

Features

➤ Material flexibility

Flat plate

➤ Achievable tolerance

0.7>

➤ Material flexibility

➤ Press-formed fine circuit

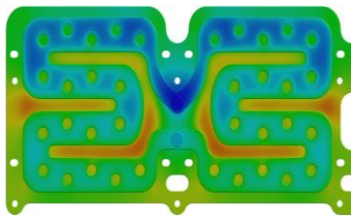
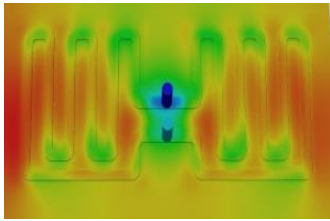
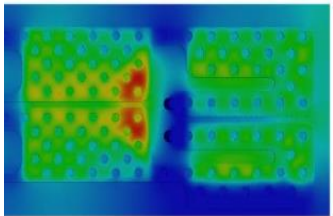
Flow plate

Connector

➤ Heating function integrated

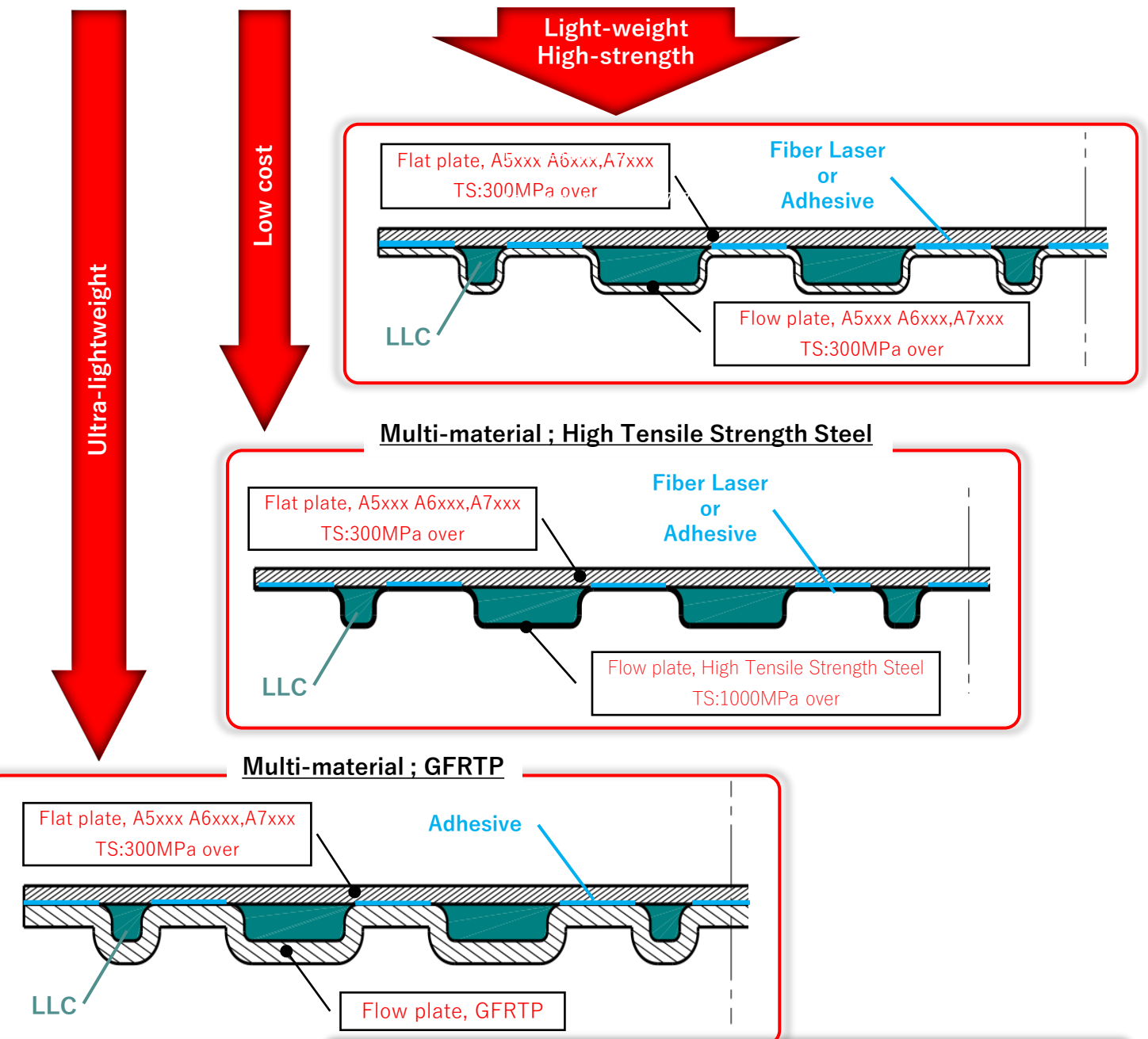
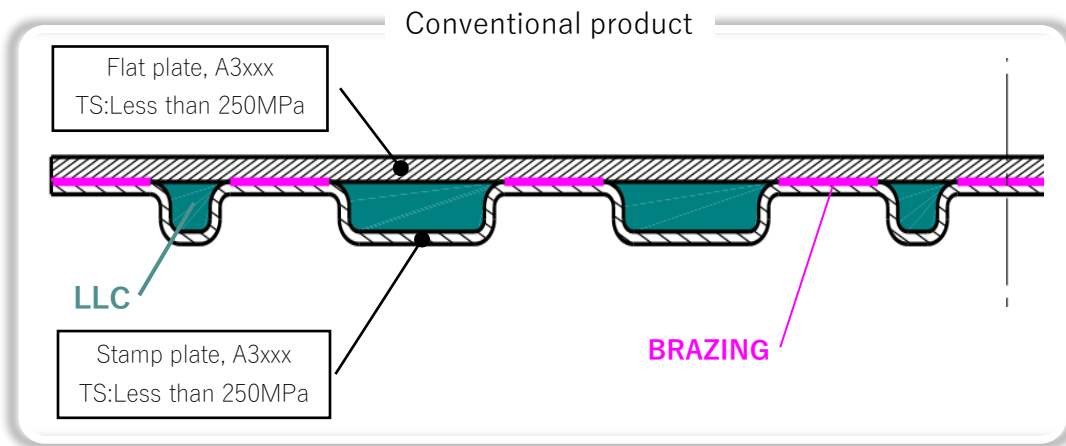
Direct Printed Heaters

