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FOREWORD

SPRING Singapore

Medical Technology (MedTech) innovations have helped to improve healthcare delivery significantly and enhance the quality of life for patients. These innovations aid in the diagnosis and treatment of diseases, rehabilitation of patients and play an increasingly important role in preventive care. Some examples of innovative medical devices include rapid test kits for HIV and other infectious diseases, drug-eluting stents and pacemakers for cardiovascular diseases and essential supplies such as syringes and catheters. MedTech innovations also accelerate research of diseases and therapies by providing research tools such as mass spectrometers and thermocyclers.

The global demand for medical devices & equipment has been growing significantly as a result of a rapidly ageing population and the ability to afford better healthcare, especially in Asia. In order to enhance market access, MedTech OEMs are looking into more collaborations with offshore suppliers to optimise their design & manufacturing capacities. This presents good growth opportunities for our enterprises providing supporting services to the MedTech industry.

This guide showcases the comprehensive range of products, services and capabilities offered by enterprises in Singapore including local small and medium enterprises (SMEs). We have a good base of Precision Engineering SMEs providing support in areas such as precision machining, sheet metal fabrication, secondary processes, system integration, etc.

To stay ahead of the competitive market, our SMEs have been investing continuously to build up core capabilities for sustainability and expansion. SPRING will continue to work closely with key partners from the public and private sectors to support such upgrading efforts. Through these efforts, our local SMEs can develop capabilities in engineering and manufacturing services, create new and innovative products and processes, and offer more complete solutions to their customers.

Png Cheong Boon
Chief Executive
SPRING Singapore
**MESSAGE**

**Economic Development Board**

Singapore has developed into Asia’s leading international bio-cluster that advances human healthcare within one short decade of focused effort to develop the biomedical sciences sector. Today, leading MedTech companies manufacture about S$3 billion worth of medical devices and research instruments for regional and global markets.

Singapore’s world-class local suppliers operate in an environment that protects intellectual property, and have a strong track record with leading MedTech OEMs. This presents a key competitive advantage for high-quality, complex manufacturing of innovative products for regional and global markets.

Singapore continually seeks to hone our competitiveness and enhance the capabilities of our suppliers. In October 2009, the Singapore Institute of Manufacturing Technology (SIMTech) announced the launch of the MedTech Manufacturing Consortium. Over the next five years, Singapore’s Workforce Development Agency and SIMTech will invest S$10 million (US$7.2 million) for technology and manpower development amongst local suppliers.

The Singapore Economic Development Board (EDB) is the lead government agency for planning and executing strategies to enhance Singapore’s position as a global business centre and grow the Singapore economy. We dream, design and deliver solutions that create value for investors and companies in Singapore. We will continue to work with companies to build up the required capabilities and talent base, and strengthen companies’ home-base in Singapore to drive their business expansion and innovation in Asia.

**SINGAPORE: MEDTECH COMPANIES’ STRATEGIC BASE IN ASIA**

Asia’s fast-growing healthcare markets, which are expected to expand from US$246 billion (2009) to US$349 billion (2012) (Frost & Sullivan, 2010), present tremendous growth opportunities for global medical technology (MedTech) companies. As companies look out for a strategic base in Asia to drive their business expansion in the region, Singapore presents a choice location with its base of globally-oriented talent who are attuned to Asia’s needs, strong track record in high-quality medical device manufacturing, and commitment to drive MedTech innovation to address Asia’s unmet healthcare needs.

Today, more than 20 leading MedTech companies that include all of the top 10 MedTech companies have established regional and international headquarters in Singapore. Notably, Siemens Medical Instruments has established its global headquarters that also includes its global supply chain control tower in Singapore. Most recently, Medtronic opened its international and regional headquarters in Singapore in October 2009.

Singapore has a strong industry base with 30 global MedTech companies investing in global and regional manufacturing facilities in Singapore. They manufacture about S$3 billion worth of medical devices and life science instruments. Today, Singapore is a global leader in medical technology manufacturing and accounts for 10% of global supply of contact lens, half of the world’s thermal cyclers and more than 50% of the world’s microarray.

Leading companies such as Becton Dickinson, Siemens and Medtronics have also co-located regional/international headquarters office at their manufacturing facilities, thereby establishing Singapore as a strategic home-base to drive business expansion in Asia and global markets.

In addition, companies are extending into innovation activities that include value engineering (e.g. AB Sciex) and product development (e.g. Welch Allyn), as they seek to leverage Singapore’s scientific and engineering capabilities to address Asia’s unmet healthcare needs. Singapore is committed to grow our capabilities in MedTech innovation through key initiatives such as the Singapore-Stanford Biodesign Program, which was launched in January 2010 and will leverage Stanford University’s pioneering biodesign program and Singapore’s network of local/regional institutes, to nurture next-generation Asian medical device innovators.
Aurigin Technology Pte Ltd designs, develops and manufactures automation machines and manufacturing solutions for advanced semiconductor packaging and electronic products such as high-density logic, memory and microprocessor devices, smart labels/RFIDs and equipment or instrumentation for biomedical/life science research or biomedical/life science products manufacturing.

Since its inception, Aurigin has consistently delivered premium returns to its customers and shareholders through creative innovations and manufacturing solutions that always exceed expectations.

Through strategic agents and distributors, the company has a firm reach throughout Asia, as well as an office in Arizona, USA, to support its growing business in North America.

Key Capabilities:
- Design and manufacture of high precision, high-speed machinery for manufacture of semiconductor, biomedical, electronics products
- Design and development of high precision motion systems
- Design and integration of vision systems for motion guidance and inspection
- Design and development of high precision dispense (micro/nano-lite) system for applications requiring non-contact on-demand liquid dispensing such as biomedical application
- Design and development of high pressure abrasive water jet system for cutting and cleaning applications
- Manufacturing solutions packages by providing specialised machinery and manufacturing services

Major equipment list:
- Laser interferometer
- High-speed camera
- High precision measurement tools
- CAD design software
- FEA analysis software

Overseas presence:
- USA

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Established in 1981, Avi-Tech Electronics has grown to become a leading one-stop total burn-in solutions provider to the semiconductor industry in the Asian region. Capitalising on the equipment build experience and supply chains developed through the years, Avi-Tech has also diversified to the systems integration business in the life sciences industry. It has established market presence in Singapore, Taiwan, Malaysia, China, Thailand and the Philippines, as well as in the US and Europe. Its major customers are key players in the global semiconductor business and life sciences industries.

Headquartered in Singapore, with a staff strength of about 250, the company has production facilities in both Singapore and China. Its Singapore facility boasts over 120 burn-in systems, supporting the burn-in of different semiconductor device types ranging from microprocessors, memories and microcontrollers, to automotive control circuits and custom-made chips. Many of its burn-in systems are designed and fabricated in-house. Other manufacturing activities in the Singapore facility include system integration of life sciences products.

Avi-Tech was conferred the Singapore Quality Class award by SPRING Singapore in 1998, with renewals for this award in 2001, 2003 and 2005. In 2008, the company was also awarded the Enterprise 50 award by the Singapore Economic Development Board in 1999 (Ranking: 1st), 1998 (Ranking: 31st) and 1997 (Ranking: 41st). It has also received numerous customer appreciation awards in recognition of its product excellence.

Key capabilities:
- Total burn-in solutions provider
- Tape and reel services
- Design and manufacture of burn-in boards and boards-related products (PCBA manufacturing)
- Full turnkey project services (built to design) and equipment manufacturing (design and build) services (box build/system integration)
- Life sciences equipment and instrument contract/outsource manufacturing
- Technical services such as field service and application support for all third party equipment distributed
- Equipment distribution including equipment and related products used in the semiconductor industry, in particular, third party burn-in and test equipment

Design and manufacture of burn-in boards and boards-related products:
- Engineering services and equipment distribution
- Full turnkey system integration services (built to design) and equipment manufacturing (design and build) services including parts procurement and fabrication, assembly and verification
- Technical services such as field service and application support for all third party equipment distributed
- Equipment distribution including equipment and related products used in the semiconductor industry, in particular, third party burn-in and test equipment

Major equipment list (Boards Manufacturing):
- Mydata SMT component placement machine
- Heller hot air reflow oven
- SMT solder/paste screen printer
- CE-OLAMEF axial forming machine
- CE-OLAMEF radial lead forming machine
- ERSA soldering machine
- Electrolytic washing machine
- Despatch board baking oven
- Mini solder pot rework station
- JBC hot air flow repair station
- TSE Boss triple CES, tester
- MCC tester
- Polar short locator
- Nikon microscope
- PCB separator

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The Woodlands facility began operations in 1998. The site manufactures and integrates wafer fab equipment for both front-end back-end Semiconductor OEM, process equipment for Storage market segment and box build for Telecommunications sector.

In addition to its expertise in low volume/high-mix and medium volume/medium-mix assemblies and complex equipment integration, Woodlands has strong capability in engineering design, equipment replication, prototype assembly and customisation.

