.861	Y34.283	N8730 X-84.921	Y-27.215
N7470 X-92.27	N7890 X-86.034	N8310 X-41.812	Y-40.279	N9150 X-92.588
Y-33.181	Y39.922	Y34.067	N8740 X-85.339	Y31.492
N7480 X-92.292	N7900 X-85.692	N8320 X-41.794	Y-40.232	N9160 X-92.573
Y-33.063	Y39.989	Y33.957	N8750 X-85.527	Y31.96
N7490 X-92.354	N7910 X-85.227	N8330 X-41.768	Y-40.209	N9170 X-92.545
Y-32.703	Y40.072	Y33.585	N8760 X-85.679	Y32.363
N7500 X-92.387	N7920 X-85.175	N8340 X-41.743	Y-40.177	N9180 X-92.518
Y-32.271	Y40.075	Y33.157	N8770 X-85.934	Y32.603
N7510 X-92.428	N7930 X-85.037	N8350 Y-33.157	Y-40.126	N9190 X-92.452
Y-31.686	Y40.093	N8360 X-41.76	N8780 X-86.395	Y33.089
N7520 X-92.425	N7940 X-84.602	Y-33.504	Y-40.024	N9200 X-92.386
Y-24.233	Y40.123	N8370 X-41.778	N8790 X-86.605	Y33.414
N7530 X-92.428	N7950 X-84.122	Y-33.708	Y-39.965	N9210 X-92.272
Y31.467	Y40.15	N8380 X-41.804	N8800 X-86.762	Y33.888
N7540 X-92.424	N7960 X-50.552	Y-34.09	Y-39.915	N9220 X-92.2
Y31.675	N7970 X-50.107	N8390 X-41.85	N8810 X-87.053	Y34.15
N7550 X-92.415	Y40.133	Y-34.384	Y-39.815	N9230 X-92.113
Y31.95	N7980 X-49.424	N8400 X-41.894	N8820 X-87.555	Y34.402
N7560 X-92.375	Y40.1	Y-34.652	Y-39.625	N9240 X-91.962
Y32.506	N7990 X-48.643	N8410 X-42.13	N8830 X-87.806	Y34.833
N7570 X-92.31	Y40.006	Y-35.504	Y-39.508	N9250 X-91.831
Y32.988	N8000 X-47.687	N8420 X-42.199	Y-39.31	Y35.194
N7580 X-92.232	Y39.825	Y-35.689	N8850 X-88.346	N9260 X-91.777
Y33.371	N8010 X-47.424	N8430 X-42.374	Y-39.226	Y35.308
N7590 X-92.12	Y39.756	Y-36.125	N8860 X-88.455	N9270 X-91.724
Y33.837	N8020 X-46.992	N8440 X-42.562	Y-39.164	Y35.427
N7600 X-92.053	Y39.624	Y-36.479	N8870 X-88.837	N9280 X-91.521
Y34.084	N8030 X-46.476	N8450 X-42.599	Y-38.923	Y35.854
N7610 X-91.848	Y39.438	Y-36.541	N8880 X-89.128	N9290 X-91.321
Y34.672	N8040 X-46.438	N8460 X-42.745	Y-38.723	Y36.225
N7620 X-91.717	Y39.421	Y-36.815	N8890 X-89.481	N9300 X-91.06
Y35.03	N8050 X-46.161	N8470 X-42.885	Y-38.441	Y36.65
N7630 X-91.619	Y39.32	Y-37.037	N8900 X-89.577	N9310 X-91.025
Y35.249	N8060 X-45.853	N8480 X-43.125	Y-38.35	Y36.696
N7640 X-91.415	Y39.183	Y-37.377	N8910 X-89.637	N9320 X-90.979
Y35.676	N8070 X-45.47	N8490 X-43.607	Y-38.302	Y36.767
N7650 X-91.208	Y38.992	Y-37.907	N8920 X-89.95	N9330 X-90.683
Y36.06	N8080 X-45.389	N8500 X-43.852	Y-37.998	Y37.158
N7660 X-90.961	Y38.944	Y-38.155	N8930 X-90.27	N9340 X-90.394
Y36.463	N8090 X-45.237	N8510 X-44.225	Y-37.678	Y37.532
N7670 X-90.925	Y38.845	Y-38.483		N9350 X-90.332
Y36.513				Y37.608

N9360 X-90.001	N9780 X-43.318	N300 X-44.934	N720 X-90.712	N1140 X-90.025
Y37.954	Y37.606	Y-39.28	Y-37.437	Y38.2
N9370 X-89.926	N9790 X-43.064	N310 X-45.313	N730 X-90.973	N1150 X-89.721
Y38.022	Y37.295	Y-39.479	Y-37.093	Y38.495
N9380 X-89.61	N9800 X-43.015	N320 X-45.38	N740 X-91.246	N1160 X-89.317
Y38.329	Y37.231	Y-39.512	Y-36.707	Y38.832
N9390 X-89.204	N9810 X-42.801	N330 X-45.581	N750 X-91.291	N1170 X-89.269
Y38.667	Y36.892	Y-39.589	Y-36.634	Y38.867
N9400 X-89.162	N9820 X-42.691	N340 X-45.82	N760 X-91.555	N1180 X-88.535
Y38.698	Y36.7	Y-39.696	Y-36.158	Y39.356
N9410 X-88.901	N9830 X-42.524	N350 X-46.219	N770 X-91.567	N1190 X-88.407
Y38.872	Y36.801 Z-	Y-39.849	Y-36.13	Y39.428
N9420 X-88.803	4.445	N360 X-46.405	N780 X-91.755	N1200 X-88.005
Y38.938	N9840 X-42.448	Y-39.912	Y-35.782	Y39.635
N9430 X-88.427	Y36.846 Z-	N370 X-46.899	N790 X-91.827	N1210 X-87.921
Y39.188	4.505	Y-40.071	Y-35.618	Y39.673
N9440 X-88.294	N9850 Z-4.506	N380 X-47.12	N800 X-92.012	N1220 X-87.851
Y39.263	N9860 X-42.302	Y-40.118	Y-35.183	Y39.7
N9450 X-87.892	Y36.614	N390 X-47.302	N810 X-92.065	N1230 X-87.629
Y39.47	N9870 X-42.235	Y-40.166	Y-35.03	Y39.803
N9460 X-87.819	Y36.475	N400 X-47.744	N820 X-92.151	N1240 X-87.289
Y39.504	N9880 X-42.065	Y-40.261	Y-34.795	Y39.934
N9470 X-87.759	Y36.111	N410 X-48.083	N830 X-92.266	N1250 X-86.989
Y39.527	N9890 X-41.993	Y-40.321	Y-34.462	Y40.045
N9480 X-87.525	Y35.93	N420 X-48.499	N840 X-92.479	N1260 X-86.535
Y39.636	N9900 X-41.924	Y-40.373	Y-33.705	Y40.176
N9490 X-87.17	Y35.703	N430 X-48.969	N850 X-92.542	N1270 X-86.456
Y39.772	N9910 X-41.859	Y-40.421	Y-33.422	Y40.195
N9500 X-86.876	Y35.527	N440 X-49.031	N860 X-92.635	N1280 X-86.432
Y39.88	N9920 X-41.735	Y-40.425	Y-32.874	Y40.2
N9510 X-86.422	Y35.117	N450 X-49.263	N870 X-92.665	N1290 X-86.236
Y40.011	N9930 X-41.673	Y-40.448	Y-32.647	Y40.256
N9520 X-86.34	Y34.869	N460 X-49.801	N880 X-92.672	N1300 X-85.918
Y40.03	N9940 X-41.598	Y-40.474	Y-32.546	Y40.318
N9530 X-86.135	Y34.448	N470 X-84.064	N890 X-92.695	N1310 X-85.453
Y40.089	N9950 X-41.577	N480 X-84.536	Y-32.336	Y40.4
N9540 X-85.805	Y34.211	Y-40.472	N900 X-92.729	N1320 X-85.36
Y40.154	N9960 X-41.559	N490 X-85.039	Y-31.846	Y40.407
N9550 X-85.34	Y34.105	Y-40.443	N910 X-92.736	N1330 X-85.232
Y40.236	N9970 X-41.535	N500 X-85.442	Y-31.687	Y40.424
N9560 X-85.268	Y33.749	Y-40.398	N920 X-92.731	N1340 X-84.827
Y40.241	N9980 X-41.51	N510 X-85.64	Y21.76	Y40.452
N9570 X-85.135	Y33.322	Y-40.374	N930 X-92.736	N1350 X-84.348
Y40.259	N9990 Y-33.322	N520 X-85.835	Y31.491	Y40.479
N9580 X-84.715	N100 X-41.526	Y-40.332	N940 X-92.713	N1360 X-50.085
Y40.287	Y-33.669	N530 X-86.054	Y32.169	N1370 X-49.672
N9590 X-84.235	N110 X-41.547	Y-40.288	N950 X-92.708	Y40.463
Y40.314	Y-33.894	N540 X-86.516	Y32.224	N1380 X-48.944
N9600 X-50.319	N120 X-41.572	Y-40.187	N960 X-92.652	Y40.427
N9610 X-49.889	Y-34.259	N550 X-86.718	Y32.707	N1390 X-48.176
Y40.298	N130 X-41.637	Y-40.129	N970 X-92.576	Y40.334
N9620 X-49.184	Y-34.682	N560 X-86.869	Y33.261	N1400 X-47.2
Y40.263	N140 X-41.661	Y-40.081	N980 X-92.516	Y40.149
N9630 X-48.41	Y-34.818	N570 X-87.166	Y33.531	N1410 X-46.957
Y40.17	N150 X-41.9 Y-	Y-39.979	N990 X-92.403	Y40.085
N9640 X-47.444	35.676	N580 X-87.678	Y33.997	N1420 X-46.525
Y39.987	N160 X-41.966	Y-39.784	N1000 X-92.308	Y39.952
N9650 X-47.19	Y-35.854	N590 X-87.919	Y34.327	N1430 X-46.453
Y39.921	N170 X-42.142	Y-39.672	N1010 X-92.076	Y39.928
N9660 X-46.758	Y-36.291	N600 X-88.325	Y34.994	N1440 X-45.992
Y39.788	N180 X-42.33	Y-39.474	N1020 X-91.944	Y39.761
N9670 X-46.234	Y-36.645	N610 X-88.48	Y35.359	N1450 X-45.923
Y39.6	N190 X-42.379	Y-39.377	N1030 X-91.871	Y39.731
N9680 X-46.181	Y-36.729	N620 X-88.58	Y35.512	N1460 X-45.669
Y39.576	N200 X-42.518	Y-39.321	N1040 X-91.83	Y39.638
N9690 X-45.915	Y-36.989	N630 X-88.962	Y35.605	N1470 X-45.386
Y39.479	N210 X-42.652	Y-39.079	N1050 X-91.627	Y39.511
N9700 X-45.62	Y-37.201	N640 X-89.241	Y36.032	N1480 X-45.003
Y39.347	N220 X-42.893	Y-38.887	N1060 X-91.435	Y39.321
N9710 X-45.237	Y-37.543	N650 X-89.594	Y36.389	N1490 X-44.904
Y39.156	N230 X-43.385	Y-38.605	N1070 X-91.169	Y39.263
N9720 X-45.146	Y-38.083	N660 X-89.705	Y36.821	N1500 X-44.366
Y39.104	N240 X-43.618	Y-38.5	N1080 X-91.124	Y38.911
N9730 X-44.613	Y-38.32	N670 X-89.762	Y36.879	N1510 X-44.056
Y38.756	N250 X-43.992	Y-38.454	N1090 X-91.081	Y38.696
N9740 X-44.29	Y-38.647	N680 X-90.063	Y36.946	N1520 X-43.705
Y38.531	N260 X-44.085	Y-38.162	N1100 X-90.796	Y38.402
N9750 X-43.94	Y-38.717	N690 X-90.383	Y37.322	N1530 X-43.476
Y38.239	N270 X-44.439	Y-37.843	N1110 X-90.508	Y38.178
N9760 X-43.711	Y-38.959	N700 X-90.627	Y37.697	N1540 X-43.317
Y38.015	N280 X-44.513	Y-37.551	N1120 X-90.445	Y38.005
N9770 X-43.565	Y-39.003	N710 X-90.676	Y37.772	N1550 X-43.082
Y37.855	N290 X-44.854	Y-37.488	N1130 X-90.112	Y37.767
	Y-39.236		Y38.121	

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N1560 X-42.829 Y37.457	N1990 X-45.153 Y-39.679	N2410 X-90.842 Y-37.579	N2830 X-90.558 Y37.936	N3250 X-43.24 Y38.34
N1570 X-42.781 Y37.396	N2000 X-45.371 Y-39.763	N2420 X-91.088 Y-37.255	N2840 X-90.222 Y38.289	N3260 X-43.07 Y38.155
N1580 X-42.568 Y37.056	N2010 X-45.595 Y-39.863	N2430 X-91.36 Y-36.868	N2850 X-90.123 Y38.379	N3270 X-42.847 Y37.929
N1590 X-42.448 Y36.846	N2020 X-45.994 Y-40.016	N2440 X-91.404 Y-36.799	N2860 X-89.832 Y38.661	N3280 X-42.593 Y37.618
N1600 Z-4.505 N1610 X-42.204	N2030 X-46.172 Y-40.076	N2450 X-91.676 Y-36.309	N2870 X-89.43 Y38.996	N3290 X-42.548 Y37.56
Y36.993 Z-4.7 N1620 Z-4.702	N2040 X-46.669 Y-40.236	N2460 X-91.69 Y-36.275	N2880 X-89.376 Y39.036	N3300 X-42.334 Y37.22
N1630 X-42.065 Y36.771	N2050 X-46.917 Y-40.289	N2470 X-91.871 Y-35.94	N2890 X-88.643 Y39.523	N3310 X-42.204 Y36.993
N1640 X-41.832 Y36.275	N2060 X-47.083 Y-40.333	N2480 X-91.94 Y-35.782	N2900 X-88.52 Y39.592	N3320 Z-4.7 N3330 X-41.96
N1650 X-41.759 Y36.094	N2070 X-47.525 Y-40.428	N2490 X-92.125 Y-35.347	N2910 X-88.118 Y39.799	Y37.139 Z- 4.895
N1660 X-41.685 Y35.848	N2080 X-47.85 Y-40.485	N2500 X-92.191 Y-35.155	N2920 X-88.022 Y39.843	N3340 Z-4.897 N3350 X-41.828
N1670 X-41.622 Y35.681	N2090 X-48.265 Y-40.538	N2510 X-92.267 Y-34.949	N2930 X-87.943 Y39.873	Y36.929 N3360 X-41.598
N1680 X-41.499 Y35.271	N2100 X-48.735 Y-40.585	N2520 X-92.382 Y-34.616	N2940 X-87.734 Y39.971	Y36.44 N3370 X-41.526
N1690 X-41.439 Y35.034	N2110 X-48.827 Y-40.591	N2530 X-92.595 Y-33.86	N2950 X-87.319 Y40.131	Y36.259 N3380 X-41.446
N1700 X-41.365 Y34.612	N2120 X-49.05 Y-40.614	N2540 X-92.602 Y-33.821	N2960 X-87.103 Y40.209	Y35.994 N3390 X-41.386
N1710 X-41.341 Y34.355	N2130 X-49.568 Y-40.639	N2550 X-92.658 Y-33.571	N2970 X-86.648 Y40.34	Y35.834 N3400 X-41.263
N1720 X-41.324 Y34.254	N2140 X-84.177 N2150 X-84.649	N2560 X-92.737 Y-33.107	N2980 X-86.553 Y40.364	Y35.424 N3410 X-41.206
N1730 X-41.301 Y33.913	Y-40.636 N2160 X-84.749	N2570 X-92.804 Y-32.679	N2990 X-86.525 Y40.369	Y35.198 N3420 X-41.131
N1740 X-41.276 Y33.486	Y-40.629 N2170 X-85.157	N2580 X-92.821 Y-32.513	N3000 X-86.337 Y40.422	Y34.776 N3430 X-41.106
N1750 Y-33.486 N1760 X-41.293	Y-40.607 N2180 X-85.545	N2590 X-92.855 Y-32.016	N3010 X-86.031 Y40.483	Y34.499 N3440 X-41.09
Y-33.833 N1770 X-41.315	Y-40.538 N2190 X-85.753	N2600 X-92.869 Y-31.667	N3020 X-85.566 Y40.565	Y34.402 N3450 X-41.068
Y-34.08 N1780 X-41.339	Y-40.487 N2200 X-85.992	N2610 X-92.865 Y3.169	N3030 X-85.452 Y40.573	Y34.078 N3460 X-41.043
Y-34.428 N1790 X-41.404	Y-40.487 N2210 X-86.175	N2620 X-92.869 Y31.483	N3040 X-85.329 Y40.589	Y33.65 N3470 Y-33.65
Y-34.852 N1800 X-41.428	Y-40.45 N2220 X-86.637	N2630 X-92.854 Y31.98	N3050 X-84.94 Y40.616	N3480 X-41.059 Y-33.998
Y-34.985 N1810 X-41.542	Y-40.349 N2230 X-86.831	N2640 X-92.839 Y32.336	N3060 X-84.461 Y40.643	Y-33.998 N3490 X-41.084
Y-35.398 N1820 X-41.563	Y-40.294 N2240 X-86.976	N2650 X-92.827 Y32.458	N3070 X-49.852 N3080 X-49.38	Y-34.265 N3500 X-41.107
Y-35.464 N1830 X-41.669	Y-40.247 N2250 X-87.226	N2660 X-92.756 Y32.992	Y40.626 N3090 X-49.249	Y-34.598 N3510 X-41.172
Y-35.848 N1840 X-41.732	Y-40.162 N2260 X-87.407	N2670 X-92.687 Y33.434	Y40.617 N3100 X-48.705	Y-35.021 N3520 X-41.195
Y-36.018 N1850 X-41.909	Y-40.096 N2270 X-87.802	N2680 X-92.629 Y33.695	Y40.499 N3110 X-47.943	Y-35.152 N3530 X-41.309
Y-36.457 N1860 X-42.097	Y-39.944 N2280 X-88.032	N2690 X-92.513 Y34.172	Y40.499 N3120 X-46.957	Y-35.565 N3540 X-41.337
Y-36.811 N1870 X-42.159	Y-39.837 N2290 X-88.439	N2700 X-92.499 Y34.217	Y40.25 N3130 X-46.723	Y-35.654 N3550 X-41.439
Y-36.916 N1880 X-42.291	Y-39.639 N2300 X-88.613	N2710 X-92.417 Y34.503	Y40.25 N3140 X-46.292	Y-36.021 N3560 X-41.499
Y-37.164 N1890 X-42.418	Y-39.528 N2310 X-88.704	N2720 X-92.19 Y35.156	Y40.117 N3150 X-46.211	Y-36.182 N3570 X-41.676
Y-37.365 N1900 X-42.66	Y-39.477 N2320 X-89.086	N2730 X-92.057 Y35.523	Y40.089 N3160 X-45.75	Y-36.623 N3580 X-41.865
Y-37.708 N1910 X-43.162	Y-39.236 N2330 X-89.354	N2740 X-91.965 Y35.716	Y39.923 N3170 X-45.666	Y-36.978 N3590 X-41.938
Y-38.259 N1920 X-43.385	Y-39.051 N2340 X-89.707	N2750 X-91.936 Y35.783	Y39.885 N3180 X-45.423	Y-37.103 N3600 X-42.064
Y-38.484 N1930 X-43.759	Y-38.769 N2350 X-89.833	N2760 X-91.733 Y36.21	Y39.796 N3190 X-45.153	Y-37.339 N3610 X-42.185
Y-38.811 N1940 X-43.86	Y-38.651 N2360 X-89.888	N2770 X-91.548 Y36.554	Y39.676 N3200 X-44.77	Y-37.53 N3620 X-42.427
Y-38.887 N1950 X-44.213	Y-38.606 N2370 X-90.176	N2780 X-91.278 Y36.991	Y39.485 N3210 X-44.662	Y-37.874 N3630 X-42.697
Y-39.129 N1960 X-44.298	Y-38.326 N2380 X-90.496	N2790 X-91.224 Y37.061	Y39.422 N3220 X-44.119	Y-38.171 N3640 X-42.76
Y-39.18 N1970 X-44.624	Y-38.007 N2390 X-90.74	N2800 X-91.184 Y37.125	Y39.066 N3230 X-43.823	Y-38.236 N3650 X-42.94
Y-39.403 N1980 X-45.079	Y-37.716 N2400 X-90.799	N2810 X-90.909 Y37.487	Y38.86 N3240 X-43.47	Y-38.435 N3660 X-43.151
Y-39.643	Y-37.64	N2820 X-90.621 Y37.861	Y38.565	Y-38.648 N3670 X-43.525

