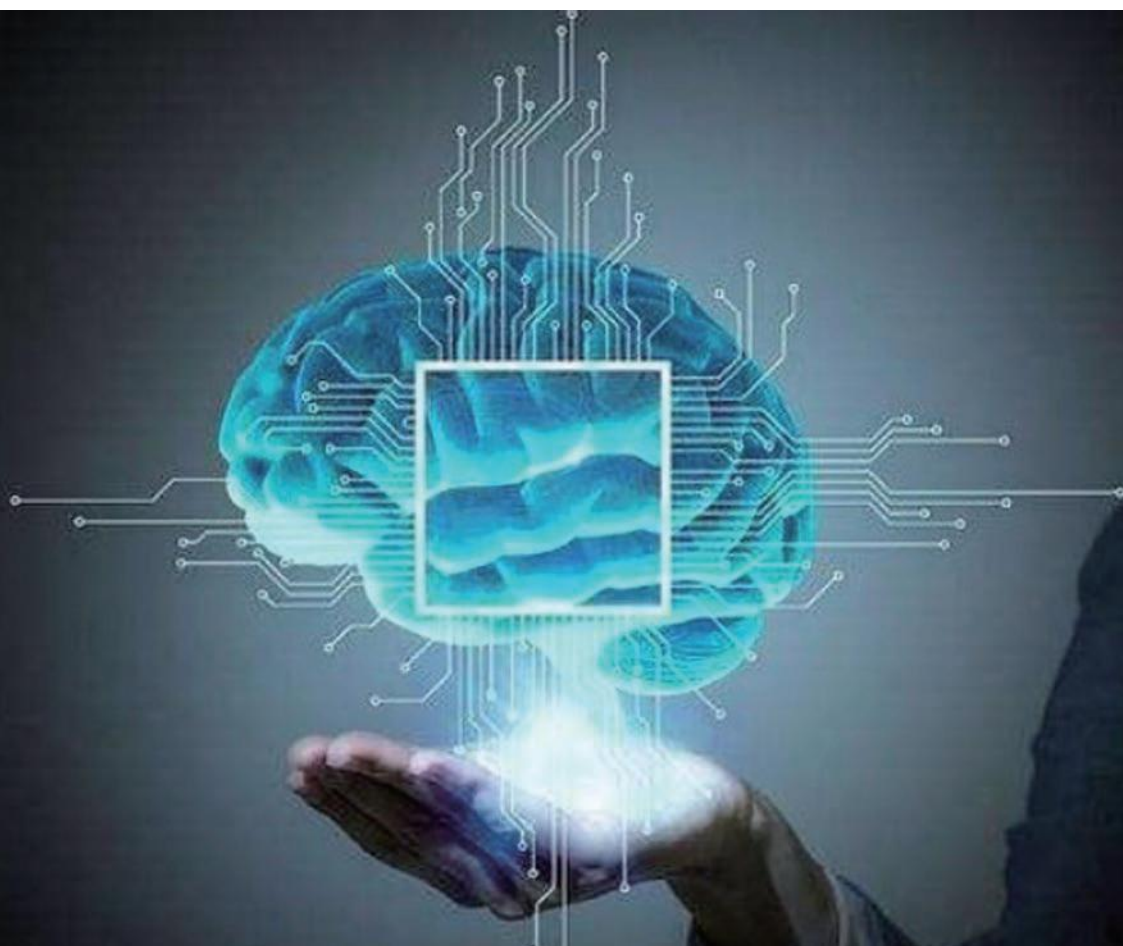




Men-Luck

— Intelligent Technology —



LASER PROCESSING

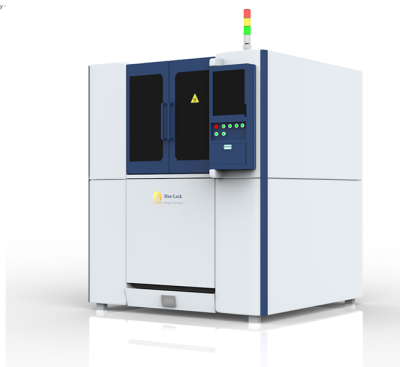
Solution of laser micromachining system
for semiconductor IC

Changzhou Men-Luck Intelligent Technology Co., Ltd.

