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# Laboratorio 1 - Robótica Industrial - "Trayectorias, Entradas y Salidas Digitales"

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## *Participantes*

- Andres Camilo Torres Cajamarca
- Brian Enrique Muñoz Garcia

## Descripción Solución Planteada

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Se realizó el proceso de configuración e inserción del controlador y el manipulador IRB 140 a la plataforma RobotStudio, para posteriormente realizar la creación de un sistema de coordenadas en la punta del marcador, que esta anclado a la herranmienta en el diseño CAD , lugo se realizó la creación, ubicación y alineación de la herramienta con la posición de el portaherramienta del manipulador.

Para generar las trayectorias necesarias para dibujar las iniciales, el logo y su nombre, primero se realizó un modelo de estos en Fusion 360. Posteriormente, se incluyó este modelo en la simulación de RobotStudio. Se utilizó un extremo del tablero que contenia el logo y letras como Work Object. De esta manera, se generaron varias trayectorias.

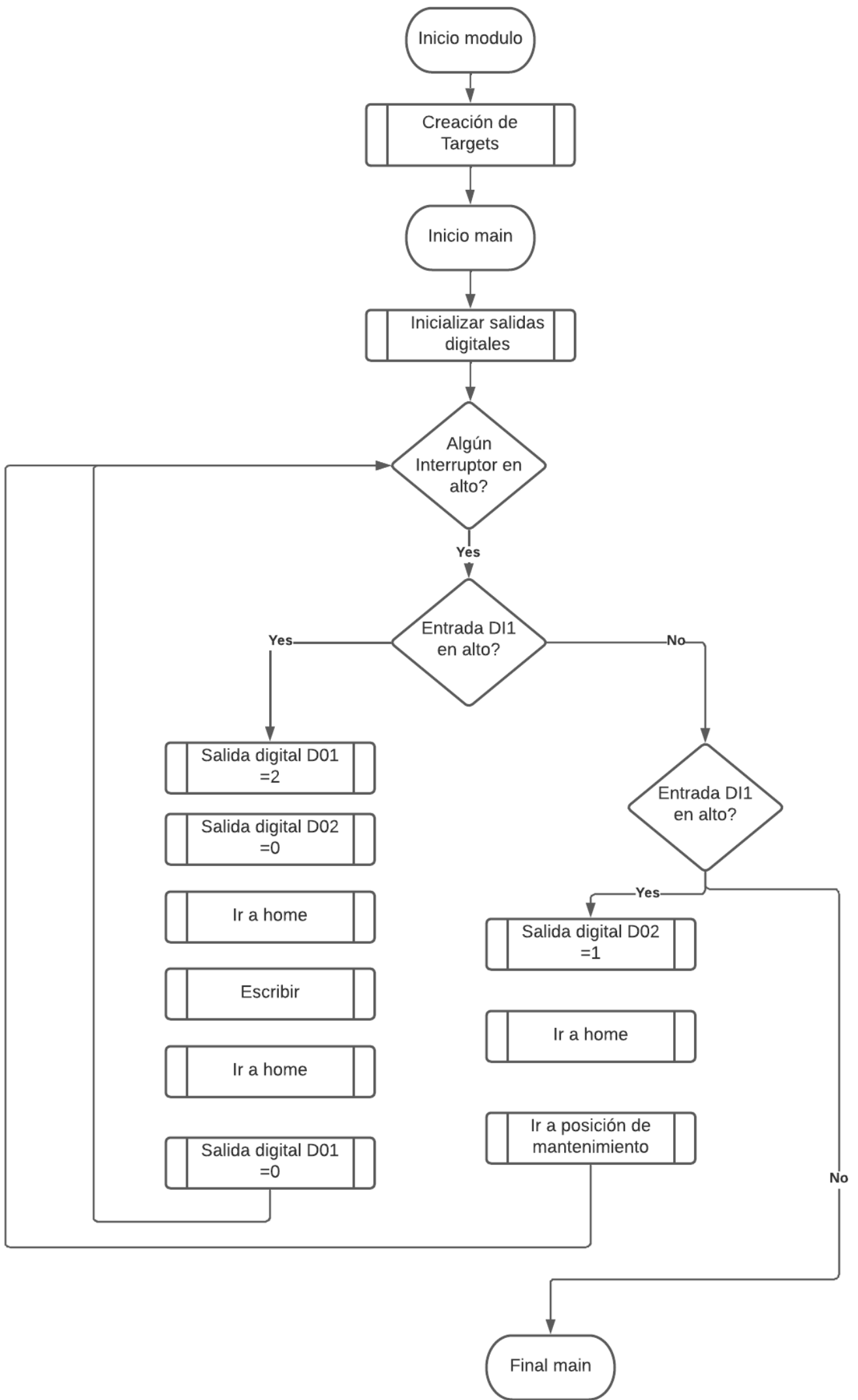
Para generar las trayectorias, se generaron cada uno de los puntos correspondientes a las esquinas de cada letra u objeto en orden de derecha a izquierda. Una vez generados, estos puntos se agregaron a su trayectoria correspondiente, y usando el

