

# Titanium medical part milling example

Work material : Ti-4Al-5V (For medical parts)  
 Size :  $\phi 52$  x height 29.5 mm  
 (Milled from 100 x 60 x 50 mm)  
 Coolant : Water soluble

**Completed by tool 5 pcs, cycle time 100 min.**

## Main processes



	Model	Process	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Allowance (mm)	a <sub>p</sub> (mm)	a <sub>e</sub> (mm)	Cycle Time (min)	Milling Distance (m)
Back	CNRS 4120-20-26 (φ12 x CR2 x 26)	Circumference roughing (Slot)	2,123	550	0.1	1	-	8.09	4.5
	CNRS 4120-20-26	Inner roughing (Pocket)	2,123	550	0.2	23	0.72	9.31	3.3
	CNRS 4120-20-26	Inner bottom semi finishing	2,123	550	0.2	0.5	6	2.1	1.4
	GCR SP 4100-20-30 (φ10 x CR2 x 30)	Inner pocket taper wall finishing	2,555	1,500	0	0.25	0.15	4	6
	GCR SP 4100-20-30	Inner pocket taper bottom finishing	2,555	1,200	0	0.2	0.4	4.31	5.3
	HLRS 4040-01-080 (φ4 x CR0.1 x EL8)	Inner notch roughing (Slot)	4,770	350	0	2.95	-	0.24	0.58
Front	CNRS 4120-20-26	Outer roughing (slot)	2,123	340	0.2	1	-	10.25	3.6
	CNRS 4120-20-26	Convex roughing (Z-level) 1	2,123	340	0.2	2	1.2	10.62	4.3
	CNRS 4120-20-26	Convex roughing (Z-level) 2	2,123	550	0.2	0.5	6	8.1	6.4
	HFB 4020-0300 (R1 x 3)	Jagged part roughing	14,700	1,000	0	0.35	0.2	6.25	7.2
	CFB 3010-0150 (R0.5 x 1.5)	Jagged part finishing	18,000	1,200	0	0.1	0.1	17.84	22.4
	HFB 4020-0300	Dome shape finishing	14,000	800	0	0.1	0.1	12.46	10

Total 100 82