Official website : <https://www.menlaser.com>

01 Laser Cutting Machine for Precision Steel Plane instrument

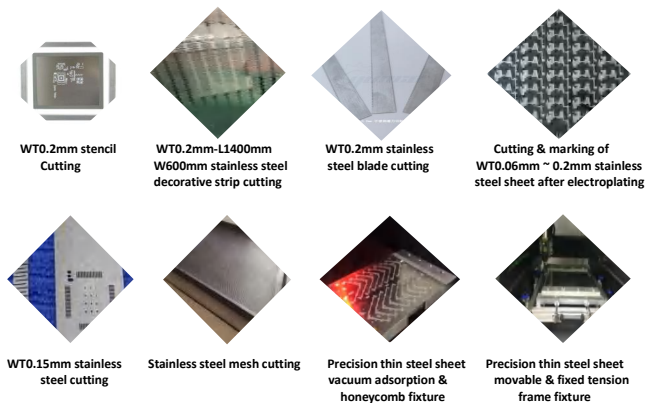
ML-EP6080



Technical Parameters:

Maximum operating speed	1000mm/s(X) ; 1000mm/s(Y1&Y2) ; 50mm/s(Z);
Positioning accuracy	±3um (X) ±3um (Y1&Y2) ; ±5um (Z);
Repetitive positioning accuracy	±1um (X) ; ±1um(Y1&Y2) ; ±3um (Z) ;
Machining material	precision stainless steel, hard alloy steel and other materials before or after surface treatment
Material wall thickness	0~2.0±0.02mm;
Plane machining range	600mm*800mm; (support customization for larger format requirements)
Laser type	Fiber laser;
Laser wavelength	1030-1070±10nm;
Laser power	CW200W&250W&300W&500W&1000W&QCW150W for option;
Equipment power supply	220V± 10%, 50Hz; AC 20A (main circuit breaker);
File format	DXF、DWG;
Equipment dimensions	1500mm*1600mm*1600mm;
Equipment weight	1650Kg;

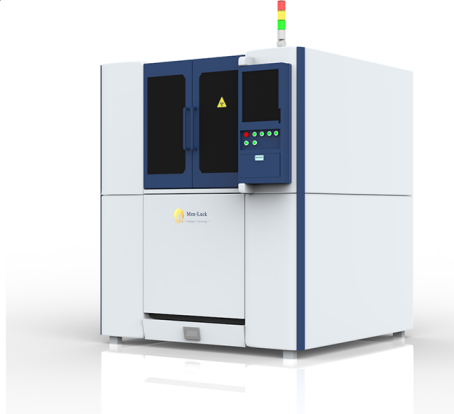
Sample Exhibition:



- **Application scope**
 - Laser micromachining of plane and curved surface instruments of precision stainless steel and hard alloy steel before or after surface treatment
- **High precision machining**
 - Small cutting seam width: 15 ~ 30um
 - High machining accuracy: $\leq \pm 10\mu\text{m}$
 - Good quality of incision: smooth incision, small heat affected zone, less burr and edge chipping $< 15\mu\text{m}$
 - Size refinement: the minimum product size is 20um
- **Strong adaptability**
 - Have the ability of laser cutting, drilling, slotting, marking and other fine processing skills for plane & curved surface instruments
 - Can machine precision stainless steel, hard alloy steel and other materials before or after surface treatment
 - Equipped with a self-developed direct drive mobile double drive precision movement platform, granite platform, aluminum alloy granite beam for selection
 - Provide the optional function, such as double station & Visual Positioning & automatic feeding and unloading system & dynamic monitoring etc.
 - Equipped with self-developed long & short focal length, sharp nozzle & flat nozzle fine laser cutting head
 - Equipped with modular material receiving and dust removal pipeline system
 - Provide self-developed optional fixture, such as movable tension frame & fixed tension frame & vacuum adsorption & honeycomb plate & profiling fixture
 - Equipped with the self-developed 2D & 2.5D & 3D CAM software system for laser micromachining
- **Flexible design**
 - Follow the design concept of ergonomics, delicate and concise
 - Flexible software & hardware function collocation, supporting personalized function configuration & intelligent production management
 - Support positive innovation design from component level to system level
 - Open control & laser micromachining software system easy to operate & intuitive interface
- **Technical certification**
 - CE
 - ISO9001
 - IATF16949