The facility is ISO9001, ISO13485, and ISO14001 certified and complies to SSQA (Standardized Supplier Quality Assessment) Quality Management System. Benchmark Woodlands attains SSQA rating >6.0, a Best-In-Class achievement in Business and Operational Excellence.

The facility also attains People Developer Certification, a program with focus on human resource planning, management and development.

6-sigma and Lean Manufacturing cultures are prevalent across the facility for continuous improvement in business processes. Customer dedicated support teams provide the edge in meeting and exceeding customers’ expectations. Woodlands is implementing Workplace Safety & Health standards into the entire manufacturing floor. It is our key objective to conduct business in a “risk-managed” safe environment. The factory has attained BizSAFE level 3 certification from the Authority.

Key capabilities
Manufacturing Services:  
- System assembly, integration and test  
- Box build  
- Electromechanical assembly

Engineering and Equipment Services:  
- System assembly and test  
- Precision process and test equipment  
- Equipment replication  
- Engineering design and customisation  
- Engineering prototype  
- Product life cycle management

Fulfilment Services:  
- Product distribution  
- Merge-in-transit  
- Warranty service and repair

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Certifications
ISO 9001: 2008
ISO 14001: 2004
ISO 13485: 2003
SSQA Quality Management System
CT-PAT Compliance (Front-end semiconductor products)
CSA (Telecommunication products)
Beyonics is a major player in the electronics manufacturing and precision engineering services landscape in Asia. It provides integrated manufacturing services to OEMs and ODMs in various industries such as biomedical diagnostic and therapeutic devices, data storage and enterprise computing, consumer electronics, automotive components, communications and networking, and security surveillance applications.

Beyonics places high importance on meeting environmental standards in manufacturing. Most of its manufacturing processes are lead-free and adhere to strict green environmental standards. Its suppliers are also expected to conform to environmental requirements and specifications. The company works closely with its customers and suppliers to ensure that the products it manufactures are RoHS compliant.

Its corporate and operational headquarters are located in Marsiling, Singapore, with primary services being strategic planning, procurement, logistics management, IT/MIS, finance and internal controls. It mainly caters to the bio-medical industry.

Beyonics’ major medical customers include Baxter Health Care, Animas – Johnson and Johnson, Bio-logic, Stryker and SpineGuard. It is equipped with class 100K cleanroom environment for bio-medical precision plastic injection moulding and is an FDA registered foreign contract manufacturer.

Key capabilities:
- Class 100K cleanroom for medical moulding and medical assembly
- Enclosed environment for precision moulding and mechanical assembly
- High cavitation moulding
- Insert moulding
- Two colour moulding
- Unscrew moulding
- Mould design and fabrication
- Heat staking
- Ultrasonic welding
- Hot stamping
- Process development – IOPQ validation
- Device history record – Lot tracking system
- First Article laboratory

Major equipment list:
- Class 100K cleanroom injection machines – 50 to 360 tons
- Enclosed environment injection machines – 40 to 280 tons
- Secondary process equipment
- Conventional tool room
- Coordinate measuring machine
- Tool maker scope
- Autoclave
- Moisture analyser
- Ceast melt flow tester

Overseas presence:
- Malaysia
- Indonesia
- Thailand
- China

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Certifications
- ISO 9001: 2000
- ISO 13485: 2003
- ISO 14001: 2004
- TS 16949: 2002
- GMP & GDP
- FDA registered
- UL (Underwriter Laboratories)
- HSA (S) registered CM
- ISO 13485: 2003
CEI Contract Manufacturing Limited was listed on the main board of the Singapore Exchange Securities Trading Limited in March 2000. The company provides printed circuit board assemblies, boxbuild assemblies, system assemblies, circuit layout, functional design, and design and manufacture its own brand of equipment for the semiconductor industry. CEI adopts 6-sigma methodology.

CEI serves customers in the industrial equipment market segment. These include electro-luminescent displays used in industrial, transportation, and medical applications, medical and health care equipment, office equipment (digital photocopiers), analytical instruments (gas and liquid chromatographs and measurement instruments), industrial safety controllers and environmental sensors, front- and back-end semiconductor equipment and SMT equipment.

Headquartered in Singapore, it has manufacturing sites in Singapore, Batam (Indonesia), Ho Chi Minh City (Vietnam) and Shanghai (China).

Key capabilities:
- Printed circuit board assemblies
- Boxbuild assemblies
- System assemblies
- Circuit layout
- Functional design
- Design and manufacture its own brand of equipment for the semiconductor industry
- Adoption of 6-sigma methodology

Major equipment list:
- 3D CAD software (solid edge)
- High level programming tools for C++/Visual Basic language and networking development
- Assembly equipment – SMT printers and mounters, IC placer, etc.
- Wave/reflow/cleaning – reflow oven, wave solder, etc.
- Testers – ICT testers and functional testers.

Overseas presence:
- Batam, Indonesia
- Ho Chi Minh, Vietnam
- Shanghai, China

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Certifications
- ISO 9001:2008
- ISO 14001:2004
- ISO/TS 16949:2009
- ISO 13485
- UL 508A
- AS 9000
Celestica Electronics (S) Pte Ltd

Celestica is dedicated to building solid partnerships and providing flexible solutions to enable its customers’ success. The company is adaptive and agile and helps customers anticipate and prepare for unexpected changes. Its talented global team is dedicated to delivering end-to-end product lifecycle solutions at the lowest total cost of ownership — in the process enabling its customers to keep their commitments and stand out in their markets.

Its expertise is in design and engineering, electronics manufacturing and supply chain management services. Its suite of solutions spans the entire product lifecycle from design, through to delivery and after-market support. By understanding the unique complexity of each customer’s business, it develops customised solutions that drive product innovation, cost savings, supply chain efficiencies and improved time-to-market.

Celestica offers its customers an extremely efficient global network including seven strategically located mega-sites and specialised centres of excellence. This strategic network provides its customers with the flexibility they need to respond quickly to changes in end-market demand. Its customer portfolio spans the healthcare, enterprise, communications, consumer, aerospace and defence, industrial and greentech end-markets.

Key capabilities:
- Provides flexible and innovative supply chain solutions for the healthcare industry.
- Partners with premiere healthcare companies and provides them a broad range of services including design, automated manufacturing, electronics manufacturing and fulfilment.
- A strong track record across a wide range of healthcare products serving the personal care, drug delivery, imaging and diagnostic segments.

Major equipment list:
- SMT equipment
- 2D/3D x-ray equipment
- In-circuit testers
- Functional testers
- Flying probe
- Automated optical inspection machine
- FA qualification lab
  - Ion chromatography
  - X-ray fluorescence microscope (XRF)
  - Scanning electron microscope (SEM)
  - Energy dispersive x-ray (EDX)
  - Scanning acoustic microscope (CSAM)
- Curve tracer
- Time domain reflectometry
- Fourier transform infrared spectrometer (FTIR)
- Thermal gravimetric analysis (TGA)
- Accelerated thermal cycling (ATC)
- Environment stress screening (ESS)
- HASA/HALT
- Laser programmable VMM
- Coordinated measuring machine (CMM)

Overseas presence:
Americas
- Canada
- USA
- Mexico
Asia
- Malaysia
- Thailand
- Hong Kong
- China
- Japan
- India
Europe
- Ireland
- Czech Republic
- Romania
- Spain
- Switzerland

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Certifications
- ISO 9001:2000
- ISO 14001
- TL 9000
- TS 16949
- ISO 13485
- FDA registered
- ANSI/ESD 20:20
- OHSAS 18001

ISO
- 9001 : 2000
- 14001
- 13485
- 9001
- 14001
- 13485
CTS Corporation

CTS Corporation designs, manufactures and sells a broad line of electronic components and sensors, and is a provider of EMS primarily serving the electronic needs of OEMs.

CTS product lines serve major markets around the world, including the automotive, computer, communications markets, industrial, medical, defence and aerospace with a wide range of products, services, technologies and capabilities.

The company attributes its success to its customer-focused, market driven product development that is enabled by its existing and new technologies. Its high-volume manufacturing adheres to consistent standards of quality, reliability, cost effectiveness and timely delivery.

CTS’ manufacturing operations, sales representatives and distributors are located throughout the world to serve its numerous customers in wide-ranging international markets. To pursue even higher levels of customer satisfaction, CTS continually audits, reviews and improves its systems, benchmarking against “best in class” systems.

