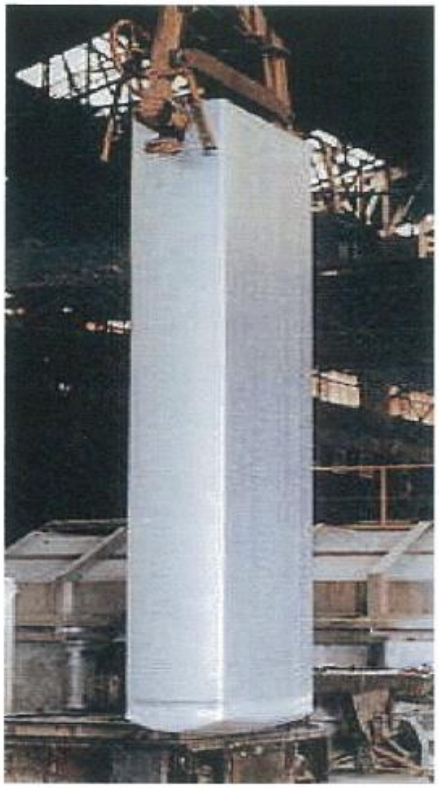
Aluminum Alloy for machining

＜KN series＞

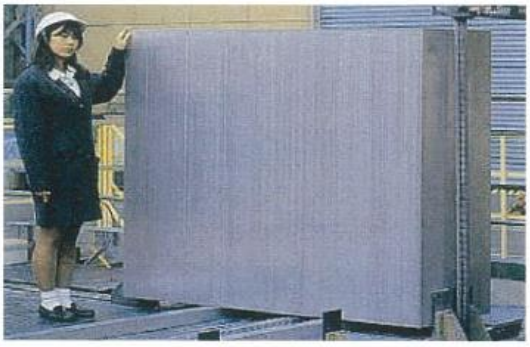
Biggest Slab in Japan

- 430mm (thickness) x 2,610mm (width) x 4,500mm (length)
- Weight : approximately 14 tons

■Aluminum alloy mold material for resin molding



Cutting



Material for machining

Application Example

Front panel for Automobile

Vacuum chamber

■Feature

- KN series are:

・**Less Strain** (Please refer to Page 4.)

・**Easier to control Surface accuracy in fabrication**

・**Shorten fabrication time**

・**Lighter than Steel**

・**Easy maintenance**

<KN500>

- Made by special continuous casting. And equivalent component to A5083.
- Very small processing strain, comparing to other material, helps to machine the material without straightening process.

Application

- Mold： Injection molding, blow molding, foam molding, Reaction Injection Molding, Vacuum pressure forming
- Vacuum chamber：transfer chamber, valve, lid
- jig and tool：base plate, jig for aircraft, machinery parts

<KN700>

- Equivalent component to 7003.
- Made by continuous casting.
- Compared to A2017, A7075 Rolled material, KN700 is available to provide thicker material.
- Comparted to zinc alloy, toughness is three times(eliminating crack of mold), increasing hardness 25% more.
- Solving pinhole

<KN520>

- equivalent to A5052.
- Applications are various such as big liquid crystal device, jigs and so on.
- Very small processing strain, fast delivery.

Application

- Parts for manufacturing equipment for semiconductor and LCD
- Jigs
- Machining processed goods

■Physical properties comparison

	Unit	KN-500	KN-520	KN-700
Tensil Strength	N/mm^2	250	180	343
Yield Strength	N/mm^2	120	70	245
Elongation	%	15	25	10
Hardness	HB	65	45	100
Modulus of Longitudinal Elasticity	KN/mm^2	70.6	70	71.1
Density	Mg/M^3	2.7	2.7	2.8
Specific Heat	J/kg・℃	963	963	963
Thermal Expansion Coefficient	$X\ 10^{-6}$/℃	24.2	23.8	23.8
Thermal Conductivity	W/m・℃	120	198	180

※Representative value by Mitsubishi Test

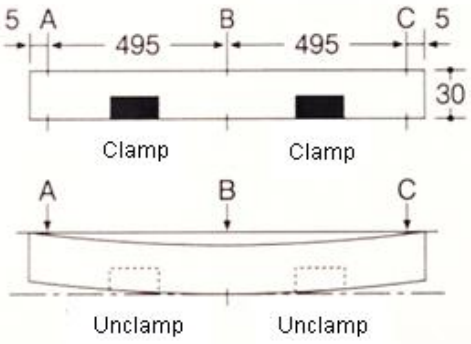
Warpage Data

Sample Shape (mm)

※ 60(W)x1000(L)x60(H)

※Remove the orange area

Manufacture and Measurement (mm)



	Warp at point B after unclamp (μ m)
KN500	12
KN520	12
KN700	400