

Process Comparison Chart

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	Ultrasonics	Vibration	Hot Plate	Laser	Spin	Thermal Press
Applicable Part Sizes	Sm-Med	Med-Lg	Med	Sm-Med	Med	Med

Assembly Techniques

Welding	•	•	•	•	•	
Staking	•			Some		•
Swaging	•			Some		•
Inserting	•					•
Spot Welding	•					
De-gating	•			•		•
Date Coding/Embossing				•		•

Materials (must be Thermoplastic)

Amorphous	•	•	•	•	•	•
Semi-Crystalline	Small Parts	•	•	•	•	•
Flexible Materials (e.g. TPE)	Some	Some	•	•	Some	Staking
Film and Fabrics	•	Some	Some	Some		

Cost

Energy	\$	\$\$	\$\$\$	\$	\$	\$\$
Labor	\$	\$\$	\$\$	\$\$	\$	\$\$
Equipment	\$	\$\$	\$\$	\$\$\$	\$	\$
Tooling	\$	\$\$\$	\$\$	\$	\$	\$

Performance

Weld Strength						-
Cycle Time						
Resultant Stress Levels						

Part Requirements

Structural/Hermetic Seals	•	•	•	•	•	-
Thin Walled Parts	•		PD	•		-
Multiple Parts per Cycle	PD	•	•	•		•
Uniform/Solid Flash			•			•
Multi-level or Curved Joints	PD	•	•	•		•
Welding Internal Surfaces	•	PD	•	•		-

Part Size KEY: Sm = Small Parts Med = Medium Size Lg = Large Parts

Cost KEY: \$ = Low Cost \$\$ = Average Cost \$\$\$ = Expensive

Performance KEY: L = Low M = Medium H = High

Part Requirements Key: PD = Part Dependent