QUASER MACHINE TOOLS, INC. was established by Mr. Edward Shar and Mr. Samuel Shieh in 1991. The company name is based on important principles for success in the machine tool industry - QUALITY, SERVICE (QUASER) and continuous DESIGN INNOVATION.

QUASER’s operation mainly focus on own-brand selling while running OEM/ODM business. In cooperation with powerful supply chain and stable sales network, QUASER have been developing innovative mechanics technology and building global customer base for products.

To maintain the leading position in global machine tools market, QUASER is committed to providing employees training on competencies and skills to reach high standards in productivity and quality.

**QUASER TAIWAN**

The new factory was opened in 2007

Main products are:
- Vertical M/C (MV1, MV2)
- Horizontal M/C (HX)
- Multi Face M/C (MF)
- 5 Axes M/C (UX, UH, MK5U)
- Pallet M/C & System (MK603S, MK154*)
- FMC (HX Cell & MF Cell)
- 5 Axes Mill-Turn M/C (MT1400U)

Note: *MK154(MV154APC)

QUASER technical centers provide end users and dealers the product with shorter lead time and faster value added service on technical, spare parts, application support.

**QUASER EUROPE**

2009 Quaser Europe Technical Center AG was established in Switzerland.

**QUASER AMERICA**

2016 Quaser America Machine Tools Inc. was established in Rock Hill, South Carolina.

**QUASER KUNSHAN**

2012 Kunshan Quaser Machine Tools, Inc. was established in Kunshan, China.

**CONTENTS**

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27 - 28 Ease of Use / Coolant & Chip Management
29 - 30 High Quality Components
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>QUASER MACHINE TOOLS, INC. was established by Mr. Edward Shieh and Mr. Samuel Shieh in May.</td>
</tr>
<tr>
<td>1994</td>
<td>First generation: - V M / C MV-204.</td>
</tr>
<tr>
<td>1996</td>
<td>The factory was moved to Dajia Town in Taichung County.</td>
</tr>
<tr>
<td>1997</td>
<td>H M / C MK60H.</td>
</tr>
<tr>
<td>1998</td>
<td>Committed to developing and producing H M / C MK60H, V M / C MV204 and MK603.</td>
</tr>
<tr>
<td>1999</td>
<td>Celebrated H M / C sales exceeded 100 units.</td>
</tr>
<tr>
<td>2000</td>
<td>Committed to developing and producing H M / C MK60H, V M / C MV204 and MK603.</td>
</tr>
<tr>
<td>2001</td>
<td>H M / C MK60H.</td>
</tr>
<tr>
<td>2002</td>
<td>V M / C MV554.</td>
</tr>
<tr>
<td>2003</td>
<td>5 Axes M / C MK600.</td>
</tr>
<tr>
<td>2004</td>
<td>Developed and produced for &quot;B&quot; company.</td>
</tr>
<tr>
<td>2005</td>
<td>ODM for company &quot;B&quot;</td>
</tr>
<tr>
<td>2006</td>
<td>5 Axes M / C UX600.</td>
</tr>
<tr>
<td>2007</td>
<td>5 Axes M / C UX500.</td>
</tr>
<tr>
<td>2008</td>
<td>H M / C HX535.</td>
</tr>
<tr>
<td>2009</td>
<td>Committed to developing and producing H M / C MK60H, V M / C MV204 and MK603.</td>
</tr>
<tr>
<td>2010</td>
<td>H M / C HX535.</td>
</tr>
<tr>
<td>2011</td>
<td>H M / C HX635.</td>
</tr>
<tr>
<td>2012</td>
<td>Developed and produced for &quot;M&quot; company.</td>
</tr>
<tr>
<td>2013</td>
<td>Developed and produced for &quot;W&quot; company.</td>
</tr>
<tr>
<td>2014</td>
<td>5 Axes M / C UX600.</td>
</tr>
<tr>
<td>2015</td>
<td>5 Axes M / C UX630.</td>
</tr>
<tr>
<td>2016</td>
<td>New generation V M / C MV4</td>
</tr>
<tr>
<td>2017</td>
<td>5 Axes M / C UX630APC.</td>
</tr>
<tr>
<td>2018</td>
<td>New generation V M / C MV2</td>
</tr>
<tr>
<td>2019</td>
<td>General stock board listed in July.</td>
</tr>
</tbody>
</table>
Global Sales Network