High Performance Circuit Design

TYPE		D.I.D New concept	Conventional design	
			Defined flow , Individual	Free flow , Convex
Thermal simulation	Solid temperature			
	Pressure drop	✓ ✓	✓ ✓ ✓	✓
	Thermal Homogeneity	✓ ✓ ✓	✓ ✓	✓
	Minimum T max	✓ ✓ ✓	✓ ✓ ✓	✓ ✓
Manufacturing difficulty		★	✓ ✓	✓ ✓ ✓
Examples of vehicles		—	VW iD series , NIO es8	Ford Mach-E , BMW iX

★ Even for fine circuits, our strength is our press tech, which enables us to achieve low cost.

TYPE		D.I.D New concept		Conventional product	
				Brazing type	Roll-Bond type
Material	Flexibility	3XXX,5XXX,6XXX,7XXX series (TS:300MPa<)		3XXX series (<TS:250MPa)	1XXX,3XXX series (<TS:250MPa)
	Temperings	O,H1X,H3X,T4,T6		O,H1X (Clad sheet)	O,H1X
Joining technology		LLC-resistant Adhesive	Fiber-laser Welding	Brazing	Rolling
Productivity (Cycle time of joining)		170°C-30min	Welding speed: 6,000mm/min<	600°C-40min<	Depends on rolling speed



Technological innovation for integration with battery enclosures.