Key capabilities:
- Manufactures and sells electronic components and sensors
- Provides EMS primarily serving the electronic needs of OEMs
- Manufactures printed circuit board assemblies, backplanes, boxbuild systems and high level assembly
- Global supplier of electromechanical, electronic control and sensors products to the automotive, transportation and small engine industries
- Repair and warranty services
- Logistics management and direct fulfillment
- Volume manufacturing and test services
- Program management
- Supply chain management
- New product introduction and engineering services
- Concept design and product development

Overseas presence:
- Canada
- China
- Czech Republic
- New Mexico
- Mexico
- Scotland
- Taiwan
- Thailand
- USA

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Certifications
- ISO 9001 : 2000
- ISO 13485 : 2003
- ISO 14001 : 1996
ETLA Limited is a subsidiary of the Frencken Group Limited, a global contract manufacturer that is committed to providing complete and integrated outsourcing solutions to its customers in the capital equipment and consumer industries. Frencken Group Limited is a public corporation listed on the Mainboard of the Singapore Exchange since May 2005. As part of Frencken Group’s mechatronics division, ETLA offers complete solutions for the manufacture of highly complex precision machining and sheet metal components, as well as the assembly and integration of complex modules, systems and equipment for the medical, semiconductor, analytical and industrial automation industries.

Its core competencies include value engineering, prototyping, program management, supply chain management, precision machining and sheet-metal fabrication, surface finishing, modular and equipment system assembly, integration, test and commissioning.

It Singapore facility is spread over 12,000 sq m (129,166 sq ft) and supported by its production in facility Bangi, Malaysia. These facilities are well equipped with a range of precision machining, sheet metal fabrication and final test and assembly machinery and equipment. Backed by project teams of experienced personnel with extensive application knowledge and technical know-how in various manufacturing and assembly processes, ETLA provides integrated solutions to meet its customers’ outsourcing needs.

Key capabilities:
- High precision and complex metal components and modules
- Wide range of materials capabilities including castings and extrusions
- Surface finishing and heat treatment services
- Highly precise fabrication parts for sheet metal fabrication
- High-mix, low-volume production capability
- CNC Laser cutting/abrasive cutting (up to 12mm thick stainless clean-cut, and 20mm mild steel plate)
- CNC Turret punching
- CNC Combo laser cut and turret
- CNC Press brake bending/tube bending
- Robotic contour welding/gas-metal arc welding/spot welding/orbital weld
- Robotic YAG Laser welding (up to 4mm welding depth on stainless steel material)
- Surface finishing – wet spray painting, powder coating, sand blasting, hair-line texture and polishing
- Cellular production
- Lean Manufacturing
- Mechatronics assembly including high precision motion control and vision guided handling systems
- Mechanical and electrical assembly
- Supply chain management including internationally sourced OEM parts
- System integration and test
- Full turnkey project management including technical order and configuration management

Major equipment list:
- CNC milling – 3-, 4-, 5-axis vertical
- CNC milling horizontal (with pallet change)
- Double-column 5-face vertical machine
- CNC turning machines
- CNC coordinate measuring machine, include portable FARO arm
- 2D/3D programming tools
- Leak test detector
- CNC coordinate measuring machine (motorised probe head)
- Spectrophotometer, thickness, surface roughness and gloss meter

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Certifications
- ISO 9001 : 2000
- ISO 13485 : 2003
Flextronics offers the broadest worldwide EMS capabilities, from design resources to end-to-end vertically integrated global supply chain services. The company designs, builds and ships complete packaged products for its OEM customers and provides after-market and field services to support customer end-to-end supply chain requirements.

Flextronics provides more value and innovation to customers by leveraging its global economies of scale in manufacturing, logistics, procurement, design, engineering and ODM services across a wide range of products and customer segments. It operates in 30 countries with a world-class work force and well-diversified customer market segments and business units.

In Singapore, Flextronics serves two major market segments, namely industrial and medical. The industrial segment offers customised services for customers’ products and its vertically integrated services include metal fabrication and stamping, plastics injection moulding, tool design and manufacturing, and enclosure systems. These mechanical solutions are integrated with PCBA and final assembly manufacturing capabilities to deliver a full product solution.

Flextronics’ medical segment provides world-class design, manufacturing, and logistics solutions to medical device and equipment companies. It provides a broad set of capabilities for medical customers in the invitro-diagnostic, drug delivery, and lab equipment industries. All activities are overseen by a world-class quality and regulatory team, ensuring compliance with 13485, 14971, 60601, and other state, federal and international medical standards and practices.
Kinergy Ltd

Established in 1988, Kinergy is one of the region’s leading high-tech equipment contract manufacturers, synonymous with top quality and innovative solutions. Its business is divided into two divisions, namely EMS and OEM.

Kinergy’s EMS division focuses primarily on the high-mix low-volume contract design and manufacturing of microprocessor-controlled automated equipment and sub-systems for OEMs for the semiconductor industry’s front- and back-end processes. It also serves the medical, pharmaceutical, packaging, automation and aeronautical industries.

The company’s OEM division designs and manufactures proprietary equipment such as microprocessor-controlled automated machines under the Kinergy brand for use mainly in the semiconductor assembly and test industry.

Kinergy works closely with its customers to customise proprietary designs in accordance with their requirements. These designs continue to be proprietary to the company and may be used in the production of machines for its other OEM customers. The OEM division also fabricates, commissions and provides maintenance services for its machines.

Key capabilities:
- Original design, manufacture and assembly of complete machines
- Value-added engineering services to improve on customers’ existing designs and further development of their products
- Assembly of components that form critical modules to equipment and machines
- Manufacture of mechanical and electrical components
- Design, development and manufacture of machines used in the semiconductor back-end assembly process such as auto frame loader, dry auto-buffing machine, strip laser marking system, high-speed servo trim and form system
- Design, development and installation of precision tools to the accuracy of 2 microns – encapsulation moulds and trim and form dies

Major equipment list:
- CNC milling – 19 units
- Milling – 9 units
- CNC – 18 units
- Grinder – 34 units
- Supporting equipment – 10 units
- QC tools – 6 units

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Certifications
ISO 9001 : 2008
ISO 13485 : 2003
ISO 14001 : 2003
Manufacturing Integration Technology Ltd (MIT)

Incorporated in 1992 and listed on the Singapore Exchange since 1999, MIT is a leading provider of integrated automation solutions for the semiconductor industry worldwide. Its range of high-end equipment includes wafer level die marking and sorting and inspection systems used in the IC manufacturing and assembly process. It has also ventured into the solar equipment industry recently with an offering of laser scribers for thin film photovoltaic (PV) panel manufacturing.

MIT also offers a full suite of contract manufacturing services to meet the needs of the MedTech industry through its wholly owned subsidiary, AMS Biomedical. The subsidiary is able to provide high quality basic component assembly to full turn key production of complex electro-mechanical modules for the MedTech industry.

Key capabilities:
- High-end range of die marking, sorting and inspection systems for IC manufacturing
- Laser scribers (and related laser handling systems) for production of thin film solar panels
- High-end vision inspection systems for semiconductor and generic manufacturing applications
- Contract Equipment Manufacturing (CEM)
- Precision machining and product assembly

Overseas Presence:
- Shanghai, China (focuses on precision machining and assembly)

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www.mit.com.sg

Certifications
- ISO 9001:2000
- ISO 13485:2003
- ISO 14001:2004
Nestronics Ltd

Nestronics offers high-end integrated EMS and solutions to OEMs. Established in Singapore in 1979, the company has built manufacturing facilities in Singapore, Malaysia and India, with an extensive marketing and sales network across USA and Europe. It has also forged strategic logistics alliances with key vendors across these regions and Asia, adding flexibility to its manufacturing capabilities and strengthening its competitive edge.

Nestronics specialises in end-to-end manufacturing solutions such as new product introduction, test development, manufacturing and specialised after-sales service. Key industries that it serves include telecommunications and instrumentation, medical and bioscience, avionics and oil and gas sectors, as well as other industrial product segments.

With a proven track record and a wealth of invaluable expertise, Nestronics offers its customers value through cost-effective, high-variation medium-volume manufacturing services.

Key capabilities:
- High-mix medium-volume and high-complexity products
- PCBA and complete product build
- Product tests development
- Materials sourcing and prototype management
- System and factory acceptance test capabilities
- Product configuration
- Logistics management including buffer stock, swap stock, direct shipment programs
- Product repair and upgrading services

Major equipment list:
- Class 10K clean room
- 15- to 850-ton injection moulding presses
- Full range of toolroom equipment (machine centres, EDM, wirecut, grinding, etc)
- Thermoset moulding equipment

Overseas presence:
- India
- Malaysia
- USA

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Certifications
- ISO 9001 : 2000
- AS 9100 : 2004
- ISO 13485 : 2003
- ISO 14001 : 2004
- UL (Underwriters Laboratory) ZPV12 & ZPV18
- CSA approved production site
- ETL (Electrical Testing Laboratory)
Sanmina-SCI Systems Singapore Pte Ltd

Headquartered in San Jose, California, Sanmina-SCI is a leading EMS provider focused on delivering complete end-to-end manufacturing capabilities and highly complex solutions to technology companies around the world. Its customer-focused business model provides its clients with customised and flexible solutions across a variety of end markets. Furthermore, its continual focus on developing best-in-class technologies, processes and performance provides customised and adaptable manufacturing solutions tailored to the unique requirements of each customer.

