

MODERATE-STRENGTH ALUMINUM ALLOY ISOTHERMAL DIE FORGING PROCESS

ABSTRACT

A moderate-strength aluminum alloy isothermal die forging process is disclosed, which
5 includes the following steps: sawing or stamping an aluminum alloy material into a blank required
for forging; performing a surface treatment on the blank; performing a stress relief annealing heat
treatment on the blank subjected to the surface treatment, a heating temperature being no higher than
250°C; performing a surface lubrication treatment on the blank subjected to the heat treatment; and
performing isothermal die forging on the lubricated blank. Stress relief annealing is adopted in a
10 heat treatment process, and the heating temperature of the blank is controlled to be no higher than
250°C, so that the plasticity of the blank is enhanced, and meanwhile the blank is kept at the
moderate strength. Therefore, the forged workpiece has a moderate strength, which means that a
solid solution and an artificial aging treatment are not needed any more, thereby reducing the forging
procedures, improving the forging efficiency, and reducing the forging costs.

15 No suitable figure