02 Laser Cutting Machine for Precision Alloy Instruments

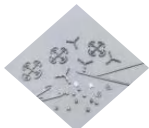
ML-EC6045



Technical Parameters:

Maximum operating speed	1000mm/s(X) ; 1000mm/s(Y1&Y2) ; 50mm/s(Z);
Positioning accuracy	±3um (X) ±3um (Y1&Y2) ; ±5um (Z);
Repetitive positioning accuracy	±1um(X); ±1um(Y1&Y2) ; ±3um (Z);
Machining material	Al & Cu & W & Mo & Ni & Ti & Zn & Mg & Magnet & Silicon Steel & Powder Metallurgy, etc.
Material wall thickness	0~2.0±0.02 mm;
Plane machining range	450mm*600mm;
Laser type	Fiber laser
Laser wavelength	1030~1070±10nm;
Laser power	CW1000W&QCW150W& QCW300W & QCW450W for optional;
Power supply	220V±10%,50Hz; AC 20A (main circuit breaker);
File format	DXF、DWG;
Dimensions	1280mm*1320mm*1600mm ;
Equipment weight	1500Kg;

Sample Exhibition:



All kinds of alloy micro structure forming



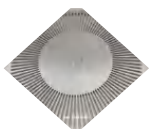
Molybdenum sheet cutting



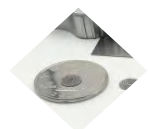
MIM structure cutting



Nickel sheet polar ear cutting



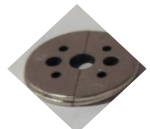
Aluminum plate WT0.8mm cutting



Alloy sheet cutting



Titanium alloy sheet WT0.8mm cutting

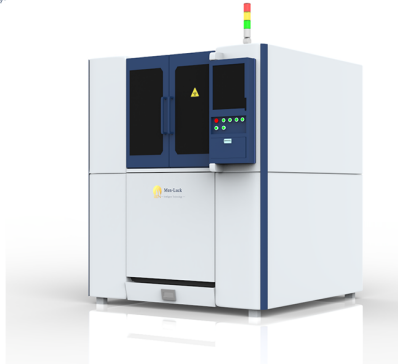


Magnetic sheet cutting

- **Application scope**
 - Laser micro-machining of planar and curved surfaces of Al & Cu & W & Mo & Ni & Ti & Zn & Mg & Magnet & Silicon Steel & Powder Metallurgy, etc.
- **High precision machining**
 - Small cutting seam width: 15 ~ 35um
 - High machining accuracy $\leq 10\mu\text{m}$
 - Good quality of incision: smooth incision & small heat affected zone & less burr
 - Size refinement: minimum product size 50um
- **Strong adaptability**
 - With fine machining technology capabilities of laser cutting, drilling and slotting for planar and curved surface instruments
 - Can process Al & Cu & W & Mo & Ni & Ti & Zn & Mg & Magnet & Silicon Steel & Powder Metallurgy and other materials
 - Equipped with a self-developed direct drive mobile double drive precision movement platform, granite platform, aluminum alloy and granite beam for selection
 - Provide the optional functions of double station & Visual Positioning & automatic feeding and unloading system & dynamic monitoring of machining
 - Equipped with self-developed long / short focal length sharp nozzle & flat nozzle fine laser cutting head
 - Equipped with modular material receiving and dedusting piping system
 - Provide self-developed movable tension frame & fixed tension frame & vacuum adsorption & honeycomb plate etc. optional fixture
 - Equipped with self-developed 2D & 2.5D&3D CAM software system for laser micro-machining
- **Flexible design**
 - Follow the design concept of ergonomics, it is exquisite and concise
 - The combination of software and hardware functions is flexible, supporting personalized function configuration and intelligent production management
 - Support positive & innovative design from component level to system level
 - Open type control, laser micro-machining software system, easy to operate & intuitive interface
- **Technical certification**
 - CE
 - ISO9001
 - IATF16949

