



# Precision Machining Manufacturer

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## 7 Commonly Used AL Alloy for Machined Parts

### Chemical Composition of Aluminium Alloy

Type	Si %	Fe %	Cu %	Mn %	Mg %	Cr %	Zn %	Ti %	Al %
AL2024	≤0.5	≤0.5	3.8-4.9	0.3-0.9	1.2-1.8	≤0.1	≤0.25	≤0.15	balance
AL5052	≤0.25	≤0.4	≤0.1	≤0.1	2.2-2.8	0.15-0.35	≤0.1	-	balance
AL5083	≤0.4	≤0.4	≤0.1	0.4-1.0	4.0-4.9	0.05-0.25	≤0.25	≤0.15	balance
AL6061	0.4-0.8	≤0.7	0.15-0.4	≤0.15	0.8-1.2	0.04-0.35	≤0.25	≤0.15	balance
AL6063	0.2-0.6	≤0.35	≤0.1	≤0.1	0.45-0.9	≤0.1	≤0.1	≤0.1	balance
AL6082	0.7-1.3	≤0.5	≤0.1	0.4-1.0	0.6-1.2	≤0.25	≤0.2	≤0.1	balance
AL7075	≤0.4	≤0.5	1.2-2.0	≤0.3	2.1-2.9	0.18-0.28	5.1-6.0	≤0.2	balance

### Mechanical Characteristic and Application

Type and Status	Tension Strength ( Mpa )	Yield Strength (Mpa)	Hardness (HB)	Elongation (T=1/16")	Feature	Application
AL2024-T351	470	325	120	20	High strength and hardness,lower corrsion resistant	Used to make all kinds of high load parts and components,such as the skeleton parts of plane,wing rib.
AL5052-H112	195	170	50-70	12	Fatigue resistant,High plasticity and corrosion resistance,better weldability,Non heat treatable.	Stamping,bending parts,sheet metal parts.
AL5083-H112	270	180	70-85	14	Good corrosion resistant,weldability and machinability,Non heat treatable.	Marine hardware,refrigeration equipment,iquid tanker.
AL6061-T651	310	276	80-95	12	Moderate strength,good corrosion resistant and weldability,anodizing effect is better.	Aerospace fixation device, electrical fixture, communication field,automatic mechanical parts,precision parts,mould manufacturer,electronic and precise instrument,SMT.
AL6063-T6	220	190	70-90	13	Good weldability,good corrosion resistance,cold processing is better.	Automatic mechanical parts,precision parts,mould manufacturer,electronic and precise instrument,SMT.
AL6082-T6	255	150	80-90	14	good weldability,good corrosion resistance and oxidation resistance	Camera lens,marine parts, coupler,piston,vales parts.
AL7075-T651	572	503	160	11	High strength,easy to machining,high wear resistance,not suitable welding.	Air craft parts,gear and shaft,turbine,key,aerospace area.