

## O4126 (MIRROR IMAGE - HOOKS)

(T03 = 0.25 DIA CENTER CUTTING END MILL - D53=0.125)  
 (T19 = 0.375 DIA 45-DEG CHAMFERING END MILL = D69=0.145 AT 0.1 DEPTH)  
 (X0Y0 AT THE CENTER OF THE PART - Z0 AT THE TOP FACE - ORIENT AS PER DRAWING)

(M21 - MIRROR IMAGE ALONG THE X AXIS)  
 (M22 - MIRROR IMAGE ALONG THE Y AXIS)  
 (M23 - MIRROR IMAGE CANCEL)  
 (\*\*\*) CHANGE M-FUNCTIONS TO MATCH THE MACHINE CONTROL (\*\*\*)

(T03 = 0.25 DIA CENTER CUTTING END MILL - D53=0.125)  
 N1 G20 (ENGLISH UNITS)  
 N2 M23 (MIRROR OFF AT PROGRAM START)  
 N3 G17 G40 G80 G49 T03 (STARTUP BLOCK - T03 READY)  
 N4 M06 (T03 IN THE SPINDLE)  
 N5 G90 G54 G00 X0 Y0 S2500 M03 T19 (\* RAPID TO POINT COMMON TO ALL MIRRORS T19 READY)  
 N6 G43 Z0.1 H03 M08 (CLEAR ABOVE PART FOR END MILLING-DO NOT CHANGE !)  
 N7 M98 P4176 (QUADRANT I)  
 N8 M21 (X MIRROR ON)  
 N9 M98 P4176 (QUADRANT II)  
 N10 M22 (X AND Y MIRROR ON)  
 N11 M98 P4176 (QUADRANT III)  
 N12 M23 (MIRROR CANCELED)  
 N13 M22 (Y MIRROR ON)  
 N14 M98 P4176 (QUADRANT IV)  
 N15 M23 (MIRROR OFF)  
 N16 G28 Z0.1 M09 (Z-AXIS MACHINE ZERO RETURN)  
 N17 M01 (OPTIONAL STOP)

(T19 = 0.375 DIA 45-DEG CHAMFERING END MILL - D69=0.145 AT 0.1 DEPTH)  
 N18 T19 (T19 READY - CONFIRMATION)  
 N19 M06 (T19 IN THE SPINDLE)  
 N20 M23 (MIRROR OFF AT THE BEGINNING OF TOOL)  
 N21 G90 G54 G00 X0 Y0 S2200 M03 T03 (\* RAPID TO POINT COMMON TO ALL MIRRORS T03 READY)  
 N22 G43 Z0.1 H19 M08 (CLEAR ABOVE PART FOR CHAMFERING-DO NOT CHANGE !!)  
 N23 M98 P4186 (QUADRANT I)  
 N24 M21 (X MIRROR ON)  
 N25 M98 P4186 (QUADRANT II)  
 N26 M22 (X AND Y MIRROR ON)  
 N27 M98 P4186 (QUADRANT III)  
 N28 M23 (MIRROR CANCELED)  
 N29 M22 (Y MIRROR ON)  
 N30 M98 P4186 (QUADRANT IV)  
 N31 M23 (MIRROR OFF)  
 N32 G28 Z0.1 M09 (Z-AXIS MACHINE ZERO RETURN)  
 N33 G28 X0 Y0 (XY-AXES MACHINE ZERO RETURN)  
 N34 M30 (END OF PROGRAM)  
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## O4176

