



**Advantages of
Electric Servo Linear Actuators
in Automotive Spot Welding**

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What Automotive Manufacturers Want

- Cost Control
- High quality



How Welding Actuators Help

- Weld quality
- Welding speed
- Flexibility
- Total cost



Weld Quality

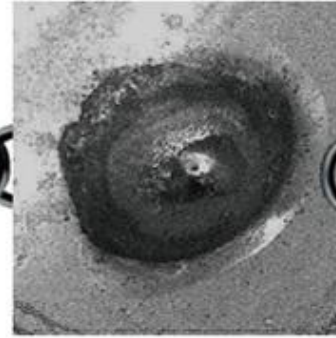
Consistent weld force is key to vehicle quality.

- Pneumatic welding actuators struggle
 - Fluctuating pressure is the issue

RESULTS OF INCONSISTENT CLAMPING FORCE FROM WELD TO WELD



Air pressure increased to compensate for low weld force



Rapid cap wear and burn through



Higher expulsion, misplaced welds, poor quality, and required redundant positioning

Weld Quality

Consistent weld force is key to vehicle quality.

- Electric servo actuators deliver consistent, strong welds

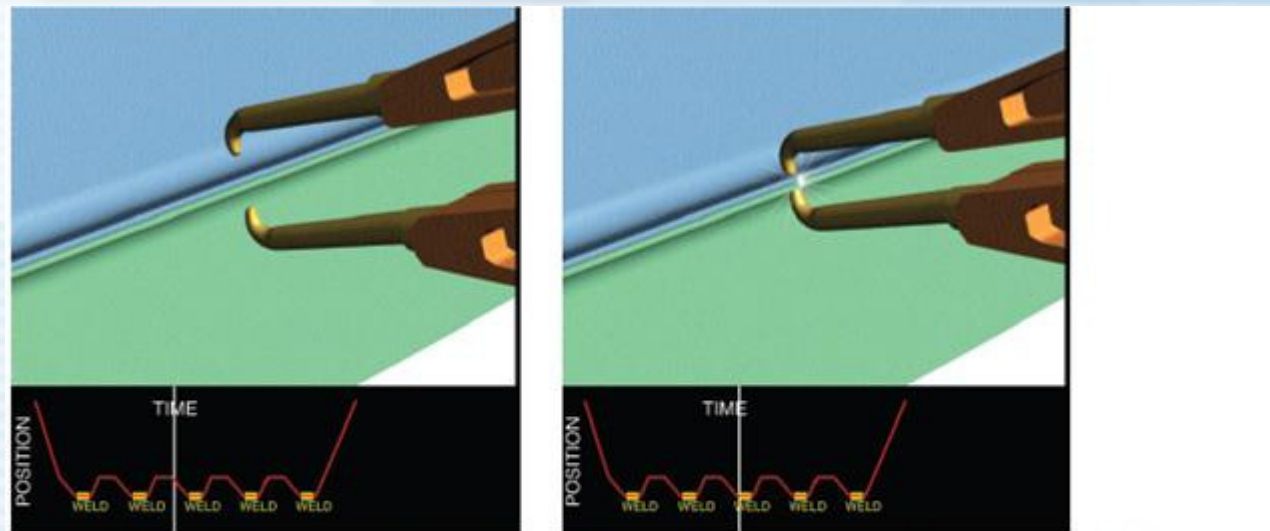
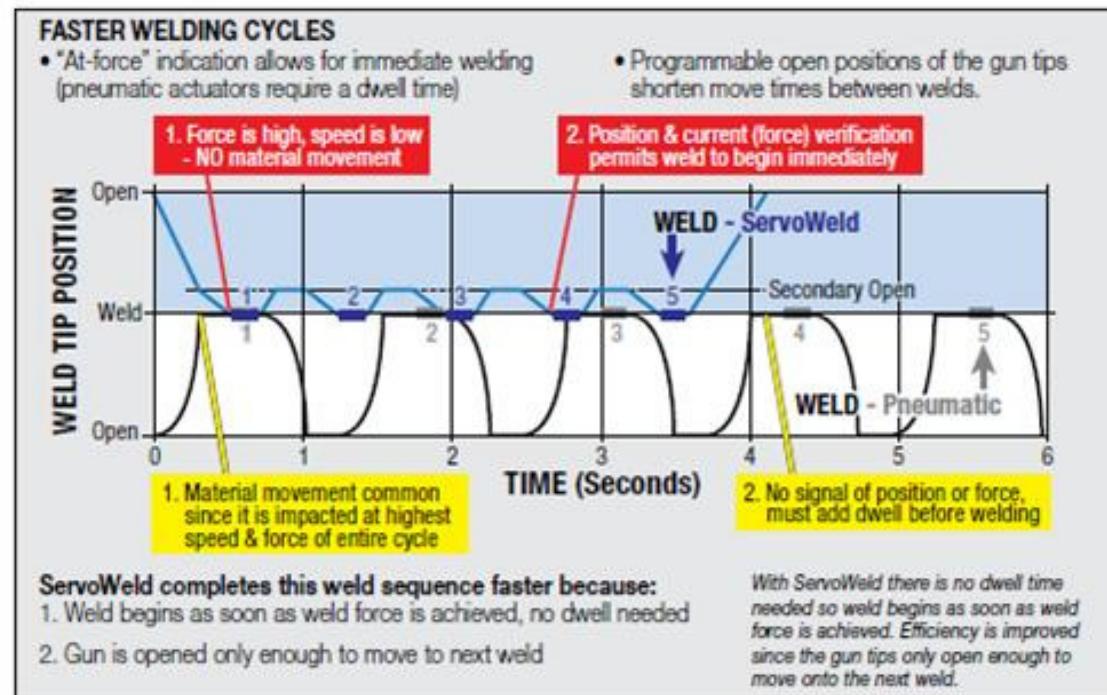


Figure 3: The illustrations above show the small precise moves that are possible with a servo spot welding program. Faster, high quality welds are possible.

Welding Speed

Faster welding increases production speeds.

- Electric servo actuators can cycle faster than pneumatic



Flexibility

Vehicles change. Production needs to adapt.

- Electric
 - Easy to program
 - Same equipment used as vehicles change
- Pneumatic
 - Not usually programmable
 - Vehicle changes may require different actuators



Total Cost

Total life cycle cost counts more than purchase price.

Electric servo actuators

- Cost more to buy
- Save money in operation
 - Faster
 - Used for multiple vehicles
 - Efficient operation
 - Low maintenance



Tolomatic GSWA ServoWeld[®] Actuators





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