- Europe
- Asia
- America
- Oceania

Global Market Revenue Share
Products

:: Automation ::
- MF400+Halter robot
- MF Cell (5-axes M/C FMC)
- HX Cell (horizontal M/C FMC)

:: Vertical M / C ::
- MV154
- MV184
- MV204C
- MV204
- MV214
- MV234

:: Multi Face & 5 Axes M / C ::
- MF400
- MF500
- MF630
- UX500

:: 5-Axes Mill-Turn M / C ::
- MT400U

:: Horizontal M / C ::
- HX635
- HX404
- HX805
- HX504 / 505
- UX600
- UX800
- UX500
- UX800
- UX800
- UX800
Research & Development

QUASER devotes itself to the research and development of advanced technology. We adopt the latest generation of CAD software and Finite Element Analysis software for machine design. We cooperate with international partners in the fields of advanced motion control, high speed spindle technology, thermal management, and vibration damping components.

EMC Certificate
EC Certificate
GB Certificate
Patent certificate

MF400
MV184
MV134
MK603S
UX500
UX600
UH800
MV234/235
MV204
MF630
HX404
HX504
HX805

Safenet Limited
Denford Garage, Denford, Kettering, Northants., NN14 4EQ, U.K.
Tel: +44 1832 732174 E-mail: office@safenet.co.uk

This is to certify that Quaser Machine Tools Co., Ltd.
No. 3, Gong 6th Road, Youshih Industrial Park, Dajia District, Taichung City (437), Taiwan
Has had a range of Machining Centres examined with regard to the Electromagnetic Compatibility Directive 2014/30/EU.
With reference to model MF400
Manufactured by: Quaser Machine Tools Co., Ltd.
No. 3, Gong 6th Road, Youshih Industrial Park, Dajia District, Taichung City (437), Taiwan
1. The technical construction file contains all the relevant information.
2. Having verified that the appropriate tests have been conducted, with regard to the MF400 representing the range.
2.1. The example has been manufactured in accordance with the technical construction file and may be used under the intended conditions.
2.2. The standards and transposed standards as the case may be, have been applied correctly.
2.3. The example has conformity with the protection requirements of Electromagnetic Compatibility Directive 2014/30/EU.
2.4. The technical file contains all the information required to include the following models UX300, UX600, UX500Dyn, UX730Dyn, MV204CU, MV154U, MD1200, MF400, MF500, MF630, UX630, UG850, UG1020, MK5U, PRO.FLEX6, PRO.S6, PRO.S10, UX800 and UX500.
Certificate Number: 7674160818
Date: 12/09/2018 Expiry Date: 12/09/2021

Safenet Limited
Denford Garage, Denford, Kettering, Northants., NN14 4EQ, U.K.
Tel: +44 1832 732174 E-mail: office@safenet.co.uk

This is to certify that Quaser Machine Tools Co., Ltd.
No. 3, Gong 6th Road, Youshih Industrial Park, Dajia District, Taichung City (437), Taiwan
Has had a range of Machining Centres examined to the Machinery Directive 2006/42/EC, as amended and the Low Voltage Directive 2014/35/EU.
With reference to model UX730Dyn
Manufactured by: Quaser Machine Tools Co., Ltd.
No. 3, Gong 6th Road, Youshih Industrial Park, Dajia District, Taichung City (437), Taiwan
1. The technical file contains all the relevant information.
2. Having verified that the appropriate tests have been conducted.
2.1. The standards and transposed standards have been applied correctly.
2.2. The example representing series production of the item, complies with the essential health and safety requirements of the Directive 2006/42/EC, as amended.
2.3. The technical file contains all the information to include the following models UX300, UX600, UX500Dyn, UX730Dyn, MV204CU, MV154U, MD1200, MF400, MF500, MF630, UX630, UG850, UG1020, MK5U, PRO.FLEX6, PRO.S6, PRO.S10, UX800 and UX500.
Certificate Number: 7673150818
Date: 12/09/2018 Expiry Date: 12/09/2021

