Table 6.2: Example of typical machining parameters currently used to machine Ti-6Al-4V airframe bulkheads

OPERATION	PART SURFACE	CUTTER DESCRIPTION & MATERIAL	SPEED: Ft /min	FEED: In. /tooth
Milling Rough/Finish	Peripheral ML flanges	2"dia. x 6" flute length, 6 flute, 35° helix, M42	50	0.0066 / 0.0096
Milling Rough	Thin flanges Walls	1 ¼"dia. x 2" flute length, 4 flute, 35° helix, M42	50	0.0062 / 0.009
Milling Finish	Thin flanges	¾"dia. x 2 ½" flute length, 4 flute, 35° helix M42	50	0.0024 / 0.0034
Milling Finish	Pocket floor	1 ¼"dia. x 2" flute length, 4 flute, 35° helix M42	50	0.0062 / 0.009

Table 6.3: Example of typical parameters for machining Ti-6Al-4V gas turbine components

OPERATION	TOOL MATERIAL	CUTTING SPEED: Ft /min	FEED	DEPTH OF CUT: In.
Turn (Rough)	C-2	150	0.010 in./rev	0.250
Turn (Finish)	C-2	200	0.006 – 0.008 in./rev	0.010 – 0.030
Turn (Finish)	C-2	300	0.006 – 0.008 in./rev	0.010 – 0.030
End Mill (¾ - 1"dia.)	M42 HSS (a)	60	0.003 in./tooth	Axial depth: 0.125 Radial depth: up to two-thirds cutter diameter
End Mill (¾ - 1"dia.)	C-10	200	0.005 in./tooth	Axial depth: .150-.200 Radial depth: up to two-thirds cutter diameter
Drill (¼ - ½"dia.)	M42 HSS (a)	30	0.005 in./rev	
Drill (¼ - ½"dia.)	C-2	40	0.004 in./rev	
Ream	M42 HSS (a)	20	0.010 in./rev	
Ream	C-2	35	0.010 in./rev	
Tap	M7 HSS	15	-	
Broach	M3 HSS	12	0.003 in./tooth max	
Spline Shape	M42 HSS	12	0.012 in./stroke	

(a) Designates tool material most widely used.

Source:
Titanium: A Technical Guide (1988), ASM International, Materials Park, OH, 44073-0002, page 75-85