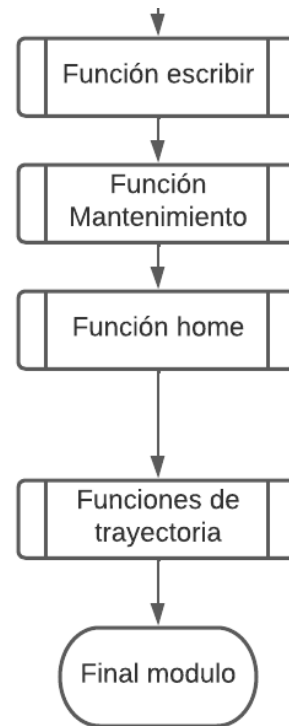
tipo de movimiento linear (MoveL) con una velocidad de  $v50$  mm/s y un zone de  $z5$  mm. Con esto, en el procedimiento principal, se tenían varias instrucciones.

Durante el desarrollo de la práctica se pudo evidenciar que en ciertos casos al generar los diversos puntos y al habilitar la opción en robot studio de asignar la orientación de cada articulación automáticamente, el robot hacia giros abruptos lo que generaba que llegara a singularidades durante las trayectorias; para solucionar esto, se realizaron cambios en los cuadrantes de las articulación teniendo en cuenta que el robot llegara a las posiciones deseadas.

## Diagrama de Flujo de acciones del robot

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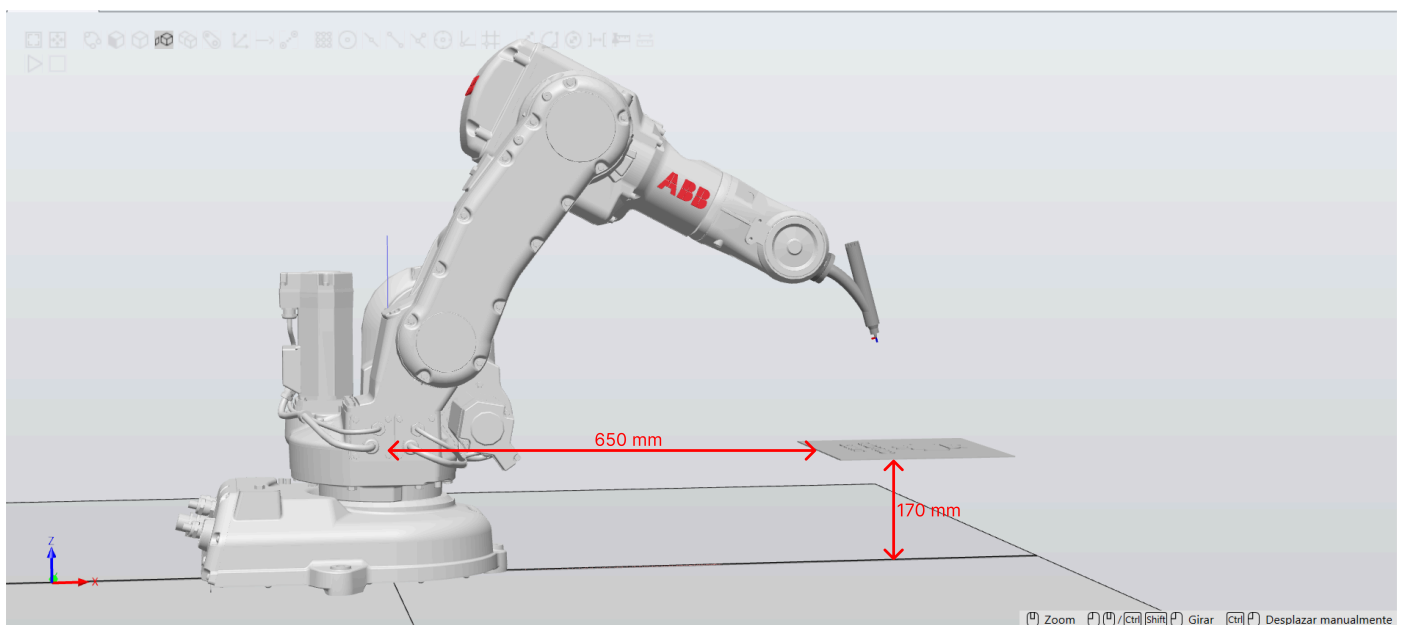
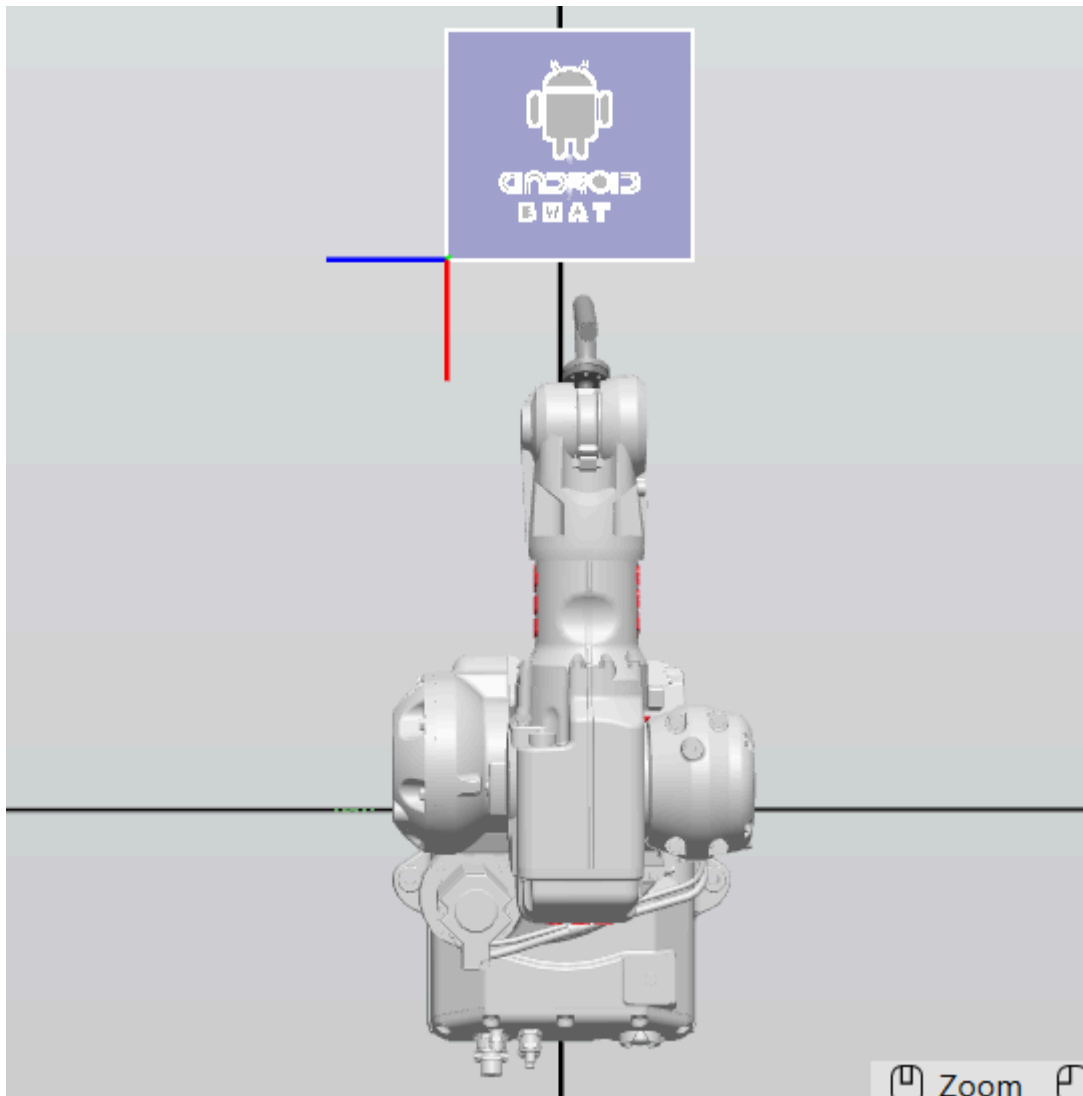