The company boasts several facilities in Singapore, each dedicated to its own specialties. One facility offers strong engineering support capability with a product focus on high-density printed circuit boards (2 to 28 layers), microelectronics, automotive, instrumentation, medical, defence and aerospace, the facility provides one of the most comprehensive PCB product portfolios and product migration paths in the industry.

Two other facilities specialise in manufacturing circuit board assemblies (PCBAs), build-to-order (BTO), configure-to-order (CTO) and new product introduction (NPI). They provide customised and adaptable manufacturing solutions tailored to the unique requirements of each customer.

With a strong technical and engineering focus, Sanmina-SCI’s strategy also includes the regionalisation of overhead functions to make doing business in Asia easy for the customer. It does this by establishing commonality in systems, tooling and procedures.

Key capabilities:
- Manufacturing of mid- to high-layer count printed circuit boards (2 to 28 layers)
- Depth and laser drilling
- Wide range of surface finishes
- Product design services
- New product introduction
- Design for manufacturing
- Product, process and quality engineering
- Reliability test engineering
- Flying probe testing
- Surface insulation resistance testing
- Universal and dedicated testing
- Assembly of medical devices
- Electrical assembly
- Optical assembly
- RF engineering
- Testing development capabilities
- Build-to-order (BTO)
- Configure-to-order (CTO)
- New product introduction (NPI)
- DFx and failure analysis

Major equipment list:
- Screen printer – Dek Horizon
- Solder paste inspection – CyberOptics SE300
- SMD component placers – Fuji NXT
- SMT reflow – Heller
- Automated optical inspection – Obrotech Trion
- Aqueous cleaner – Aquastorm 200
- Wave-soldering – Electrovert Vebra
- Automated Xray inspection – Agilent
- Flying Probe – Takaya
- In-circuit tester – Agilent, GenRad & Tenadyne
- Boundary Scan Tool – Asset Intertech, JTAG, Goepel & Corellis
- XRF RoHS Analyser – Horiba

Overseas presence:
- Americas: Canada, Mexico, United States
- UK: England
- Europe: Finland, France, Germany, Hungary, Ireland, Scotland, Spain, Sweden
- Israel
- Asia: China, Indonesia, Japan, Malaysia, Thailand, India

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Certifications
- TL 9000
- FDA certified
- ISO 13485:2000
- AS 9100
- ISO 14001
- TS 16949
- C-TPAT
- JPAL
- ISO 9001:2000
- ISO/IEC 27001
- TL 9000
Established as a precision engineering company in 1989, Sys-Mac Automation Engineering is constantly looking for new ways to increase the value of its products and services. Additionally, in order to offer the best products and services, Sys-Mac employs a team of experienced in-house engineers.

Its team’s expertise ranges from design, electrical/electronics, software and assembly, to specific focus on the pharmaceutical, semiconductor, life sciences, electronics and marine industries.

Sys-Mac employs close to 200 people in Singapore and Indonesia. The close proximity of its two manufacturing facilities helps the company to maximise the availability of its resources to manage both recurring orders and specialised precision engineering projects.
Venture Corporation Limited was founded in 1984 as a global electronics services provider. With world-class technical capabilities, innovative manufacturing technology, reliable testing capabilities and state-of-the-art facilities, Venture provides a seamless manufacturing system, delivering product quality and cost efficiency for a range of high-mix, high-value and complex products.

Today, Venture is a strategic partner of choice for successful global companies including top Fortune 500 companies, offering total value chain management including ODM, EMS and E-fulfilment services.

The Venture Group comprises about 40 companies with global clusters of excellence in Southeast Asia, North Asia, America and Europe and employs more than 14,000 people worldwide. With complementary engineering capabilities, operational synergy, real-time infrastructure interfaces and faster time-to-market, Venture ranks among the best in managing the value chain for leading electronics companies. Venture works with over 25 global leaders in medical devices, equipment and life sciences. It provides end-to-end design, development and manufacturing with full regulatory compliance.

Key capabilities:
- Specialises in CDM/ODM projects with capabilities in mechanical systems design, precision plastic tools design, electronics systems design, ASIC design, software design and development, reliability engineering and testing, regulatory compliance engineering and testing, and product test development
- Provides full spectrum of high-mix high value-added, integrated turnkey manufacturing services including complex circuit board assemblies of more than 20 layers; strategic sub-assemblies and complex fibre optics assemblies; box-build; system integration and configuration and complex test development services
- Offers comprehensive support including advanced manufacturing technologies, new product introduction management, strategic commodity and supplier cluster management and on-site programme management

Overseas presence:
- Shanghai, China
- Shenzhen, China
- Suzhou, China
- Johor, Malaysia
- Penang, Malaysia
- Barcelona, Spain
- Anaheim, USA
- Newark, USA

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Certifications
- ISO 9001
- QS 9000
- TS 16949
- QHSAS 18000
- RoHS Initiative
- OSHA 18000
- ISO 13485
- ODS Free Scheme
- AS 9100
Automation Solutions
Established in 1984 with just a handful of mechanics, Fujicon has grown to become a 70-men one-stop systems house providing a wide range of handling systems for factory automations. Its services range from design, development, mechanical and software integration, right up to piece part fabrication.

As a fundamental auto solutions provider, Fujicon has stayed relevant to various regional industries including, but not limited to medical, automotive, semiconductor, LED, pharmaceuticals, timepiece and aerospace.

Its export markets stretch beyond Asia to include Germany, Switzerland, Ireland, the US and Mexico.

In the MedTech area, Fujicon has accumulated more than 10 years of experience working with several prestigious device manufacturers and pharmaceutical companies in in-line dried powder packaging (back-end), blood flow device assembly, blood flow device testing, volumetric tube coiler and degators (multi-capacity), among others.

Besides being ISO 9000-certified, Fujicon also adopts cGMP, GAMP practices and custom builds machine systems that comply to CE, UL, CSA, RoHS and WEEE standards.

To address the increasing demands in the MedTech field, it has a network of factories and offices in Seremban, Penang, Bangkok and Shanghai, all of which offer quick response to their customers’ needs.

Fujicon is determined to continuously develop high-speed, sophisticated special purpose machines and provide contract manufacturing services for equipment makers.
Integral Systems Pte Ltd is a company of the Mikron Technology Group. It offers a wide range of standard machine platforms and customised automation solutions. Its proven application expertise, extensive experience and strong technical aptitude have garnered it long-standing partnerships with its global manufacturing customers.

The company provides design and manufacture of automated production systems, customised automation equipment and turnkey assembly lines specific to its customers’ needs. It does this through understanding its customers’ production requirements, business processes, unique products combined with its vast automation experience.

It takes pride in innovating machines to enhance its customers’ business competitive edge via automation and better manufacturing process control.

Key capabilities:
- Standard platform and customised automated turnkey solutions for assembly, testing and packing of MedTech products
- Systems build according to GAMP and CFR Part II with full validation capabilities
- Full technological capability support from Mikron Switzerland and USA
- Maintenance contract services for supplied equipment

Major equipment list:
- Automated systems capable of producing parts at below 3 seconds of cycle time
- Precision and accuracy up to 20 microns

Overseas presence:
- China
- Switzerland
- USA

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Certifications
- ISO 9001
- ISO 13485
- GAMP 5 & 21CFR Part 11
Established in August 2003, MEMS Solutions was formed by a group of young professionals with years of experience in supporting HDD and semiconductors in the areas of materials handling and automated equipment solutions. The company capitalises on these capabilities to provide the same services to the bio/life sciences industry. Its vision is to become Asia’s leading contract manufacturer for electro-mechanical systems integration.

MEMS combines the best of high-tech product development options with the cost-effective benefits of the Asia Pacific industrial economy to deliver the highest opportunity benefits and value-added engineering. With a clear understanding of true project costs, it focuses on competitive delivery at all stages of the product lifecycle.

MEMS is geared mainly for low-volume, high-mix manufacturing operations ranging from handheld instruments and bench-top workstations to factory floor automated assembly systems. It can fully support product design and prototype development, mechanical engineering, PCB circuit design, CPU firmware development, electrical and electronic assembly and harness development through to final production manufacture.

Key capabilities:
- Contract manufacturer for electro-mechanical systems integration
- Product design and prototype development
- Mechanical engineering
- PCB circuit design
- CPU firmware development
- Electrical and electronic assembly
- Harness development
- Software creation
- Data capture
- Final production manufacture

 Overseas presence:
- UK (Manchester)

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Certifications
- ISO 9001 : 2008
- ISO 13485 : 2003
PSB Technologies Pte Ltd

PSB Technologies is a member of TÜV SÜD Group, a German group that provides technical services relating to product quality, safety testing and compliance, management system certification, training and engineering consultation. PSB Technologies has two business units: the Systems and Automation Centre (SAC) and the Environmental Technology Centre (ETC).

