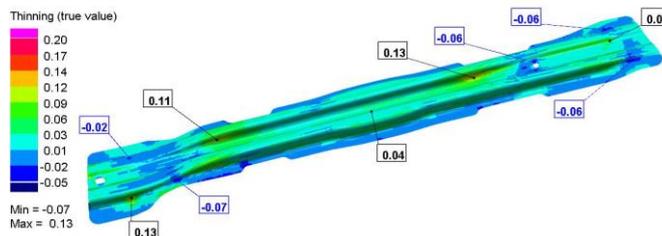


# Warm/hot forming process of High-strength aluminum sheet

## Introduction

- According to statistical forecasts, the global demand for recycled aluminum applications will be the largest in 2025, and so as the trend of lightweight vehicles. As the strength of the aluminum alloy increases, the difficulty of the forming process increases relatively, and the current domestic cold stamping process would lead to problems such as thinning and cracking of the sheet metal.
- This technology takes advantage of the improved formability of aluminum alloys after heating and softening. For parts with complex forming characteristics and strength requirements, the aluminum alloy heating forming process is developed to overcome the difficulties of cold stamping aluminum alloy parts.
- This technology produces high-strength aluminum alloys (series 2 and series 7), combined with heat treatment of sheet parts in the forming process, which can increase the overall production efficiency by 50% and reduce waste by 60%.
- Through numerical simulation analysis, mold design, and the development of process parameters to help domestic manufacturers. By providing a platform for the trial production of aluminum alloy parts development, sampling verification, and strengthening the independent research and development capabilities of high-value aluminum alloy parts.



Through cold stamping, the sheet will be thinned and broken. Therefore, it is impossible to form high-strength aluminum alloy sheet parts



Through warm/ hot forming to obtain parts with good surface quality

## Awards/Patents

- A total of 7 related patents in the pre-treatment method and device for light metal forming (Patent No. I745174) were issued in R.O.C, P. R.O.C, and the U.S.A

## Industrial Applications/ Case Studies

- It can be used in aerospace, rail vehicles, automobiles, and motorbikes to improve industrial competitiveness and value added to win high-value orders and integrate with international companies.



Construction of the first demonstration production line in Taiwan



The development of seat armrest parts has greatly improved, and there is no need to worry about cracks occur the current state of being too thin in the circle 6 area.

Aluminized analysis Case of high strength aluminum alloy automotive structural parts

According to the equipment of the MIRDC 800T hydraulic press, the size of the press table is L3000mm\*W2000mm Product thickness below 4mm