## Plano de planta de la ubicación de cada uno de los elementos

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Para el desarrollo de la práctica se colocó el plano de trabajo a 170 mm desde el suelo (distancia en el eje z) y a 650 mm desde el eje z del robot (distancia en el eje x)



# Descripción de las funciones empleadas

1. **SetDO** : Esta instrucción se utiliza para **establecer el estado de una salida digital (DO)** en el robot. Por ejemplo, puedes usar **SetDO** para activar o

desactivar una señal de salida que controle un dispositivo externo, como una válvula o una luz.

2. **MoveL** : La instrucción **MoveL** se emplea para **mover el robot en una trayectoria lineal (L)** . Es útil cuando necesitas que el robot siga una línea recta entre dos puntos. Los ejes del robot se mueven simultáneamente hacia el destino, manteniendo la orientación de la herramienta.
3. **MoveJ** : Por otro lado, **MoveJ** permite **mover el robot de un punto a otro sin seguir necesariamente una línea recta** . En este caso, los ejes del robot alcanzan el punto de destino al mismo tiempo, pero no necesariamente mantienen la orientación de la herramienta.

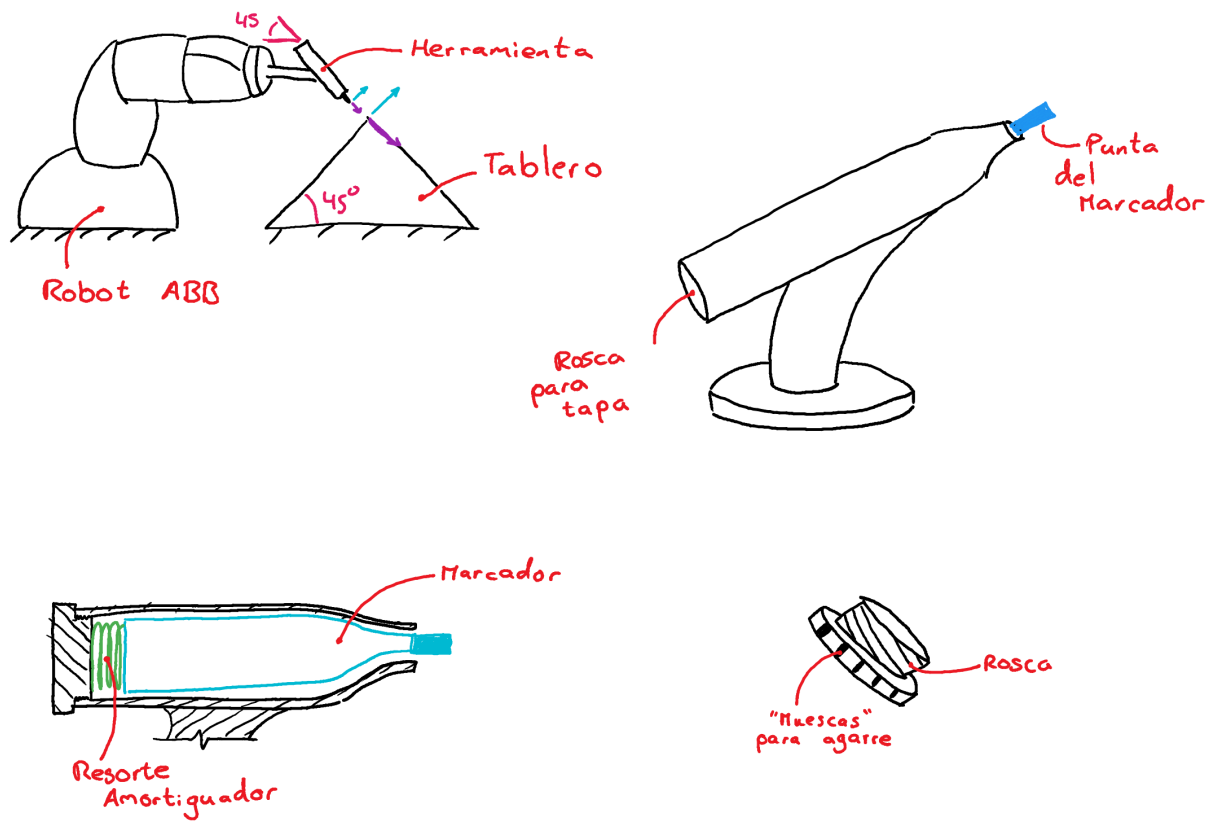
## Diseño de la herramienta

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Para el diseño de la herramienta se consideraron los siguientes parametros de diseño:

- Tamaño del marcador
- Tamaño de soporte principal
- Fuerzas ejercidas por el robot
- Ángulo de la superficie
- Tolerancias
- Otros

Teniendo en cuenta esto, se tomaron las respectivas medidas del marcador y teniendo en cuenta la hoja de datos del robot se procedió a hacer un boceto de la herramienta como se ve en la siguiente imagen y por facilidad para alcanzar la superficie y evitar tener inconvenientes con la concordancia de los sistemas coordenados se diseñó la herramienta a 45°

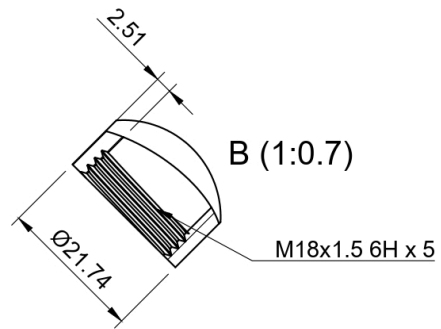
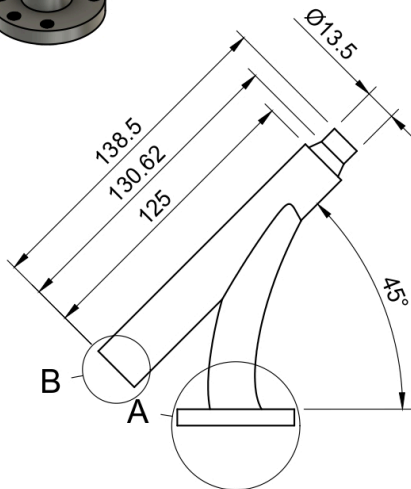
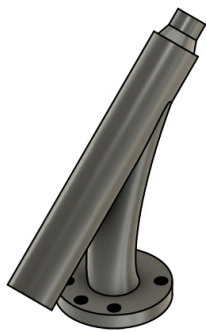


Una vez teniendo esto, se tuvo en cuenta que la herramienta se pretendía hacer por medio de manufactura aditiva con impresión 3D por lo cual se tenía que tener en cuenta ciertas tolerancias debido a la expansión y contracción termica que podría sufrir el PLA por este método de manufactura.

