

Floating Power, 1931

In early July 1931, Plymouth introduced the Model PA, featuring a radically new system of mounting the engine, dubbed Floating Power by its inventor Fred Zeder. Standard practice in the industry was to bolt the engine directly to the car's steel frame at the four corners of the engine, which added torsional stiffness to the frame. When accelerating, the engine would "kick" sideways, transmitting vibrations and noise through the frame to the car's body.

Zeder devised a system whereby the engine rested on two rubber mounts, one located just under the water pump at the front of the engine and the other at the rear of the transmission. The center of gravity of the engine was midway between the mounts, allowing the engine to rotate around the axis line through the center of the engine, eliminating the "side-kick." To prevent the engine from turning excessively about its axis, Zeder introduced a five-leaf cantilever stabilizing spring attached to the transmission case at one end and to the right side of the frame at the other. This spring, which ran perpendicular to the axis of the engine, was encased in rubber where it connected to the frame. The net result is that nowhere in this mounting system was there metal-to-metal contact between the engine and the frame or body. The rubber mountings absorbed engine vibrations, and the car was free of discernable engine vibration or noise. In the words of Chrysler advertising of the period, customers received "the smoothness of a Six, the economy of a Four."