

Automotive

Alloy Choice and Quick Turnaround Point to Investment Casting to Produce Fuel Pump Removal Tool

Alloy choice, overall configuration and rapid turnaround were major considerations when choosing the investment casting process to manufacture a fuel pump removal tool for the automotive industry.

The fuel pump removal tool was designed as a joint project between an investment caster and a major auto maker.

An emergency recall required the removal of the fuel pump that was attached to the inside bottom of the fuel tank. Since the tool would be used in a gas fume environment, a non sparking metal was necessary. The alloy chosen was aluminum bronze.

High strength was also needed since the tool would be required to cut through four supports on the bottom of the pump without damaging the coating inside the tank that prevent fuel from seeping.

The customer in this case had an idea of what the tool should do, but not a complete design. Using rapid prototyping technology and its casting expertise, the investment caster was able to provide several design iterations in the form of plastic prototypes within a 48-hour period, and produced 17,100 aluminum bronze

castings in seven weeks from final design concept including packaging, assembly and shipping of the complete product to auto dealers throughout the world.

The investment cast fuel removal tool saved the auto manufacturers the cost of completely replacing the fuel tank.