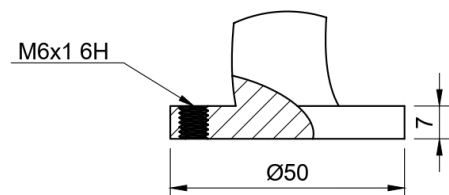


Una vez teniendo en cuenta estos parametros se diseñó la herramienta que se ve en los siguientes planos.

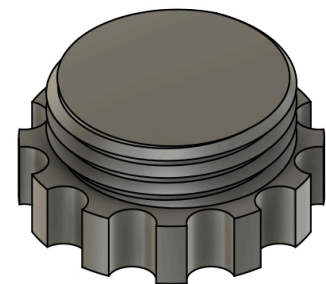
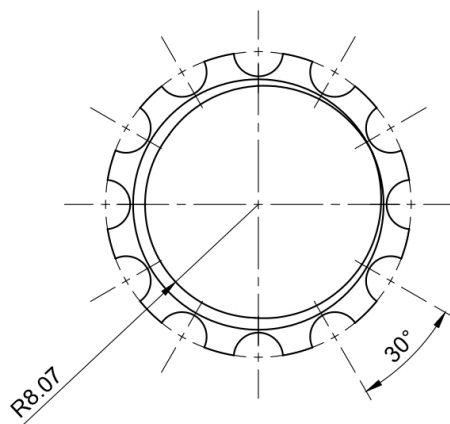
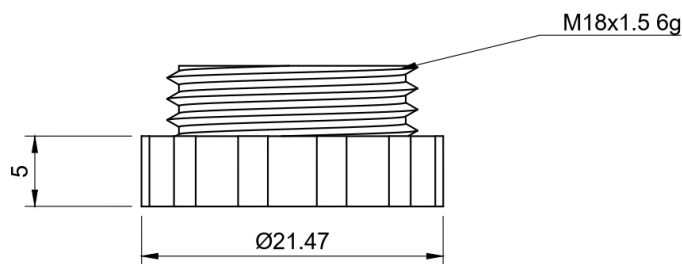




A (1:1)



mm	1:2	±0.1		 UNIVERSIDAD NACIONAL DE COLOMBIA
Creado por	Andres Camilo Torres Cajamarca	12/03/2024		
Revisado por	Brian Enrique Muñoz García	12/03/2024		
Aprobado por	Brian Enrique Muñoz García	12/03/2024	V2	
				Herramienta
				1



mm	3:1	±0.1		 UNIVERSIDAD NACIONAL DE COLOMBIA
Creado por	Andres Camilo Torres Cajamarca	12/03/2024		
Revisado por	Brian Enrique Muñoz García	12/03/2024		
Aprobado por	Brian Enrique Muñoz García	12/03/2024	V2	
				Tapa
				2

Al realizar la impresión 3D se obtuvo la siguiente herramienta.