The company boasts more than 20 years of experience in designing and building customised automated lines for a wide range of industries, including consumer electronics, medical device, automotive and precision engineering. Machines designed and built by PSB Technologies have been installed worldwide, including in China, Singapore, Europe and the US.

PSB Technologies is one of the few automation houses in the region that can deliver fully customised automated machines based on customer requirements. It is also one of the few automation houses that possesses expertise in some areas of EMC testing. PSB Technologies, therefore, is able to carry out pre-compliance tests – such as radiated/conducted emission and immunity tests – in-house. In this way, the company provides faster turnaround time for the delivery of its machines to its customers.

Key capabilities:
- Develops high precision and high-speed customised automation systems for various industries including medical devices, water application, flexible circuits, automotive safety systems, mould insertion automation, laser systems, test systems and RFID
- Designs high-speed motion mechanisms, high-speed precision control and positioning systems
- Designs precision vision inspection and measurement systems, integrated laser cutting, curing, welding and marking systems
- Designs machines for use in class 10 cleanroom
- Designs multi-platform control systems
- Manufactures data acquisition and production tracking systems
- Automation feasibility studies
- Supplies complete "build-to-print" automation lines
- CCE and NRTL compliance of production equipment
- Upgrading, servicing and maintenance of contract for automation lines
- High-speed syringes assembly line (250ppm)
- High-speed drip chamber inspection machine (450ppm)

Major equipment list:
- CNC machines including milling, turning, wire-cut, EDM and micro-EDM
- Inspection facilities including OMM, profile projector and precision measuring tools
- CE pre-compliance test kit to conduct radiated/conducted emission and immunity test
- Unigraphics, autocad and OneSpace Design 3D CAD system

Overseas presence:
- Ireland

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ISO 9001 : 2000
Skymech Automation & Engineering Pte Ltd

Skymech Automation & Engineering was established in 1988 with a focus on the design and build of customised automation machines for the electronic industries. It soon grew into a leading automation company not only in Singapore, but also in the Asia Pacific region from Thailand to China. It offers expertise in custom-designed, flexible automation systems and robotics integration solutions, with installed bases for its designed and integrated automation systems stretching from countries such as Brazil, UK, Spain and China.

Over the years, Skymech has developed solutions for some of the world’s largest and leading manufacturing companies in various industries, including electronics, disk drives and biomedical. It prides itself in having a stable of brand name customers from a wide range of industries and continues to contribute to their development through the increasing value-added services that it offers, including new product introduction development.

Skymech’s management team boasts a repository of more than 50 years of cumulative multi-discipline design, engineering and project management experience. It draws on this wealth of expertise in turnkey design and manufacturing of automatic assembly and process machines.

Key capabilities:
- Design and build of customised automation machines such as:
  - PRN auto assembly machine (medical)
  - FBN ultrasonic hub welding and leak test machine (medical)
  - Safety needle secondary packaging line (medical)
  - PCB assembly and labelling line (hard disk)
  - Carton labelling machine (hard disk)
  - Hard disk vision inspection machine (hard disk)
  - Heating element inspection line (consumer electronics)
  - Steam iron processing machine (consumer electronics)
  - PMMA application system (consumer electronics)
  - Combo header assembly machine (connector)
- Cost down reduction for built-to-print automation equipment

Overseas presence:
- China
- Thailand

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Certifications
ISO 9001:2000
Plastics & Rubber
DI Precision Mold Pte Ltd

DI Precision Mold aims to be a one-stop design and manufacturing company for precision-engineered plastic resin moulded parts and contract parts assembly facility for the computer, automobile and medical device manufacturing industries.

Over the years, DI Precision Mold has developed the ability to manufacturing its own precision tooling and moulds for precision plastic resin injection moulded parts. Its ability to handle very small parts in a highly precise environment has earned its stellar recognition from its customers. The company’s knowledge and strengths in both tooling and precision plastic resin injection moulding has allowed it to provide support its customers’ products from development phase through to delivery.

In the design and developmental phase, DI Precision Mold’s expertise plays an important role in providing the right feedback on the manufacturability, functionality and cost-effectiveness of each design before building.

The company was established in 1990, providing general machining and spare parts fabrication. It began precision mould making in 1996 and engineering plastic injection in 2002 to further meet its clients’ requirements. From its initial two moulding machines for FA sample testing, the company grew to acquire 20 injection moulding machines ranging from 25 tons to 130 tons to support its clients’ growth.

Today its commitment to providing world-class quality components has given it a competitive edge in the field of engineering solutions.

Key capabilities:
- Specialises in connectors and precision mould making (small parts)
- Supports mass production of precision engineered plastic resin parts
- Part and mould design services
- Precision mould making
- Precision plastic injection moulding such as wire connectors, mobile phone antenna, plastic housing, brackets, functional parts, etc.

Major equipment list:
- Plastic injection molding machines ranging from 25 ton to 130 tons
  (Sumitomo – electric, hydraulic and toggle types)
- Arburg Allrounder vertical injection molding machines for over-moulding
- High-speed CNC machining centres
- Charmilles CNC EDM
- Mitsubishi CNC EDM
- Makino Wire EDM
- Mitsubishi Wire EDM
- UG CAD/CAM
- AutoCad inventor
- Vision measuring machine
- Drying oven
- Fissure test machine
- Hot/cold clamp machine

Overseas presence:
- Shanghai, China

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ISO 9001 : 2000

Certifications
Fischer Tech is a total plastics solutions provider specialising in precision tooling, injection moulding, decorative secondary processes and final assembly. Established in 1994, the company became a public-listed company on the Stock Exchange of Singapore in 2001. The group currently generates an annual turnover of over S$100 million. Fischer Tech has strong, niche technologies as well as technical and operational capabilities that are all vertically integrated within the group. This, in turn, helps the company to stand out in the industry.

Fischer Tech has injection moulding machines — both hydraulic and electric — that range from 40 to 450 tons. It strives to meet its customers’ needs and demands by developing cost-effective solutions and new technological processes to cater for ever-sophisticated product demands. Maintaining a high level of trust with its customers is key to Fischer Tech’s corporate values.

Key capabilities:
- Vertically integrated capabilities and processes
- In-mould decoration specialising in FIM (film insert) technology
- Cosmetic moulding technology
- Scientific tooling design and injection moulding
- High cavitation and high speed moulding
- Class 100K cleanroom moulding and assembly of MedTech devices

Major equipment list:
- Injection moulding machines
- Tool microscopes
- Werth video checks
- Portable roughness gauges
- Stereo microscopes
- CMM machines

Overseas presence:
- Malaysia
- Thailand
- China
- USA
- Europe
- Japan

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Certifications
- ISO 13485:2003
- TS 16949:2002
- SQEM 1759
- Green Partner
Forefront Medical Technology (Pte) Ltd

Forefront is an integrated contract manufacturer that provides leading medical device companies with collaborative product design and development, rapid SLS prototyping, in-house tool making, injection moulding and extrusion, clean room scalable assembly and packaging, testing, sterilisation and global logistics.

Customers select the specific contract manufacturing resources they need (e.g. tubes, injection-moulded DEHP-free PVC or silicone components), or capitalise on Forefront’s technical expertise to have the company custom-design a new product from a conceptual drawing into a completely manufactured, packaged and sterilised product, ready for global shipment. Its integrated capabilities bring customers’ new products to market quickly while providing confidentiality of new designs and protection of intellectual property.

Forefront’s core values focus on customer needs, engineering excellence and responsiveness. Its rigorous quality policy underscores “Fitness For Purpose with Continuous Improvement” and promotes a working environment where every customer and employee is valued and respected. Forefront welcomes external auditors to visit its premises and conduct Supplier audits. Confidentiality is assured on every application.