03 Precision Optical Fiber Laser Cutting Machine for PCB substrate

ML-EC6080



Technical Parameters:

Maximum operating speed	1000mm/s(X) ; 1000mm/s(Y1&Y2) ; 50mm/s(Z);
Positioning accuracy	±3um (X) ±3um (Y1&Y2) ; ±5um (Z);
Repetitive positioning accuracy	±1um (X) ; ±1um(Y1&Y2) ; ±3um (Z) ;
Machining material	precision stainless steel, hard alloy steel and other materials before or after surface treatment
Material wall thickness	0~2.0±0.02mm;
Plane machining range	600mm*800mm; (support customization for larger format requirements)
Laser type	Fiber laser;
Laser wavelength	1030-1070±10nm;
laser power	CW1000W&CW2000W&QCW150W&QCW450W&QCW750W for option;
Equipment power supply	220V± 10%, 50Hz; AC 30A (main circuit breaker);
File format	DXF、DWG;
Equipment dimensions	1750mm*1850mm*1600mm;
Equipment weight	1800Kg;

Sample Exhibition:



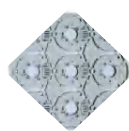
70.3mm laser cutting of tinned copper substrate



Aluminum substrate cutting 01



Aluminum substrate cutting 02



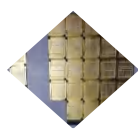
Aluminum substrate cutting 03



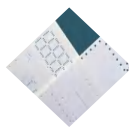
Aluminum substrate cutting 04



Cutting quality of aluminum substrate



Ceramic substrate marking



Ceramic substrate cutting

● Application scope

- o Laser micromachining , such as cutting, drilling, slotting and marking of precision PCB aluminum substrate, copper substrate and ceramic substrate.

● High precision machining

- o Small cutting seam width: 20 ~ 40um
- o High machining accuracy: $\leq \pm 10\mu\text{m}$
- o Good quality of incision: smooth incision & small heat affected zone & less burr
- o Size refinement: the minimum product size is 100um

● Strong adaptability

- o Have the ability of laser cutting, drilling, marking and other fine machining of PCB substrate
- o Can machine PCB aluminum substrate, copper substrate, ceramic substrate and other materials
- o Equipped with self-developed direct-drive mobile dual-drive precision motion platform, granite platform & sealed shafting configuration
- o Provides dual position & visual positioning & automatic loading and unloading system & other optional functions
- o Equipped with self-developed long & short focal length sharp nozzle & flat nozzle laser cutting head
- o Equipped with customized vacuum adsorption clamping fixture & slag dust separation collection module & dust removal pipeline system & safety explosion-proof treatment system
- o Equipped with self-developed 2D & 2.5D & CAM software system for laser micromachining

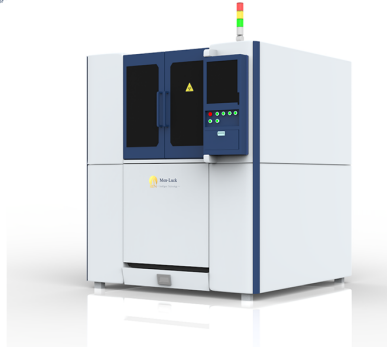
● Flexible design

- o Follow the design concept of ergonomics, delicate and concise
- o Flexible software & hardware function collocation, supporting personalized function configuration & intelligent production management
- o Support positive innovation design from component level to system level
- o Open control & laser micromachining software system easy to operate & intuitive interface