**Código en RAPID**

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MODULE Module1

```
    PERS tooldata TCPHerramientaV:=[TRUE,[[50.767,-1.638,126.799],
[0.923879533,0,0.382683432,0]],[1,[0,0,1],[1,0,0,0],0,0,0]];
    TASK PERS wobjdata Workobject_1:=[FALSE,TRUE,"",[[0,0,0],[1,0,0,0]],
[[917,-146.5,172],[0,0,1,0]]];
    CONST robtarget Target_10:=[[71.903,171.999,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_20:=[[121.027,171.999,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_30:=[[123.53,171.339,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_40:=[[125.384,169.531,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_50:=[[126.107,166.919,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_60:=[[126.107,160.902,-2],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_70:=[[142.304,160.902,-2],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_80:=[[145.208,159.724,-2],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_90:=[[147.181,157.534,-2],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_100:=[[148.057,154.266,-2],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_110:=[[147.346,151.176,-2],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_120:=[[145.335,148.766,-2],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_130:=[[142.304,147.496,-2],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_140:=[[126.107,147.496,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_150:=[[126.107,136.576,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_160:=[[142.304,136.576,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_170:=[[145.265,135.358,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_180:=[[147.264,133.057,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_190:=[[148.057,130.001,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_200:=[[147.309,126.776,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_210:=[[145.159,124.314,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_220:=[[142.304,123.171,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_230:=[[126.107,123.171,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_240:=[[126.107,117.154,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_250:=[[126.104,117.31,-2],[1,0,0,0],[-1,0,-1,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_260:=[[125.489,114.725,-2],[1,0,0,0],[-1,0,-1,0],
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[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_270:=[[123.694,112.83,-2],[1,0,0,0],[-1,0,-1,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_280:=[[121.027,112.074,-2],[1,0,0,0],[-1,0,-1,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_290:=[[71.903,112.074,-2],[1,0,0,0],[-1,0,-1,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_300:=[[71.903,171.999,-2],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_330:=[[71.903,142.036,-2],[1,0,0,0],[-1,0,-1,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_320:=[[71.903,112.074,-2],[1,0,0,0],[-1,0,-1,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_310:=[[96.465,112.074,-2],[1,0,0,0],[-1,0,-1,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_340:=[[71.903,171.999,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_350:=[[71.903,171.999,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_360:=[[67.659,172.277,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_370:=[[67.659,172.277,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_380:=[[61.423,171.263,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_390:=[[55.305,168.068,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_400:=[[50.615,163.554,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_410:=[[46.537,156.845,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_420:=[[38.741,162.408,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_430:=[[38.206,162.455,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_440:=[[37.704,162.246,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_450:=[[37.357,161.823,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_460:=[[37.251,161.271,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_470:=[[37.448,160.701,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_480:=[[37.828,160.355,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_490:=[[45.688,154.746,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_500:=[[43.556,142.416,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_510:=[[45.688,130.254,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_520:=[[37.828,124.645,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_530:=[[37.417,124.253,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_540:=[[37.25,123.707,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
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CONST robtarget Target_550:=[[37.379,123.134,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_560:=[[37.7,122.757,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_570:=[[38.201,122.546,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_580:=[[38.741,122.592,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_590:=[[46.537,128.155,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_600:=[[50.043,122.176,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_610:=[[55.128,117.064,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_620:=[[61.106,113.845,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_630:=[[67.659,112.723,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_640:=[[67.659,172.277,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_650:=[[67.659,172.277,-8],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_660:=[[77.333,176.186,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_670:=[[77.333,176.186,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_680:=[[105.91,176.186,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_690:=[[108.63,177.237,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_700:=[[110.814,179.601,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_710:=[[111.654,182.511,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_720:=[[110.943,185.931,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_730:=[[108.895,188.355,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_740:=[[90.221,189.591,0],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_750:=[[105.91,189.591,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_760:=[[77.333,189.591,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_770:=[[74.626,188.549,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_780:=[[72.296,185.924,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_790:=[[71.579,182.88,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_800:=[[72.409,179.639,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_810:=[[74.509,177.307,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_820:=[[77.333,176.186,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_830:=[[77.333,176.186,-8],[1,0,0,0],[0,0,0,0],
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[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_840:=[[77.333,108.153,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_850:=[[77.333,108.153,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_860:=[[73.97,106.618,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_870:=[[72.417,104.716,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_880:=[[71.579,101.487,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_890:=[[72.409,98.199,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_900:=[[74.349,95.983,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_910:=[[77.333,94.748,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_920:=[[105.91,94.748,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_930:=[[108.593,95.774,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_940:=[[110.713,97.987,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_950:=[[111.661,101.676,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_960:=[[111.149,104.042,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_970:=[[109.296,106.599,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_980:=[[105.91,108.153,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_990:=[[77.333,108.153,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1000:=[[77.333,108.153,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1010:=[[53.234,156.928,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1020:=[[53.215,156.899,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1030:=[[52.676,155.075,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1040:=[[53.06,153.488,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1050:=[[54.275,152.169,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1060:=[[55.988,151.648,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1070:=[[57.762,152.084,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1080:=[[58.912,153.142,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1090:=[[59.494,154.837,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1100:=[[59.132,156.602,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1110:=[[57.907,157.946,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