Key capabilities:
- Medical device application focus on:
  - Integrated design, prototyping, tooling, moulding, assembly, packaging, sterilisation and global logistics
  - Quick prototype parts for evaluation with Rapid (SLS) Prototyping
  - In-house tool design and fabrication
  - Innovative manufacturing solutions for both disposable and reusable medical devices
  - Injection-moulded flexible tubing, catheters (from 0.5mm to 20mm diameter and up to 75 cm length) and specialty wire reinforced stainless steel or nitinol flexible tubing
  - Extrusion/co-extrusion of multi-lumen (colour or barium sulphate) tubing and specialty catheters
  - Injection-moulded custom-designed components moulded from PVC, DEHP-free PVC, silicone rubber, polyurethane, polysulphone, PP, PC and PC-ABS.
  - Specially blow moulding of balloons and inflation devices utilising DEHP-free PVC
  - Robotised adhesive dispensing and UV curing
  - Design and development with rapid manufacturing techniques
  - Rapid (SLS) prototyping
  - Tool making
  - Injection moulding and extrusion
  - Test laboratory
  - Assembly automation
  - Cleanroom setup and packaging
  - Sterilisation and shipment

Major equipment list:
- Extrusion in DEHP-free PVC and polyurethane
- Extrusion in liquid silicone rubber
- Horizontal moulding from 7 to 220 tons
- Vertical moulding from 30 to 75 tons
- Automated blow moulding
- Liquid silicone rubber (LSR) injection moulding from 15 to 40 tons
- Customised blister packaging
- Selective laser sintering
- Photopolymer prototyping
- High-speed 3-axis milling
- Wire cut EDM, die sink EDM
- SCARA assembly robots
- Cartesian assembly robots
- Cartesian de-moulding robots
- Customised automated adhesive dispensing and UV curing assemblies
- Mitutoyo CMM
- Quick scope non-contact measuring scope
- Walk-in aging and conventional aging chambers

Overseas presence:
- Xiamen, China
- Farmington, CT, USA

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www.forefront.sg

Certifications
- ISO 9001 : 2008
- ISO 13485 : 2003
- FDA registered
- CFR 21 Part 820
Inzign is an award-winning niche contract manufacturer specialising in plastics injection moulding and the assembly of disposable medical and healthcare devices. Headquartered in Singapore, its partnerships with OEMs span the globe, from North America and Europe to the Asia Pacific region.

Its business partners are established medical/pharmaceutical conglomerates with a wide range of products for use in different medical fields, including respiratory, haemodialysis and drug delivery.

Established in 1981, the company has transformed itself from a precision mould maker to one that offers total business services from design development to fully assembled disposable products. Driven by passion and innovation, it has strong capabilities in product design and development, in-house tool design and fabrication.

Key capabilities:
- Product design and development
- Prototyping
- Tool design and fabrication of high precision multi-cavity moulds
- Clean room moulding (Class 10K & 100K)
- Clean room automated assembly
- One-stop services in parts and components from product design and development, prototyping to tool design and fabrication
- Volume manufacturing and assembly under stringent cGMP requirements
- Post moulding and assembly operation requirements such as packaging and sterilisation

Major equipment list:
- Electric and hydraulic plastics injection molding machine (75 tons to 230 tons)
- CMM & OGP equipment
- EDM equipment
- High speed CNC milling equipment
- Conventional milling equipment
- CNC lathe machine
- Surface, cylindrical and jig grinding machine

Overseas presence:
- Batam, Indonesia

Certifications
- ISO 9001 : 2000
- ISO 13485 : 2003

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Established in Singapore since 1988, MAP Plastics Pte Ltd (MAPP) is a subsidiary of MAP Technology Holdings Limited, which is listed on Singapore Stock Exchange (SGX-ST). With operations in Singapore and Suzhou, MAP Plastics specialises in precision plastics injection moulding in class 100K and class 10K cleanrooms. We provide a full range of product development services, from mould conceptualisation and design to mass production.

MAP Plastics’s design and production capabilities cover a wide range of industries including MedTech, BioTech, Defense, Automobile and Consumer Electronics.

We are committed to Continuous Improvement in our Quality Management System. Our Singapore Plant is certified with ISO 9001, ISO 14001 and ISO 13485 while our Suzhou Plant with ISO 9001 and TS 16949.

Key capabilities:
- Tooling DFM and DFMEA
- Software such as Unigraphics CAD/CAM and AutoCad
- Mold Flow Simulation
- Semi/Full Hot Runner multi-cavitations tooling and moulding
- In-mold decoration (IMD)
- Thin wall moulding
- Vertical injection for Insert and Outsert Molding
- Product validations using tools like IQ, PD OQ, PQ, DOE AND PPAP
- Sub-assembly of components
- Competitive price
- Reliable management with 20 years of experience
- Responsive Project Management Team
- Web-based MRP system
- Strong Intellectual Properties protection

Major equipment list:
- Class 100,000 and 10,000 cleanroom precision plastics injection moulding
- Environment control precision plastics injection molding.
- Double shot plastics moulding, vertical moulding and in-mold labelling/ decoration
- Precision mould fabrication, prototyping and mass production multi-cavitation moulds
- Vertical injection for insert and outsert moulding
- Measuring equipment like Smart Scope, CCD camera, OMM, Laser Scanning Microscope, tool maker scope and gear tester.
- High precision plastics gear mould making and injection moulding for plastics gear up to AGMA 10 accuracy
- UV Precision Laser Etching Machine for microstructure steel marking with spot size of 20 micron

Overseas presence:
- Suzhou, China

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Meiban Group Ltd is a leading Singapore contract manufacturing company. Public-listed since 1994, Meiban has since grown to become a $500-million company.

With capabilities ranging from design and development, precision plastic injection moulding, toolmaking, to full turnkey box build manufacturing, Meiban is well positioned to manage the end-to-end needs of its customers. Meiban’s manufacturing operations located in Singapore, Malaysia and China ensure it is well positioned to support customers seeking a strong Asian partner with proven track records.

Over the years, Meiban has garnered numerous accolades including being named one of Forbes’ ‘Best Under A Billion’ Asian companies and hailed by DP Network as one of the Top 15 fastest growing companies in Singapore. Meiban has also been consistently ranked in the Singapore International 100 Ranking of companies.

The company’s manufacturing strength is complemented by its innovative design capabilities as evidenced by its international accolades including the Red Dot Design Award 2006 for the Rolleroaster, Red Dot & IF Design Award 2007 for the Falk Car Navigation System, and the Red Dot Design Award 2009 for Orangin.

Medical manufacturing and quality credentials are reflected in its ISO13485 quality management certification and class 10K cleanroom manufacturing facilities. Experienced medical manufacturing expertise, coupled with precision manufacturing and inspection equipment enable Meiban to meet stringent customer requirements.

Meiban’s commitment to technological innovation is demonstrated by its Innovative Manufacturing Technology (IMT) programme. IMT currently offers patented solutions applicable to any plastic injection moulding operation. Adopters may expect to realise significantly higher production output at lower manufacturing costs without compromising on quality. More info on IMT is available at www.imt.com.sg
Nypro Singapore

A plastics company, Nypro operates 49 separate businesses in 16 countries which design plastics products, build moulds used to mould plastics, perform plastics injection moulding, supply other parts needed to be assembled with plastics parts, assemble the parts and prepare them for delivery to its customers. Nypro’s customers are the world’s largest companies that use plastics in their products.

Nypro provides solutions from start to finish – it is passionate about its unique team of people, enabling it to provide the highest quality design, development and global production solution for precision injection moulding and related manufacturing solutions.

Nypro’s strategy is focused on providing integrated and innovative plastics solutions to the world’s leading companies, implemented by its premier global team of employees. It targets strong long-term growth by being the supplier of choice to some of the best companies in the healthcare, electronics, telecommunications, industrial, automotive, packaging and consumer markets.

Its growth is achieved by concentrating its efforts on profitable opportunities with customers that value its core competencies.

Key capabilities:
- Precision injection moulding – thin wall moulding, specialty materials, screw/unscrewing/stack moulding, transfer moulding, in mould decorative lens, vertical moulding for healthcare application.
- Contract manufacturing – high-speed assembly operations, filling capabilities, healthcare assembly.

Major equipment list
- Class 100K clean room production area.

Overseas presence:
- China
- India
- Europe
- USA

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Certifications
- ISO 9001 : 2000
- ISO 13485 : 2000
- cGMP
Racer Technology is one of the leading medical device manufacturers in the world. It was established in December 1988, specialising in manufacturing high quality precision components, sub-assemblies and contract manufacturing. Through a systemic understanding of the requirements and target feasibility experiments, Racer’s product design service makes device development more predictable in scope, time and cost.

Its disciplined approach to systems engineering, programmatic risk management and detailed design reduces development risk and minimises cost and time to market. As an integrated solutions manufacturer, it provides services in all thermoplastic-related manufacturing, from industrial/mechanical design, CNC prototyping, silicon tools, prototype tools, production tool fabrication, precision machining, precision engineering plastics, EMI/UV/cosmetic spray painting, finishing decorations, ultrasonic welds, ultrasonic cleaning, sub-assemblies and final package.

Racer can provide direct support from many strategic locations throughout Asia. With its workforce running on three shifts, six days a week, clients are assured of good lead-time in deliveries. The Group has a staff strength of about 2,000 regionally and 300,000 sq ft (27,870 sq m) of manufacturing space with over 280 injection machines ranging from 30 to 55 tons. Singapore serves as the company’s headquarters with connections in Malaysia, Indonesia and China. Finished products can be shipped directly to its customers’ distribution channels.