N3680 X-43.634	N4100 X-89.82	N4520 X-91.661	N4940 X-44.919	N5370 X-41.951
Y-39.058	Y-38.934	Y36.718	Y39.84	Y-37.694
N3690 X-43.987	N4110 X-89.961	N4530 X-91.387	N4950 X-44.536	N5380 X-42.195
Y-39.299	Y-38.801	Y37.162	Y39.65	Y-38.039
N3700 X-44.083	N4120 X-90.013	N4540 X-91.323	N4960 X-44.42	N5390 X-42.464
Y-39.356	Y-38.759	Y37.244	Y39.581	Y-38.336
N3710 X-44.394	N4130 X-90.289	N4550 X-91.286	N4970 X-44.061	N5400 X-42.547
Y-39.569	Y-38.491	Y37.304	Y39.347	Y-38.423
N3720 X-44.846	N4140 X-90.609	N4560 X-91.022	N4980 X-44.03	N5410 X-42.718
Y-39.808	Y-38.171	Y37.651	Y39.324	Y-38.61
N3730 X-44.925	N4150 X-90.853	N4570 X-90.734	N4990 X-43.871	N5420 X-42.918
Y-39.846	Y-37.88	Y38.026	Y39.22	Y-38.813
N3740 X-45.162	N4160 X-90.921	N4580 X-90.671	N5000 X-43.589	N5430 X-43.292
Y-39.937	Y-37.793	Y38.101	Y39.024	Y-39.14
N3750 X-45.369	N4170 X-90.971	N4590 X-90.332	N5010 X-43.234	N5440 X-43.408
Y-40.03	Y-37.722	Y38.456	Y38.728	Y-39.228
N3760 X-45.769	N4180 X-91.203	N4600 X-90.221	N5020 X-43.005	N5450 X-43.762
Y-40.184	Y-37.416	Y38.557	Y38.503	Y-39.47
N3770 X-45.938	N4190 X-91.475	N4610 X-89.943	N5030 X-42.823	N5460 X-43.869
Y-40.241	Y-37.03	Y38.828	Y38.305	Y-39.533
N3780 X-46.439	N4200 X-91.517	N4620 X-89.543	N5040 X-42.611	N5470 X-44.164
Y-40.402	Y-36.963	Y39.16	Y38.09	Y-39.735
N3790 X-46.713	N4210 X-91.796	N4630 X-89.483	N5050 X-42.314	N5480 X-44.612
Y-40.46	Y-36.46	Y39.205	Y37.724	Y-39.972
N3800 X-46.863	N4220 X-91.813	N4640 X-88.751	N5060 X-42.101	N5490 X-44.698
Y-40.5	Y-36.42	Y39.691	Y37.385	Y-40.014
N3810 X-47.305	N4230 X-91.987	N4650 X-88.633	N5070 X-41.96	N5500 X-44.952
Y-40.594	Y-36.098	Y39.757	Y37.139	Y-40.111
N3820 X-47.616	N4240 X-92.053	N4660 X-88.231	N5080 Z-4.895	N5510 X-45.144
Y-40.65	Y-35.947	Y39.964	N5090 X-41.717	Y-40.197
N3830 X-48.032	N4250 X-92.238	N4670 X-88.124	Y37.286 Z-5.09	N5520 X-45.544
Y-40.702	Y-35.512	Y40.013	N5100 Z-5.093	Y-40.351
N3840 X-48.502	N4260 X-92.318	N4680 X-88.036	N5110 X-41.591	N5530 X-45.705
Y-40.75	Y-35.28	Y40.046	Y37.087	Y-40.405
N3850 X-48.623	N4270 X-92.383	N4690 X-87.838	N5120 X-41.365	N5540 X-46.166
Y-40.757	Y-35.103	Y40.139	Y36.604	Y-40.555
N3860 X-48.838	N4280 X-92.498	N4700 X-87.423	N5130 X-41.292	N5550 X-46.21
Y-40.779	Y-34.77	Y40.298	Y36.423	Y-40.567
N3870 X-49.334	N4290 X-92.708	N4710 X-87.216	N5140 X-41.206	N5560 X-46.496
Y-40.803	Y-34.024	Y40.374	Y36.139	Y-40.628
N3880 X-84.29	N4300 X-92.719	N4720 X-86.762	N5150 X-41.15	N5570 X-46.644
N3890 X-84.762	Y-33.961	Y40.504	Y35.987	Y-40.667
Y-40.8	N4310 X-92.773	N4730 X-86.651	N5160 X-41.027	N5580 X-47.086
N3900 X-84.883	Y-33.721	Y40.532	Y35.577	Y-40.761
Y-40.792	N4320 X-92.85	N4740 X-86.618	N5170 X-40.972	N5590 X-47.383
N3910 X-85.275	Y-33.273	Y40.538	Y35.362	Y-40.814
Y-40.77	N4330 X-92.917	N4750 X-86.438	N5180 X-40.898	N5600 X-47.798
N3920 X-85.647	Y-32.843	Y40.589	Y34.941	Y-40.866
Y-40.729	N4340 X-92.941	N4760 X-86.145	N5190 X-40.871	N5610 X-48.268
N3930 X-85.866	Y-32.646	Y40.647	Y34.642	Y-40.914
Y-40.702	N4350 X-92.952	N4770 X-85.679	N5200 X-40.855	N5620 X-48.419
N3940 X-85.943	Y-32.523	Y40.729	Y34.551	Y-40.924
Y-40.687	N4360 X-92.987	N4780 X-85.545	N5210 X-40.834	N5630 X-48.625
N3950 X-86.148	Y-32.027	Y40.739	Y34.242	Y-40.944
Y-40.642	N4370 X-93.001	N4790 X-85.427	N5220 X-40.809	N5640 X-49.101
N3960 X-86.296	Y-31.676	Y40.754	Y33.815	Y-40.967
Y-40.613	N4380 X-92.996	N4800 X-85.053	N5230 Y-33.815	N5650 X-84.403
N3970 X-86.758	Y6.795	Y40.78	N5240 X-40.826	N5660 X-84.876
Y-40.511	N4390 X-93.001	N4810 X-84.574	Y-34.162	Y-40.965
N3980 X-86.944	Y31.474	Y40.807	N5250 X-40.852	N5670 X-85.018
Y-40.458	N4400 X-92.986	N4820 X-49.619	Y-34.451	Y-40.955
N3990 X-87.084	Y31.977	N4830 X-49.146	N5260 X-40.874	N5680 X-85.393
Y-40.414	N4410 X-92.971	Y40.79	Y-34.767	Y-40.934
N4000 X-87.33	Y32.339	N4840 X-48.988	N5270 X-40.939	N5690 X-85.979
Y-40.33	N4420 X-92.936	Y40.78	Y-35.19	Y-40.867
N4010 X-87.515	Y32.659	N4850 X-48.465	N5280 X-40.962	N5700 X-86.068
Y-40.262	N4430 X-92.871	Y40.754	Y-35.319	Y-40.849
N4020 X-87.706	Y33.139	N4860 X-47.709	N5290 X-41.076	N5710 X-86.305
Y-40.187	N4440 X-92.798	Y40.663	Y-35.731	Y-40.797
N4030 X-87.925	Y33.608	N4870 X-46.713	N5300 X-41.112	N5720 X-86.417
Y-40.104	N4450 X-92.742	Y40.472	Y-35.844	Y-40.775
N4040 X-88.145	Y33.859	N4880 X-46.49	N5310 X-41.208	N5730 X-86.878
Y-40.001	N4460 X-92.626	Y40.414	Y-36.193	Y-40.673
N4050 X-88.552	Y34.336	N4890 X-46.058	N5320 X-41.265	N5740 X-87.057
Y-39.803	N4470 X-92.603	Y40.281	Y-36.347	Y-40.622
N4060 X-88.747	Y34.409	N4900 X-45.969	N5330 X-41.444	N5750 X-87.191
Y-39.679	N4480 X-92.526	Y40.251	Y-36.79	Y-40.58
N4070 X-88.829	Y34.68	N4910 X-45.508	N5340 X-41.632	N5760 X-87.435
Y-39.634	N4490 X-92.304	Y40.084	Y-37.144	Y-40.497
N4080 X-89.211	Y35.317	N4920 X-45.408	N5350 X-41.718	N5770 X-87.623
Y-39.392	N4500 X-92.17	Y40.04	Y-37.29	Y-40.429
N4090 X-89.467	Y35.688	N4930 X-45.177	N5360 X-41.837	N5780 X-87.819
Y-39.216	N4510 X-91.838	Y39.955	Y-37.513	Y-40.353
	Y36.388			

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N5790 X-87.839	N6210 X-93.093	N6630 X-48.913	N7060 X-40.641	N7480 X-85.511
Y-40.343	Y32.451	Y40.954	Y-34.936	Y-41.098
N5800 X-88.048	N6220 X-93.051	N6640 X-48.726	N7070 X-40.706	N7490 X-86.092
Y-40.263	Y32.81	Y40.942	Y-35.359	Y-41.031
N5810 X-88.258	N6230 X-92.987	N6650 X-48.225	N7080 X-40.729	N7500 X-86.193
Y-40.165	Y33.286	Y40.918	Y-35.486	Y-41.011
N5820 X-88.665	N6240 X-92.909	N6660 X-47.476	N7090 X-40.843	N7510 X-86.461
Y-39.968	Y33.782	Y40.828	Y-35.898	Y-40.952
N5830 X-88.881	N6250 X-92.855	N6670 X-46.47	N7100 X-40.886	N7520 X-86.538
Y-39.831	Y34.024	Y40.634	Y-36.035	Y-40.937
N5840 X-88.954	N6260 X-92.74	N6680 X-46.256	N7110 X-40.978	N7530 X-86.999
Y-39.79	Y34.501	Y40.578	Y-36.365	Y-40.835
N5850 X-89.336	N6270 X-92.707	N6690 X-45.825	N7120 X-41.032	N7540 X-87.171
Y-39.549	Y34.602	Y40.445	Y-36.511	Y-40.787
N5860 X-89.581	N6280 X-92.635	N6700 X-45.727	N7130 X-41.211	N7550 X-87.298
Y-39.38	Y34.856	Y40.412	Y-36.956	Y-40.746
N5870 X-89.934	N6290 X-92.418	N6710 X-45.266	N7140 X-41.399	N7560 X-87.539
Y-39.098	Y35.478	Y40.246	Y-37.31	Y-40.665
N5880 X-90.089	N6300 X-92.283	N6720 X-45.151	N7150 X-41.498	N7570 X-87.731
Y-38.952	Y35.852	Y40.194	Y-37.477	Y-40.595
N5890 X-90.139	N6310 X-91.944	N6730 X-44.931	N7160 X-41.61	N7580 X-87.947
Y-38.911	Y36.566	Y40.114	Y-37.688	Y-40.511
N5900 X-90.403	N6320 X-91.774	N6740 X-44.686	N7170 X-41.718	N7590 X-87.971
Y-38.655	Y36.882	Y40.005	Y-37.858	Y-40.5
N5910 X-90.722	N6330 X-91.496	N6750 X-44.303	N7180 X-41.962	N7600 X-88.171
Y-38.336	Y37.332	Y39.814	Y-38.204	Y-40.423
N5920 X-90.967	N6340 X-91.423	N6760 X-44.178	N7190 X-42.232	N7610 X-88.372
Y-38.044	Y37.427	Y39.74	Y-38.501	Y-40.33
N5930 X-91.044	N6350 X-91.388	N6770 X-43.819	N7200 X-42.335	N7620 X-88.778
Y-37.945	Y37.482	Y39.506	Y-38.609	Y-40.132
N5940 X-91.1	N6360 X-91.135	N6780 X-43.775	N7210 X-42.496	N7630 X-89.015
Y-37.864	Y37.815	Y39.474	Y-38.786	Y-39.982
N5950 X-91.318	N6370 X-90.847	N6790 X-43.624	N7220 X-42.684	N7640 X-89.078
Y-37.578	Y38.19	Y39.375	Y-38.977	Y-39.946
N5960 X-91.59	N6380 X-90.784	N6800 X-43.356	N7230 X-43.058	N7650 X-89.46
Y-37.192	Y38.265	Y39.189	Y-39.305	Y-39.705
N5970 X-91.631	N6390 X-90.442	N6810 X-42.999	N7240 X-43.183	N7660 X-89.694
Y-37.128	Y38.624	Y38.89	Y-39.398	Y-39.545
N5980 X-91.916	N6400 X-90.319	N6820 X-42.769	N7250 X-43.536	N7670 X-90.047
Y-36.61	Y38.736	Y38.666	Y-39.64	Y-39.262
N5990 X-91.937	N6410 X-90.053	N6830 X-42.576	N7260 X-43.654	N7680 X-90.216
Y-36.564	Y38.994	Y38.455	Y-39.71	Y-39.102
N6000 X-92.103	N6420 X-89.656	N6840 X-42.375	N7270 X-43.934	N7690 X-90.265
Y-36.256	Y39.325	Y38.252	Y-39.902	Y-39.063
N6010 X-92.166	N6430 X-89.589	N6850 X-42.081	N7280 X-44.379	N7700 X-90.516
Y-36.111	Y39.374	Y37.889	Y-40.137	Y-38.819
N6020 X-92.351	N6440 X-88.858	N6860 X-41.867	N7290 X-44.47	N7710 X-90.835
Y-35.676	Y39.858	Y37.549	Y-40.181	Y-38.5
N6030 X-92.445	N6450 X-88.746	N6870 X-41.717	N7300 X-44.742	N7720 X-91.08
Y-35.405	Y39.921	Y37.286	Y-40.285	Y-38.209
N6040 X-92.499	N6460 X-88.344	N6880 Z-5.09	N7310 X-44.919	N7730 X-91.166
Y-35.257	Y40.128	N6890 X-41.473	Y-40.364	Y-38.097
N6050 X-92.614	N6470 X-88.226	Y37.432 Z-	N7320 X-45.319	N7740 X-91.23
Y-34.924	Y40.182	5.285	Y-40.518	Y-38.007
N6060 X-92.821	N6480 X-88.128	N6900 Z-5.289	N7330 X-45.471	N7750 X-91.433
Y-34.188	Y40.22	N6910 X-41.355	Y-40.57	Y-37.74
N6070 X-92.837	N6490 X-87.943	Y37.244	N7340 X-45.932	N7760 X-91.705
Y-34.101	Y40.306	N6920 X-41.131	Y-40.719	Y-37.353
N6080 X-92.888	N6500 X-87.528	Y36.769	N7350 X-45.98	N7770 X-91.744
Y-33.87	Y40.466	N6930 X-41.059	Y-40.733	Y-37.292
N6090 X-92.962	N6510 X-87.329	Y36.587	N7360 X-46.306	N7780 X-92.037
Y-33.44	Y40.538	N6940 X-40.967	Y-40.802	Y-36.761
N6100 X-93.03	N6520 X-86.875	Y36.285	N7370 X-46.424	N7790 X-92.06
Y-33.007	Y40.669	N6950 X-40.914	Y-40.834	Y-36.709
N6110 X-93.072	N6530 X-86.748	Y36.14	N7380 X-46.866	N7800 X-92.218
Y-32.662	Y40.7	N6960 X-40.79	Y-40.928	Y-36.414
N6120 X-93.082	N6540 X-86.711	Y35.73	N7390 X-47.149	N7810 X-92.279
Y-32.554	Y40.707	N6970 X-40.739	Y-40.978	Y-36.275
N6130 X-93.114	N6550 X-86.539	Y35.527	N7400 X-47.565	N7820 X-92.464
Y-32.106	Y40.756	N6980 X-40.664	Y-41.031	Y-35.841
N6140 X-93.124	N6560 X-86.258	Y35.105	N7410 X-48.035	N7830 X-92.572
Y-31.911	Y40.811	N6990 X-40.635	Y-41.078	Y-35.529
N6150 X-93.13	N6570 X-85.792	Y34.786	N7420 X-48.215	N7840 X-92.615
Y-31.679	Y40.893	N7000 X-40.621	Y-41.09	Y-35.411
N6160 X-93.125	N6580 X-85.637	Y34.699	N7430 X-48.412	N7850 X-92.73
Y-8.959	Y40.905	N7010 X-40.601	Y-41.11	Y-35.078
N6170 X-93.13	N6590 X-85.524	Y34.407	N7440 X-48.868	N7860 X-92.934
Y12.907	Y40.919	N7020 X-40.576	Y-41.132	Y-34.353
N6180 Y31.47	N6600 X-85.053	Y33.979	N7450 X-84.516	N7870 X-92.954
N6190 X-93.119	Y40.952	N7030 Y-33.979	N7460 X-84.989	Y-34.242
Y31.882	N6610 X-84.687	N7040 X-40.592	Y-41.129	N7880 X-93.004
N6200 X-93.104	Y40.972	Y-34.326	N7470 X-85.152	Y-34.02
Y32.337	N6620 X-49.385	N7050 X-40.62	Y-41.117	N7890 X-93.075
		Y-34.636		Y-33.606