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CONST robtarget Target_1120:=[[56.151,158.47,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1130:=[[54.472,158.064,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1140:=[[53.194,156.866,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1150:=[[53.194,156.866,-8],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1160:=[[53.176,130.973,-8],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1170:=[[53.176,130.973,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1180:=[[52.737,129.3,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1190:=[[53.157,127.66,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1200:=[[54.294,126.435,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1210:=[[56.06,125.888,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1220:=[[57.755,126.288,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1230:=[[58.982,127.396,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1240:=[[59.554,129.063,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1250:=[[59.15,130.925,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1260:=[[57.986,132.176,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1270:=[[56.073,132.711,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1280:=[[54.387,132.221,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1290:=[[53.197,131.01,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1300:=[[53.197,131.01,-8],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1520:=[[165.684,199.181,-8],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1310:=[[165.684,199.181,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1320:=[[187.049,199.181,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1330:=[[187.049,203.454,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1340:=[[170.092,203.454,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1350:=[[170.092,213.9,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1360:=[[171.608,216.533,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1370:=[[173.8,218.058,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1380:=[[176.834,218.562,-2],[1,0,0,0],[0,0,0,0],  
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];  
CONST robtarget Target_1390:=[[179.551,217.745,-2],[1,0,0,0],[0,0,0,0],
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[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1400:=[[181.753,215.728,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1410:=[[182.844,212.814,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1420:=[[182.844,207.592,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1430:=[[187.049,207.592,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1440:=[[187.049,212.814,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1450:=[[185.483,217.446,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1460:=[[182.097,220.892,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1470:=[[177.197,222.571,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1480:=[[172.176,221.834,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1490:=[[168.234,219.122,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1500:=[[165.684,214.442,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1510:=[[165.684,199.181,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1530:=[[173.463,193.864,-8],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1540:=[[173.463,193.864,-2],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1550:=[[187.049,193.864,-2],[1,0,0,0],[0,-1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1560:=[[187.049,189.591,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1570:=[[174.256,189.591,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1580:=[[171.767,188.407,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1590:=[[169.932,186.152,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1600:=[[169.277,183.34,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1610:=[[169.815,180.744,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1620:=[[171.254,178.68,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1630:=[[174.256,177.052,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1640:=[[187.049,177.052,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1650:=[[187.049,172.779,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1660:=[[173.463,172.779,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1670:=[[169.272,174.678,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1680:=[[166.317,178.037,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
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CONST robtarget Target_1690:=[[164.934,183.256,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1700:=[[166.051,188.101,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1710:=[[169.114,191.845,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1720:=[[173.463,193.864,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1730:=[[173.463,193.864,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1740:=[[170.236,167.475,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1750:=[[170.236,167.475,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1760:=[[165.963,167.475,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1770:=[[165.963,155.522,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1780:=[[167.95,151.215,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1790:=[[171.816,148.066,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1800:=[[176.522,146.993,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1810:=[[181.086,148.014,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1820:=[[184.953,151.075,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1830:=[[187.049,155.522,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1840:=[[187.049,167.475,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1850:=[[182.776,167.475,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1860:=[[182.776,156.315,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1870:=[[181.801,154.113,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1880:=[[179.136,151.898,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1890:=[[176.627,151.337,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1900:=[[173.748,151.957,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1910:=[[171.343,153.929,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1920:=[[170.236,156.315,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1930:=[[170.236,167.475,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1940:=[[170.236,167.475,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1950:=[[170.236,142.036,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1960:=[[170.236,142.036,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_1970:=[[165.963,142.036,-2],[1,0,0,0],[0,0,0,0],
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[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1980:=[[165.963,128.752,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_1990:=[[167.791,125.682,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2000:=[[170.497,123.806,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2010:=[[173.931,123.168,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2020:=[[177.683,124.236,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2030:=[[180.201,126.497,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2040:=[[182.184,125.268,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2050:=[[184.63,124.49,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2060:=[[187.049,124.353,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2070:=[[187.049,127.862,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2080:=[[184.519,128.528,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2090:=[[182.699,129.961,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2100:=[[181.35,132.711,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2110:=[[181.35,142.036,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2120:=[[177.077,142.036,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2130:=[[177.077,130.797,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2140:=[[176.612,129.074,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2150:=[[175.533,127.937,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2160:=[[173.543,127.378,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2170:=[[171.896,127.865,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2180:=[[170.798,128.919,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2190:=[[170.236,130.797,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2200:=[[170.236,142.036,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2210:=[[170.236,142.036,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2220:=[[176.374,118.843,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2230:=[[176.374,118.843,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2240:=[[170.325,117.432,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2250:=[[165.947,113.046,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
