Introduction of shape-memory alloy (Ni-Ti alloy)

Are you familiar with shape memory alloys?
Shape memory alloys have unique properties not found in common metals.
I would like to introduce the features of the shape-memory alloy (Ni-Ti alloy) we handle.

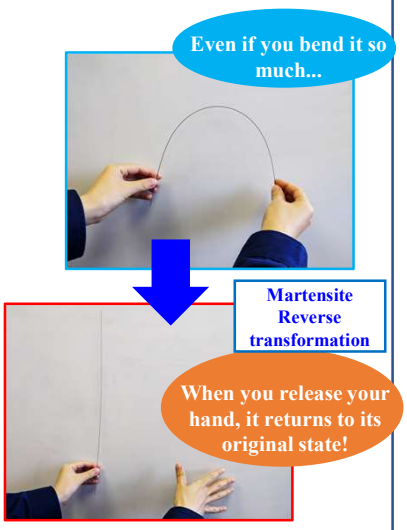
■ What is a shape memory alloy?

Shape memory alloy has the characteristics of "shape memory effect" and "superelasticity".

The "shape memory effect" is deformed when the deformed material is heated. Phase transformation by heating (martensite Reverse transformation) occurs and returns to the shape before deformation. Temperature at which this shape recovery begins Af point is called.

"Superelasticity" means that Af point is below the operating temperature. A martensitic reverse transformation that occurs at the moment of unloading with the addition of deformation Form recovery due to phase transformation occurs in addition to normal elastic recovery.

The shape memory alloy stores the above-mentioned "shape before deformation" by heat treatment
It can give various shapes.



Superelastic properties (Ni-Ti wires)

■ Characteristics of Ni-Ti alloys

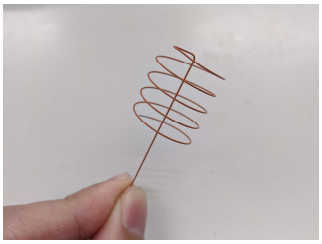
Ni-Ti alloy is one of the most prominent shape-memory alloys.
It has an elastic recovery amount, and returns to its original shape even if it is given a strain of about 8%.
It is used not only for stents placed inside the human body Medical instrument used for operation because it is a medical certification material.

Mechanical Properties of Ni-Ti Alloys and SUS304

	Ni-Ti alloys	SUS304
Amount of elastic recovery	8%	2%
Tensile strength [MPa]	1100	520～
Young's modulus [MPa]	50	185

■ Processing techniques for Ni-Ti alloys

We handle Ni-Ti alloyed wires and small diameters and a large number of pipes and plate materials.
In addition to the shape-memory treatment of these Ni-Ti alloys, for more sophisticated processing such as laser cutting and finishing Please feel free to contact us.


Shape-memory treatment of Ni-Ti wires (PTFE coating completed)


Laser-cutting techniques for Ni-Ti wires

You may be able to solve your problems with Ni-Ti alloys. Please consult 29 Precision at least once.

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