N7900 X-93.143	N8320 X-88.047	N8750 Z-5.485	N9180 X-45.238	N9600 X-92.157
Y-33.172	Y40.474	N8760 X-41.118	Y-40.734	Y-36.912
N7910 X-93.184	N8330 X-87.632	Y37.402	N9190 X-45.699	N9610 X-92.183
Y-32.84	Y40.633	N8770 X-40.898	Y-40.883	Y-36.854
N7920 X-93.203	N8340 X-87.442	Y36.933	N9200 X-45.75	N9620 X-92.334
Y-32.64	Y40.702	N8780 X-40.825	Y-40.898	Y-36.572
N7930 X-93.238	N8350 X-86.988	Y36.752	N9210 X-46.102	N9630 X-92.393
Y-32.148	Y40.833	N8790 X-40.728	Y-40.973	Y-36.44
N7940 X-93.252	N8360 X-86.846	Y36.43	N9220 X-46.205	N9640 X-92.577
Y-31.821	Y40.868	N8800 X-40.677	Y-41.001	Y-36.005
N7950 X-93.256	N8370 X-86.804	Y36.294	N9230 X-46.647	N9650 X-92.698
Y-31.678	Y40.876	N8810 X-40.554	Y-41.095	Y-35.654
N7960 X-93.254	N8380 X-86.64	Y35.884	N9240 X-46.916	N9660 X-92.731
Y-24.729	Y40.923	N8820 X-40.506	Y-41.143	Y-35.565
N7970 X-93.256	N8390 X-86.371	Y35.691	N9250 X-47.331	N9670 X-92.846
Y31.47	Y40.976	N8830 X-40.431	Y-41.195	Y-35.232
N7980 X-93.237	N8400 X-85.905	Y35.27	N9260 X-47.802	N9680 X-93.047
Y32.118	Y41.058	N8840 X-40.4	Y-41.243	Y-34.517
N7990 X-93.223	N8410 X-85.73	Y34.93	N9270 X-48.011	N9690 X-93.072
Y32.45	Y41.071	N8850 X-40.386	Y-41.256	Y-34.382
N8000 X-93.206	N8420 X-85.621	Y34.847	N9280 X-48.199	N9700 X-93.119
Y32.619	Y41.085	N8860 X-40.367	Y-41.275	Y-34.169
N8010 X-93.165	N8430 X-85.15	Y34.571	N9290 X-48.634	N9710 X-93.187
Y32.962	Y41.117	N8870 X-40.342	Y-41.296	Y-33.773
N8020 X-93.094	N8440 X-84.8	Y34.144	N9300 X-84.629	N9720 X-93.256
Y33.491	Y41.136	N8880 Y-34.144	N9310 X-85.102	Y-33.336
N8030 X-93.079	N8450 X-49.152	N8890 X-40.359	Y-41.294	N9730 X-93.295
Y33.575	N8460 X-48.679	Y-34.491	N9320 X-85.286	Y-33.018
N8040 X-93.02	Y41.119	N8900 X-40.389	Y-41.28	N9740 X-93.317
Y33.956	N8470 X-48.465	Y-34.822	N9330 X-85.63	Y-32.785
N8050 X-92.968	Y41.105	N8910 X-40.409	Y-41.261	N9750 X-93.35
Y34.188	N8480 X-47.985	Y-35.105	N9340 X-86.205	Y-32.311
N8060 X-92.843	Y41.081	N8920 X-40.474	Y-41.195	N9760 X-93.374
Y34.7	N8490 X-47.242	Y-35.528	N9350 X-86.317	Y-31.77
N8070 X-92.811	Y40.992	N8930 X-40.496	Y-41.173	N9770 Y31.561
Y34.794	N8500 X-46.798	Y-35.652	N9360 X-87.12	N9780 X-93.36
N8080 X-92.743	Y40.908	N8940 X-40.61	Y-40.998	Y32.056
Y35.032	N8510 X-46.556	Y-36.065	N9370 X-87.284	N9790 X-93.335
N8090 X-92.532	Y40.859	N8950 X-40.661	Y-40.951	Y32.621
Y35.64	N8520 X-46.226	Y-36.225	N9380 X-87.475	N9800 X-93.319
N8100 X-92.396	Y40.796	N8960 X-40.747	Y-40.89	Y32.783
Y36.016	N8530 X-46.023	Y-36.538	N9390 X-87.732	N9810 X-93.28
N8110 X-92.05	Y40.743	N8970 X-40.798	Y-40.801	Y33.113
Y36.744	N8540 X-45.591	Y-36.676	N9400 X-88.074	N9820 X-93.207
N8120 X-91.887	Y40.61	N8980 X-40.979	Y-40.67	Y33.655
Y37.047	N8550 X-45.485	Y-37.122	N9410 X-88.103	N9830 X-93.188
N8130 X-91.64	Y40.574	N8990 X-41.167	Y-40.656	Y33.764
Y37.45	N8560 X-45.024	Y-37.476	N9420 X-88.294	N9840 X-93.131
N8140 X-91.605	Y40.407	N9000 X-41.277	Y-40.583	Y34.13
Y37.502	N8570 X-44.893	Y-37.664	N9430 X-88.485	N9850 X-93.081
N8150 X-91.523	Y40.349	N9010 X-41.383	Y-40.494	Y34.353
Y37.61	N8580 X-44.685	Y-37.862	N9440 X-88.891	N9860 X-92.954
N8160 X-91.49	Y40.272	N9020 X-41.484	Y-40.296	Y34.872
Y37.661	N8590 X-44.453	Y-38.023	N9450 X-89.123	N9870 X-92.916
N8170 X-91.248	Y40.169	N9030 X-41.729	Y-40.15	Y34.986
Y37.98	N8600 X-44.069	Y-38.37	N9460 X-89.203	N9880 X-92.852
N8180 X-90.96	Y39.978	N9040 X-41.999	Y-40.103	Y35.209
Y38.354	N8610 X-43.935	Y-38.667	N9470 X-89.585	N9890 X-92.646
N8190 X-90.897	Y39.9	N9050 X-42.122	Y-39.861	Y35.801
Y38.43	N8620 X-43.577	Y-38.795	N9480 X-89.807	N9900 X-92.509
N8200 X-90.553	Y39.666	N9060 X-42.274	Y-39.709	Y36.181
Y38.791	N8630 X-43.52	Y-38.962	N9490 X-90.16	N9910 X-92.156
N8210 X-90.417	Y39.623	N9070 X-42.451	Y-39.427	Y36.922
Y38.914	N8640 X-43.377	Y-39.141	N9500 X-90.344	N9920 X-92.
N8220 X-90.164	Y39.53	N9080 X-42.825	Y-39.252	Y37.211
Y39.16	N8650 X-43.122	Y-39.469	N9510 X-90.39	N9930 X-91.753
N8230 X-89.769	Y39.353	N9090 X-42.957	Y-39.216	Y37.614
Y39.489	N8660 X-42.764	Y-39.568	N9520 X-90.629	N9940 X-91.714
N8240 X-89.696	Y39.053	N9100 X-43.31	Y-38.984	Y37.673
Y39.543	N8670 X-42.534	Y-39.81	N9530 X-90.948	N9950 X-91.622
N8250 X-89.32	Y38.829	N9110 X-43.439	Y-38.664	Y37.793
Y39.793	N8680 X-42.329	Y-39.887	N9540 X-91.193	N9960 X-91.592
N8260 X-89.281	Y38.605	N9120 X-43.704	Y-38.373	Y37.84
Y39.816	N8690 X-42.139	Y-40.068	N9550 X-91.289	N9970 X-91.361
N8270 X-88.966	Y38.413	N9130 X-44.145	Y-38.25	Y38.144
Y40.025	N8700 X-41.847	Y-40.301	N9560 X-91.359	N9980 X-91.073
N8280 X-88.859	Y38.053	N9140 X-44.243	Y-38.149	Y38.519
Y40.085	N8710 X-41.634	Y-40.348	N9570 X-91.548	N9990 X-91.01
N8290 X-88.458	Y37.714	N9150 X-44.533	Y-37.901	Y38.594
Y40.292	N8720 X-41.473	Y-40.46	N9580 X-91.82	N100 X-90.663
N8300 X-88.327	Y37.432	N9160 X-44.694	Y-37.515	Y38.959
Y40.352	N8730 Z-5.285	Y-40.532	N9590 X-91.857	N110 X-90.515
N8310 X-88.221	N8740 X-41.229	N9170 X-45.094	Y-37.456	Y39.093
Y40.393	Y37.579 Z-5.48	Y-40.685		

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N120 X-90.275	N540 X-43.129	N970 X-42.051	N1390 X-89.92	N1810 X-92.358
Y39.326	Y39.685	Y-39.138	Y-39.873	Y36.902
N130 X-89.882	N550 X-42.889	N980 X-42.217	N1400 X-90.273	N1820 X-92.345
Y39.654	Y39.518	Y-39.306	Y-39.591	Y36.924
N140 X-89.803	N560 X-42.624	N990 X-42.591	N1410 X-90.472	N1830 X-92.261
Y39.712	Y39.298	Y-39.633	Y-39.403	Y37.1
N150 X-89.426	N570 X-42.528	N1000 X-42.732	N1420 X-90.516	N1840 X-92.113
Y39.962	Y39.216	Y-39.739	Y-39.368	Y37.375
N160 X-89.373	N580 X-42.299	N1010 X-43.085	N1430 X-90.742	N1850 X-91.866
Y39.994	Y38.991	Y-39.98	Y-39.148	Y37.778
N170 X-89.074	N590 X-42.082	N1020 X-43.225	N1440 X-91.062	N1860 X-91.824
Y40.193	Y38.755	Y-40.063	Y-38.829	Y37.843
N180 X-88.972	N600 X-41.904	N1030 X-43.474	N1450 X-91.306	N1870 X-91.722
Y40.25	Y38.574	Y-40.234	Y-38.537	Y37.976
N190 X-88.571	N610 X-41.614	N1040 X-43.912	N1460 X-91.411	N1880 X-91.695
Y40.457	Y38.218	Y-40.465	Y-38.402	Y38.019
N200 X-88.429	N620 X-41.4	N1050 X-44.015	N1470 X-91.489	N1890 X-91.474
Y40.521	Y37.878	Y-40.515	Y-38.292	Y38.309
N210 X-88.313	N630 X-41.229	N1060 X-44.323	N1480 X-91.663	N1900 X-91.186
Y40.566	Y37.579	Y-40.634	Y-38.063	Y38.683
N220 X-88.152	N640 Z-5.48	N1070 X-44.469	N1490 X-91.935	N1910 X-91.123
Y40.641	N650 X-40.985	Y-40.699	Y-37.676	Y38.758
N230 X-87.737	Y37.725 Z-	N1080 X-44.868	N1500 X-91.97	N1920 X-90.773
Y40.801	5.675	Y-40.852	Y-37.621	Y39.126
N240 X-87.555	N660 Z-5.681	N1090 X-45.004	N1510 X-92.278	N1930 X-90.614
Y40.867	N670 X-40.881	Y-40.898	Y-37.063	Y39.271
N250 X-87.101	Y37.56	N1100 X-45.465	N1520 X-92.306	N1940 X-90.385
Y40.998	N680 X-40.665	Y-41.048	Y-36.999	Y39.493
N260 X-86.943	Y37.097	N1110 X-45.521	N1530 X-92.45	N1950 X-89.996
Y41.037	N690 X-40.592	Y-41.064	Y-36.73	Y39.818
N270 X-86.897	Y36.916	N1120 X-45.899	N1540 X-92.506	N1960 X-89.909
Y41.045	N700 X-40.489	Y-41.144	Y-36.604	Y39.881
N280 X-86.741	Y36.576	N1130 X-45.986	N1550 X-92.691	N1970 X-89.533
Y41.089	N710 X-40.441	Y-41.167	Y-36.169	Y40.131
N290 X-86.484	Y36.447	N1140 X-46.427	N1560 X-92.962	N1980 X-89.465
Y41.14	N720 X-40.318	Y-41.262	Y-35.386	Y40.171
N300 X-86.019	Y36.037	N1150 X-46.683	N1570 X-93.16	N1990 X-89.182
Y41.222	N730 X-40.272	Y-41.307	Y-34.681	Y40.36
N310 X-85.822	Y35.855	N1160 X-47.098	N1580 X-93.189	N2000 X-89.085
Y41.236	N740 X-40.197	Y-41.36	Y-34.522	Y40.414
N320 X-85.719	Y35.434	N1170 X-47.568	N1590 X-93.235	N2010 X-88.684
Y41.25	N750 X-40.165	Y-41.407	Y-34.318	Y40.621
N330 X-85.247	Y35.074	N1180 X-47.807	N1600 X-93.318	N2020 X-88.531
Y41.282	N760 X-40.152	Y-41.422	Y-33.835	Y40.691
N340 X-84.913	Y34.996	N1190 X-47.986	N1610 X-93.37	N2030 X-88.405
Y41.301	N770 X-40.134	Y-41.44	Y-33.501	Y40.739
N350 X-48.918	Y34.735	N1200 X-48.401	N1620 X-93.412	N2040 X-88.256
N360 X-48.446	N780 X-40.109	Y-41.46	Y-33.155	Y40.809
Y41.283	Y34.308	N1210 X-84.742	N1630 X-93.419	N2050 X-87.841
N370 X-48.204	N790 Y-34.308	N1220 X-85.215	Y-33.047	Y40.968
Y41.268	N800 X-40.125	Y-41.458	N1640 X-93.431	N2060 X-87.668
N380 X-47.746	Y-34.655	N1230 X-85.421	Y-32.929	Y41.031
Y41.245	N810 X-40.157	Y-41.443	N1650 X-93.463	N2070 X-87.214
N390 X-47.009	Y-35.007	N1240 X-85.748	Y-32.474	Y41.162
Y41.156	N820 X-40.176	Y-41.425	N1660 X-93.487	N2080 X-87.041
N400 X-46.317	Y-35.275	N1250 X-86.318	Y-31.934	Y41.205
Y41.023	N830 X-40.241	Y-41.36	N1670 Y31.726	N2090 X-86.99
N410 X-46.296	Y-35.698	N1260 X-86.442	N1680 X-93.474	Y41.214
Y41.017	N840 X-40.263	Y-41.336	Y32.201	N2100 X-86.842
N420 X-45.982	Y-35.819	N1270 X-87.241	N1690 X-93.448	Y41.256
Y40.957	N850 X-40.377	Y-41.16	Y32.792	N2110 X-86.597
N430 X-45.79	Y-36.232	N1280 X-87.397	N1700 X-93.432	Y41.305
Y40.907	N860 X-40.435	Y-41.116	Y32.948	N2120 X-86.132
N440 X-45.358	Y-36.415	N1290 X-87.589	N1710 X-93.395	Y41.387
Y40.774	N870 X-40.517	Y-41.054	Y33.265	N2130 X-85.915
N450 X-45.243	Y-36.71	N1300 X-87.845	N1720 X-93.32	Y41.402
Y40.735	N880 X-40.565	Y-40.966	Y33.82	N2140 X-85.816
N460 X-44.782	Y-36.84	N1310 X-88.202	N1730 X-93.296	Y41.415
Y40.569	N890 X-40.746	Y-40.829	Y33.954	N2150 X-85.345
N470 X-44.636	Y-37.288	N1320 X-88.237	N1740 X-93.242	Y41.448
Y40.503	N900 X-40.934	Y-40.812	Y34.304	N2160 X-85.026
N480 X-44.439	Y-37.643	N1330 X-88.417	N1750 X-93.194	Y41.465
Y40.431	N910 X-41.057	Y-40.743	Y34.517	N2170 X-48.685
N490 X-44.219	Y-37.851	N1340 X-88.598	N1760 X-93.065	N2180 X-48.212
Y40.333	N920 X-41.156	Y-40.658	Y35.044	Y41.447
N500 X-43.836	Y-38.037	N1350 X-89.004	N1770 X-93.02	N2190 X-47.942
Y40.143	N930 X-41.251	Y-40.461	Y35.179	Y41.43
N510 X-43.693	Y-38.187	N1360 X-89.283	N1780 X-92.961	N2200 X-47.506
Y40.059	N940 X-41.496	Y-40.284	Y35.385	Y41.409
N520 X-43.335	Y-38.535	N1370 X-89.328	N1790 X-92.76	N2210 X-46.775
Y39.825	N950 X-41.766	Y-40.259	Y35.962	Y41.321
N530 X-43.265	Y-38.832	N1380 X-89.71	N1800 X-92.622	N2220 X-46.064
Y39.773	N960 X-41.909	Y-40.018	Y36.345	Y41.184
	Y-38.981			

N2230 X-46.037	N2660 X-40.03	N3080 X-86.431	N3500 Y31.89	N3920 X-86.943
Y41.176	Y-35.986	Y-41.524	N3510 X-93.587	Y41.423
N2240 X-45.739	N2670 X-40.144	N3090 X-86.567	Y32.346	N3930 X-86.71
Y41.119	Y-36.399	Y-41.498	N3520 X-93.56	Y41.469
N2250 X-45.556	N2680 X-40.21	N3100 X-87.362	Y32.963	N3940 X-86.245
Y41.071	Y-36.606	Y-41.322	N3530 X-93.545	Y41.551
N2260 X-45.124	N2690 X-40.286	N3110 X-87.51	Y33.112	N3950 X-86.007
Y40.939	Y-36.882	Y-41.28	N3540 X-93.5	Y41.568
N2270 X-45.001	N2700 X-40.331	N3120 X-87.702	Y33.498	N3960 X-85.913
Y40.897	Y-37.004	Y-41.219	N3550 X-93.433	Y41.58
N2280 X-44.541	N2710 X-40.496	N3130 X-87.958	Y33.984	N3970 X-85.442
Y40.73	Y-37.416	Y-41.13	N3560 X-93.405	Y41.613
N2290 X-44.378	N2720 X-40.513	N3140 X-88.329	Y34.144	N3980 X-85.139
Y40.658	Y-37.455	Y-40.987	N3570 X-93.353	Y41.629
N2300 X-44.192	N2730 X-40.701	N3150 X-88.37	Y34.478	N3990 X-48.451
Y40.59	Y-37.809	Y-40.967	N3580 X-93.307	N4000 X-47.979
N2310 X-43.986	N2740 X-40.837	N3160 X-88.54	Y34.681	Y41.612
Y40.498	Y-38.038	Y-40.902	N3590 X-93.176	N4010 X-47.681
N2320 X-43.602	N2750 X-40.929	N3170 X-88.711	Y35.215	Y41.593
Y40.307	Y-38.211	Y-40.823	N3600 X-93.124	N4020 X-47.266
N2330 X-43.451	N2760 X-41.017	N3180 X-89.117	Y35.371	Y41.572
Y40.218	Y-38.352	Y-40.625	N3610 X-93.069	N4030 X-46.542
N2340 X-43.092	N2770 X-41.264	N3190 X-89.417	Y35.562	Y41.485
Y39.984	Y-38.701	Y-40.436	N3620 X-92.874	N4040 X-45.81
N2350 X-43.01	N2780 X-41.533	N3200 X-89.452	Y36.123	Y41.344
Y39.923	Y-38.997	Y-40.416	N3630 X-92.735	N4050 X-45.777
N2360 X-42.882	N2790 X-41.697	N3210 X-89.834	Y36.51	Y41.334
Y39.839	Y-39.168	Y-40.174	N3640 X-92.465	N4060 X-45.495
N2370 X-42.656	N2800 X-41.829	N3220 X-90.033	Y37.08	Y41.281
Y39.682	Y-39.313	Y-40.038	N3650 X-92.447	N4070 X-45.323
N2380 X-42.391	N2810 X-41.984	N3230 X-90.386	Y37.111	Y41.236
Y39.463	Y-39.47	Y-39.756	N3660 X-92.367	N4080 X-44.891
N2390 X-42.293	N2820 X-42.358	N3240 X-90.6	Y37.278	Y41.103
Y39.378	Y-39.798	Y-39.553	N3670 X-92.226	N4090 X-44.76
N2400 X-42.063	N2830 X-42.506	N3250 X-90.641	Y37.54	Y41.059
Y39.154	Y-39.909	Y-39.52	N3680 X-91.979	N4100 X-44.299
N2410 X-41.835	N2840 X-42.859	N3260 X-90.855	Y37.943	Y40.892
Y38.905	Y-40.151	Y-39.313	N3690 X-91.933	N4110 X-44.121
N2420 X-41.668	N2850 X-43.01	N3270 X-91.175	Y38.014	Y40.813
Y38.736	Y-40.24	Y-38.993	N3700 X-91.821	N4120 X-43.946
N2430 X-41.38	N2860 X-43.244	N3280 X-91.419	Y38.159	Y40.749
Y38.382	Y-40.401	Y-38.702	N3710 X-91.797	N4130 X-43.752
N2440 X-41.167	N2870 X-43.678	N3290 X-91.534	Y38.197	Y40.662
Y38.042	Y-40.63	Y-38.554	N3720 X-91.299	N4140 X-43.369
N2450 X-40.985	N2880 X-43.788	N3300 X-91.618	Y38.848	Y40.471
Y37.725	Y-40.683	N3310 X-91.618	N3730 X-91.236	N4150 X-43.209
N2460 Z-5.675	N2890 X-44.113	N3310 X-91.777	Y38.923	Y40.377
N2470 X-40.742	Y-40.808	Y-38.224	N3740 X-90.883	N4160 X-42.85
Y37.872 Z-5.87	N2900 X-44.244	N3320 X-92.049	Y39.294	Y40.143
N2480 Z-5.877	Y-40.866	Y-37.838	N3750 X-90.712	N4170 X-42.755
N2490 X-40.645	N2910 X-44.643	N3330 X-92.083	Y39.45	Y40.073
Y37.717	Y-41.019	Y-37.785	N3760 X-90.496	N4180 X-42.635
N2500 X-40.431	N2920 X-44.771	N3340 X-92.313	Y39.659	Y39.994
Y37.262	Y-41.063	Y-37.372	N3770 X-90.109	N4190 X-42.422
N2510 X-40.358	N2930 X-45.232	N3350 X-92.398	Y39.982	Y39.846
Y37.08	Y-41.212	Y-37.213	N3780 X-90.016	N4200 X-42.157
N2520 X-40.25	N2940 X-45.291	N3360 X-92.429	Y40.05	Y39.627
Y36.721	Y-41.229	Y-37.144	N3790 X-89.64	N4210 X-42.058
N2530 X-40.205	N2950 X-45.695	N3370 X-92.566	Y40.3	Y39.541
Y36.6	Y-41.316	Y-36.889	N3800 X-89.558	N4220 X-41.828
N2540 X-40.082	N2960 X-45.766	N3380 X-92.804	Y40.349	Y39.317
Y36.19	Y-41.334	Y-36.334	N3810 X-89.29	N4230 X-41.588
N2550 X-40.039	N2970 X-46.208	N3390 X-93.079	Y40.527	Y39.055
Y36.02	Y-41.429	Y-35.54	N3820 X-89.198	N4240 X-41.432
N2560 X-39.964	N2980 X-46.449	N3400 X-93.273	Y40.578	Y38.897
Y35.598	Y-41.472	Y-34.846	N3830 X-88.797	N4250 X-41.147
N2570 X-39.929	N2990 X-46.864	N3410 X-93.306	Y40.785	Y38.546
Y35.217	Y-41.524	Y-34.663	N3840 X-88.633	N4260 X-40.934
N2580 X-39.917	N3000 X-47.335	N3420 X-93.35	Y40.861	Y38.207
Y35.144	Y-41.571	Y-34.468	N3850 X-88.498	N4270 X-40.742
N2590 X-39.9	N3010 X-47.603	N3430 X-93.433	Y40.912	Y37.872
Y34.9	Y-41.589	Y-33.984	N3860 X-88.361	N4280 Z-5.87
N2600 X-39.875	N3020 X-47.773	N3440 X-93.483	Y40.976	N4290 X-40.498
Y34.472	Y-41.606	Y-33.665	N3870 X-87.946	Y38.018 Z-
N2610 Y-34.472	N3030 X-48.167	N3450 X-93.525	Y41.136	6.065
N2620 X-39.892	Y-41.625	Y-33.32	N3880 X-87.781	N4300 Z-6.073
Y-34.819	N3040 X-84.855	N3460 X-93.535	Y41.196	N4310 X-40.408
N2630 X-39.926	N3050 X-85.328	Y-33.175	N3890 X-87.327	Y37.875
Y-35.193	Y-41.622	N3470 X-93.545	Y41.326	N4320 X-40.198
N2640 X-39.943	N3060 X-85.555	Y-33.074	N3900 X-87.138	Y37.426
Y-35.444	Y-41.606	N3480 X-93.58	Y41.373	N4330 X-40.125
N2650 X-40.009	N3070 X-85.866	Y-32.569	N3910 X-87.083	Y37.245
Y-35.867	Y-41.589	N3490 X-93.6	Y41.383	N4340 X-40.011
		Y-32.098		Y36.867