● Technical certification

- o CE
- o ISO9001
- o IATF16949

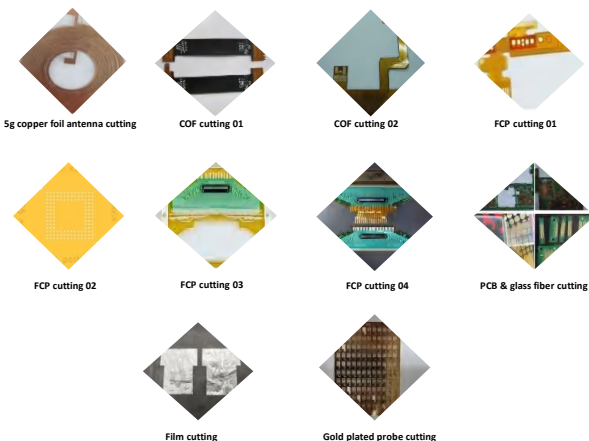
04 PCB UV Laser Cutting Machine ML-UVM4035



Technical Parameters:

Maximum operating speed	500mm/s (X) ; 500mm/s (Y1Y2) ; 50mm/s (Z) ;
Positioning accuracy	±3um (X) ±3um (Y1Y2) ; ±3um (Z) ;
Repetitive positioning accuracy	±1um (X) ; ±1um (Y1Y2) ; ±1um (Z) ;
Machining material	FPC & PCB & PET & PI & copper foil & aluminum foil & carbon fiber & glass fiber & composite material & ceramic and other materials
Material wall thickness	0~1.0±0.02mm;
Plane machining range	400mm*350mm;
Laser type	UV fiber laser;
Laser wavelength	355±5nm;
Laser power	Nanosecond & picosecond, 10W & 15W for option
Laser frequency	10~300KHz
Power stability	< ± 3% (continuous operation for 12 hours);
Power supply	220V±10%,50Hz/60Hz; AC 20A(main circuit breaker)
File format	DXF、DWG&Gepar;
Dimensions	1200mm*1400mm*1800mm ;
Equipment weight	1500kg;

Sample Exhibition:



● Application scope

- o PCB laser splitting & drilling; Camera & fingerprint identification module FPC cutting; Covering film windowing & uncovering and trimming of hard and soft bonding plate; Silicon steel sheet & Ceramic Scribing; Ultra thin composite material & copper foil & aluminum foil & carbon fiber & glass fiber & Pet & PI laser cutting machining.

● High precision machining

- o Small cutting seam width: 15 ~ 35um
- o High machining accuracy $\leq 10\mu\text{m}$
- o Good quality of incision: smooth incision & small heat affected zone & less burr
- o Size refinement: minimum product size 50um

● Strong adaptability

- o Have the ability of laser cutting, drilling, scribing, blind engraving and other fine machining technology for plane & regular curved surface instruments
- o Can machine FPC & PCB & PET & PI & copper foil & aluminum foil & carbon fiber & glass fiber & composite material & ceramic and other materials
- o Provide self-developed direct drive XY superposition type & split type fixed gantry precision motion platform & automatic loading and unloading system for option
- o Provide the function of pre scan of bilateral CCD vision location & automatic target grasping and location
- o Equipped with precision vacuum adsorption fixture & dust removal pipeline system
- o Equipped with self-developed 2D & 2.5D CAM software system for laser micromachining

● Flexible design

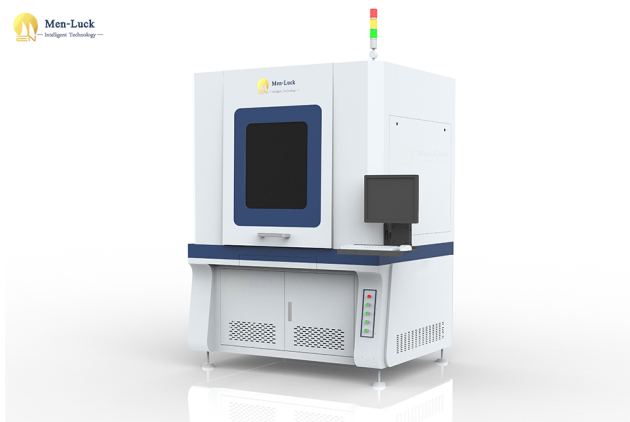
- o Follow the design concept of ergonomics, it is exquisite and concise
- o The combination of software and hardware functions is flexible, supporting personalized function configuration and intelligent production management
- o Support positive & innovative design from component level to system level
- o Open type control, laser micro-machining software system, easy to operate & intuitive interface

