

# Water Jet Cutting

Next Generation Type Water Jet Cutting Equipment

## KATANA2

Energy Saving, Extra Fine,  
and Eco Friendly High Precision  
Cutting for various materials!

Sugino Machine: As a pioneer and a market leader in the Water Jet Technology Field, Sugino has developed a new abrasive mixing and energy saving Water Jet Cutting Machine. The new extra fine nozzle (minimum dia. 0.012 in. / 0.3mm) enables it to not only minimize cutting width, heat affection, and noise, but also reduces power and abrasive consumption. Thus lowering running costs and environmental burden.



### <Recommended Application>

- Mechanical parts : High quality shape cutting or micro cutting for difficult to machine materials
- Automobile and Aerospace : low-volume production of multiple varieties
- Job Shop : New material cutting or trial tests
- Substitute for Laser cutting : For materials such as Copper, Tempered Glass, and others which laser cannot cut efficiently

### Now further high precision cutting has been achieved!

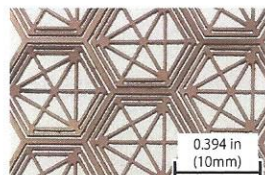
Minimum dia. (0.012 in. / 0.3mm) cutting allowance was achieved with the development of the dia. (0.012 in. / 0.3mm) extra fine abrasive nozzle. Further precise cutting is enabled by harmonic combination of clean & stable Servo Jet Pump and high precise axis-control mechanism of machining center. This is the new generation Water Jet Cutting developed by our accumulated technical knowledge and many years of field experience.

### Mechanism

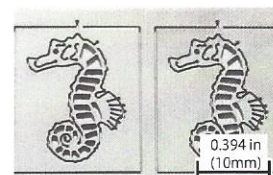


### ■ Main Spec.

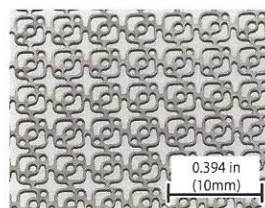
Abrasive nozzle hole diameter	φ0.012~φ0.020 in. (φ0.3~φ0.5 mm)
Stroke	9.5 x 7.87 x 7.87 in. (X240 Y200 Z200 mm)
Discharge pressure	43,600 psi (max 50,800 psi) / 300MPa (max 350MPa)
Flow rate	Max. 0.17gpm/min (0.7L/min)
Rapid feed rate	66 ft./min (20m/min)
Machine dimension	W30 x L81 x H83 in. (W750 x L2,050 x H2,100 mm)
Pump dimension	W27 x L48 x H61 in. (W685 x L1,200 x H1,530 mm)
Power supply	AC200V Pump: 13k VA, Machine: 5k VA



Carbon (Thickness : 0.079 in / 2mm)



Stainless Steel (Thickness : 0.079 in / 2mm)



Titanium (Thickness : 0.020 in / 0.5mm)



CFRP (Thickness : 0.018 in / 3mm)

## 1. Cutting various materials with high precision

Adopting an extra fine abrasive nozzle can achieve superior fine cutting and improvement of finished edge roughness as well as other typical features of water jet such as "no-heat affect" and "no-contact cutting". The Materials which are difficult for laser cutting, can also be handled.

< Applicable Materials >

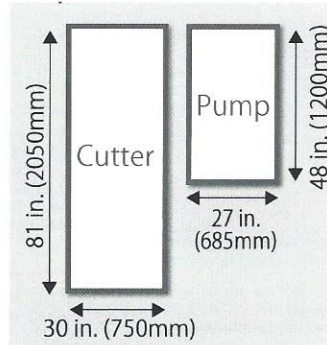
Soft Materials: Resin, Rubber, Paper, Polystyrene, etc.

Hard materials: Tempered Glass, Stainless steel, Copper, CFRP, Laminated lumber, etc.

## 2. Saving Energy, Running Cost, & Floor Space

Uses 60%\* less abrasives, which also contributed to the downsizing of the pump and reduction of running costs. The floor space of the machine only takes up 33 ft<sup>2</sup> (3m<sup>2</sup>).

\*Depends on material thickness and material type.



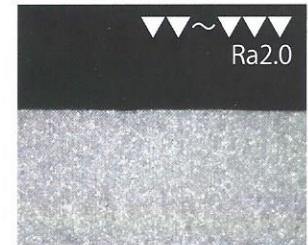
Comparison of finished edge roughness  
(Material:Aluminium)

Finished edge roughness is greatly improved !



Old Technology

Abrasive nozzle hole :  $\phi$  0.040 in.  
( $\phi$  1.0mm)

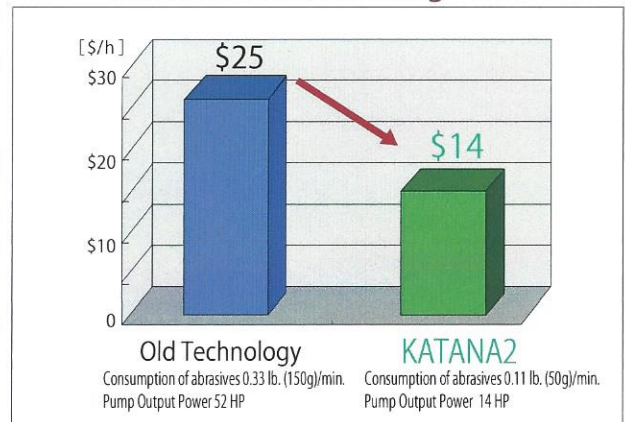


KATANA2

Abrasive nozzle hole :  $\phi$  0.013 in.  
( $\phi$  0.3mm)

Comparison of cost performance

Saves 40% of running cost !



## 3. Guaranteeing total support because all by SUGINO!!

Sugino designs and manufactures nozzles and head units as well as High Pressure Pumps. All after sales service support is carried out by one of Sugino's worldwide locations.



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