Safenet Limited
Denford Garage, Denford, Kettering, Northants., NN14 4EQ, U.K.
Tel: +44 1832 732174 E-mail: office@safenet.co.uk
Quaser Technology

Thermal Control

- Cooling circuit
  1. Coolant through ballscrew (C.T.B.) to keep repeatability accuracy on X/Y/Z axes.
  2. Spindle cooling circuit
  3. Motor cooling circuit (for coupling spindle)
  4. Motor mounting block cooling circuit (for coupling spindle)
  5. Large capacity oil cooler

<table>
<thead>
<tr>
<th></th>
<th>Belt spindle</th>
<th>Coupling spindle</th>
<th>Built-in spindle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>∗</td>
<td>∗</td>
<td>∗</td>
</tr>
<tr>
<td>2</td>
<td>∗</td>
<td>∗</td>
<td>∗</td>
</tr>
<tr>
<td>3</td>
<td>×</td>
<td>∗</td>
<td>∗</td>
</tr>
<tr>
<td>4</td>
<td>×</td>
<td>∗</td>
<td>×</td>
</tr>
<tr>
<td>5</td>
<td>∗</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

- Depending on models, please reference machine catalog.

Above figure is coupling spindle

Oil-air system

Re-grease system

5 Axes Application

Thermal compensation

- Real-time time measuring & compensation

- CAD / CAM
- NC programming
- Tooling technology
- Machining operation
Assembly Technology
Measurement & Calibration

Static stiffness measurement

Geometric accuracy inspection

Tilting and rotating axes measurement

Laser & Double ball-bar inspection

Ballbar Trace (ISO 10791-6)
Testing

Cutting test

Running 48 hours non-stop reliability test on all functions (tool changer, spindle, multi-axis, coolant system, leak-proof).

Half of ISO accuracy standard

<table>
<thead>
<tr>
<th>1. Straightness of axis motion</th>
<th>2. Squareness between linear motions</th>
<th>3. Periodic axial slip of the spindle</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 500 &lt; L ≤ 800 0.015</td>
<td>GMT 500 &lt; L ≤ 800 0.008</td>
<td>ISO 0.02 / 500</td>
</tr>
<tr>
<td>800 &lt; L ≤ 1250 0.02</td>
<td>800 &lt; L ≤ 1250 0.01</td>
<td>GMT 0.008 / 400</td>
</tr>
<tr>
<td>1250 &lt; L ≤ 2000 0.025</td>
<td>ISO 0.02 / 500</td>
<td>ISO 0.005</td>
</tr>
</tbody>
</table>

4. Run-out of internal taper of the spindle
   a) at the spindle nose;
   b) at a distance of 300 mm from the spindle nose

<table>
<thead>
<tr>
<th>4. Run-out of internal taper of the spindle</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 0.01</td>
</tr>
<tr>
<td>ISO 0.02</td>
</tr>
</tbody>
</table>

5. Parallelism between the spindle axis and the Z-axis motion

<table>
<thead>
<tr>
<th>5. Parallelism between the spindle axis and the Z-axis motion</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 0.015 / 300</td>
</tr>
</tbody>
</table>

6. Squareness between the spindle axis and the X-axis motion

<table>
<thead>
<tr>
<th>6. Squareness between the spindle axis and the X-axis motion</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 0.015 / 300</td>
</tr>
</tbody>
</table>
High Performance Spindle

- **Spindle code**: SC-4.2
  - Transmission: Coupling
  - Speed range: 10,000 min⁻¹
  - 12,000 min⁻¹
  - Lubrication: Grease packed system

- **Spindle code**: SC-5.0
  - Transmission: Gear box + Coupling
  - Speed range: 6,000 min⁻¹
  - Lubrication: Grease packed system

- **Spindle code**: SC-5.0A
  - Transmission: Belt driving
  - Gear box + Belt
  - Speed range: 6,000 min⁻¹
  - 7,500 min⁻¹
  - Lubrication: Oil air system