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N4350 X-39.969 Y36.754	N4770 X-45.547 Y-41.501	N5190 X-92.552 Y-37.288	N5610 X-90.222 Y40.147	N6030 X-42.189 Y40.011
N4360 X-39.845 Y36.344	N4780 X-45.988 Y-41.596	N5200 X-92.682 Y-37.047	N5620 X-90.123 Y40.219	N6040 X-41.924 Y39.791
N4370 X-39.805 Y36.184	N4790 X-46.216 Y-41.636	N5210 X-92.917 Y-36.498	N5630 X-89.746 Y40.469	N6050 X-41.822 Y39.704
N4380 X-39.731 Y35.763	N4800 X-46.631 Y-41.688	N5220 X-93.195 Y-35.694	N5640 X-89.65 Y40.527	N6060 X-41.593 Y39.48
N4390 X-39.694 Y35.361	N4810 X-47.101 Y-41.736	N5230 X-93.386 Y-35.01	N5650 X-89.397 Y40.695	N6070 X-41.341 Y39.205
N4400 X-39.683 Y35.293	N4820 X-47.399 Y-41.755	N5240 X-93.424 Y-34.803	N5660 X-89.312 Y40.743	N6080 X-41.196 Y39.059
N4410 X-39.667 Y35.064	N4830 X-47.56 Y-41.771	N5250 X-93.466 Y-34.617	N5670 X-88.91 Y40.95	N6090 X-40.913 Y38.711
N4420 X-39.642 Y34.637	N4840 X-47.934 Y-41.789	N5260 X-93.549 Y-34.134	N5680 X-88.734 Y41.03	N6100 X-40.7 Y38.371
N4430 Y-34.637	N4850 X-84.969	N5270 X-93.596 Y-33.829	N5690 X-88.59 Y41.085	N6110 X-40.498 Y38.018
N4440 X-39.658 Y-34.984	N4860 X-85.441 Y-41.787	N5280 X-93.638 Y-33.484	N5700 X-88.465 Y41.144	N6120 Z-6.065 N6130 X-40.254 Y38.165 Z- 6.259
N4450 X-39.694 Y-35.378	N4870 X-85.689 Y-41.769	N5290 X-93.65 Y-33.303	N5710 X-88.05 Y41.303	N6140 Z-6.269 N6150 X-40.171 Y38.033
N4460 X-39.711 Y-35.613	N4880 X-85.984 Y-41.753	N5300 X-93.659 Y-33.218	N5720 X-87.894 Y41.36	N6160 X-39.964 Y37.59
N4470 X-39.776 Y-36.036	N4890 X-86.545 Y-41.689	N5310 X-93.694 Y-32.714	N5730 X-87.44 Y41.491	N6170 X-39.891 Y37.409
N4480 X-39.797 Y-36.153	N4900 X-86.692 Y-41.66	N5320 X-93.714 Y-32.263	N5740 X-87.236 Y41.541	N6180 X-39.771 Y37.012
N4490 X-39.911 Y-36.565	N4910 X-87.154 Y-41.558	N5330 Y32.054	N5750 X-87.176 Y41.552	N6190 X-39.732 Y36.907
N4500 X-39.984 Y-36.796	N4920 X-87.177 Y-41.551	N5340 X-93.701 Y32.491	N5760 X-87.044 Y41.59	N6200 X-39.609 Y36.497
N4510 X-40.056 Y-37.055	N4930 X-87.483 Y-41.484	N5350 X-93.673 Y33.133	N5770 X-86.823 Y41.633	N6210 X-39.572 Y36.349
N4520 X-40.098 Y-37.169	N4940 X-87.623 Y-41.444	N5360 X-93.658 Y33.276	N5780 X-86.358 Y41.715	N6220 X-39.497 Y35.927
N4530 X-40.263 Y-37.58	N4950 X-87.815 Y-41.383	N5370 X-93.613 Y33.662	N5790 X-86.1 Y41.734	N6230 X-39.459 Y35.505
N4540 X-40.281 Y-37.621	N4960 X-88.071 Y-41.294	N5380 X-93.547 Y34.148	N5800 X-86.011 Y41.746	N6240 X-39.448 Y35.441
N4550 X-40.469 Y-37.975	N4970 X-88.456 Y-41.146	N5390 X-93.513 Y34.333	N5810 X-85.539 Y41.778	N6250 X-39.434 Y35.228
N4560 X-40.616 Y-38.226	N4980 X-88.504 Y-41.123	N5400 X-93.463 Y34.652	N5820 X-85.253 Y41.794	N6260 X-39.409 Y34.801
N4570 X-40.702 Y-38.386	N4990 X-88.663 Y-41.062	N5410 X-93.42 Y34.846	N5830 X-48.218 N5840 X-47.746 Y41.776	N6270 Y-34.801 N6280 X-39.425 Y-35.148
N4580 X-40.784 Y-38.516	N5000 X-88.824 Y-40.987	N5420 X-93.305 Y35.323	N5850 X-47.42 Y41.755	N6290 X-39.463 Y-35.564
N4590 X-41.031 Y-38.866	N5010 X-89.23 Y-40.789	N5430 X-93.287 Y35.387	N5860 X-47.027 Y41.736	N6300 X-39.478 Y-35.782
N4600 X-41.301 Y-39.163	N5020 X-89.551 Y-40.587	N5440 X-93.23 Y35.559	N5870 X-46.308 Y41.649	N6310 X-39.543 Y-36.205
N4610 X-41.484 Y-39.354	N5030 X-89.577 Y-40.572	N5450 X-93.178 Y35.738	N5880 X-45.556 Y41.504	N6320 X-39.564 Y-36.32
N4620 X-41.607 Y-39.489	N5040 X-89.959 Y-40.331	N5460 X-92.988 Y36.285	N5890 X-45.517 Y41.493	N6330 X-39.678 Y-36.732
N4630 X-41.75 Y-39.635	N5050 X-90.146 Y-40.202	N5470 X-92.849 Y36.674	N5900 X-45.252 Y41.443	N6340 X-39.758 Y-36.986
N4640 X-42.124 Y-39.962	N5060 X-90.499 Y-39.92	N5480 X-92.572 Y37.257	N5910 X-45.089 Y41.4	N6350 X-39.825 Y-37.227
N4650 X-42.28 Y-40.079	N5070 X-90.728 Y-39.704	N5490 X-92.548 Y37.298	N5920 X-44.657 Y41.267	N6360 X-39.865 Y-37.333
N4660 X-42.634 Y-40.321	N5080 X-90.767 Y-39.672	N5500 X-92.473 Y37.456	N5930 X-44.518 Y41.22	N6370 X-40.029 Y-37.745
N4670 X-42.796 Y-40.417	N5090 X-90.968 Y-39.477	N5510 X-92.339 Y37.704	N5940 X-44.057 Y41.053	N6380 X-40.048 Y-37.787
N4680 X-43.015 Y-40.567	N5100 X-91.288 Y-39.158	N5520 X-92.092 Y38.107	N5950 X-43.864 Y40.967	N6390 X-40.236 Y-38.141
N4690 X-43.445 Y-40.794	N5110 X-91.532 Y-38.866	N5530 X-92.042 Y38.184	N5960 X-43.7 Y40.907	N6400 X-40.396 Y-38.413
N4700 X-43.56 Y-40.85	N5120 X-91.656 Y-38.706	N5540 X-91.921 Y38.342	N5970 X-43.519 Y40.826	N6410 X-40.475 Y-38.56
N4710 X-43.904 Y-40.982	N5130 X-91.747 Y-38.577	N5550 X-91.899 Y38.376	N5980 X-43.135 Y40.636	N6420 X-40.55 Y-38.68
N4720 X-44.019 Y-41.033	N5140 X-91.892 Y-38.386	N5560 X-91.412 Y39.012	N5990 X-42.966 Y40.537	N6430 X-40.798 Y-39.031
N4730 X-44.418 Y-41.187	N5150 X-92.164 Y-38.	N5570 X-91.349 Y39.087	N6000 X-42.608 Y40.303	N6440 X-41.068 Y-39.328
N4740 X-44.998 Y-41.377	N5160 X-92.196 Y-37.95	N5580 X-90.993 Y39.461	N6010 X-42.5 Y40.222	N6450 X-41.271 Y-39.54
N4750 X-45.061 Y-41.395	N5170 X-92.426 Y-37.537	N5590 X-90.81 Y39.628	N6020 X-42.388 Y40.149	
N4760 X-45.491 Y-41.487	N5180 X-92.518 Y-37.364	N5600 X-90.607 Y39.825		

N6460 X-41.385	N6880 X-90.612	N7300 X-92.962	N7720 X-45.257	N8150 X-39.331
Y-39.665	Y-40.084	Y36.838	Y41.652	Y-36.486
N6470 X-41.517	N6890 X-90.856	N7310 X-92.678	N7730 X-45.008	N8160 X-39.445
Y-39.799	Y-39.854	Y37.435	Y41.604	Y-36.899
N6480 X-41.891	N6900 X-90.892	N7320 X-92.65	N7740 X-44.856	N8170 X-39.533
Y-40.126	Y-39.825	Y37.485	Y41.565	Y-37.177
N6490 X-42.055	N6910 X-91.081	N7330 X-92.579	N7750 X-44.424	N8180 X-39.595
Y-40.249	Y-39.641	Y37.634	Y41.432	Y-37.399
N6500 X-42.408	N6920 X-91.401	N7340 X-92.452	N7760 X-44.276	N8190 X-39.631
Y-40.491	Y-39.322	Y37.869	Y41.382	Y-37.498
N6510 X-42.581	N6930 X-91.645	N7350 X-92.205	N7770 X-43.815	N8200 X-39.796
Y-40.594	Y-39.031	Y38.271	Y41.215	Y-37.909
N6520 X-42.785	N6940 X-91.778	N7360 X-92.151	N7780 X-43.606	N8210 X-39.815
Y-40.733	Y-38.859	Y38.355	Y41.122	Y-37.953
N6530 X-43.211	N6950 X-91.877	N7370 X-92.02	N7790 X-43.454	N8220 X-40.004
Y-40.958	Y-38.719	Y38.524	Y41.066	Y-38.308
N6540 X-43.333	N6960 X-92.007	N7380 X-92.001	N7800 X-43.285	N8230 X-40.176
Y-41.017	Y-38.548	Y38.555	Y40.991	Y-38.6
N6550 X-43.694	N6970 X-92.279	N7390 X-91.525	N7810 X-42.902	N8240 X-40.247
Y-41.156	Y-38.161	Y39.176	Y40.8	Y-38.735
N6560 X-43.793	N6980 X-92.309	N7400 X-91.463	N7820 X-42.724	N8250 X-40.317
Y-41.2	Y-38.114	Y39.251	Y40.696	Y-38.845
N6570 X-44.193	N6990 X-92.539	N7410 X-91.104	N7830 X-42.366	N8260 X-40.566
Y-41.354	Y-37.701	Y39.629	Y40.462	Y-39.197
N6580 X-44.765	N7000 X-92.639	N7420 X-90.908	N7840 X-42.245	N8270 X-40.835
Y-41.541	Y-37.515	Y39.807	Y40.372	Y-39.494
N6590 X-44.832	N7010 X-92.675	N7430 X-90.718	N7850 X-42.14	N8280 X-41.059
Y-41.56	Y-37.433	Y39.992	Y40.304	Y-39.727
N6600 X-45.273	N7020 X-92.798	N7440 X-90.335	N7860 X-41.955	N8290 X-41.162
Y-41.655	Y-37.205	Y40.311	Y40.175	Y-39.841
N6610 X-45.327	N7030 X-93.03	N7450 X-90.229	N7870 X-41.69	N8300 X-41.283
Y-41.668	Y-36.662	Y40.388	Y39.956	Y-39.963
N6620 X-45.769	N7040 X-93.311	N7460 X-89.853	N7880 X-41.587	N8310 X-41.657
Y-41.763	Y-35.848	Y40.638	Y39.867	Y-40.291
N6630 X-45.982	N7050 X-93.5	N7470 X-89.742	N7890 X-41.357	N8320 X-41.829
Y-41.8	Y-35.175	Y40.705	Y39.642	Y-40.42
N6640 X-46.397	N7060 X-93.541	N7480 X-89.505	N7900 X-41.094	N8330 X-42.182
Y-41.853	Y-34.943	Y40.862	Y39.355	Y-40.662
N6650 X-46.868	N7070 X-93.581	N7490 X-89.425	N7910 X-40.961	N8340 X-42.366
Y-41.9	Y-34.767	Y40.907	Y39.22	Y-40.771
N6660 X-47.195	N7080 X-93.664	N7500 X-89.023	N7920 X-40.68	N8350 X-42.555
Y-41.921	Y-34.283	Y41.114	Y38.875	Y-40.9
N6670 X-47.347	N7090 X-93.709	N7510 X-88.836	N7930 X-40.467	N8360 X-42.978
Y-41.937	Y-33.994	Y41.2	Y38.535	Y-41.123
N6680 X-47.7	N7100 X-93.751	N7520 X-88.682	N7940 X-40.254	N8370 X-43.105
Y-41.954	Y-33.648	Y41.259	Y38.165	Y-41.184
N6690 X-85.082	N7110 X-93.766	N7530 X-88.57	N7950 Z-6.259	N8380 X-43.484
N6700 X-85.554	Y-33.431	Y41.311	N7960 X-40.011	Y-41.33
Y-41.951	N7120 X-93.773	N7540 X-88.155	Y38.311 Z-	N8390 X-43.568
N6710 X-85.824	Y-33.363	Y41.471	6.456	Y-41.368
Y-41.932	N7130 X-93.808	N7550 X-88.007	N7970 Z-6.465	N8400 X-43.968
N6720 X-86.102	Y-32.858	Y41.524	N7980 X-39.935	Y-41.521
Y-41.916	N7140 X-93.827	N7560 X-87.553	Y38.19	N8410 X-44.532
N6730 X-86.658	Y-32.427	Y41.655	N7990 X-39.731	Y-41.705
Y-41.853	N7150 Y32.219	N7570 X-87.333	Y37.755	N8420 X-44.602
N6740 X-86.817	N7160 X-93.812	Y41.71	N8000 X-39.658	Y-41.725
Y-41.822	Y32.724	N7580 X-87.269	Y37.574	N8430 X-45.55
N6750 X-87.279	N7170 X-93.805	Y41.721	N8010 X-39.532	Y-41.929
Y-41.72	Y32.849	N7590 X-87.145	Y37.157	N8440 X-45.749
N6760 X-87.315	N7180 X-93.785	Y41.756	N8020 X-39.496	Y-41.965
Y-41.71	Y33.304	N7600 X-86.936	Y37.06	N8450 X-46.164
N6770 X-87.604	N7190 X-93.771	Y41.798	N8030 X-39.373	Y-42.017
Y-41.646	Y33.441	N7610 X-86.471	Y36.65	N8460 X-46.634
N6780 X-87.736	N7200 X-93.726	Y41.88	N8040 X-39.338	Y-42.065
Y-41.609	Y33.827	N7620 X-86.192	Y36.513	N8470 X-46.99
N6790 X-87.928	N7210 X-93.66	Y41.9	N8050 X-39.264	Y-42.087
Y-41.547	Y34.313	N7630 X-86.108	Y36.091	N8480 X-47.134
N6800 X-88.184	N7220 X-93.622	Y41.911	N8060 X-39.223	Y-42.102
Y-41.459	Y34.523	N7640 X-85.637	Y35.648	N8490 X-47.467
N6810 X-88.584	N7230 X-93.574	Y41.943	N8070 X-39.214	Y-42.118
Y-41.305	Y34.826	N7650 X-85.366	Y35.59	N8500 X-85.195
N6820 X-88.638	N7240 X-93.534	Y41.958	N8080 X-39.2	N8510 X-85.667
Y-41.279	Y35.01	N7660 X-47.984	Y35.393	Y-42.115
N6830 X-88.786	N7250 X-93.418	N7670 X-47.512	N8090 X-39.175	N8520 X-85.958
Y-41.222	Y35.487	Y41.941	Y34.965	Y-42.094
N6840 X-88.937	N7260 X-93.398	N7680 X-47.158	N8100 Y-34.965	N8530 X-86.22
Y-41.152	Y35.559	Y41.918	N8110 X-39.192	Y-42.08
N6850 X-89.343	N7270 X-93.332	N7690 X-46.787	Y-35.313	N8540 X-86.771
Y-40.954	Y35.756	Y41.9	N8120 X-39.231	Y-42.017
N6860 X-90.084	N7280 X-93.287	N7700 X-46.075	Y-35.749	N8550 X-86.942
Y-40.487	Y35.914	Y41.814	N8130 X-39.245	Y-41.984
N6870 X-90.259	N7290 X-93.102	N7710 X-45.303	Y-35.951	N8560 X-87.404
Y-40.366	Y36.446	Y41.665	N8140 X-39.311	Y-41.882
			Y-36.374	