Key capabilities:
- Product design (rendering & mechanical design)
- Prototyping
- Precision machining of plastics components
- Class 100,000 moulding, assembly class 10k
- 2 shots moulding, reel-to-reel moulding, structural moulding, steam assist moulding, in-mould decoration (IMD)
- Class 100,000 assembly room
- Sterilisation
- Sub-assembly
- Adoption of 6-sigma methodology

Medical Industry expertise includes:
- Prototyping adopting MUB (mold unit base, aluminium inserts)
- DFMEA and DFM review prior to tooling fabrication
- Mechanical design
- Class 100,000 cleanroom facilities in moulding and assembly
- Pre-clinical solutions
- Process qualification and validation capabilities

Major equipment list:
- Highly precise Engel injection machines
- Omron high-speed CNC machines
- Fanuc high-speed 16 tool change
- Litz Hitech CV-800
- Ard convectional EDM machine
- Sordick Japan CNC wire cut machine

Overseas presence:
- California, USA
- Suzhou, China
- Batam, Indonesia
- Senai, Malaysia

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Certifications
- ISO 9001 : 2000
- ISO 13485 : 2003
- ISO 14001 : 2004
- FDA registered
- UL (Underwriter Laboratory)
- cGMP
Rayco Technologies Pte Ltd

Rayco Technologies is a Singaporean company founded in 1954 to provide customised precision elastomer solutions for the automotive and aerospace, data and mobile storage, and medical and electronics industries. The company conducts research and development as well as designs and manufactures precision elastomer components at our internationally certified manufacturing facilities in Singapore and China.

Rayco supports its customers in product and tooling design, developing unique elastomeric formulation and fabrication of moulds. It is capable of over-moulding elastomers with various materials such as metal, plastic, film and fabric. They also support PTFE coating and provide ultra-clean parts in a Class 100 cleanroom environment.

Key capabilities:
- One-stop customised precision elastomeric component solution provider from design to delivery: in-house material formulation, tool design and cutting, moulding, clean room operations and lab tests
- Specialised in miniature, complex and over-moulding of elastomeric materials with metal, plastic and fabric for specific engineering needs
- Serving global customers in aerospace, automotive, data/mobile storage, life sciences and electronics industries

Major equipment list:
Tool Room:
- CNC EDM (Germany/Japan)
- Machine centre (Germany/Japan)
- Milling machine
- CNC turning auto lathe

Production:
- Compounding – Auto batching system
- 2/4 roll mill
- Lab mill
- Preparation – Precision preformer with strainer
- Moulding – Auto PLC vulcanising presses
- Rubber/TPE/TPR/LSR injection machine
- DIPG
- Secondary – Vacuum oven
- Process pen recorder controlled air ventilation oven
- Cryogenic deflashing machine with PLC SPC
- Trim press
- Mould cleaning machine
- Polishing machine
- PTFE coating

Accredited test services:
- Ion chromatography (IC)
- Fourier transform infrared spectrophotometer (FTIR)
- Gas chromatography – mass spectrometry (GCMS)
- Thermogravimetry analysis (TGA)
- DIN microhardness testing

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Certifications
- ISO 9001
- ISO/IEC 17025
- TS 16949
- ISO 14001
Sunningdale Tech Ltd is a leading manufacturer of precision plastic components. The Group provides one-stop turnkey plastic solutions with capabilities ranging from product design, mould fabrication, injection moulding and secondary processing, through to the precision assembly of complete products. It focuses on four key business segments: automotive, consumer/IT/telco, healthcare and toolings.

Sunningdale Tech has manufacturing facilities located in nine locations across Singapore, Malaysia (Uhoor), Indonesia (Bintan), China (Tianjin, Shanghai, Suzhou and Zhongshan) and Mexico (Guadalajara). Its strategic position in almost all of the key manufacturing centres in Asia enables the Group to target and capture opportunities in different sectors in each geographic location.

The company leverages its strengths by sharing technology and skills across the Group’s facilities. In this way, it is able to offer customers a strong suite of capabilities across the entire value chain.

**Key capabilities:**
- Design and precision mould manufacturing
- Plastic injection moulding
- Secondary decorative processes
- Full turnkey precision assembly

**Major equipment list:**
- Plastic injection moulding
- Ultra precision injection moulding
- Clean room medical moulding (ISO 13485-certified facilities)
- Machine range from 35 tons to 2800 tons
- High-speed thin wall moulding capability
- Two-shots injection moulding
- Multi-components moulding
- Auto inserts moulding
- Gas-assisted moulding
- MuCell moulding
- In-mould decoration/label moulding

**Secondary Processes**
- Fully automated high speed UV spindle system
- Fully automated high speed reciprocal system
- Fully automated high speed five-axis system
- High-speed solvent/water based system
- High-precision laser etching machinery
- Precision toolroom machines and advanced computer-aided design software/hardware
- Precision injection moulding machines ranging from 30 to 2800 tons
- Class 10K and 100K cleanroom moulding for healthcare products

**Overseas presence:**
- Malaysia
- Indonesia
- China
- Mexico

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**Certifications**
- ISO 9001
- TS 16949
- ISO 13485
- ISO 14001
- OSHAS 18001
- HACCP (ISO 22000)
- cGMP (FDA-QRS 820)
Univac was founded more than 20 years ago and now ranks among the global market leaders in the field of high precision mould making. It offers customers a one-stop solution with the advantage of its world-class engineering technology centre, state-of-the-art moulding facilities in Singapore, Malaysia and China, as well as capabilities in providing full turnkey solutions. It offers a complete range of services from mould conceptualisation and design, prototyping, test and maintenance of precision engineering moulds, to the production of plastic injection types. It is also fully equipped to undertake full turnkey projects in semi and fully automatic sub-assembly of plastic and metal parts.

The company serves a wide range of global manufacturers from varied industries including electronics and telecommunications, electrical and computer peripherals, medical and healthcare, packaging and automotives.

Key capabilities:
- Product development
- Precision medical tool design and fabrication
- Cleanroom injection moulding and assemblies
- Contract manufacturing of medical consumables and disposables
- Integrating automation into assembly lines

Major equipment list:
- Prototype moulds
- Pre-production moulds
- Multi-cavity/high cavitation
- Multi-shot (multi-material)
- Fixtures (de-gating/inspection)
- End-of-arm tooling
- ISO Class 8 cleanroom moulding and assembly
- Insert moulding
- Transfer programs
- Semi to fully automated assembly systems
- Automation systems

Overseas presence:
- Malaysia
- China

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ISO 13485
ISO 14001
TS 16949
Metal Machining and Fabricators
A & One Precision Engineering Pte Ltd

A & One Precision was founded in 1992 and incorporated as a private company in 1994. Driven by a commitment to quality and total customer satisfaction, A & One has established itself as the premier service provider in the precision machinery industry, with unique characters and unmatched strength. Its customers range from data storage, semiconductor, equipment manufacturing, medical technology, aerospace, oil and gas and telecommunication industries.

Over the years, the company has created a broad-based presence in the industry and continues to invest heavily in state-of-the-art precision machinery such as multi-axis machining centres and ultra-precision measuring centres.

There are numerous factors that make A & One the success that it is. Experience, technical knowledge, and the collective effort of its hardworking and dedicated staff are just some of a few. The company believes that human resources are its greatest assets. With its team of experienced and talented staff, A & One is committed to helping customers enhance their competitive advantage through cutting-edge technologies, and meeting all their exacting standards for quality and reliability — while at the same time achieving cost effectiveness to achieve the best value for its products.

Today, the company is one of the leading precision engineering service providers in the region delivering a complete suite of services. Besides fabrication of precision processed components and sheet metal works, A & One is capable of providing customers with prototyping, assembly, integration, testing, and the commissioning of full turnkey projects, as well as the manufacturing of customised equipment.

Key capabilities:
- Precision machining of components, sheet metal work and assembly of turnkey projects

Major equipment list:
- Multi-pallet flexible machining system
- Multi-axis CNC turn mill centre
- 5-Face CNC vertical machining centre
- Multi-axis CNC horizontal machining centre
- Multi-axis CNC vertical machining centre
- Multi-axis CNC lathe
- High precision CNC grinding machine
- Laser cut machine
- Punch and form machine
- Precision press brake
- CNC coordinate measuring machine
- Abrasive flow machine

Overseas presence:
Factories in:
- Kuala Lumpur, Malaysia
- Wuxi, China
- Bintan, Indonesia

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Advanced Materials Technologies (AMT) Pte Ltd

Advanced Materials Technologies is a leading manufacturer that specialises in the mass production of precision metal and ceramic components through its proprietary Metal Injection Moulding (MIM) technology. Leveraging on this technology and the company’s precision machining facility in Dongguan, China, AMT delivers high-quality components and assemblies for the medical devices industry at compelling prices.

ISO 9001:2008-certified and TS 16949-compliant, AMT boasts extensive experience and know-how in the manufacturing arena to enable it to manufacture solutions for high-quality products, not only for application in the medical industry but also in international industries such as electronics, automotive, industrial and energy.

Incorporated in 1990 and headquartered in Singapore, AMT is a subsidiary of Accuron Technologies. Together its facility in China, the company is capable of processing an annual capacity of 500 tons of materials at competitive prices.