(SUBPROGRAM FOR MIRROR IMAGE HOOKS IN QUADRANT I - ROUGHING AND FINISHING)  
 N101 G91 G00 X0.7 Y0.4 (1 - START POINT FOR ROUGHING)  
 N102 G01 Z-0.3 F6.0 (SLOT DEPTH FOR CONTOURING - INCREMENTAL MODE)  
 N103 Y0.875 (2 - ROUGH AT CENTERLINE)  
 N104 X0.25 (3 - ROUGH AT CENTERLINE)  
 N105 G03 Y0.8 I0 J0.4 (4 - ROUGH AT CENTERLINE)  
 N106 G01 X-0.25 (5 - ROUGH AT CENTERLINE)  
 N107 G41 X-0.195 Y-0.005 D53 (6 - D-OFFSET AT START IS FOR FINISHING)  
 N108 G03 X0.195 Y-0.195 I0.195 J0 (7 - LEAD-IN ARC)

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N109 G01 X0.25 (8 - COUNTOURING)
N110 G02 Y-0.4 I0 J-0.2 (9 - COUNTOURING)
N111 G01 X-0.25 (10 - COUNTOURING)
N112 G03 X-0.2 Y-0.2 I0 J-0.2 (11 - COUNTOURING)
N113 G01 Y-0.875 (12 - COUNTOURING)
N114 G03 X0.4 I0.2 J0 (13 - COUNTOURING)
N115 G01 Y0.625 (14 - COUNTOURING)
N116 G02 X0.05 Y0.05 I0.05 J0 (15 - COUNTOURING)
N117 G03 Y1.2 I0 J0.6 (16 - COUNTOURING)
N118 G01 X-0.25 (17 - COUNTOURING)
N119 G03 Y-0.4 I0 J-0.2 (18 - COUNTOURING)
N120 X0.195 Y0.195 I0 J0.195 (19 - LEAD-OUT ARC)
N121 G40 G01 X-0.195 Y0.005 (20 - RADIUS OFFSET CANCELED - SAME AS POSITION 5)
N122 G90 G00 Z0.1 (CLEARANCE ABOVE THE PART - ABSOLUTE LOCATION)
N123 X0 Y0 (* RAPID RETURN TO POINT COMMON TO ALL MIRRORS *)
N124 M99 (END OF SUBPROGRAM - RETURN TO MAIN PROGRAM)
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O4186

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(SUBPROGRAM FOR MIRROR IMAGE HOOKS IN QUADRANT I - CHAMFERING)
N201 G91 G00 X0.7 Y2.075 (5 - START POINT FOR CHAMFERING)
N202 G01 Z-0.2 F7.0 (SLOT DEPTH FOR CHAMFERING - INCREMENTAL MODE)
N203 G41 X-0.195 Y-0.005 D69 (6 - D-OFFSET AT START IS FOR CHAMFERING)
N204 G03 X0.195 Y-0.195 I0.195 J0 (7 - LEAD-IN ARC)
N205 G01 X0.25 (8 - CHAMFERING)
N206 G02 Y-0.4 I0 J-0.2 (9 - CHAMFERING)
N207 G01 X-0.25 (10 - CHAMFERING)
N208 G03 X-0.2 Y-0.2 I0 J-0.2 (11 - CHAMFERING)
N209 G01 Y-0.875 (12 - CHAMFERING)
N210 G03 X0.4 I0.2 J0 (13 - CHAMFERING)
N211 G01 Y0.625 (14 - CHAMFERING)
N212 G02 X0.05 Y0.05 I0.05 J0 (15 - CHAMFERING)
N213 G03 Y1.2 I0 J0.6 (16 - CHAMFERING)
N214 G01 X-0.25 (17 - CHAMFERING)
N215 G03 Y-0.4 I0 J-0.2 (18 - CHAMFERING)
N216 X0.195 Y0.195 I0 J0.195 (19 - LEAD-OUT ARC)
N217 G40 G01 X-0.195 Y0.005 (20 - RADIUS OFFSET CANCELED)
N218 G90 G00 Z0.1 (CLEARANCE ABOVE THE PART - ABSOLUTE LOCATION)
N219 X0 Y0 (* RAPID RETURN TO POINT COMMON TO ALL MIRRORS *)
N220 M99 (END OF SUBPROGRAM - RETURN TO THE MAIN PROGRAM)
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