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N8570 X-87.453	N8990 X-93.898	N9410 X-87.246	N9840 X-39.26	N360 X-45.515
Y-41.868	Y33.475	Y41.923	Y37.214	Y-42.129
N8580 X-87.724	N9000 X-93.885	N9420 X-87.049	N9850 X-39.137	N370 X-45.931
Y-41.808	Y33.605	Y41.962	Y36.804	Y-42.182
N8590 X-87.849	N9010 X-93.839	N9430 X-86.584	N9860 X-39.105	N380 X-46.401
Y-41.773	Y33.991	Y42.044	Y36.677	Y-42.229
N8600 X-88.041	N9020 X-93.773	N9440 X-86.285	N9870 X-39.03	N390 X-46.786
Y-41.712	Y34.477	Y42.066	Y36.256	Y-42.254
N8610 X-88.297	N9030 X-93.73	N9450 X-86.205	N9880 X-38.988	N400 X-46.921
Y-41.623	Y34.712	Y42.076	Y35.792	Y-42.267
N8620 X-88.711	N9040 X-93.685	N9460 X-85.734	N9890 X-38.979	N410 X-47.233
Y-41.464	Y35.	Y42.109	Y35.738	Y-42.282
N8630 X-88.772	N9050 X-93.647	N9470 X-85.479	N9900 X-38.967	N420 X-85.308
Y-41.434	Y35.174	Y42.122	Y35.557	N430 X-85.78
N8640 X-88.909	N9060 X-93.531	N9480 X-47.751	N9910 X-38.942	Y-42.28
Y-41.382	Y35.651	N9490 X-47.279	Y35.13	N440 X-86.092
N8650 X-89.05	N9070 X-93.509	Y42.105	N9920 Y-35.13	Y-42.257
Y-41.316	Y35.731	N9500 X-46.897	N9930 X-38.958	N450 X-86.338
N8660 X-89.456	N9080 X-93.436	Y42.08	Y-35.477	Y-42.244
Y-41.118	Y35.948	N9510 X-46.547	N9940 X-39. Y-	N460 X-86.884
N8670 X-90.208	N9090 X-93.396	Y42.063	35.935	Y-42.182
Y-40.644	Y36.091	N9520 X-45.841	N9950 X-39.013	N470 X-87.067
N8680 X-90.372	N9100 X-93.216	Y41.978	Y-36.121	Y-42.146
Y-40.531	Y36.607	N9530 X-45.049	N9960 X-39.078	N480 X-87.528
N8690 X-90.725	N9110 X-93.075	Y41.825	Y-36.544	Y-42.044
Y-40.249	Y37.003	N9540 X-44.997	N9970 X-39.098	N490 X-87.59
N8700 X-90.984	N9120 X-92.785	Y41.81	Y-36.653	Y-42.027
Y-40.004	Y37.612	N9550 X-44.765	N9980 X-39.212	N500 X-87.845
N8710 X-91.018	N9130 X-92.751	Y41.766	Y-37.066	Y-41.971
Y-39.977	Y37.671	N9560 X-44.622	N9990 X-39.307	N510 X-87.962
N8720 X-91.194	N9140 X-92.684	Y41.729	Y-37.367	Y-41.937
Y-39.806	Y37.812	N9570 X-44.19	N100 X-39.364	N520 X-88.154
N8730 X-91.514	N9150 X-92.566	Y41.596	Y-37.572	Y-41.876
Y-39.486	Y38.033	N9580 X-44.034	N110 X-39.398	N530 X-88.41
N8740 X-91.758	N9160 X-92.319	Y41.543	Y-37.662	Y-41.788
Y-39.195	Y38.436	N9590 X-43.573	N120 X-39.562	N540 X-88.58
N8750 X-91.901	N9170 X-92.26	Y41.377	Y-38.073	Y-41.724
Y-39.011	Y38.525	N9600 X-43.349	N130 X-39.583	N550 X-88.839
N8760 X-92.006	N9180 X-92.12	Y41.276	Y-38.12	Y-41.622
Y-38.862	Y38.707	N9610 X-43.208	N140 X-39.771	N560 X-88.906
N8770 X-92.122	N9190 X-92.103	Y41.225	Y-38.474	Y-41.59
Y-38.709	Y38.733	N9620 X-43.052	N150 X-39.955	N570 X-89.032
N8780 X-92.394	N9200 X-91.639	Y41.155	Y-38.787	Y-41.541
Y-38.323	Y39.341	N9630 X-42.668	N160 X-40.02	N580 X-89.163
N8790 X-92.422	N9210 X-91.576	Y40.965	Y-38.91	Y-41.48
Y-38.278	Y39.416	N9640 X-42.482	N170 X-40.084	N590 X-89.57
N8800 X-92.652	N9220 X-91.526	Y40.855	Y-39.009	Y-41.283
Y-37.865	Y39.47	N9650 X-42.124	N180 X-40.333	N600 X-90.333
N8810 X-92.759	N9230 X-91.214	Y40.621	Y-39.362	Y-40.8
Y-37.666	Y39.796	N9660 X-41.99	N190 X-40.603	N610 X-90.485
N8820 X-92.798	N9240 X-91.006	Y40.522	Y-39.659	Y-40.695
Y-37.578	Y39.985	N9670 X-41.893	N200 X-40.846	N620 X-90.838
N8830 X-92.914	N9250 X-90.828	Y40.459	Y-39.913	Y-40.413
Y-37.363	Y40.158	N9680 X-41.722	N210 X-40.94	N630 X-91.112
N8840 X-93.143	N9260 X-90.448	Y40.339	Y-40.016	Y-40.155
Y-36.827	Y40.475	N9690 X-41.457	N220 X-41.05	N640 X-91.143
N8850 X-93.427	N9270 X-90.336	Y40.12	Y-40.128	Y-40.129
Y-36.002	Y40.557	N9700 X-41.351	N230 X-41.424	N650 X-91.307
N8860 X-93.613	N9280 X-89.96	Y40.029	Y-40.455	Y-39.97
Y-35.339	Y40.807	N9710 X-41.122	N240 X-41.604	N660 X-91.627
N8870 X-93.659	N9290 X-89.834	Y39.805	Y-40.59	Y-39.651
Y-35.083	Y40.882	N9720 X-40.847	N250 X-41.957	N670 X-91.871
N8880 X-93.696	N9300 X-89.613	Y39.505	Y-40.832	Y-39.359
Y-34.916	Y41.029	N9730 X-40.725	N260 X-42.152	N680 X-92.023
N8890 X-93.779	N9310 X-89.538	Y39.382	Y-40.947	Y-39.163
Y-34.433	Y41.072	N9740 X-40.447	N270 X-42.325	N690 X-92.136
N8900 X-93.822	N9320 X-89.136	Y39.039	Y-41.066	Y-39.004
Y-34.158	Y41.279	N9750 X-40.233	N280 X-42.744	N700 X-92.237
N8910 X-93.864	N9330 X-88.938	Y38.7	Y-41.287	Y-38.871
Y-33.813	Y41.369	N9760 X-40.011	N290 X-42.878	N710 X-92.509
N8920 X-93.882	N9340 X-88.775	Y38.311	Y-41.352	Y-38.485
Y-33.56	Y41.432	N9770 Z-6.456	N300 X-43.275	N720 X-92.535
N8930 X-93.887	N9350 X-88.674	N9780 X-39.767	Y-41.504	Y-38.443
Y-33.507	Y41.479	Y38.458 Z-	N310 X-43.343	N730 X-92.765
N8940 X-93.922	N9360 X-88.259	6.653	Y-41.535	Y-38.03
Y-33.003	Y41.638	N9790 Z-6.661	N320 X-43.743	N740 X-92.88
N8950 X-93.94	N9370 X-88.12	N9800 X-39.698	Y-41.688	Y-37.817
Y-32.592	Y41.689	Y38.348	N330 X-44.298	N750 X-92.921
N8960 Y32.383	N9380 X-87.666	N9810 X-39.497	Y-41.87	Y-37.723
N8970 X-93.925	Y41.819	Y37.919	N340 X-44.372	N760 X-93.029
Y32.889	N9390 X-87.431	N9820 X-39.424	Y-41.891	Y-37.521
N8980 X-93.916	Y41.878	Y37.738	N350 X-45.33	N770 X-93.256
Y33.041	N9400 X-87.362	N9830 X-39.293	Y-42.096	Y-36.991
	Y41.89	Y37.303		

N780 X-93.449	N1200 X-90.443	N1620 X-41.224	N2050 X-41.19	N2470 X-91.42
Y-36.43	Y40.726	Y40.284	Y-40.62	Y-40.134
N790 X-93.457	N1210 X-90.066	N1630 X-41.116	N2060 X-41.378	N2480 X-91.74
Y-36.404	Y40.976	Y40.192	Y-40.76	Y-39.815
N800 X-93.543	N1220 X-89.926	N1640 X-40.887	N2070 X-41.731	N2490 X-91.984
Y-36.156	Y41.06	Y39.968	Y-41.002	Y-39.524
N810 X-93.726	N1230 X-89.721	N1650 X-40.6	N2080 X-41.937	N2500 X-92.146
Y-35.503	Y41.197	Y39.655	Y-41.124	Y-39.316
N820 X-93.776	N1240 X-89.651	N1660 X-40.489	N2090 X-42.095	N2510 X-92.265
Y-35.224	Y41.236	Y39.543	Y-41.232	Y-39.147
N830 X-93.812	N1250 X-89.249	N1670 X-40.213	N2100 X-42.511	N2520 X-92.352
Y-35.065	Y41.443	Y39.204	Y-41.452	Y-39.032
N840 X-93.895	N1260 X-89.039	N1680 X-40.	N2110 X-42.651	N2530 X-92.624
Y-34.582	Y41.539	Y38.864	Y-41.519	Y-38.646
N850 X-93.935	N1270 X-88.867	N1690 X-39.767	N2120 X-43.05	N2540 X-92.648
Y-34.322	Y41.605	Y38.458	Y-41.673	Y-38.607
N860 X-93.977	N1280 X-88.779	N1700 Z-6.653	N2130 X-43.118	N2550 X-92.878
Y-33.977	Y41.646	N1710 X-39.523	Y-41.702	Y-38.194
N870 X-94.036	N1290 X-88.364	Y38.604 Z-6.85	N2140 X-43.518	N2560 X-93. Y-
Y-33.147	Y41.806	N1720 Z-6.856	Y-41.855	37.967
N880 X-94.053	N1300 X-88.234	N1730 X-39.461	N2150 X-44.065	N2570 X-93.044
Y-32.756	Y41.853	Y38.506	Y-42.034	Y-37.868
N890 Y32.547	N1310 X-87.779	N1740 X-39.264	N2160 X-44.143	N2580 X-93.145
N900 X-94.038	Y41.984	Y38.084	Y-42.056	Y-37.679
Y33.053	N1320 X-87.528	N1750 X-39.191	N2170 X-45.111	N2590 X-93.369
N910 X-94.028	Y42.046	Y37.902	Y-42.263	Y-37.156
Y33.232	N1330 X-87.455	N1760 X-39.054	N2180 X-45.282	N2600 X-93.568
N920 X-94.01	Y42.059	Y37.448	Y-42.294	Y-36.579
Y33.645	N1340 X-87.347	N1770 X-39.024	N2190 X-45.697	N2610 X-93.578
N930 X-93.998	Y42.09	Y37.367	Y-42.346	Y-36.542
Y33.77	N1350 X-87.163	N1780 X-38.9	N2200 X-46.167	N2620 X-93.659
N940 X-93.952	Y42.126	Y36.957	Y-42.393	Y-36.31
Y34.155	N1360 X-86.697	N1790 X-38.871	N2210 X-46.582	N2630 X-93.839
N950 X-93.886	Y42.208	Y36.842	Y-42.42	Y-35.668
Y34.641	N1370 X-86.377	N1800 X-38.797	N2220 X-46.708	N2640 X-93.894
N960 X-93.839	Y42.232	Y36.42	Y-42.433	Y-35.364
Y34.902	N1380 X-86.303	N1810 X-38.753	N2230 X-47. Y-	N2650 X-93.927
N970 X-93.796	Y42.241	Y35.936	42.447	Y-35.215
Y35.174	N1390 X-85.831	N1820 X-38.744	N2240 X-85.421	N2660 X-94.01
N980 X-93.76	Y42.274	Y35.887	N2250 X-85.893	Y-34.731
Y35.339	N1400 X-85.592	N1830 X-38.708	Y-42.444	N2670 X-94.048
N990 X-93.644	Y42.287	Y35.294	N2260 X-86.227	Y-34.487
Y35.816	N1410 X-47.517	N1840 Y-35.294	Y-42.42	N2680 X-94.09
N1000 X-93.62	N1420 X-47.045	N1850 X-38.725	N2270 X-86.456	Y-34.141
Y35.903	Y42.269	Y-35.641	Y-42.408	N2690 X-94.15
N1010 X-93.541	N1430 X-46.636	N1860 X-38.768	N2280 X-86.997	Y-33.292
Y36.14	Y42.243	Y-36.121	Y-42.346	N2700 X-94.166
N1020 X-93.504	N1440 X-46.307	N1870 X-38.78	N2290 X-87.192	Y-32.92
Y36.267	Y42.227	Y-36.29	Y-42.308	N2710 Y32.712
N1030 X-93.33	N1450 X-45.608	N1880 X-38.845	N2300 X-87.653	N2720 X-94.151
Y36.768	Y42.143	Y-36.713	Y-42.206	Y33.217
N1040 X-93.188	N1460 X-44.795	N1890 X-38.865	N2310 X-87.728	N2730 X-94.14
Y37.167	Y41.985	Y-36.82	Y-42.185	Y33.424
N1050 X-92.892	N1470 X-44.737	N1900 X-38.979	N2320 X-87.966	N2740 X-94.123
Y37.79	Y41.969	Y-37.233	Y-42.133	Y33.816
N1060 X-92.853	N1480 X-44.521	N1910 X-39.082	N2330 X-88.075	N2750 X-94.111
Y37.858	Y41.928	Y-37.557	Y-42.102	Y33.934
N1070 X-92.79	N1490 X-44.389	N1920 X-39.134	N2340 X-88.267	N2760 X-94.065
Y37.99	Y41.893	Y-37.744	Y-42.041	Y34.32
N1080 X-92.679	N1500 X-43.957	N1930 X-39.164	N2350 X-88.524	N2770 X-93.999
Y38.197	Y41.76	Y-37.826	Y-41.952	Y34.806
N1090 X-92.432	N1510 X-43.792	N1940 X-39.329	N2360 X-88.693	N2780 X-93.947
Y38.6	Y41.705	Y-38.238	Y-41.889	Y35.092
N1100 X-92.369	N1520 X-43.331	N1950 X-39.35	N2370 X-88.966	N2790 X-93.907
Y38.696	Y41.538	Y-38.286	Y-41.781	Y35.348
N1110 X-92.227	N1530 X-43.091	N1960 X-39.538	N2380 X-89.04	N2800 X-93.873
Y38.88	Y41.431	Y-38.64	Y-41.745	Y35.503
N1120 X-92.206	N1540 X-42.962	N1970 X-39.735	N2390 X-89.155	N2810 X-93.758
Y38.912	Y41.384	Y-38.974	Y-41.701	Y35.98
N1130 X-91.752	N1550 X-42.818	N1980 X-39.793	N2400 X-89.276	N2820 X-93.731
Y39.505	Y41.32	Y-39.084	Y-41.645	Y36.075
N1140 X-91.689	N1560 X-42.435	N1990 X-39.85	N2410 X-89.683	N2830 X-93.645
Y39.58	Y41.129	Y-39.173	Y-41.447	Y36.333
N1150 X-91.636	N1570 X-42.24	N2000 X-40.1	N2420 X-90.458	N2840 X-93.613
Y39.637	Y41.014	Y-39.527	Y-40.956	Y36.444
N1160 X-91.324	N1580 X-41.881	N2010 X-40.37	N2430 X-90.598	N2850 X-93.444
Y39.964	Y40.78	Y-39.824	Y-40.86	Y36.93
N1170 X-91.104	N1590 X-41.734	N2020 X-40.634	N2440 X-90.951	N2860 X-93.301
Y40.164	Y40.671	Y-40.099	Y-40.577	Y37.331
N1180 X-90.939	N1600 X-41.646	N2030 X-40.718	N2450 X-91.24	N2870 X-92.999
Y40.324	Y40.613	Y-40.192	Y-40.305	Y37.967
N1190 X-90.561	N1610 X-41.488	N2040 X-40.817	N2460 X-91.269	N2880 X-92.955
Y40.64	Y40.504	Y-40.292	Y-40.282	Y38.045

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N2890 X-92.896	N3310 X-44.155	N3740 X-38.903	N4160 X-88.38	N4580 X-94.178
Y38.168	Y42.058	Y-37.916	Y-42.205	Y34.484
N2900 X-92.792	N3320 X-43.723	N3750 X-38.931	N4170 X-88.637	N4590 X-94.112
Y38.362	Y41.925	Y-37.991	Y-42.116	Y34.97
N2910 X-92.545	N3330 X-43.55	N3760 X-39.095	N4180 X-88.806	N4600 X-94.056
Y38.765	Y41.866	Y-38.402	Y-42.053	Y35.281
N2920 X-92.478	N3340 X-43.089	N3770 X-39.118	N4190 X-89.094	N4610 X-94.018
Y38.866	Y41.7	Y-38.452	Y-41.94	Y35.521
N2930 X-92.319	N3350 X-42.834	N3780 X-39.306	N4200 X-89.174	N4620 X-93.986
Y39.073	Y41.586	Y-38.806	Y-41.901	Y35.668
N2940 X-92.308	N3360 X-42.716	N3790 X-39.515	N4210 X-89.278	N4630 X-93.871
Y39.091	Y41.542	Y-39.161	Y-41.861	Y36.144
N2950 X-91.865	N3370 X-42.585	N3800 X-39.566	N4220 X-89.389	N4640 X-93.842
Y39.669	Y41.484	Y-39.259	Y-41.809	Y36.247
N2960 X-91.802	N3380 X-42.202	N3810 X-39.617	N4230 X-89.796	N4650 X-93.754
Y39.745	Y41.293	Y-39.338	Y-41.611	Y36.509
N2970 X-91.747	N3390 X-41.998	N3820 X-39.868	N4240 X-90.582	N4660 X-93.722
Y39.805	Y41.174	Y-39.693	Y-41.113	Y36.62
N2980 X-91.434	N3400 X-41.639	N3830 X-40.137	N4250 X-90.712	N4670 X-93.558
Y40.131	Y40.94	Y-39.99	Y-41.024	Y37.091
N2990 X-91.203	N3410 X-41.479	N3840 X-40.421	N4260 X-91.065	N4680 X-93.414
Y40.342	Y40.821	Y-40.286	Y-40.742	Y37.496
N3000 X-91.05	N3420 X-41.398	N3850 X-40.496	N4270 X-91.368	N4690 X-93.106
Y40.491	Y40.768	Y-40.368	Y-40.456	Y38.145
N3010 X-90.674	N3430 X-41.255	N3860 X-40.583	N4280 X-91.394	N4700 X-93.056
Y40.804	Y40.668	Y-40.456	Y-40.434	Y38.232
N3020 X-90.549	N3440 X-40.99	N3870 X-40.957	N4290 X-91.534	N4710 X-93.002
Y40.895	Y40.449	Y-40.784	Y-40.299	Y38.346
N3030 X-90.173	N3450 X-40.881	N3880 X-41.152	N4300 X-91.853	N4720 X-92.905
Y41.145	Y40.355	Y-40.931	Y-39.98	Y38.526
N3040 X-90.019	N3460 X-40.651	N3890 X-41.506	N4310 X-92.098	N4730 X-92.658
Y41.238	Y40.131	Y-41.172	Y-39.688	Y38.929
N3050 X-89.829	N3470 X-40.353	N3900 X-41.722	N4320 X-92.268	N4740 X-92.587
Y41.364	Y39.805	Y-41.301	Y-39.468	Y39.037
N3060 X-89.764	N3480 X-40.253	N3910 X-41.865	N4330 X-92.383	N4750 X-91.978
Y41.4	Y39.704	Y-41.399	Y-39.306	Y39.834
N3070 X-89.362	N3490 X-39.98	N3920 X-42.278	N4340 X-92.466	N4760 X-91.915
Y41.607	Y39.368	Y-41.616	Y-39.194	Y39.909
N3080 X-89.141	N3500 X-39.766	N3930 X-42.423	N4350 X-92.739	N4770 X-91.857
Y41.709	Y39.029	Y-41.686	Y-38.808	Y39.972
N3090 X-88.979	N3510 X-39.523	N3940 X-42.823	N4360 X-92.762	N4780 X-91.545
Y41.771	Y38.604	Y-41.84	Y-38.771	Y40.299
N3100 X-88.883	N3520 Z-6.85	N3950 X-42.893	N4370 X-92.991	N4790 X-91.301
Y41.814	N3530 X-39.279	Y-41.869	Y-38.358	Y40.521
N3110 X-88.468	Y38.75 Z-7.047	N3960 X-43.292	N4380 X-93.12	N4800 X-91.16
Y41.973	N3540 Z-7.052	Y-42.023	Y-38.118	Y40.657
N3120 X-88.347	N3550 X-39.225	N3970 X-43.831	N4390 X-93.167	N4810 X-90.787
Y42.017	Y38.663	Y-42.198	Y-38.012	Y40.969
N3130 X-87.893	N3560 X-39.03	N3980 X-43.913	N4400 X-93.261	N4820 X-90.656
Y42.148	Y38.248	Y-42.222	Y-37.837	Y41.064
N3140 X-87.626	N3570 X-38.958	N3990 X-44.891	N4410 X-93.482	N4830 X-90.28
Y42.214	Y38.067	Y-42.43	Y-37.32	Y41.314
N3150 X-87.548	N3580 X-38.815	N4000 X-45.048	N4420 X-93.687	N4840 X-90.111
Y42.228	Y37.594	Y-42.458	Y-36.727	Y41.415
N3160 X-87.447	N3590 X-38.787	N4010 X-45.464	N4430 X-93.7	N4850 X-89.936
Y42.257	Y37.52	Y-42.51	Y-36.68	Y41.531
N3170 X-87.276	N3600 X-38.664	N4020 X-45.934	N4440 X-93.775	N4860 X-89.877
Y42.291	Y37.11	Y-42.558	Y-36.464	Y41.565
N3180 X-86.81	N3610 X-38.638	N4030 X-46.378	N4450 X-93.952	N4870 X-89.475
Y42.373	Y37.006	Y-42.586	Y-35.832	Y41.772
N3190 X-86.469	N3620 X-38.563	N4040 X-46.495	N4460 X-94.011	N4880 X-89.243
Y42.397	Y36.585	Y-42.598	Y-35.504	Y41.878
N3200 X-86.4	N3630 X-38.517	N4050 X-46.766	N4470 X-94.043	N4890 X-89.052
Y42.407	Y36.08	Y-42.611	Y-35.364	Y41.951
N3210 X-85.929	N3640 X-38.51	N4060 X-85.534	N4480 X-94.126	N4900 X-88.988
Y42.439	Y36.035	N4070 X-86.007	Y-34.881	Y41.981
N3220 X-85.705	N3650 X-38.475	Y-42.609	N4490 X-94.161	N4910 X-88.573
Y42.451	Y35.459	N4080 X-86.361	Y-34.651	Y42.141
N3230 X-47.284	N3660 Y-35.459	Y-42.583	N4500 X-94.203	N4920 X-88.46
N3240 X-46.812	N3670 X-38.491	N4090 X-86.574	Y-34.306	Y42.182
Y42.434	Y-35.806	Y-42.571	N4510 X-94.264	N4930 X-88.006
N3250 X-46.374	N3680 X-38.537	N4100 X-87.11	Y-33.436	Y42.313
Y42.406	Y-36.306	Y-42.51	N4520 X-94.279	N4940 X-87.723
N3260 X-46.068	N3690 X-38.547	N4110 X-87.317	Y-33.085	Y42.383
Y42.391	Y-36.459	Y-42.47	N4530 Y32.876	N4950 X-87.641
N3270 X-45.375	N3700 X-38.613	N4120 X-87.778	N4540 X-94.264	Y42.397
Y42.307	Y-36.882	Y-42.368	Y33.382	N4960 X-87.548
N3280 X-44.542	N3710 X-38.632	N4130 X-87.866	N4550 X-94.251	Y42.424
Y42.146	Y-36.987	Y-42.344	Y33.616	N4970 X-87.389
N3290 X-44.477	N3720 X-38.746	N4140 X-88.087	N4560 X-94.235	Y42.455
Y42.128	Y-37.399	Y-42.295	Y33.987	N4980 X-86.923
N3300 X-44.278	N3730 X-38.856	N4150 X-88.188	N4570 X-94.224	Y42.537
Y42.09	Y-37.748	Y-42.266	Y34.098	N4990 X-86.562
				Y42.563

