[Technical Data]
Roughness Ranges by Various Processes

Arithmetic Average Roughness Ra		0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50	100
Traditional Roughness Notations	Maximum Height Rmax.	0.1 –S	0.2 –S	0.4 –S	0.8 –S	1.6 –S	3.2 –S	6.3 –S	12.5 –S	25 –S	50 –S	100 –S	200 –S	400 –S
	Reference Value of Standard Length (mm)	0.25				0.8			2.5		8		25	
	Finish Symbol	▽▽▽▽				▽▽▽			▽▽		▽		–	
Processes	Forging								Precise					
	Casting								Precise					
	Die Casting													
	Hot Rolling													
	Cold Rolling													
	Drawing													
	Extruding													
	Tumbling													
	Sand Blasting													
	Rolling													
	Face Milling						Precise							
	Planing													
	Carving / Slotting													
	Milling						Precise							
	Precision Boring													
	Filing						Precise							
	Round Turning				Precise		Fine		Medium			Coarse		
	Boring						Precise							
	Drilling													
	Reaming					Precise								
	Broaching					Precise								
	Shaping													
	Milling			Precise	Fine		Medium			Coarse				
	Honing			Precise										
	Stone Lapping	Precise												
	Buff Finishing			Precise										
	Fine Sanding			Precise										
	Lapping	Precise												
	Hydro Honing			Precise										
	Burnishing													
	Roller Finishing													
	Sinker EDM													
	Wire EDM													
	Chemical Polishing						Precise							
	Electropolishing		Precise											