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CONST robtarget Target_2260:=[[164.541,108.021,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2270:=[[166.366,101.414,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2280:=[[170.313,97.73,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2290:=[[175.952,96.3,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2300:=[[181.34,97.747,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2310:=[[185.534,101.861,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2320:=[[187.089,107.416,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2330:=[[185.613,113.158,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2340:=[[181.649,117.228,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2350:=[[176.362,118.843,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2360:=[[176.362,118.843,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2370:=[[165.684,91.716,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2380:=[[165.684,91.716,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2390:=[[165.684,87.359,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2400:=[[187.09,87.359,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2410:=[[187.09,91.716,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2420:=[[165.684,91.716,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2430:=[[165.684,91.716,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2440:=[[165.963,81.94,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2450:=[[165.963,81.94,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2460:=[[165.963,69.987,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2470:=[[168.206,65.359,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2480:=[[171.928,62.478,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2490:=[[176.472,61.458,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2500:=[[181.011,62.445,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2510:=[[184.859,65.424,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2520:=[[187.049,69.987,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2530:=[[187.049,81.94,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2540:=[[182.776,81.94,-2],[1,0,0,0],[0,0,0,0],
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[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2550:=[[182.776,70.78,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2560:=[[181.644,68.36,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2570:=[[179.345,66.461,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2580:=[[176.739,65.806,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2590:=[[173.836,66.382,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2600:=[[171.655,68.008,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2610:=[[170.252,70.714,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2620:=[[170.236,81.94,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2630:=[[165.963,81.94,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2640:=[[165.963,81.94,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2650:=[[201.571,200.538,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2660:=[[201.571,200.538,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2670:=[[201.571,190.253,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2680:=[[201.907,187.93,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2690:=[[202.96,186.189,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2700:=[[204.277,185.274,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2710:=[[206.041,184.932,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2720:=[[207.579,185.218,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2730:=[[208.768,185.963,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2740:=[[209.905,187.841,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2750:=[[210.471,186.287,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2760:=[[211.503,185.005,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2770:=[[212.711,184.35,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2780:=[[214.234,184.11,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2790:=[[215.616,184.273,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2800:=[[216.734,184.728,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2810:=[[218.452,186.378,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
    CONST robtarget Target_2820:=[[219.105,188.546,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]]];
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CONST robtarget Target_2830:=[[219.351,191.058,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2840:=[[219.351,200.538,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2850:=[[201.571,200.538,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2860:=[[201.571,200.538,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2870:=[[201.571,172.987,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_2880:=[[201.571,165.748,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3000:=[[201.571,172.987,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3010:=[[201.571,165.748,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3020:=[[212.386,162.976,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3040:=[[201.571,160.221,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3050:=[[201.571,152.999,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3060:=[[219.351,152.999,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3070:=[[219.351,157.5,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3080:=[[205.781,157.5,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3090:=[[219.351,160.957,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3100:=[[219.351,165.029,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3110:=[[205.781,168.486,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3120:=[[219.351,168.486,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3130:=[[219.351,172.987,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3140:=[[201.571,172.987,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3150:=[[201.571,172.987,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3160:=[[201.571,136.297,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3170:=[[201.571,136.297,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3180:=[[201.571,130.291,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3190:=[[219.351,123.617,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3200:=[[219.351,129.367,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3210:=[[216.408,130.257,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3220:=[[216.408,136.503,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
CONST robtarget Target_3230:=[[219.351,137.375,-2],[1,0,0,0],[0,0,0,0],
```

```

[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3240:=[[219.351,142.988,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3250:=[[201.571,136.297,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3260:=[[201.571,136.297,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3270:=[[206.174,133.354,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3280:=[[206.174,133.354,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3290:=[[212.557,135.305,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3300:=[[212.557,131.403,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3310:=[[206.174,133.354,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3320:=[[206.174,133.354,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3330:=[[205.969,114.821,-8],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3340:=[[205.969,114.821,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3350:=[[205.969,109.208,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3360:=[[219.351,109.208,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3370:=[[219.351,103.715,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3380:=[[205.969,103.715,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3390:=[[205.969,98.102,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3400:=[[201.571,98.102,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3410:=[[201.571,114.821,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Target_3420:=[[205.969,114.821,-2],[1,0,0,0],[0,0,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget Mant:=[[370.486996961,711.046688664,-258.54022938],
[0.524968705,-0.712028769,0.448789991,-0.126532345],[0,1,0,0],
[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
    CONST robtarget HOME:=[[176.28069358,144.862,-170.134988326],
[0.991444861,0,-0.130526193,0],[-1,0,-1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];
! *****
!
! M?dulo:  Module1
!
! Descripción:
!   <Introduzca la descripción aquí>
!
! Autor:  usuario
!
! Versión: 1.0
!
! *****