N5000 X-86.498	N5430 X-38.282	N5850 X-46.174	N6270 X-94.065	N6690 X-89.589
Y42.572	Y36.223	Y-42.752	Y-35.997	Y41.936
N5010 X-86.026	N5440 X-38.275	N5860 X-46.282	N6280 X-94.129	N6700 X-89.345
Y42.604	Y36.184	Y-42.763	Y-35.645	Y42.048
N5020 X-85.818	N5450 X-38.241	N5870 X-46.533	N6290 X-94.158	N6710 X-89.144
Y42.616	Y35.623	Y-42.775	Y-35.514	Y42.124
N5030 X-47.051	N5460 Y-35.623	N5880 X-85.647	N6300 X-94.241	N6720 X-89.092
N5040 X-46.578	N5470 X-38.258	N5890 X-86.12	Y-35.03	Y42.149
Y42.598	Y-35.97	Y-42.773	N6310 X-94.274	N6730 X-88.677
N5050 X-46.113	N5480 X-38.305	N5900 X-86.495	Y-34.816	Y42.308
Y42.568	Y-36.492	Y-42.746	N6320 X-94.316	N6740 X-88.573
N5060 X-45.828	N5490 X-38.315	N5910 X-86.693	Y-34.47	Y42.346
Y42.554	Y-36.628	Y-42.735	N6330 X-94.378	N6750 X-88.119
N5070 X-45.141	N5500 X-38.38	N5920 X-87.223	Y-33.581	Y42.477
Y42.471	Y-37.051	Y-42.675	N6340 X-94.392	N6760 X-87.821
N5080 X-44.288	N5510 X-38.399	N5930 X-87.442	Y-33.249	Y42.551
Y42.306	Y-37.154	Y-42.632	N6350 Y33.041	N6770 X-87.734
N5090 X-44.217	N5520 X-38.513	N5940 X-87.903	N6360 X-94.377	Y42.566
Y42.286	Y-37.566	Y-42.53	Y33.546	N6780 X-87.649
N5100 X-44.034	N5530 X-38.631	N5950 X-88.003	N6370 X-94.363	Y42.59
Y42.251	Y-37.938	Y-42.502	Y33.808	N6790 X-87.502
N5110 X-43.922	N5540 X-38.672	N5960 X-88.208	N6380 X-94.348	Y42.62
Y42.222	Y-38.089	Y-42.457	Y34.157	N6800 X-87.036
N5120 X-43.49	N5550 X-38.697	N5970 X-88.302	N6390 X-94.337	Y42.702
Y42.089	Y-38.155	Y-42.431	Y34.263	N6810 X-86.654
N5130 X-43.308	N5560 X-38.862	N5980 X-88.493	N6400 X-94.291	Y42.729
Y42.028	Y-38.566	Y-42.369	Y34.648	N6820 X-86.595
N5140 X-42.847	N5570 X-38.885	N5990 X-88.75	N6410 X-94.225	Y42.737
Y41.861	Y-38.618	Y-42.281	Y35.135	N6830 X-86.123
N5150 X-42.576	N5580 X-39.073	N6000 X-88.919	N6420 X-94.164	Y42.769
Y41.74	Y-38.973	Y-42.218	Y35.471	N6840 X-85.931
N5160 X-42.47	N5590 X-39.294	N6010 X-89.221	N6430 X-94.129	Y42.78
Y41.701	Y-39.348	Y-42.099	Y35.695	N6850 X-46.817
N5170 X-42.351	N5600 X-39.339	N6020 X-89.308	N6440 X-94.099	N6860 X-46.345
Y41.648	Y-39.433	Y-42.056	Y35.832	Y42.762
N5180 X-41.968	N5610 X-39.383	N6030 X-89.401	N6450 X-93.984	N6870 X-45.852
Y41.458	Y-39.502	Y-42.021	Y36.309	Y42.731
N5190 X-41.755	N5620 X-39.635	N6040 X-89.503	N6460 X-93.954	N6880 X-45.588
Y41.333	Y-39.858	Y-41.973	Y36.419	Y42.718
N5200 X-41.397	N5630 X-39.905	N6050 X-89.909	N6470 X-93.856	N6890 X-44.908
Y41.099	Y-40.155	Y-41.776	Y36.709	Y42.636
N5210 X-41.224	N5640 X-40.208	N6060 X-90.707	N6480 X-93.831	N6900 X-44.034
Y40.971	Y-40.472	Y-41.269	Y36.796	Y42.467
N5220 X-41.151	N5650 X-40.273	N6070 X-90.825	N6490 X-93.673	N6910 X-43.957
Y40.923	Y-40.544	Y-41.188	Y37.252	Y42.445
N5230 X-41.021	N5660 X-40.35	N6080 X-91.178	N6500 X-93.527	N6920 X-43.791
Y40.833	Y-40.621	Y-40.906	Y37.66	Y42.413
N5240 X-40.757	N5670 X-40.724	N6090 X-91.496	N6510 X-93.213	N6930 X-43.688
Y40.613	Y-40.948	Y-40.606	Y38.323	Y42.386
N5250 X-40.645	N5680 X-40.927	N6100 X-91.52	N6520 X-93.158	N6940 X-43.257
Y40.518	Y-41.101	Y-40.586	Y38.418	Y42.254
N5260 X-40.416	N5690 X-41.28	N6110 X-91.647	N6530 X-93.107	N6950 X-43.066
Y40.293	Y-41.343	Y-40.463	Y38.524	Y42.189
N5270 X-40.106	N5700 X-41.508	N6120 X-91.966	N6540 X-93.018	N6960 X-42.605
Y39.955	Y-41.478	Y-40.144	Y38.69	Y42.023
N5280 X-40.018	N5710 X-41.635	N6130 X-92.211	N6550 X-92.771	N6970 X-42.319
Y39.866	Y-41.565	Y-39.852	Y39.093	Y41.895
N5290 X-39.746	N5720 X-42.044	N6140 X-92.391	N6560 X-92.696	N6980 X-42.224
Y39.533	Y-41.78	Y-39.62	Y39.207	Y41.86
N5300 X-39.533	N5730 X-42.196	N6150 X-92.496	N6570 X-92.091	N6990 X-42.118
Y39.193	Y-41.854	Y-39.47	Y39.998	Y41.813
N5310 X-39.279	N5740 X-42.637	N6160 X-92.581	N6580 X-92.028	N7000 X-41.735
Y38.75	Y-42.022	Y-39.356	Y40.073	Y41.622
N5320 Z-7.047	N5750 X-42.668	N6170 X-92.853	N6590 X-91.967	N7010 X-41.513
N5330 X-39.036	Y-42.036	Y-38.969	Y40.14	Y41.492
Y38.897 Z-	N5760 X-43.067	N6180 X-92.875	N6600 X-91.655	N7020 X-41.155
7.244	Y-42.19	Y-38.936	Y40.466	Y41.258
N5340 Z-7.248	N5770 X-43.598	N6190 X-93.104	N6610 X-91.399	N7030 X-40.969
N5350 X-38.988	Y-42.363	Y-38.523	Y40.699	Y41.12
Y38.821	N5780 X-43.683	N6200 X-93.241	N6620 X-91.271	N7040 X-40.904
N5360 X-38.797	Y-42.387	Y-38.269	Y40.823	Y41.078
Y38.412	N5790 X-44.125	N6210 X-93.29	N6630 X-90.9	N7050 X-40.788
N5370 X-38.724	Y-42.482	Y-38.157	Y41.133	Y40.997
Y38.231	N5800 X-44.254	N6220 X-93.377	N6640 X-90.763	N7060 X-40.523
N5380 X-38.576	Y-42.507	Y-37.995	Y41.233	Y40.778
Y37.739	N5810 X-44.672	N6230 X-93.595	N6650 X-90.387	N7070 X-40.41
N5390 X-38.551	Y-42.597	Y-37.484	Y41.483	Y40.68
Y37.673	N5820 X-44.815	N6240 X-93.806	N6660 X-90.203	N7080 X-40.181
N5400 X-38.428	Y-42.622	Y-36.875	Y41.593	Y40.456
Y37.263	N5830 X-45.23	N6250 X-93.821	N6670 X-90.044	N7090 X-39.859
N5410 X-38.404	Y-42.675	Y-36.818	Y41.699	Y40.105
Y37.17	N5840 X-45.7	N6260 X-93.891	N6680 X-89.99	N7100 X-39.782
N5420 X-38.33	Y-42.722	Y-36.618	Y41.729	Y40.027
Y36.749				

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N7110 X-39.513 Y39.697	N7540 X-41.811 Y-41.945	N7960 X-92.513 Y-39.772	N8380 X-92.805 Y39.378	N8800 X-42.061 Y42.049
N7120 X-39.299 Y39.357	N7550 X-41.968 Y-42.021	N7970 X-92.653 Y-39.574	N8390 X-92.204 Y40.163	N8810 X-41.978 Y42.019
N7130 X-39.036 Y38.897	N7560 X-42.842 Y-42.357	N7980 X-92.696 Y-39.517	N8400 X-92.141 Y40.238	N8820 X-41.884 Y41.977
N7140 Z-7.244	N7570 X-43.364 Y-42.527	N7990 X-92.968 Y-39.131	N8410 X-92.077 Y40.307	N8830 X-41.501 Y41.786
N7150 X-38.792 Y39.043 Z- 7.441	N7580 X-43.454 Y-42.553	N8000 X-92.988 Y-39.1	N8420 X-91.765 Y40.634	N8840 X-41.271 Y41.651
N7160 Z-7.444	N7590 X-43.895 Y-42.647	N8010 X-93.218 Y-38.687	N8430 X-91.497 Y40.878	N8850 X-40.912 Y41.417
N7170 X-38.751 Y38.979	N7600 X-44.075 Y-42.683	N8020 X-93.361 Y-38.42	N8440 X-91.382 Y40.99	N8860 X-40.714 Y41.27
N7180 X-38.563 Y38.577	N7610 X-44.452 Y-42.764	N8030 X-93.413 Y-38.302	N8450 X-91.035 Y41.28	N8870 X-40.657 Y41.232
N7190 X-38.491 Y38.395	N7620 X-44.581 Y-42.787	N8040 X-93.493 Y-38.153	N8460 X-90.87 Y41.402	N8880 X-40.554 Y41.161
N7200 X-38.336 Y37.885	N7630 X-44.997 Y-42.839	N8050 X-93.708 Y-37.649	N8470 X-90.493 Y41.652	N8890 X-40.29 Y40.942
N7210 X-38.315 Y37.827	N7640 X-45.467 Y-42.886	N8060 X-93.924 Y-37.023	N8480 X-90.295 Y41.771	N8900 X-40.175 Y40.843
N7220 X-38.192 Y37.417	N7650 X-45.97 Y-42.919	N8070 X-93.943 Y-36.957	N8490 X-90.152 Y41.866	N8910 X-39.945 Y40.619
N7230 X-38.171 Y37.335	N7660 X-46.07 Y-42.929	N8080 X-94.007 Y-36.772	N8500 X-90.103 Y41.893	N8920 X-39.611 Y40.255
N7240 X-38.096 Y36.913	N7670 X-46.299 Y-42.94	N8090 X-94.178 Y-36.161	N8510 X-89.702 Y42.1	N8930 X-39.546 Y40.189
N7250 X-38.047 Y36.367	N7680 X-85.76 N7690 X-86.233	N8100 X-94.246 Y-35.785	N8520 X-89.446 Y42.217	N8940 X-39.279 Y39.861
N7260 X-38.041 Y36.332	N7700 X-86.63 Y-42.909	N8110 X-94.273 Y-35.663	N8530 X-89.237 Y42.298	N8950 X-39.066 Y39.522
N7270 X-38.008 Y35.787	N7710 X-86.811 Y-42.899	N8120 X-94.357 Y-35.18	N8540 X-89.197 Y42.316	N8960 X-38.792 Y39.043
N7280 Y-35.787	N7720 X-87.336 Y-42.839	N8130 X-94.387 Y-34.98	N8550 X-88.782 Y42.476	N8970 Z-7.441 N8980 X-38.548
N7290 X-38.024 Y-36.135	N7730 X-87.567 Y-42.794	N8140 X-94.429 Y-34.635	N8560 X-88.686 Y42.511	Y39.19 Z-7.638 N8990 Z-7.64
N7300 X-38.074 Y-36.677	N7740 X-88.028 Y-42.692	N8150 X-94.492 Y-33.725	N8570 X-88.232 Y42.641	N9000 X-38.515 Y39.136
N7310 X-38.082 Y-36.797	N7750 X-88.141 Y-42.661	N8160 X-94.505 Y-33.413	N8580 X-87.918 Y42.719	N9010 X-38.33 Y38.741
N7320 X-38.147 Y-37.221	N7760 X-88.329 Y-42.619	N8170 Y33.205 N8180 X-94.491	N8590 X-87.826 Y42.735	N9020 X-38.257 Y38.56
N7330 X-38.166 Y-37.32	N7770 X-88.415 Y-42.595	Y33.711	N8600 X-87.75 Y42.757	N9030 X-38.097 Y38.03
N7340 X-38.28 Y-37.733	N7780 X-88.606 Y-42.534	N8190 X-94.474 Y33.999	N8610 X-87.615 Y42.784	N9040 X-38.078 Y37.98
N7350 X-38.405 Y-38.128	N7790 X-88.863 Y-42.445	N8200 X-94.46 Y34.328	N8620 X-87.15 Y42.866	N9050 X-37.955 Y37.57
N7360 X-38.442 Y-38.261	N7800 X-89.032 Y-42.382	N8210 X-94.45 Y34.427	N8630 X-86.747 Y42.895	N9060 X-37.937 Y37.499
N7370 X-38.464 Y-38.319	N7810 X-89.348 Y-42.257	N8220 X-94.405 Y34.813	N8640 X-86.692 Y42.902	N9070 X-37.863 Y37.078
N7380 X-38.629 Y-38.731	N7820 X-89.442 Y-42.212	N8230 X-94.338 Y35.299	N8650 X-86.221 Y42.935	N9080 X-37.811 Y36.511
N7390 X-38.652 Y-38.785	N7830 X-89.524 Y-42.18	N8240 X-94.273 Y35.66	N8660 X-86.044 Y42.944	N9090 X-37.806 Y36.481
N7400 X-38.84 Y-39.139	N7840 X-89.616 Y-42.138	N8250 X-94.24 Y35.869	N8670 X-46.584 N8680 X-46.111	N9100 X-37.774 Y35.952
N7410 X-39.074 Y-39.535	N7850 X-90.022 Y-41.94	N8260 X-94.212 Y35.996	Y42.927	N9110 Y-35.952 N9120 X-37.791
N7420 X-39.112 Y-39.608	N7860 X-90.404 Y-41.699	N8270 X-94.097 Y36.473	N8690 X-45.59 Y42.893	Y-36.299
N7430 X-39.15 Y-39.667	N7870 X-90.569 Y-41.591	N8280 X-94.065 Y36.591	N8700 X-45.349 Y42.882	N9130 X-37.842 Y-36.863
N7440 X-39.402 Y-40.024	N7880 X-90.832 Y-41.426	N8290 X-93.961 Y36.896	N8710 X-44.674 Y42.8	N9140 X-37.849 Y-36.967
N7450 X-39.672 Y-40.321	N7890 X-90.938 Y-41.353	N8300 X-93.939 Y36.973	N8720 X-44.23 Y42.716	N9150 X-37.915 Y-37.39
N7460 X-39.996 Y-40.658	N7900 X-91.291 Y-41.071	N8310 X-93.846 Y37.245	N8730 X-43.781 Y42.627	N9160 X-37.933 Y-37.487
N7470 X-40.051 Y-40.719	N7910 X-91.624 Y-40.756	N8320 X-93.64 Y37.825	N8740 X-43.697 Y42.604	N9170 X-38.047 Y-37.9
N7480 X-40.116 Y-40.785	N7920 X-91.645 Y-40.739	N8330 X-93.32 Y38.5	N8750 X-43.547 Y42.575	N9180 X-38.18 Y-38.319
N7490 X-40.49 Y-41.113	N7930 X-91.76 Y-40.628	N8340 X-93.259 Y38.605	N8760 X-43.455 Y42.551	N9190 X-38.211 Y-38.433
N7500 X-40.701 Y-41.271	N7940 X-92.079 Y-40.308	N8350 X-93.213 Y38.702	N8770 X-43.023 Y42.418	N9200 X-38.395 Y-38.895
N7510 X-41.054 Y-41.513	N7950 X-92.324 Y-40.017	N8360 X-93.131 Y38.855	N8780 X-42.824 Y42.351	N9210 X-38.42 Y-38.951
N7520 X-41.293 Y-41.654		N8370 X-92.884 Y39.258	N8790 X-42.363 Y42.184	N9220 X-38.608 Y-39.305
N7530 X-41.405 Y-41.731				

