

The Development of Cold Forging Progressive Die Technology for the Case of Slim Type Spindle Motor

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Abstract. To promote the competitiveness of 3C industries in Taiwan, the cold forging progressive die technology is still being developed. The technology can rapidly and steadily produce high quality and complex shape products. Moreover, it can reduce manufacturing costs and time, too.

The design for the cold forging progressive die process for the slim type spindle motor case consists of three main stages. First, we arrange a reasonable and appropriate process planing for the case. Second, we use computer software to simulate the main forming processes. Third, we perform a simple forming test to check up the results of the simulation.

According to the test results, the main forming of the slim type spindle motor case is similar to the results of the simulation. Consequently, we demonstrate that the one-piece slim type spindle motor case can be manufactured with a progressive die. The forming processes include piercing, coining, upsetting, ironing, sizing, and blanking.

The results from computer simulation and forming test result indicate that a reasonable effective manufacturing process for the one-piece slim type spindle motor case is possible. The final conclusions will be introduced in the article. In addition, we also discuss the possible problem involving the production of the slim type spindle motor case.