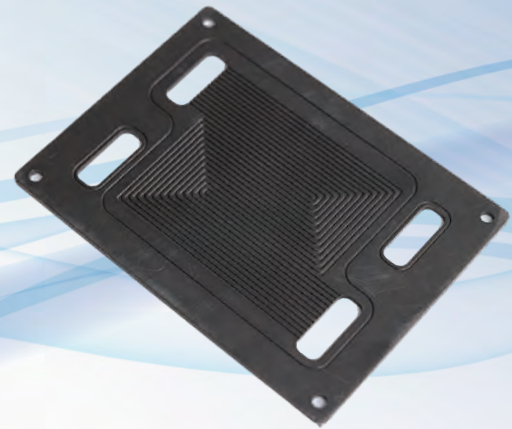


Bipolar Carbon Separator

Creating the Future
FJ Composite

Just Powder. Just Press.

Carbon powder and synthetic resin are used as raw materials for die press molding. We have originally developed a manufacturing technology for composite materials, and established a fully automated production line. To realize the products requested by our customers, we optimize material selection and manufacturing conditions to provide high-quality products.



Characteristics

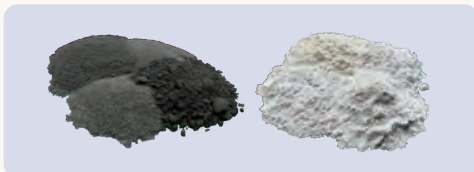
Materials Carbon powder and synthetic resin

Advantage

- Carbon exhibits excellent corrosion resistance.
- The mixture ratio can be adjusted with an accuracy of 0.01%.
- Good Balance between Production cost and Physical properties.

Available materials

- Natural and artificial graphite powder
- Thermoplastics and thermosets



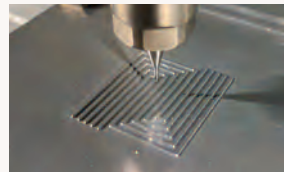
Shape processing Shape processing die press molding

Advantage

- Low production cost
- High speed production
- Manufacturing molds internally
(Manufacturing through cutting processes is also available.)

Maximum shape

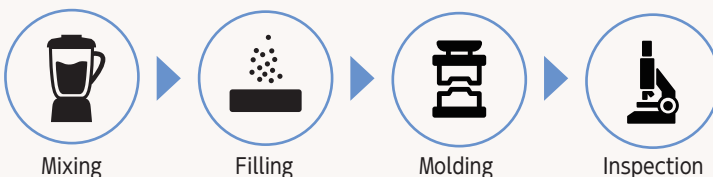
- Width and length: 950 mm max
- Thickness: 1.0~10 mm



Manufacturing technology

Our manufacturing process is very simple, so we have developed automated manufacturing facilities incorporating robots.

- Press molding using powder raw materials
- Since products with groove shapes can be manufactured using molds, post-processing (cutting processes) is unnecessary.
- Excellent in cost performance and low environmental impact
- Product quality can be finely adjusted by varying the formulation cost.



Bipolar Carbon Separator

Creating the Future
FJ Composite

Properties

Name	PE	PP	PVDF	PPS	PF
Penetration resistance [mN]	5.45	3.85	3.70	3.70	5.70
Bending strength [Mpa]	24	32	31	41	50
Bending strain [%]	0.54	0.74	0.60	0.35	0.38
Mass production	○	○	○	○	△
Production cost	○	△	×	×	×
Corrosion resistance	○	○	○	○	○
Heat resistant temperature [°C]	100	140	160	220	200

- The combination of resin and carbon is possible regardless of the type.
- We can fine-tune the resin ratio.
- We have been conducting research and development in collaboration with resin manufacturers and graphite manufacturers for many years.

We can measure the properties of separators in-house.

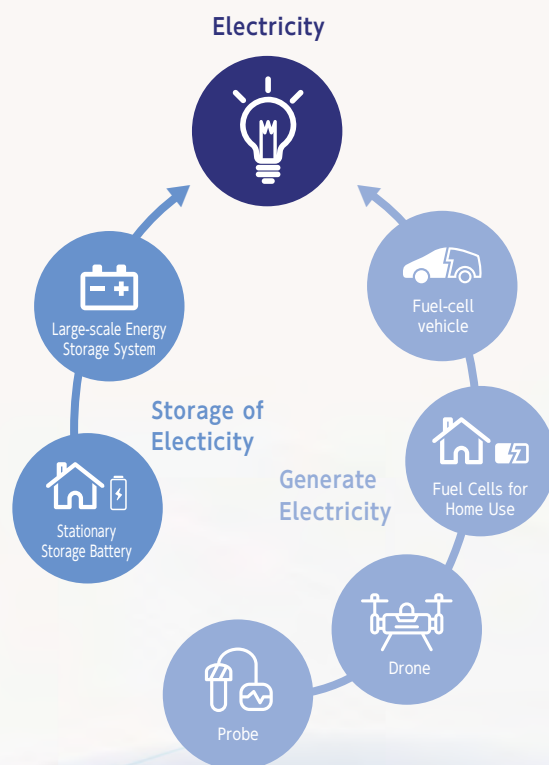
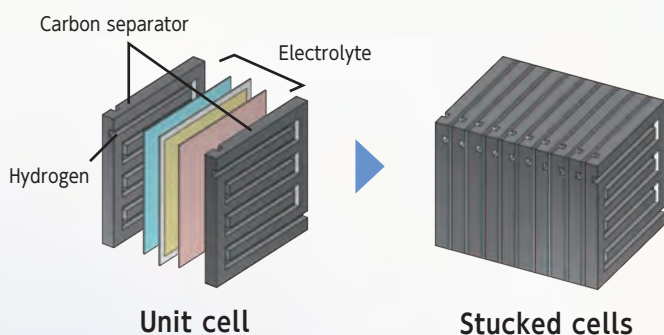


- Gas permeability (He, H₂)
- Electric resistance
- Thermal expansion
- Bending strength

Application

Polymer Electrolyte Fuel cell and storage battery

A separator is one of the essential components in fuel cells. Fuel cells generate electricity through the chemical reaction with hydrogen and oxygen. The basic unit of a fuel cell is called a unit cell, which consists of a catalyst to accelerate the chemical reaction, an electrolyte membrane that conducts protons, and a separator. By stacking multiple cells together, high-voltage power generation is achieved. Fuel cells and batteries serve various purposes, including being environmentally friendly and providing stable electricity supply during disasters and at night.



FJ Comopse Materials Co.,LTD

2-2-3, Kashiwadai-minami, Chitose-shi, Hokkaido, 066-0009, Japan

TEL : 0123-29-7034 FAX : 0123-29-7035

URL : <https://www.fj-composite.com/>