● Technical certification

- o CE
- o ISO9001
- o IATF16949

05 Precision Laser Cutting Machine for Hard Brittle Materials

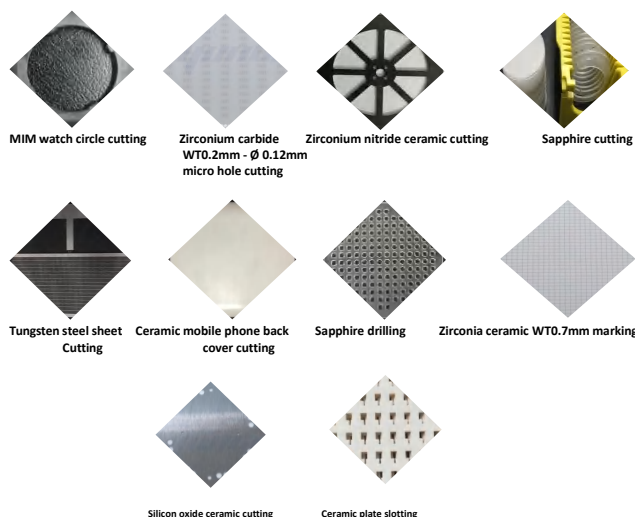
ML-SC6045



Technical Parameters:

Maximum operating speed	1000mm/s(X) ; 1000mm/s(Y1&Y2) ; 50mm/s(Z);
Positioning accuracy	±3um (X) ±3um (Y1&Y2) ; ±5um (Z);
Repetitive positioning accuracy	±1um (X) ; ±1um(Y1&Y2) ; ±3um (Z) ;
Machining material	Alumina & zirconia & aluminum nitride & silicon nitride & Diamond & Sapphire & Silicon & gallium arsenide & tungsten steel, etc;
Material wall thickness	0~2.0±0.02mm;
Plane machining range	300mm*300mm; (support customization for larger format requirements)
Laser type	Fiber laser;
Laser wavelength	1030-1070±10nm;
Laser power	CW1000W&QCW150W& QCW300W& QCW450W for option
Equipment power supply	220V± 10%, 50Hz; AC 20A (main circuit breaker);
File format	DXF、DWG;
Equipment dimensions	1280mm*1320mm*1600mm;
Equipment weight	1500Kg;

Sample Exhibition:



- **Application scope**
 - Laser micromachining of ceramics, sapphire, diamond and calcium steel, high hardness & high brittleness plane and regular curved instruments
- **High precision machining**
 - Small cutting seam width: 15 ~ 30um
 - High machining accuracy: $\leq \pm 10\mu\text{m}$
 - Good quality of incision: smooth incision, small heat affected zone, less burr and edge chipping $< 15\mu\text{m}$
 - Size refinement: the minimum product size is 100um
- **Strong adaptability**
 - Have the ability of laser cutting, drilling, slotting, marking and other fine processing skills for plane & curved surface instruments
 - Can machine alumina, zirconia, aluminum nitride, silicon nitride, diamond, sapphire, silicon, gallium arsenide and tungsten steel
 - Equipped with a self-developed direct drive mobile double drive precision movement platform, granite platform, aluminum alloy granite beam for selection
 - Provide the optional function, such as double station & Visual Positioning & automatic feeding and unloading system & dynamic monitoring etc.
 - Equipped with self-developed long & short focal length, sharp nozzle & flat nozzle fine laser cutting head
 - Equipped with modular material receiving and dust removal pipeline system
 - Provide self-developed movable tension frame & fixed tension frame & vacuum adsorption & honeycomb plate, etc. optional fixture
 - Equipped with the self-developed 2D & 2.5D & 3D CAM software system for laser micromachining
- **Flexible design**
 - Follow the design concept of ergonomics, delicate and concise
 - Flexible software & hardware function collocation, supporting personalized function configuration & intelligent production management
 - Support positive innovation design from component level to system level
 - Open control & laser micromachining software system easy to operate & intuitive interface
- **Technical certification**
 - CE
 - ISO9001
 - IATF16949

