Proper jigging is a critical part of anodizing and must successfully accomplish at least three basic functions:

- Hold the part securely during transfer between process tanks and while immersed in a vigorously agitated solution
- Provide contacts with the work that will safely conduct enough current from the source to the part to provide a uniform coating
- Provide adequate drainage of the work, leaving no pockets of residual solution trapped in the components

The following factors need to be taken into account in jig and rack design and the way in which components are secured on racks:

1) Suitability for the process sequence and solution used
2) Ease of loading and unracking of parts
3) Provision of secure contact points which ensure a uniform coating
4) Location of jig marks in positions acceptable to the customer
5) Density of loading of the components must balance the economics of bath loading against dangers of local overheating and shielding
6) The rack must be cost effective in terms of the quantity required and the revenue from the job

**FUNCTIONAL FEATURES**

The basic need is to secure properly the components on the jig and for them to be retained throughout subsequent processing. The choice of design is often a matter...
of experience and judgement. The following factors have to be taken into account:

- The size and weight of the part
- Sensitivity of work surfaces to prevent damages from clamping
- The locations where trapped gas or liquid pockets may occur
- The amount of current required by the parts on the jig
- The position and number of points where contact marks may be allowed

In the early development of anodizing racks and jigs were made exclusively of aluminium, usually pure aluminium, which had the disadvantage of being soft and readily damaged. However, this has been overcome to a large extent by the use of heat treatable alloys, such as 6061 and 2024. In high volume applications, titanium has now become widely used. Aluminium has the following advantages:

1) Low initial cost
2) Ease of fabrication
3) High level conductivity
4) Proper conductivity for electrocolouring

Offsetting these factors are the following disadvantages:

- Progressive weakening by chemical attack in etching and by chemical polishing
- Less robustness in handling terms
This can be expressed in terms of the current which can be carried by a given cross-section without significant temperature rise. However, aluminium has a high current carrying capacity, although this varies with the alloy used. Busbars in 6063 alloy will carry 1.8 A/mm² in air.

Based on measurements carried out in a large architectural anodizing plant supplied from a 12,000 A rectifier using four 6063 alloy vertical splines 30x30 cross-section to carry the current to the work, the current carrying capacity was found to be 3.3. A/mm².
Special alloy extruded aluminium jigs

“Star” type jigs - Sized, shaped and milled on request

Square jigs - Sized, shaped and milled on request

Multi-use pentagonal jigs - Sized, shaped and milled on request

Hooking plugs (english key)
Universal hooking to be used with jigs having at least one side 25 mm. long

Rings