

Process Comparison Chart

	Ultrasonics	Vibration	Hot Plate & Infrared	Laser	Spin
Applicable Part Sizes	SM-Med	Med-Lg	Med	Sm-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
Film and Fabrics	•	Some	Some	Some	

Cost					
Energy	£	££	£££	£	£
Labor	£	££	££	££	£
Equipment	£	££	££	£££	£
Tooling	£	££	££	££	£

Performance					
Weld Strength	→ H	→ H	→ H	→ M	→ H
Cycle Time	⌚	⌚	⌚	⌚	⌚
Resultant Stress Levels	→ M	→ M	→ M	→ L	→ M

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		