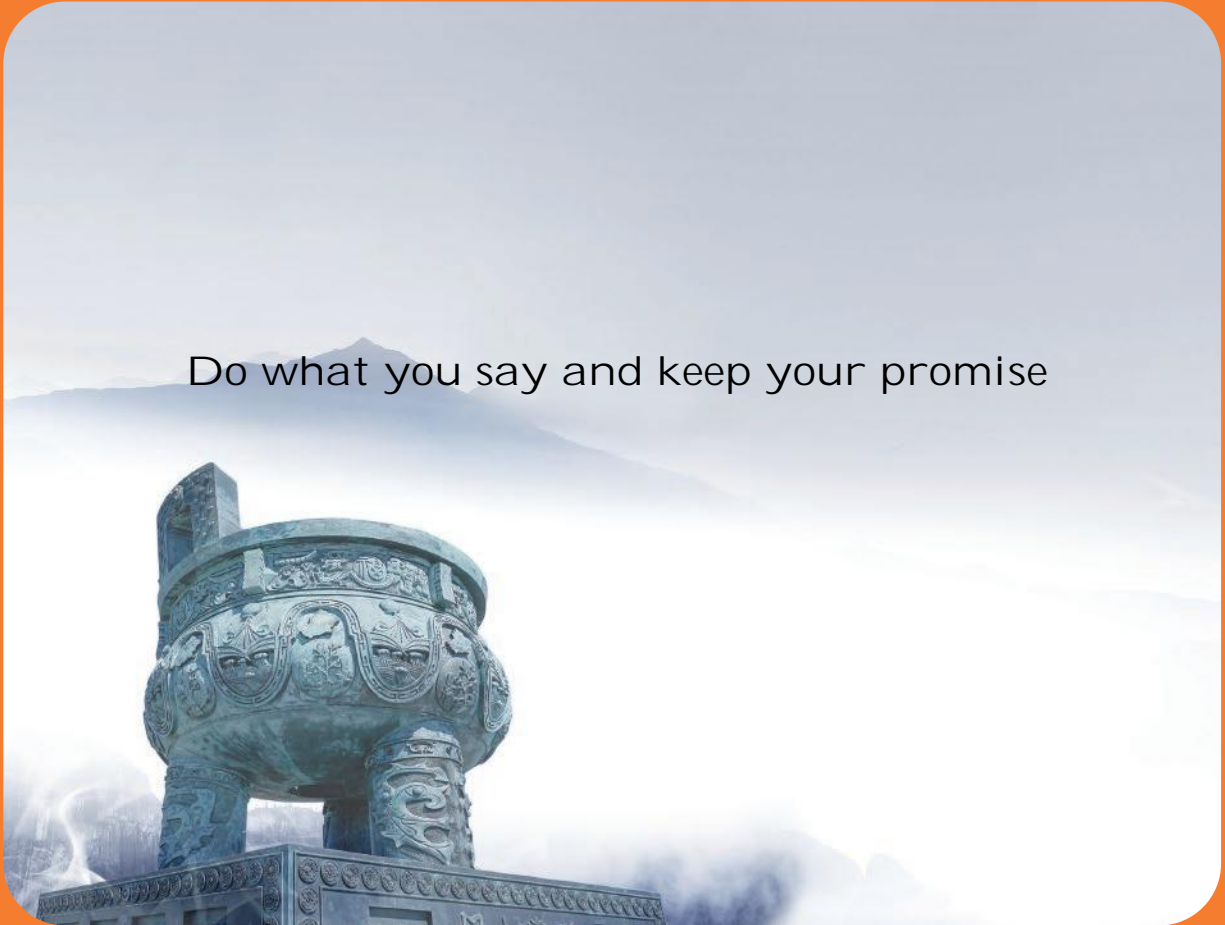
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nancy@men-machine.com

Do what you say and keep your promise



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