

Major auto maker uses ultrasonic welding to protect automatic door lock actuators against the elements

BENEFITS

- Avoids water damage to actuator components
- Eliminates potential for rattling noise
- Plastic actuator easily mounts inside door cavity
- An industry standard of proven weld performance for 20 years



APPLICATION

Securing door lock actuators

CUSTOMER

Major automotive manufacturer

CHALLENGE

When power door locks on automobiles began to replace manual door locks in the late '80s, they were mounted inside the door cavity. That exposed the actuator components (motor, gears, and circuitry) to environmental contaminants that could penetrate the cavity and compromise the actuator's operation.

To avoid such contamination and protect the actuator, the manufacturer enclosed the actuator components inside a snap-fit housing. In addition to avoiding contaminants, the actuator had to withstand thousands of locking and unlocking actions, as well as endure years of vibration and the jolts of repeated opening and closing of the car doors.

Unfortunately, the snap-fit sealing method did not protect the actuator well enough, and the manufacturer experienced an unacceptable rate of actuator malfunction and failure—largely caused by moisture and other contaminants penetrating the housing and compromising their operation. A better method of sealing the actuator housing had to be found.

SOLUTION

To address the problems created by the snap-fit housing, multiple automotive manufacturers turned to Branson ultrasonic plastics welding technology available from Emerson.

Waterproofing power door lock actuators

Branson ultrasonic welding technology from Emerson has protected the operation of automotive power door lock actuators for more than two decades.

Unlike the snap-fit seal, the ultrasonic welding produced a hermetic seal that eliminated the damage to actuator components caused by penetration of moisture and other particulates.

The plastic actuator housing was not only lightweight and easy to mount inside the door cavity, the material also prevented the rattling often caused by the vibration and temperature swings to which previous materials and mounting methods were susceptible.

For the past two decades, the sealing strength of Branson ultrasonic welding technology from Emerson has protected the operation of the auto maker's power door lock actuators.

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