

# Environmental Topics

## Environmentally Conscious Products

In recent years, in the Industrial Machinery Products Business, to contribute to the reduction of energy use we have been focusing on magnesium as a material that is lighter and more easily recyclable than aluminum and supplying magnesium alloy injection molding machines, which are used to produce notebook PC chassis, automobile parts, and other products, around the world. Meanwhile, hydrogen-derived energy has been gaining attention to curb global warming as exemplified in the gradual popularity in hydrogen fuel cell vehicles in the automobile industry. At JSW, we develop steel pressure vessels for hydrogen stations that take advantage of our advanced steel technologies as our contribution to the establishment of infrastructure for a hydrogen society. Some of the commercial hydrogen stations have already adopted our pressure vessels.

### Magnesium alloy injection molding machines

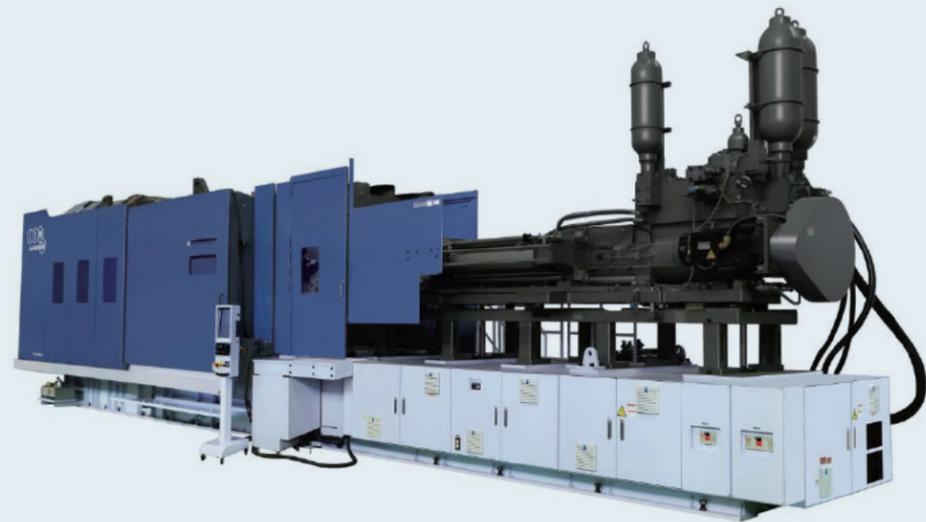


Magnesium has been drawing much attention as a material whose features include light weight, easy recyclability, and eco-friendliness. As an example, magnesium alloy automobile parts are expected to improve fuel efficiency as a result of lighter body weight and prove effective in curbing the emission of greenhouse gases.

When applied to the chassis of notebook PCs and cameras, magnesium contributes to reducing their overall weight to make it more convenient to carry around. Moreover, its superior recyclability makes it possible to repeatedly reuse the material to cut down on waste generation.

Our magnesium alloy injection molding machines melt magnesium in a sealed cylinder. This renders it unnecessary to use non-flammable gas (mainly sulfur hexafluoride, a potent greenhouse gas that has a high global warming potential), which was needed in the conventional die casting method to prevent molten metal in the furnace from being exposed to the atmosphere. In this way, magnesium alloy injection molding machines don't emit greenhouse gases.

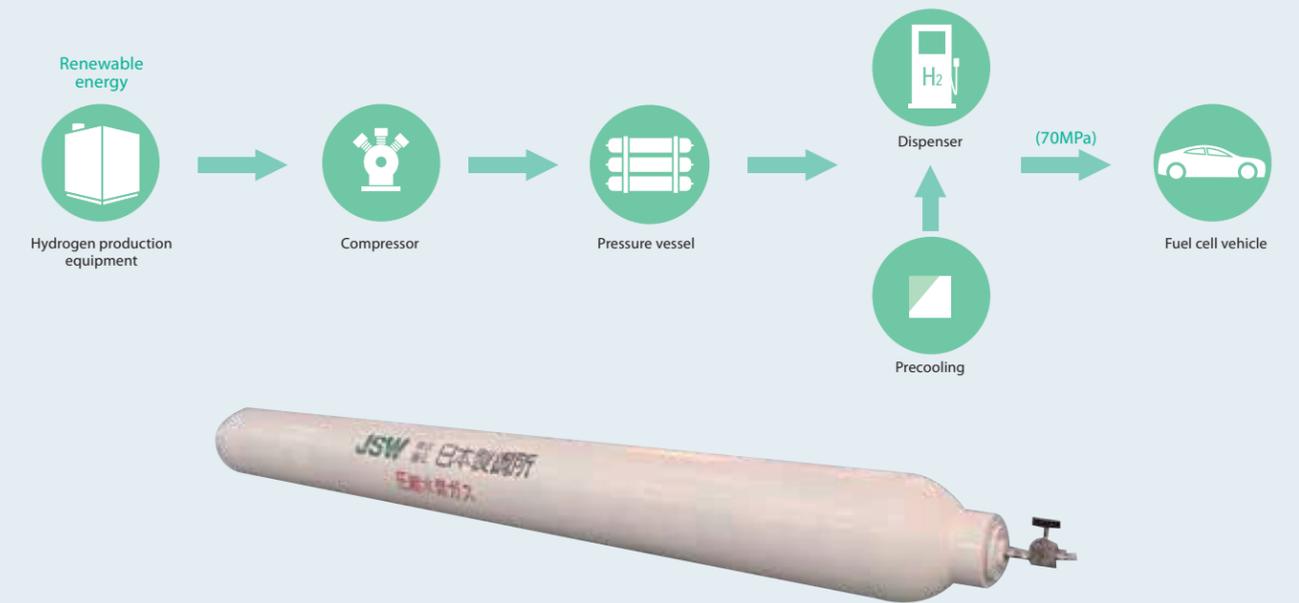
JSW will remain committed to the realization of a recycling-based society and the prevention of further global warming through the development of injection molding machines.



## Pressure Vessels for Hydrogen Stations

FCVs run on fuel cells which generate electricity by a chemical reaction between hydrogen and atmosphere-derived oxygen. After the reaction, the car only emits water. Since FCVs don't emit CO2 like internal-combustion vehicles, they are drawing much attention as an ultimate eco-car. Amid an environment in which curbing global warming has become an urgent task, it is essential to realize a hydrogen-based society by promoting the spread of FCVs and constructing more hydrogen stations around the world that supply hydrogen to FCVs.

To contribute to realizing a hydrogen-based society, we have been combining our long-accumulated technologies and expertise in steel materials and hydrogen to supply highly reliable steel pressure vessels for hydrogen stations. We remain committed to the development of a future hydrogen society by providing safe and secure products underpinned by dependable technologies and expertise.



At hydrogen stations that recharge hydrogen, which is the fuel for fuel cell vehicles (FCV), pressure vessels are essential for storing the hydrogen gas at high pressure.

Some commercial hydrogen stations, for which construction began in 2013, use our steel hydrogen vessels.

In fiscal 2018, we developed a new pressure vessel featuring a longer product life at a more affordable price than the previous products.



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Hydrogen stations appearance



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Hydrogen station