

Products

for print [products_eng.pdf](#)

1. Design and manufacturing precision punching dies.

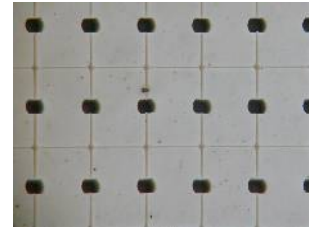
ref. [punching.pdf](#)

a. For ceramic green sheet

【 Dies for trial or mass production 】

$\phi 0.03$ trial punching die.

$\phi 0.10$, $\square 0.24 \times 0.18$ mass production die to punch
about 4,000 holes at one time



$\square 0.2 \times 0.25$ holes & snaplines

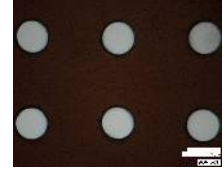
b. For plastic or metal films

【 Dies to punch single foil or laminated film 】

TAB tape for LCD, CSP

PET film, viscous tape, metal foil, paper etc.

PI $\phi 0.15$



2. Design and manufacturing of general parts, precision and fine machining, and press system.

a. Laser processing

【 Diameter is down to 30 micrometer. 】

- Round hole, Sheped hole
- Material : tungsten carbide, metal, ceramics, glass etc.



tungsten carbide 0.9 t, $\phi 0.1$

b. Precision and ultra fine pins

ref. [pin.pdf](#)

【 We do either just one piece or thousands of pieces. 】

For punching, injection molding, testing etc.

Material : tungsten carbide, SKH, SUS etc.



$\phi 20 \mu\text{m} \times 14\text{mm}$ length

c. Fine via holes

ref. [drilling.pdf](#)

【 Diameter is down to 30 micrometer. 】

Drilling, EDM drilling

Material : tungsten carbide, metal, glass, plastic etc.



$\phi 30 \mu\text{m}$
machinable ceramic

d. Milling

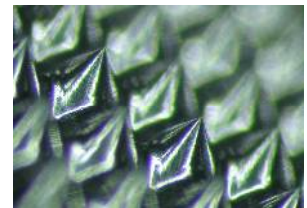
ref. [milling.pdf](#)

【 Fine milling by high precision and fast machine 】

3D milling, diamond bite milling.

Material : metal, glass, plastic etc.

Cone
0.5mm high



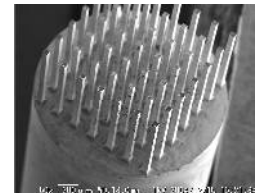
e. Grinding

ref. [grinding.pdf](#)

【 Narrow groove down to 30 micrometer, V shape, blade etc. 】

Groove : tungsten carbide, metal, glass etc.

Blade : tungsten carbide, tempered metal.



f. Glass

ref. [glass.pdf](#)

【 Quartz glass, pyrex glass etc. 】

Holes, profile : pyramid, round pole, taper hollow

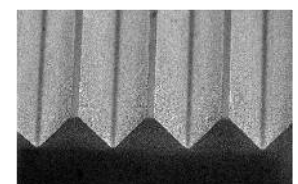
Groove : micro channel with bonded cover

$\square 50 \mu\text{m} \times 1\text{mm}$ high

g. Parts

ref. [parts.pdf](#)

Material : tungsten carbide, metal, glass, plastic etc.



h. Equipment

ref. [equipment](#)

70° V groove $140 \mu\text{m}$ depth
quartz glass

i. Others

ref. [others.pdf](#)