- **Spindle code**: SC-5.1A
  - Transmission: Gear box + Belt
  - Speed range: 6,000 min⁻¹
  - 7,500 min⁻¹
  - Lubrication: Oil air system

- **Spindle code**: AB-4.0
  - Transmission: Belt driving
  - Speed range: 8,000 min⁻¹
  - 12,000 min⁻¹
  - Lubrication: Grease packed system

- **Spindle code**: MB-4.0
  - Transmission: Belt driving
  - Speed range: 9,000 min⁻¹
  - 12,000 min⁻¹
  - Lubrication: Grease packed system

- **Spindle code**: MT4.0 / MT4.0R
  - Transmission: Coupling
  - Speed range: 12,000 min⁻¹
  - 15,000 min⁻¹
  - Lubrication: Grease packed system

- **Spindle code**: SC-4.2
  - Transmission: Coupling
  - Speed range: 10,000 min⁻¹
  - 12,000 min⁻¹
  - Lubrication: Grease packed system

- **Spindle code**: MC-4.0R / MC-4.1R
  - Transmission: Coupling
  - Speed range: 20,000 min⁻¹
  - 15,000 min⁻¹
  - Lubrication: Re-grease system

- **Spindle code**: SB-5.0
  - Transmission: Belt driving
  - Speed range: 6,000 min⁻¹
  - Lubrication: Grease packed system

- **Spindle code**: SB-5.0A
  - Transmission: Belt driving
  - Gear box + Belt
  - Speed range: 6,000 min⁻¹
  - 7,500 min⁻¹
  - Lubrication: Oil air system

- **Spindle code**: SB-5.1A
  - Transmission: Gear box + Belt
  - Speed range: 6,000 min⁻¹
  - 7,500 min⁻¹
  - Lubrication: Oil air system

Standard on all models

- **Spindle code**: HM4.0 / HM4.0A
  - (Only for UX630 & UX630APC)
  - Transmission: Built-in spindle
  - Speed range: 12,000 min⁻¹
  - 18,000 min⁻¹
  - Lubrication: Grease packed system

- **Spindle code**: MC-5.0A
  - Transmission: Coupling
  - Speed range: 15,000 min⁻¹
  - Lubrication: Oil air system

- **Spindle code**: HM4.0A
  - Transmission: Coupling
  - Speed range: 12,000 min⁻¹
  - Lubrication: Re-grease system

- **Spindle code**: SB-5.0A
  - Transmission: Belt driving
  - Gear box + Belt
  - Speed range: 6,000 min⁻¹
  - 7,500 min⁻¹
  - Lubrication: Oil air system

- **Spindle code**: SB-5.1A
  - Transmission: Gear box + Belt
  - Speed range: 6,000 min⁻¹
  - 7,500 min⁻¹
  - Lubrication: Oil air system

- **Spindle code**: SC-4.2
  - Transmission: Coupling
  - Speed range: 10,000 min⁻¹
  - 12,000 min⁻¹
  - Lubrication: Grease packed system

- **Spindle code**: MB-4.0
  - Transmission: Belt driving
  - Speed range: 9,000 min⁻¹
  - 12,000 min⁻¹
  - Lubrication: Grease packed system

- **Spindle code**: MC-4.0R / MC-4.1R
  - Transmission: Coupling
  - Speed range: 20,000 min⁻¹
  - 15,000 min⁻¹
  - Lubrication: Re-grease system

- **Spindle code**: SC-5.0
  - Transmission: Gear box + Coupling
  - Speed range: 6,000 min⁻¹
  - Lubrication: Grease packed system

- **Spindle code**: SC-5.0A
  - Transmission: Belt driving
  - Gear box + Belt
  - Speed range: 6,000 min⁻¹
  - 7,500 min⁻¹
  - Lubrication: Oil air system

- **Spindle code**: SC-5.1A
  - Transmission: Gear box + Belt
  - Speed range: 6,000 min⁻¹
  - 7,500 min⁻¹
  - Lubrication: Oil air system
Digitized process

Transparent real-time digitized production information

IQS(Intelligent Quaser Software)

Database

ESOP + production history database
ATC System

Different types of magazines with large capacity are available.

