

Binder-less hardmetal M78 & SPS process and systems

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M78 is a sintered product manufacturing by raw powder material treatment and sintering process. that sps syntex developed after many years.

Sintering extra-fine powder wc without using sintering aids leads to the excellent products equipped with superior material characteristics.

M78 has an extraordinary reputation in lens mold industry, and there have been many inquiries about the product.

Chracteristics of M78

Material	Specific gravity	Hardness	Fracture toughness	Traverse rupture strength	Compressive strength	Coefficient of thermal expansion	
	g/cm ³	mHv	KIC	kgf/mm ²	kgf/mm ²	× 10 ⁻⁶ /K	
						RT~637K (20~400°C)	RT~1073K (20~800°C)
M78	15.4	2600	5.0	150	489	3.6	4.0

Characteristic

High Hardness

structure with fine and homogeneous primary particle
without using sintering aids

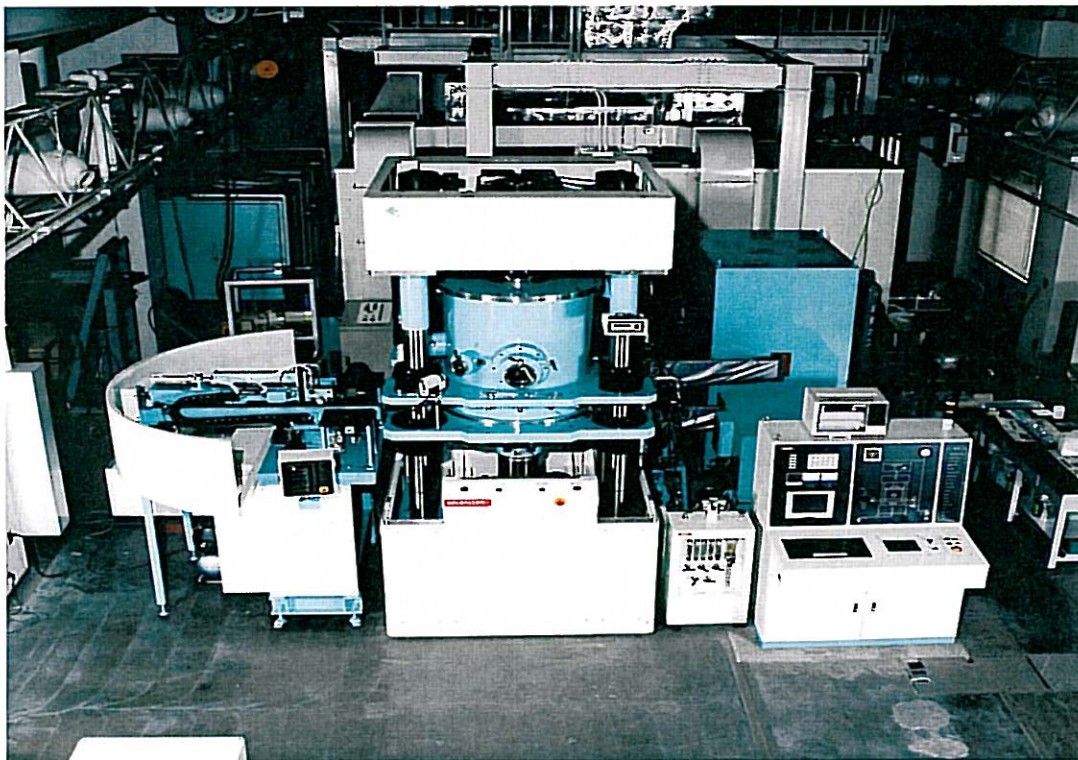
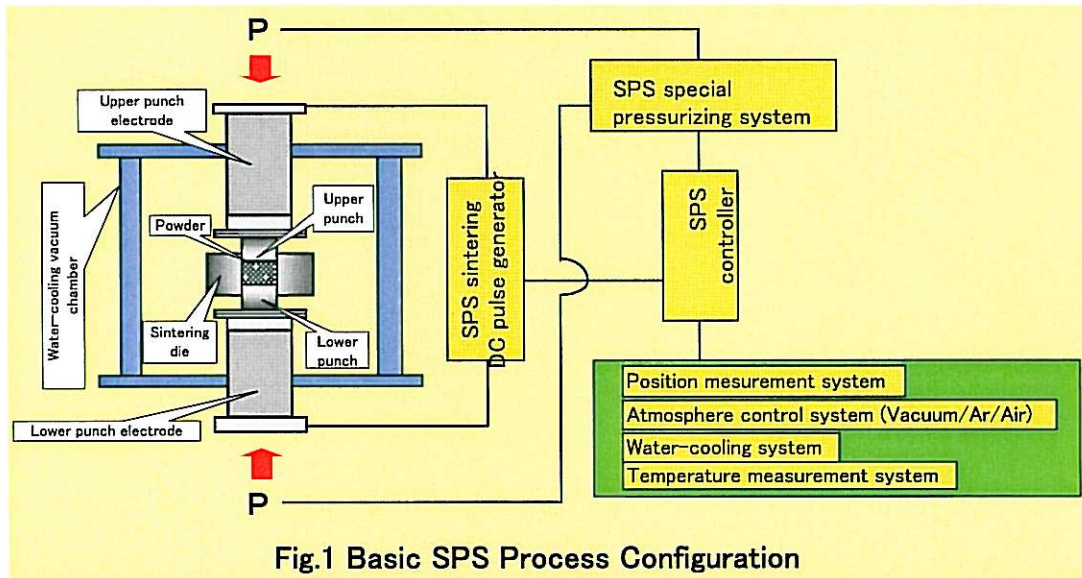
Performance

excellent wear resistant
fine suraface roughness
excellent high temporeture strength
excellent corrosion resistance
excellent adhesive wear resistance
low thermal expansion

SPS Process and Systems.

Figure 1 shows the basic configuration of a typical SPS system. The system consists of a SPS sintering machine with a vertioal single-axis pressurization mechanism, specially designed punch electrodes incorporating a water cooler, a water-cooled vacuum chamber, a vacuum/air/argon-gas atmosphere control mechanism, a special DC-pulse sintering power generator, a cooling water control unit, a position measuring unit, a temperature measuring; unit, an applied pressure display unit and various interlock safety units.

Figure 2 shows the large-size Spark Plasma Sintering System. The sintering graphite mold die is handled by a robot mounted on the left side of the Sintering Machine.



About

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