N9230 X-38.854	N9650 X-89.648	N170 X-94.325	N590 X-45.878	N1050 X37.4 Y-
Y-39.722	Y-42.34	Y36.161	Y43.091	12.4
N9240 X-38.885	N9660 X-89.729	N180 X-94.21	N600 X-45.329	N1060 Y12.4
Y-39.782	Y-42.302	Y36.638	Y43.056	N1070 X12.6
N9250 X-38.916	N9670 X-90.135	N190 X-94.176	N610 X-45.109	N1080 Y-12.4
Y-39.831	Y-42.104	Y36.763	Y43.045	N1090 X37.4
N9260 X-39.169	N9680 X-90.517	N200 X-94.067	N620 X-44.441	N1100 X59. Y-
Y-40.189	Y-41.863	Y37.084	Y42.964	34.
N9270 X-39.439	N9690 X-90.723	N210 X-94.048	N630 X-43.997	N1110 Y34.
Y-40.486	Y-41.73	Y37.149	Y42.88	N1120 X-9.
N9280 X-39.783	N9700 X-90.956	N220 X-93.955	N640 X-43.527	N1130 Y-34.
Y-40.845	Y-41.582	Y37.421	Y42.787	N1140 X59.
N9290 X-39.829	N9710 X-91.051	N230 X-93.753	N650 X-43.438	N1150 G0 Z20.
Y-40.895	Y-41.517	Y37.989	Y42.762	N1160 X30.846
N9300 X-39.883	N9720 X-91.404	N240 X-93.427	N660 X-43.304	Y33.
Y-40.95	Y-41.235	Y38.678	Y42.737	N1170 Z2.118
N9310 X-40.257	N9730 X-91.751	N250 X-93.361	N670 X-43.221	N1180 G1 Z-
Y-41.277	Y-40.907	Y38.792	Y42.715	.882 F1000.
N9320 X-40.475	N9740 X-91.771	N260 X-93.319	N680 X-42.79	N1190 X58. Z-
Y-41.441	Y-40.891	Y38.88	Y42.582	2.305 F1623.
N9330 X-40.829	N9750 X-91.873	N270 X-93.244	N690 X-42.582	N1200 Y-33. Z-
Y-41.683	Y-40.792	Y39.019	Y42.512	5.764
N9340 X-41.078	N9760 X-92.193	N280 X-92.997	N700 X-42.121	N1210 X26.6 Y-
Y-41.831	Y-40.473	Y39.422	Y42.346	1.6
N9350 X-41.175	N9770 X-92.437	N290 X-92.915	N710 X-41.804	N1220 Y1.6
Y-41.898	Y-40.181	Y39.548	Y42.204	N1230 X23.4
N9360 X-41.577	N9780 X-92.636	N300 X-92.317	N720 X-41.732	N1240 Y-1.6
Y-42.109	Y-39.925	Y40.327	Y42.177	N1250 X26.6
N9370 X-41.741	N9790 X-92.811	N310 X-92.254	N730 X-41.651	N1260 X37.4 Y-
Y-42.188	Y-39.679	Y40.402	Y42.141	12.4
N9380 X-42.617	N9800 X-93.083	N320 X-92.188	N740 X-41.268	N1270 Y12.4
Y-42.524	Y-39.293	Y40.475	Y41.951	N1280 X12.6
N9390 X-43.131	N9810 X-93.101	N330 X-91.875	N750 X-41.029	N1290 Y-12.4
Y-42.692	Y-39.265	Y40.801	Y41.811	N1300 X37.4
N9400 X-43.224	N9820 X-93.331	N340 X-91.595	N760 X-40.67	N1310 X59. Y-
Y-42.718	Y-38.852	Y41.056	Y41.577	34.
N9410 X-43.666	N9830 X-93.482	N350 X-91.493	N770 X-40.459	N1320 Y34.
Y-42.813	Y-38.57	Y41.156	Y41.42	N1330 X-9.
N9420 X-43.897	N9840 X-93.536	N360 X-91.146	N780 X-40.321	N1340 Y-34.
Y-42.859	Y-38.447	Y41.446	Y41.326	N1350 X59.
N9430 X-44.233	N9850 X-93.609	N370 X-90.976	N790 X-40.056	N1360 G0 Z20.
Y-42.931	Y-38.312	Y41.571	Y41.106	N1370 X30.846
N9440 X-44.348	N9860 X-93.822	N380 X-90.6	N800 X-39.939	Y33.
Y-42.951	Y-37.813	Y41.821	Y41.006	N1380 Z-.764
N9450 X-44.763	N9870 X-94.043	N390 X-90.387	N810 X-39.71	N1390 G1 Z-
Y-43.003	Y-37.171	Y41.949	Y40.782	3.764 F1000.
N9460 X-45.233	N9880 X-94.064	N400 X-90.26	N820 X-39.364	N1400 X58. Z-
Y-43.051	Y-37.095	Y42.033	Y40.405	5.187 F1623.
N9470 X-45.766	N9890 X-94.123	N410 X-90.216	N830 X-39.311	N1410 Y-33. Z-
Y-43.085	Y-36.926	Y42.058	Y40.35	8.646
N9480 X-45.857	N9900 X-94.291	N420 X-89.815	N840 X-39.046	N1420 X26.6 Y-
Y-43.094	Y-36.325	Y42.265	Y40.026	1.6
N9490 X-46.066	N9910 X-94.364	N430 X-89.548	N850 X-38.832	N1430 Y1.6
Y-43.104	Y-35.925	Y42.387	Y39.686	N1440 X23.4
N9500 X-85.873	N9920 X-94.389	N440 X-89.329	N860 X-38.548	N1450 Y-1.6
N9510 X-86.346	Y-35.812	Y42.471	Y39.19	N1460 X26.6
Y-43.102	N9930 X-94.472	N450 X-89.301	N870 G0 Z-2.64	N1470 X37.4 Y-
N9520 X-86.764	Y-35.329	Y42.484	N880 Z17.36	12.4
Y-43.071	N9940 X-94.501	N460 X-88.886	N890 M5	N1480 Y12.4
N9530 X-86.929	Y-35.144	Y42.643	N900 G91 G28	N1490 X12.6
Y-43.062	N9950 X-94.543	N470 X-88.799	Z0.	N1500 Y-12.4
N9540 X-87.449	Y-34.799	Y42.675	N910 M01	N1510 X37.4
Y-43.004	N9960 X-94.606	N480 X-88.345	(PLATO 54	N1520 X59. Y-
N9550 X-87.692	Y-33.87	Y42.806	ACERO)	34.
Y-42.956	N9970 X-94.618	N490 X-88.016	N920 T2 M6	N1530 Y34.
N9560 X-88.153	Y-33.578	Y42.888	N930 G0 G90	N1540 X-9.
Y-42.855	N9980 Y33.369	N500 X-87.919	X30.846 Y33.	N1550 Y-34.
N9570 X-88.279	N9990 X-94.604	Y42.905	S1592 M3	N1560 X59.
Y-42.819	Y33.875	N510 X-87.851	N940 G43 H2	N1570 G0 Z20.
N9580 X-88.449	N100 X-94.586	Y42.924	Z20.	N1580 X30.846
Y-42.782	Y34.191	N520 X-87.728	N950 M8	Y33.
N9590 X-88.528	N110 X-94.573	Y42.948	N960 Z5.	N1590 Z-3.646
Y-42.759	Y34.499	N530 X-87.263	N970 G1 Z2.	N1600 G1 Z-
N9600 X-88.72	N120 X-94.563	Y43.03	F1000.	6.646 F1000.
Y-42.698	Y34.591	N540 X-86.839	N980 X58.	N1610 X58. Z-
N9610 X-88.976	N130 X-94.518	Y43.061	Z.577 F1623.	8.069 F1623.
Y-42.61	Y34.977	N550 X-86.79	N990 Y-33. Z-	N1620 Y-33. Z-
N9620 X-89.145	N140 X-94.451	Y43.067	2.882	11.528
Y-42.546	Y35.463	N560 X-86.318	N1000 X26.6 Y-	N1630 X26.6 Y-
N9630 X-89.476	N150 X-94.381	Y43.1	1.6	1.6
Y-42.416	Y35.85	N570 X-86.157	N1010 Y1.6	N1640 Y1.6
N9640 X-89.575	N160 X-94.351	Y43.109	N1020 X23.4	N1650 X23.4
Y-42.368	Y36.043	N580 X-46.35	N1030 Y-1.6	N1660 Y-1.6
			N1040 X26.6	N1670 X26.6

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N1680 X37.4 Y-12.4	N2310 X37.4 Y-12.4	N2940 X37.4 Y-12.4	N3570 X37.4 Y-12.4	N4200 X37.4 Y-12.4
N1690 Y12.4	N2320 Y12.4	N2950 Y12.4	N3580 Y12.4	N4210 Y12.4
N1700 X12.6	N2330 X12.6	N2960 X12.6	N3590 X12.6	N4220 X12.6
N1710 Y-12.4	N2340 Y-12.4	N2970 Y-12.4	N3600 Y-12.4	N4230 Y-12.4
N1720 X37.4	N2350 X37.4	N2980 X37.4	N3610 X37.4	N4240 X37.4
N1730 X59. Y-34.	N2360 X59. Y-34.	N2990 X59. Y-34.	N3620 X59. Y-34.	N4250 X59. Y-34.
N1740 Y34.	N2370 Y34.	N3000 Y34.	N3630 Y34.	N4260 Y34.
N1750 X-9.	N2380 X-9.	N3010 X-9.	N3640 X-9.	N4270 X-9.
N1760 Y-34.	N2390 Y-34.	N3020 Y-34.	N3650 Y-34.	N4280 Y-34.
N1770 X59.	N2400 X59.	N3030 X59.	N3660 X59.	N4290 X59.
N1780 G0 Z20.	N2410 G0 Z20.	N3040 G0 Z20.	N3670 G0 Z20.	N4300 G0 Z20.
N1790 X30.846 Y33.	N2420 X30.846 Y33.	N3050 X30.846 Y33.	N3680 X30.846 Y33.	N4310 X30.846 Y33.
N1800 Z-6.528	N2430 Z-15.174	N3060 Z-23.82	N3690 Z-32.466	N4320 Z-41.112
N1810 G1 Z-9.528 F1000.	N2440 G1 Z-18.174 F1000.	N3070 G1 Z-26.82 F1000.	N3700 G1 Z-35.466 F1000.	N4330 G1 Z-44.112 F1000.
N1820 X58. Z-10.951 F1623.	N2450 X58. Z-19.597 F1623.	N3080 X58. Z-28.243 F1623.	N3710 X58. Z-36.889 F1623.	N4340 X58. Z-45.535 F1623.
N1830 Y-33. Z-14.41	N2460 Y-33. Z-23.056	N3090 Y-33. Z-31.702	N3720 Y-33. Z-40.348	N4350 Y-33. Z-48.994
N1840 X26.6 Y-1.6	N2470 X26.6 Y-1.6	N3100 X26.6 Y-1.6	N3730 X26.6 Y-1.6	N4360 X26.6 Y-1.6
N1850 Y1.6	N2480 Y1.6	N3110 Y1.6	N3740 Y1.6	N4370 Y1.6
N1860 X23.4	N2490 X23.4	N3120 X23.4	N3750 X23.4	N4380 X23.4
N1870 Y-1.6	N2500 Y-1.6	N3130 Y-1.6	N3760 Y-1.6	N4390 Y-1.6
N1880 X26.6	N2510 X26.6	N3140 X26.6	N3770 X26.6	N4400 X26.6
N1890 X37.4 Y-12.4	N2520 X37.4 Y-12.4	N3150 X37.4 Y-12.4	N3780 X37.4 Y-12.4	N4410 X37.4 Y-12.4
N1900 Y12.4	N2530 Y12.4	N3160 Y12.4	N3790 Y12.4	N4420 Y12.4
N1910 X12.6	N2540 X12.6	N3170 X12.6	N3800 X12.6	N4430 X12.6
N1920 Y-12.4	N2550 Y-12.4	N3180 Y-12.4	N3810 Y-12.4	N4440 Y-12.4
N1930 X37.4	N2560 X37.4	N3190 X37.4	N3820 X37.4	N4450 X37.4
N1940 X59. Y-34.	N2570 X59. Y-34.	N3200 X59. Y-34.	N3830 X59. Y-34.	N4460 X59. Y-34.
N1950 Y34.	N2580 Y34.	N3210 Y34.	N3840 Y34.	N4470 Y34.
N1960 X-9.	N2590 X-9.	N3220 X-9.	N3850 X-9.	N4480 X-9.
N1970 Y-34.	N2600 Y-34.	N3230 Y-34.	N3860 Y-34.	N4490 Y-34.
N1980 X59.	N2610 X59.	N3240 X59.	N3870 X59.	N4500 X59.
N1990 G0 Z20.	N2620 G0 Z20.	N3250 G0 Z20.	N3880 G0 Z20.	N4510 G0 Z20.
N2000 X30.846 Y33.	N2630 X30.846 Y33.	N3260 X30.846 Y33.	N3890 X30.846 Y33.	N4520 X30.846 Y33.
N2010 Z-9.41	N2640 Z-18.056	N3270 Z-26.702	N3900 Z-35.348	N4530 Z-43.994
N2020 G1 Z-12.41 F1000.	N2650 G1 Z-21.056 F1000.	N3280 G1 Z-29.702 F1000.	N3910 G1 Z-38.348 F1000.	N4540 G1 Z-46.994 F1000.
N2030 X58. Z-13.833 F1623.	N2660 X58. Z-22.479 F1623.	N3290 X58. Z-31.125 F1623.	N3920 X58. Z-39.771 F1623.	N4550 X58. Z-48.417 F1623.
N2040 Y-33. Z-17.292	N2670 Y-33. Z-25.938	N3300 Y-33. Z-34.584	N3930 Y-33. Z-43.23	N4560 Y-33. Z-51.876
N2050 X26.6 Y-1.6	N2680 X26.6 Y-1.6	N3310 X26.6 Y-1.6	N3940 X26.6 Y-1.6	N4570 X26.6 Y-1.6
N2060 Y1.6	N2690 Y1.6	N3320 Y1.6	N3950 Y1.6	N4580 Y1.6
N2070 X23.4	N2700 X23.4	N3330 X23.4	N3960 X23.4	N4590 X23.4
N2080 Y-1.6	N2710 Y-1.6	N3340 Y-1.6	N3970 Y-1.6	N4600 Y-1.6
N2090 X26.6	N2720 X26.6	N3350 X26.6	N3980 X26.6	N4610 X26.6
N2100 X37.4 Y-12.4	N2730 X37.4 Y-12.4	N3360 X37.4 Y-12.4	N3990 X37.4 Y-12.4	N4620 X37.4 Y-12.4
N2110 Y12.4	N2740 Y12.4	N3370 Y12.4	N4000 Y12.4	N4630 Y12.4
N2120 X12.6	N2750 X12.6	N3380 X12.6	N4010 X12.6	N4640 X12.6
N2130 Y-12.4	N2760 Y-12.4	N3390 Y-12.4	N4020 Y-12.4	N4650 Y-12.4
N2140 X37.4	N2770 X37.4	N3400 X37.4	N4030 X37.4	N4660 X37.4
N2150 X59. Y-34.	N2780 X59. Y-34.	N3410 X59. Y-34.	N4040 X59. Y-34.	N4670 X59. Y-34.
N2160 Y34.	N2790 Y34.	N3420 Y34.	N4050 Y34.	N4680 Y34.
N2170 X-9.	N2800 X-9.	N3430 X-9.	N4060 X-9.	N4690 X-9.
N2180 Y-34.	N2810 Y-34.	N3440 Y-34.	N4070 Y-34.	N4700 Y-34.
N2190 X59.	N2820 X59.	N3450 X59.	N4080 X59.	N4710 X59.
N2200 G0 Z20.	N2830 G0 Z20.	N3460 G0 Z20.	N4090 G0 Z20.	N4720 G0 Z20.
N2210 X30.846 Y33.	N2840 X30.846 Y33.	N3470 X30.846 Y33.	N4100 X30.846 Y33.	N4730 X30.846 Y33.
N2220 Z-12.292	N2850 Z-20.938	N3480 Z-29.584	N4110 Z-38.23	N4740 Z-46.876
N2230 G1 Z-15.292 F1000.	N2860 G1 Z-23.938 F1000.	N3490 G1 Z-32.584 F1000.	N4120 G1 Z-41.23 F1000.	N4750 G1 Z-49.876 F1000.
N2240 X58. Z-16.715 F1623.	N2870 X58. Z-25.361 F1623.	N3500 X58. Z-34.007 F1623.	N4130 X58. Z-42.653 F1623.	N4760 X58. Z-51.299 F1623.
N2250 Y-33. Z-20.174	N2880 Y-33. Z-28.82	N3510 Y-33. Z-37.466	N4140 Y-33. Z-46.112	N4770 Y-33. Z-54.758
N2260 X26.6 Y-1.6	N2890 X26.6 Y-1.6	N3520 X26.6 Y-1.6	N4150 X26.6 Y-1.6	N4780 X26.6 Y-1.6
N2270 Y1.6	N2900 Y1.6	N3530 Y1.6	N4160 Y1.6	N4790 Y1.6
N2280 X23.4	N2910 X23.4	N3540 X23.4	N4170 X23.4	N4800 X23.4
N2290 Y-1.6	N2920 Y-1.6	N3550 Y-1.6	N4180 Y-1.6	N4810 Y-1.6
N2300 X26.6	N2930 X26.6	N3560 X26.6	N4190 X26.6	N4820 X26.6