```



```

! *****
!
! Procedimiento Main
!
! Este es el punto de entrada de su programa
!
! *****
PROC main()
    SetDO DO_01,0;
    SetDO DO_02,0;
    WHILE TRUE DO
        IF DI_01 = 1 THEN
            SetDO DO_01,1;
            SetDO DO_02,0;
            Casa;
            Escribir;
            Casa;
            SetDO DO_01,0;
        ELSEIF DI_02 = 1 THEN
            SetDO DO_02,1;
            Casa;
            Mantenimiento;
        ENDIF
    ENDWHILE
ENDPROC
PROC Escribir()
    Path_10;
    Path_20;
    Path_30;
    Path_40;
    Path_50;
    Path_60;
    Path_70;
ENDPROC
PROC Path_10()
    MoveL Target_10,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_20,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_30,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_40,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_50,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_60,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_70,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_80,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_90,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_100,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_110,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_120,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_130,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_140,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_150,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_160,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_170,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_180,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_190,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_200,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
    MoveL Target_210,v50,z5,TCPHerramientaV\WObj:=Workobject_1;

```

[illegible]







[illegible]





```

MoveL Target_3090,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3100,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3110,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3120,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3130,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3140,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3150,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3160,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3170,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3180,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3190,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3200,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3210,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3220,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3230,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3240,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3250,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3260,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3270,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3280,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3290,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3300,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3310,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3320,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3330,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3340,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3350,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3360,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3370,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3380,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3390,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3400,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3410,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
MoveL Target_3420,v50,z5,TCPHerramientaV\WObj:=Workobject_1;
ENDPROC
PROC Mantenimiento()
    MoveJ Mant,v50,z10,TCPHerramientaV\WObj:=Workobject_1;
ENDPROC
PROC Casa()
    MoveJ HOME,v50,z10,TCPHerramientaV\WObj:=Workobject_1;
ENDPROC
ENDMODULE

```

## Video Demostrativo

El link donde se encuentra el video de la simulación es el siguiente:

[https://drive.google.com/file/d/1-fkUrs10K-\\_VG1Xfjn2DbphrHv41BWaV/view?usp=sharing](https://drive.google.com/file/d/1-fkUrs10K-_VG1Xfjn2DbphrHv41BWaV/view?usp=sharing)

El link donde se encuentra el video demostrativo del funcionamiento es el siguiente:

[https://drive.google.com/file/d/1xLDvLqA7we9p7A\\_fknllluA77fwrY0Xp/view?  
usp=drive\\_link](https://drive.google.com/file/d/1xLDvLqA7we9p7A_fknllluA77fwrY0Xp/view?usp=drive_link)