Pallet System & 4th axis system

APC testing with maximum load

<table>
<thead>
<tr>
<th>Products</th>
<th>Model</th>
<th>#40</th>
<th>#50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical series</td>
<td>MV154 / 154 / 204</td>
<td>30 - 40</td>
<td>60 - 60</td>
</tr>
<tr>
<td></td>
<td>MV254 / 254</td>
<td>40 - 60</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>MV205 / 205</td>
<td>-</td>
<td>30 - 40</td>
</tr>
<tr>
<td>Pallets series</td>
<td>MK6056 (MK154 MV154)</td>
<td>40 - 60</td>
<td>-</td>
</tr>
<tr>
<td>5 Axes series</td>
<td>MK5U</td>
<td>130 - 180 - 60</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>UX004 / 600 / 730</td>
<td>48 - 60</td>
<td>-</td>
</tr>
<tr>
<td>Multi Face series</td>
<td>MF400 / 500 / 630</td>
<td>30 - 60 - 60</td>
<td>-</td>
</tr>
<tr>
<td>5 Axes Mill-Turn series</td>
<td>MS500U</td>
<td>48 - 60 - 120</td>
<td>-</td>
</tr>
<tr>
<td>Horizontal series</td>
<td>HK404</td>
<td>60</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>HK604</td>
<td>60 - 120 - 240 - 360 - 500</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>HS05 / 535</td>
<td>-</td>
<td>40 - 60 - 120 - 150</td>
</tr>
<tr>
<td></td>
<td>HK05</td>
<td>-</td>
<td>60 - 120 - 150</td>
</tr>
<tr>
<td></td>
<td>HK Cell</td>
<td>120 - 240</td>
<td>120 - 150</td>
</tr>
</tbody>
</table>
Cell - Automation System

Cell series is suitable for high mix low volume manufacturing. The FMC system enables a 2nd/3rd shift unmanned operation.

HX Cell horizontal M/C is equipped with a pallet loader and a large pallet storage and tool magazine (standard 240 tools; option up to 500 tools). The system can be integrated with 31iB Fanuc or 840D Siemens NC system.

**HX504 Cell**:
- Pallet size: 500 (mm)
- Travel X / Y / Z: 762 / 640 / 810 (mm)
- ATC capacity: 240
- Pallet capacity: 8 or 14 (opt.)

**HX505 Cell**:
- Pallet size: 500 (mm)
- Travel X / Y / Z: 762 / 640 / 800 (mm)
- ATC capacity: 150
- Pallet capacity: 8 or 14 (opt.)

HF Cell horizontal M/C is equipped with a pallet loader and a large pallet storage and tool magazine (standard 240 tools; option up to 500 tools). The system can be integrated with 31iB Fanuc or 840D Siemens NC system.

**MF Cell** 5 Axes M/C. This machine system is equipped with a dual magazine with max capacity 120 tools. The pallet storage tower is capable of storing 40 pallets (MF400) and 28 pallets (MF500) in a small footprint. It can be integrated to Fanuc 0iMF and Siemens 828D NC systems, for 5 Axes positioning model; Fanuc 31iB5 and Siemens 840D NC systems for 5 Axes simultaneously model.

**MF400C/U Cell**:
- Pallet size: 265 (mm)
- Travel X / Y / Z: 680 / 610 / 510 (mm)
- ATC capacity: 120
- Pallet capacity: 40

**MF500C/U Cell**:
- Pallet size: 350 (mm)
- Travel X / Y / Z: 550 / 630 / 610 (mm)
- ATC capacity: 120
- Pallet capacity: 28

This factory automation solution can be apply to a broad range of application.
Ease of Use

- Ergonomic operation panel with adjustable angle
- Excellent accessibility to the table & spindle
- Wide-opening door for loading

Coolant & Chip Management

- Nozzle coolant
- Coolant through spindle
- Ceiling coolant HX series
- Wash down coolant
- Wash gun
- Large capacity coolant tank
- Paper filtering system (opt.)
- Drum type chip conveyor (opt.)
- Chip conveyor
- Chip auger

Chip types:
- Curly iron
- Metallic
- Foundry
- Curly Aluminum
- Aluminum
High Quality Components