N4830 X37.4 Y-12.4	N5410 G3 X66.855 Y7.62 I-7.62 J0.	N5850 G1 Y-51.	(BROCA 12)	N6710 X-122.5 Y2.237 I-2.237 J0.
N4840 Y12.4	N5420 G1 X59.235	N5860 G3 X-26. Y-51.475 I.475 J0.	N6310 T5 M6	N6720 X-124.737 Y0.
N4850 X12.6	N5430 X61.235 Y-7.62	N5870 G1 X76. I0. J.475	N6320 G0 G90 X-67.5 Y55.	I0. J-2.237
N4860 Y-12.4	N5440 X68.855 N5450 G3 X76.475 Y0.	N5880 G3 X76.475 Y-51. I0. J.475	S2838 M3	N6730 X-124.718 Y-.019 I.019 J0.
N4870 X37.4	N5460 G1 Y51. N5470 G3 X76. Y51.475 I-.475 J0.	N5890 G1 Y0. N5900 G3 X68.855 Y7.62 I-7.62 J0.	N6330 G43 H5 Z2.36	N6740 G1 X-123.099
N4880 X59. Y-34.	N5480 G1 X-26. N5490 G3 X-26.475 Y51. I0. J-.475	N5910 G1 X61.235	N6340 G99 G83 Z-62. R2.36 Q15. F795.	N6750 X-123.599 Y.019
N4890 Y34.	N5500 G1 Y-51. N5510 G3 X-26. Y-51.475 I.475 J0.	N5920 X57.235 Y-7.62	N6350 X-122.5 Y0.	N6760 X-125.218
N4900 X-9.	N5520 G1 X76. N5530 G3 X76.475 Y-51. I0. J.475	N5930 Z-57.64 F1000.	N6360 X-67.5 Y-55.	N6770 G3 X-125.237 Y0.
N4910 Y-34.	N5540 G1 Y0. N5550 G3 X68.855 Y7.62 I-7.62 J0.	N5940 X64.855 F602.	N6370 G80 (BROCA 12)	I0. J-.019
N4920 X59.	N5560 G1 X61.235	N5950 G3 X72.475 Y0. I0. J7.62	N6380 X-21. Y46. Z10.	N6780 X-122.5 Y-2.737 I2.737 J0.
N4930 G0 Z20.	N5570 X57.235 Y-7.62	N6000 Y0. N6010 G3 X64.855 Y7.62 I-7.62 J0.	N6390 Z-47.64	N6790 X-119.763 Y0.
N4940 X30.846 Y33.	N5580 Z-38.427 F1000.	N6020 G1 X57.235	N6400 G99 G81 Z-62. R-47.64 F795.	I0. J2.737
N4950 Z-49.758	N5590 X64.855 F602.	N6030 X59.235 Y-7.62	N6410 X71. N6420 Y-46.	N6800 X-122.5 Y2.737 I-2.737 J0.
N4960 G1 Z-52.758 F1000.	N5600 G3 X72.475 Y0. I0. J7.62	N6040 X66.855 N6050 G3 X74.475 Y0. I0. J7.62	N6430 X-21. N6440 G80	N6810 X-125.237 Y0.
N4970 X58. Z-54.181 F1623.	N5610 G1 Y47.475	N6060 G1 Y49.475	N6450 Z10. (BROCA 12)	I0. J-2.737
N4980 Y-33. Z-57.64	N5620 X-22.475 Y47.475	N6070 X-24.475 N6080 Y-49.475	N6460 X128. Y0. Z25.	N6820 X-125.218 Y-.019 I.019 J0.
N4990 X26.6 Y-1.6	N5630 Y-47.475 N5640 X72.475	N6090 X74.475	N6470 G98 G81 Z-62. R-36.89 F795.	N6830 G1 X-123.599
N5000 Y1.6	N5650 Y0. N5660 G3 X64.855 Y7.62 I-7.62 J0.	N6100 Y0. N6110 G3 X66.855 Y7.62 I-7.62 J0.	N6480 G80 N6490 M5	N6840 X-124.099 Y.019
N5010 X23.4	N5670 G1 X57.235	N6120 G1 X59.235	N6500 G91 G28 Z0.	N6850 X-125.718
N5020 Y-1.6	N5680 X59.235 Y-7.62	N6130 X61.235 Y-7.62	N6510 M01 (FRESA 9.525)	N6860 G3 X-125.737 Y0.
N5030 X26.6	N5690 X66.855 N5700 G3 X74.475 Y0. I0. J7.62	N6140 X68.855 N6150 G3 X76.475 Y0. I0. J7.62	N6520 T6 M6	I0. J-.019
N5040 X37.4 Y-12.4	N5710 G1 Y49.475	N6160 G1 Y51. N6170 G3 X76. Y51.475 I-.475 J0.	N6530 G0 G90 X-122.599	N6870 X-122.5 Y-3.237 I3.237 J0.
N5050 Y12.4	N5720 X-24.475 N5730 Y-49.475	N6180 G1 X-26. N6190 G3 X-26.475 Y51.	Y.019 S1671 M3	N6880 X-119.263 Y0.
N5060 X12.6	N5740 X74.475 N5750 Y0.	N6200 G1 Y-51. N6210 G3 X-26. Y-51.475 I.475 J0.	N6540 G43 H6 Z15.	I0. J3.237
N5070 Y-12.4	N5760 G3 X66.855 Y7.62 I-7.62 J0.	N6220 G1 X76. N6230 G3 X76.475 Y-51. I0. J-.475	N6550 M8	N6890 X-122.5 Y3.237 I-3.237 J0.
N5080 X37.4	N5770 G1 X59.235	N6240 G1 Y0. N6250 G3 X68.855 Y7.62 I-7.62 J0.	N6560 Z5.	N6900 X-125.737 Y0.
N5090 X59. Y-34.	N5780 X61.235 Y-7.62	N6260 G1 X61.235	N6570 G1 Z-22.64 F1000.	I0. J-3.237
N5100 Y34.	N5790 X68.855 N5800 G3 X76.475 Y0. I0. J7.62	N6270 G0 Z15.	N6580 X-124.218 F602.	N6910 X-125.718 Y-.019 I.019 J0.
N5110 X-9.	N5810 G1 Y51. N5820 G3 X76. Y51.475 I-.475 J0.	N6280 M5	N6590 G3 X-124.237 Y0. I0. J-.019	N6920 G1 X-124.099
N5120 Y-34.	N5830 G1 X-26. N5840 G3 X-26.475 Y51. I0. J-.475	N6290 G91 G28 Z0. M9	N6600 X-122.5 Y-1.737 I1.737 J0.	N6930 X-124.599 Y.019
N5130 X59.	N5850 G1 Y-51.	N6300 M01	N6610 X-120.763 Y0. I0. J1.737	N6940 X-126.218
N5140 G0 Z20.	N5860 G3 X-26. Y-51.475 I.475 J0.		N6620 X-122.5 Y1.737 I-1.737 J0.	N6950 G3 X-126.237 Y0.
N5150 M5	N5870 G1 X76. I0. J.475		N6630 X-124.237 Y0. I0. J-1.737	I0. J-.019
N5160 G91 G28 Z0. M9	N5880 G3 X76.475 Y-51. I0. J.475		N6640 X-124.218 Y-.019 I.019 J0.	N6960 X-122.5 Y-3.737 I3.737 J0.
N5170 M01	N5890 G1 Y0. N5900 G3 X68.855 Y7.62 I-7.62 J0.		N6650 G1 X-122.599	N6970 X-118.763 Y0.
N5180 T4 M6	N5910 G1 X61.235		N6660 X-123.099 Y.019	I0. J3.737
N5190 G0 G90 X57.235 Y-7.62	N5920 X57.235 Y-7.62		N6670 X-124.718	N6980 X-122.5 Y3.737 I-3.737 J0.
N5200 G43 H4 Z15.	N5930 Z-57.64 F1000.		N6680 G3 X-124.737 Y0. I0. J-.019	N7000 X-126.218 Y-.019 I.019 J0.
N5210 M8	N5940 X64.855 F602.		N6690 X-120.263 Y0. I0. J2.237	N7010 G1 X-124.599
N5220 Z5.	N5950 G3 X72.475 Y0. I0. J7.62			
N5230 G1 Z-19.213 F1000.	N5960 G1 Y47.475			
N5240 X64.855 F602.	N5970 X-22.475 Y47.475			
N5250 G3 X72.475 Y0. I0. J7.62	N5980 Y-47.475			
N5260 G1 Y47.475	N5990 X72.475			
N5270 X-22.475	N6000 Y0. N6010 G3 X64.855 Y7.62 I-7.62 J0.			
N5280 Y-47.475	N6020 G1 X57.235			
N5290 X72.475	N6030 X59.235 Y-7.62			
N5300 Y0.	N6040 X66.855 N6050 G3 X74.475 Y0. I0. J7.62			
N5310 G3 X64.855 Y7.62 I-7.62 J0.	N6060 G1 Y49.475			
N5320 G1 X57.235	N6070 X-24.475 N6080 Y-49.475			
N5330 X59.235 Y-7.62	N6090 X74.475			
N5340 X66.855	N6100 Y0. N6110 G3 X66.855 Y7.62 I-7.62 J0.			
N5350 G3 X74.475 Y0. I0. J7.62	N6120 G1 X59.235			
N5360 G1 Y49.475	N6130 X61.235 Y-7.62			
N5370 X-24.475	N6140 X68.855 N6150 G3 X76.475 Y0. I0. J7.62			
N5380 Y-49.475	N6160 G1 Y51. N6170 G3 X76. Y51.475 I-.475 J0.			
N5390 X74.475	N6180 G1 X-26. N6190 G3 X-26.475 Y51.			
N5400 Y0.	N6200 G1 Y-51. N6210 G3 X-26. Y-51.475 I.475 J0.			
	N6220 G1 X76. N6230 G3 X76.475 Y-51. I0. J-.475			
	N6240 G1 Y0. N6250 G3 X68.855 Y7.62 I-7.62 J0.			
	N6260 G1 X61.235			
	N6270 G0 Z15.			
	N6280 M5			
	N6290 G91 G28 Z0. M9			
	N6300 M01			

ANEXO IV. PROGRAMA CNC DE MECANIZADO

N7020 X-	N7350 X-67.5	N7670 G1 X-	N8000 X-67.5	N8330 G1 X-
125.099 Y.019	Y53.263 I1.737	69.099	Y60.237 I-	68.599
N7030 X-	J0.	N7680 X-69.599	5.237 J0.	N8340 X-69.099
126.718	N7360 X-65.763	Y55.019	N8010 X-72.737	Y-54.981
N7040 G3 X-	Y55. I0.	N7690 X-71.218	Y55. I0. J-	N8350 X-70.718
126.737 Y0.	J1.737	N7700 G3 X-	5.237	N8360 G3 X-
I0. J-.019	N7370 X-67.5	71.237 Y55.	N8020 X-72.718	70.737 Y-55.
N7050 X-122.5	Y56.737 I-	I0. J-.019	Y54.981 I.019	I0. J-.019
Y-4.237 I4.237	1.737 J0.	N7710 X-67.5	J0.	N8370 X-67.5
J0.	N7380 X-69.237	Y51.263 I3.737	N8030 G1 X-	Y-58.237
N7060 X-	Y55. I0. J-	J0.	71.099	I3.237 J0.
118.263 Y0.	1.737	N7720 X-63.763	N8040 G0 Z15.	N8380 X-64.263
I0. J4.237	N7390 X-69.218	Y55. I0.	N8050 X-67.599	Y-55. I0.
N7070 X-122.5	Y54.981 I.019	J3.737	Y-54.981	J3.237
Y4.237 I-4.237	J0.	N7730 X-67.5	N8060 Z5.	N8390 X-67.5
J0.	N7400 G1 X-	Y58.737 I-	N8070 G1 Z-	Y-51.763 I-
N7080 X-	67.599	3.737 J0.	22.64 F1000.	3.237 J0.
126.737 Y0.	N7410 X-68.099	N7740 X-71.237	N8080 X-69.218	N8400 X-70.737
I0. J-4.237	Y55.019	Y55. I0. J-	F602.	Y-55. I0. J-
N7090 X-	N7420 X-69.718	3.737	N8090 G3 X-	3.237
126.718 Y-.019	N7430 G3 X-	N7750 X-71.218	69.237 Y-55.	N8410 X-70.718
I.019 J0.	69.737 Y55.	Y54.981 I.019	I0. J-.019	Y-55.019 I.019
N7100 G1 X-	I0. J-.019	J0.	N8100 X-67.5	J0.
125.099	N7440 X-67.5	N7760 G1 X-	Y-56.737	N8420 G1 X-
N7110 X-	Y52.763 I2.237	69.599	I1.737 J0.	69.099
125.599 Y.019	J0.	N7770 X-70.099	N8110 X-65.763	N8430 X-69.599
N7120 X-	N7450 X-65.263	Y55.019	Y-55. I0.	Y-54.981
127.218	Y55. I0.	N7780 X-71.718	J1.737	N8440 X-71.218
N7130 G3 X-	J2.237	N7790 G3 X-	N8120 X-67.5	N8450 G3 X-
127.237 Y0.	N7460 X-67.5	71.737 Y55.	Y-53.263 I-	71.237 Y-55.
I0. J-.019	Y57.237 I-	I0. J-.019	1.737 J0.	I0. J-.019
N7140 X-122.5	2.237 J0.	N7800 X-67.5	N8130 X-69.237	N8460 X-67.5
Y-4.737 I4.737	N7470 X-69.737	Y50.763 I4.237	Y-55. I0. J-	Y-58.737
J0.	Y55. I0. J-	J0.	1.737	I3.737 J0.
N7150 X-	2.237	N7810 X-63.263	N8140 X-69.218	N8470 X-63.763
117.763 Y0.	N7480 X-69.718	Y55. I0.	Y-55.019 I.019	Y-55. I0.
I0. J4.737	Y54.981 I.019	J4.237	J0.	J3.737
N7160 X-122.5	J0.	N7820 X-67.5	N8150 G1 X-	N8480 X-67.5
Y4.737 I-4.737	N7490 G1 X-	Y59.237 I-	67.599	Y-51.263 I-
J0.	68.099	4.237 J0.	N8160 X-68.099	3.737 J0.
N7170 X-	N7500 X-68.599	N7830 X-71.737	Y-54.981	N8490 X-71.237
127.237 Y0.	Y55.019	Y55. I0. J-	N8170 X-69.718	Y-55. I0. J-
I0. J-4.737	N7510 X-70.218	4.237	N8180 G3 X-	3.737
N7180 X-	N7520 G3 X-	N7840 X-71.718	69.737 Y-55.	N8500 X-71.218
127.218 Y-.019	70.237 Y55.	Y54.981 I.019	I0. J-.019	Y-55.019 I.019
I.019 J0.	I0. J-.019	J0.	N8190 X-67.5	J0.
N7190 G1 X-	N7530 X-67.5	N7850 G1 X-	Y-57.237	N8510 G1 X-
125.599	Y52.263 I2.737	70.099	I2.237 J0.	69.599
N7200 X-	J0.	N7860 X-70.599	N8200 X-65.263	N8520 X-70.099
126.099 Y.019	N7540 X-64.763	Y55.019	Y-55. I0.	Y-54.981
N7210 X-	Y55. I0.	N7870 X-72.218	J2.237	N8530 X-71.718
127.718	J2.737	N7880 G3 X-	N8210 X-67.5	N8540 G3 X-
N7220 G3 X-	N7550 X-67.5	72.237 Y55.	Y-52.763 I-	71.737 Y-55.
127.737 Y0.	Y57.737 I-	I0. J-.019	2.237 J0.	I0. J-.019
I0. J-.019	2.737 J0.	N7890 X-67.5	N8220 X-69.737	N8550 X-67.5
N7230 X-122.5	N7560 X-70.237	Y50.263 I4.737	Y-55. I0. J-	Y-59.237
Y-5.237 I5.237	Y55. I0. J-	J0.	2.237	I4.237 J0.
J0.	2.737	N7900 X-62.763	N8230 X-69.718	N8560 X-63.263
N7240 X-	N7570 X-70.218	Y55. I0.	Y-55.019 I.019	Y-55. I0.
117.263 Y0.	Y54.981 I.019	J4.737	J0.	J4.237
I0. J5.237	J0.	N7910 X-67.5	N8240 G1 X-	N8570 X-67.5
N7250 X-122.5	N7580 G1 X-	Y59.737 I-	68.099	Y-50.763 I-
Y5.237 I-5.237	68.599	4.737 J0.	N8250 X-68.599	4.237 J0.
J0.	N7590 X-69.099	Y55. I0. J-	Y-54.981	N8580 X-71.737
N7260 X-	Y55.019	4.737	N8260 X-70.218	Y-55. I0. J-
127.737 Y0.	N7600 X-70.718	N7920 X-72.237	N8270 G3 X-	4.237
I0. J-5.237	N7610 G3 X-	Y55. I0. J-	70.237 Y-55.	N8590 X-71.718
N7270 X-	70.737 Y55.	4.737	I0. J-.019	Y-55.019 I.019
127.718 Y-.019	I0. J-.019	Y54.981 I.019	N8280 X-67.5	J0.
I.019 J0.	N7620 X-67.5	J0.	Y-57.737	N8600 G1 X-
N7280 G1 X-	Y51.763 I3.237	N7940 G1 X-	I2.737 J0.	70.099
126.099	J0.	70.599	N8290 X-64.763	N8610 X-70.599
N7290 G0 Z15.	N7630 X-64.263	N7950 X-71.099	Y-55. I0.	Y-54.981
N7300 X-67.599	Y55. I0.	Y55.019	J2.737	N8620 X-72.218
Y55.019	J3.237	N7960 X-72.718	N8300 X-67.5	N8630 G3 X-
N7310 Z5.	N7640 X-67.5	N7970 G3 X-	Y-52.263 I-	72.237 Y-55.
N7320 G1 Z-	Y58.237 I-	72.737 Y55.	2.737 J0.	I0. J-.019
22.64 F1000.	3.237 J0.	I0. J-.019	N8310 X-70.237	N8640 X-67.5
N7330 X-69.218	N7650 X-70.737	N7980 X-67.5	Y-55. I0. J-	Y-59.737
F602.	Y55. I0. J-	Y49.763 I5.237	2.737	I4.737 J0.
N7340 G3 X-	3.237	J0.	N8320 X-70.218	N8650 X-62.763
69.237 Y55.	N7660 X-70.718	N7990 X-62.263	Y-55.019 I.019	Y-55. I0.
I0. J-.019	Y54.981 I.019	Y55. I0.	J0.	J4.737
	J0.	J5.237		

N8660 X-67.5 Y-50.263 I- 4.737 J0.	N8840 G3 X127.263 Y0. I0. J-.019	N9030 X128. Y- 1.737 I1.737 J0.	N9210 X128. Y- 2.737 I2.737 J0.	N9390 X128. Y- 3.737 I3.737 J0.
N8670 X-72.237 Y-55. I0. J- 4.737	N8850 X128. Y- .737 I.737 J0. N8860 X128.737 Y0. I0. J.737	N9040 X129.737 Y0. I0. J1.737 N9050 X128. Y1.737 I-1.737 J0.	N9220 X130.737 Y0. I0. J2.737 N9230 X128. Y2.737 I-2.737 J0.	N9400 X131.737 Y0. I0. J3.737 N9410 X128. Y3.737 I-3.737 J0.
N8680 X-72.218 Y-55.019 I.019 J0.	N8870 X128. Y.737 I-.737 J0.	N9060 X126.263 Y0. I0. J- 1.737	N9240 X125.263 Y0. I0. J- 2.737	N9420 X124.263 Y0. I0. J- 3.737
N8690 G1 X- 70.599	N8880 X127.263 Y0. I0. J-.737	N9070 X126.282 Y-.019 I.019 J0.	N9250 X125.282 Y-.019 I.019 J0.	N9430 X124.282 Y-.019 I.019 J0.
N8700 X-71.099 Y-54.981	N8890 X127.282 Y-.019 I.019 J0.	N9080 G1 X127.901	N9260 G1 X126.901	N9440 G1 X125.901
N8710 X-72.718 N8720 G3 X- 72.737 Y-55. I0. J-.019	N8910 X128.401 Y.019	N9090 X127.401 Y.019	N9270 X126.401 Y.019	N9450 X125.401 Y.019
N8730 X-67.5 Y-60.237	N8920 X126.782 N8930 G3 X126.763 Y0. I0. J-.019	N9100 X125.782 N9110 G3 X125.763 Y0. I0. J-.019	N9280 X124.782 N9290 G3 X124.763 Y0. I0. J-.019	N9460 X123.782 N9470 G3 X123.763 Y0. I0. J-.019
N8740 X-62.263 Y-55. I0. J5.237	N8940 X128. Y- 1.237 I1.237 J0.	N9120 X128. Y- 2.237 I2.237 J0.	N9300 X128. Y- 3.237 I3.237 J0.	N9480 X128. Y- 4.237 I4.237 J0.
N8750 X-67.5 Y-49.763 I- 5.237 J0.	N8950 X129.237 Y0. I0. J1.237	N9130 X130.237 Y0. I0. J2.237	N9310 X131.237 Y0. I0. J3.237	N9490 X132.237 Y0. I0. J4.237
N8760 X-72.737 Y-55. I0. J- 5.237	N8960 X128. Y1.237 I-1.237 J0.	N9140 X128. Y2.237 I-2.237 J0.	N9320 X128. Y3.237 I-3.237 J0.	N9500 X128. Y4.237 I-4.237 J0.
N8770 X-72.718 Y-55.019 I.019 J0.	N8970 X126.763 Y0. I0. J- 1.237	N9150 X125.763 Y0. I0. J- 2.237	N9330 X124.763 Y0. I0. J- 3.237	N9510 X123.763 Y0. I0. J- 4.237
N8780 G1 X- 71.099	N8980 X126.782 Y-.019 I.019 J0.	N9160 X125.782 Y-.019 I.019 J0.	N9340 X124.782 Y-.019 I.019 J0.	N9520 X123.782 Y-.019 I.019 J0.
N8790 G0 Z15. (FRESA 9.525) Y.019	N8990 G1 X128.401	N9170 G1 X127.401	N9350 G1 X126.401	N9530 G1 X125.401
N8810 Z-41.89 N8820 G1 Z- 51.89 F1000.	N9000 X127.901 Y.019	N9180 X126.901 Y.019	N9360 X125.901 Y.019	N9540 G0 Z15. N9550 M5
N8830 X127.282 F602.	N9010 X126.282 N9020 G3 X126.263 Y0. I0. J-.019	N9190 X125.282 N9200 G3 X125.263 Y0. I0. J-.019	N9370 X124.282 N9380 G3 X124.263 Y0. I0. J-.019	N9560 G91 G28 Z0. M9 N9570 G28 X0. Y0. N9580 M30