Key capabilities:
- Metal injection moulding – materials include SS 316L, 17-4 PH, super-alloy F75, SS 440C, Fe-50%Ni, Kovar, HK-30, etc.
- Ceramic injection moulding – zirconia, alumina, spinel MgAl2O4, etc.
- Copper injection moulding
- High precision machining – able to process materials above 60 HRC

Major equipment list:
- MIM equipment and furnaces
- Ceramic air furnaces
- Tornos CNC turn-milling
- Hembrug CNC hard turn
- Studer cylindrical grinding
- Mazak CNC turn-milling
- Mazak & Makino CNC milling and turning
- Brother CNC tapping
- Okamoto surface grinding
- Sunnen honing

Overseas presence:
- Dongguan, China

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Dou Yee Technologies (DYT) specialises in metal injection moulding (MIM), ceramic injection moulding (CIM) and engineering plastics. Its proven track record has earned the company a place on the lists of preferred suppliers of numerous MNCs.

DYT addresses its customers’ needs by providing competent engineering solutions with ample capacity for their volume production. All this is done with the highest quality and with customised metrology as a value-add.

DYT prides itself on being one of the fastest time-to-market providers and a major player in the industry. Its sound financial record and customer recognition has enabled its team to face any challenges ahead.

Key capabilities:
- MIM, CIM, plastic metal overmould and mechanical sub-assemblies
- Works in collaboration with Micro Stamping Corporation for mechanical sub-assembly of endoscopic products
- Class 100k plastic moulding
- MIM output capabilities: 1 million pieces per day.

Overseas presence:
- Malaysia
- Indonesia
- China
- France
- Philippines
- Japan
- USA

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Certifications
- ISO 13485
- ISO 3001
Encus International Pte Ltd

Founded in August 2004, Encus International is headquartered in Singapore. Its core competencies are in high-value customised systems assemblies and sheet metal forming manufacturing.

Encus has two operations sites: a 40,000-sq-ft (3,716 sq m) facility in Singapore that specialises in high-mix low-volume (HMLV) customised systems, and a 40,000-sq-ft (3,716 sq m) facility located in Shanghai, China, that specialises in mid- to high-volume cosmetic metal components.

The company also boasts two global sales offices in Glasgow, Scotland and New Jersey, USA. These were established to support its overseas clients and queries. Encus International’s services include turnkey manufacturing, electro-mechanical assembly, mechanical assembly, sheet metal fabrication, product design, engineering, tool design and program management.

Key capabilities:
- High complexity product design – mechanical, electrical, firmware and software design
- High precision sheet metal fabrication
- Mechanical and electro-mechanical sub-assemblies and turnkey manufacturing services
- Cosmetic sheet metal manufacturing
- Program management – ATMs, kiosk systems, industrial equipment, medical equipment, consumer electronics

Major equipment list:
- Laser cutting machines
- Turret punching machines
- Press brakes (Amada)
- Haarline machines
- CMM
- TIG, MIG, spot welding
- Spray painting and powder coating facilities
- E-coating facilities
- Anodising facilities

Overseas presence:
- Shanghai, China
- San Diego, USA
- New Jersey, USA
- Glasgow, Scotland

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Certifications
ISO 9001
Fine Sheetmetal Technologies Pte Ltd

Fine Sheetmetal (FSM) Group of Companies provides a full spectrum of integrated, value-added services including design and engineering services, production of complex assemblies, custom-designed sub-assemblies, indoor and outdoor custom enclosure systems, complete mechanics systems integration and testing. These services are provided to a diverse base of leading OEM companies in the semiconductor, high-end communications, storage, medical, military, tooling machinery and other sectors of the mechatronics industry.

FSM utilises highly flexible responsive manufacturing facilities for their customers to provide unparalleled service and support. Each operation has its own manufacturing, quality, engineering, materials management and customer service teams that meet FSM’s internal standards for quality, delivery, technology and cost competitiveness. FSM is committed to providing its customers with a full range of services for fulfillment anywhere in the world.

Key capabilities
- Advanced design and engineering
- Quick turn fabrication and assembly
- New product introductions (NPI) and development
- High-mix, low- and medium-volume production
- Supply chain management/international procurement
- Enclosure assembly
- Mechanics integrations and testing
- Painting for wet paint and powder coating

Major equipment list:
- Mitsubishi (M-VS20/15) CNC 5-face milling 3,000(L) X 1,500(W) X 1,200(H) (accuracy 0.006)
- Mitsubishi (MVR35) CNC 5-face milling 5,200(L) X 2,000(W) X 1,500(H) (accuracy 0.005)
- Mitsubishi (MVR35) CNC 5-face milling 6,200(L) X 2,500(W) X 2,200(H) (accuracy 0.005)
- DaHin (CIM2212) CNC vertical milling centre 2,200(L) X 1,300(W) X 760(H) (accuracy 0.005)
- Amada (F03019) CNC laser (4kw) 3,050(L) X 1,550(W) X 200(H) (accuracy 0.05)
- Amada (FBX-NT8025) CNC bending (80 ton/2,500 lg) (accuracy 0.02)

Overseas presence:
- Malaysia
- China

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ISO 9001 : 2008
ISO 14001 : 2002
Fong's Engineering & Manufacturing Pte Ltd

With a 2,141 sq m (23,045 sq ft) production area in Singapore and a 2,400 sq m (25,800 sq ft) production area in Nantong, China, Fong's Engineering and Manufacturing is well-equipped to offer state-of-the-art manufacturing technologies to its global customers.

With over 70 CNC high-tech precision machines and a new 930 sq m (10,000 sq ft) assembly business unit, Fong's 270 dedicated and skilled employees manufacture and assemble high-end mechanical, electro-mechanical and opto-mechanical components, modules or systems for the bio-medical, defence, electronics, optics, communication, and oil and gas industries.

Fong's Engineering regularly improves and updates its products and processes. The company believes that productivity and achievement of strategic goals are a matter of people. People are its key resource and with good management, the organisation and its staff consistently deliver on their objectives and strategies.
HFB is a specialist and pioneer in the product and service delivery of sheet metal fabrication and frame fabrication. The company has been in operation since the 1980s and has rapidly grown from a local manufacturing company with 20 employees to the conglomerate it is today with four manufacturing plants scattered across Asia.

Its presence can be felt in Malaysia and China as regional strategic partners to its customers. With quality expertise, premium customer service and competitive pricing, HFB has become an industry leader. Its engineering solutions reduce manufacturing lead-time across the supply chain, while its processes are designed to ensure excellence through self-inspection, timely technology refreshment and innovation.
Metal Component Engineering Limited

Metal Component Engineering (MCE) is a one-stop mechanical manufacturing solutions provider with a regional manufacturing presence in Asia. It focuses on ATM, gaming terminals, computer peripherals, printers, consumer electronics, automobiles and hard disk industrials.

The company offers services such as design, prototyping, tool and die fabrication, stamping production and value-added assembly. It supports customers through both high-mix low-volume and low-mix high-volume production. MCE’s services also extend to electro-mechanical assembly solutions with supply chain management capabilities. Its assembly lines allow flexible configuration to meet various product requirements.

Through its efficient supply chain and inventory hub management, MCE provides the most competitive solutions to its customers. It has plans to expand its customer base by going into the renewable energy, petrochemical and gaming industries.

Key capabilities:
- Product design
- Early supplier involvement
- DFM
- Program management
- Prototyping
- Tool fabrication
- Batch production
- High-volume production
- Secondary processes
- In-house surface treatment
- Supply chain management
- Product assembly

Major equipment list:
- Turret machines
- 4kW laser machines
- Robotic laser welding
- EN plating machines
- Tumbling machines
- V-bending machines
- Progressive and manual mechanical presses (600 to 45 tons)

 Overseas presence:
- Malaysia
- China

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Microcast Pte Ltd

Microcast has been supplying precision zinc die cast components to customers worldwide since 1989. Its partnership with its customers begins from the design phase. Through innovative redesigning of components, its experienced design team has helped customers reduce their overall production costs and attain improved performance.

With its own design team, tool room facility and die-casting machines, the company provides a one-stop solution in precision zinc die-cast components. Part to part consistency is maintained throughout the production cycle, with tolerance as close as +/-0.01mm or 0.0004".

Its quality, flash-free and ready-to-use components are utilised in a wide range of industries such as telecommunications, computers, consumer products, medical equipment and heavy machinery, among others. The company counts names like Sony, Hitachi, Panasonic, Schneider Electric and Honeywell among its clients. It also exports to countries like Japan, USA, China, India, Taiwan, Hong Kong, Indonesia, Malaysia, Thailand, Australia and Europe.

Key capabilities:
- Tool design
- Tool making
- Component redesigning
- Secondary processes, e.g. plating, assembly, magnetic deburring, etc.
- Precision components production
- Joint R&D projects
- Ability to cast components up to 1kg in weight
  (no minimum weight restrictions)
- Able to read various drawing formats: DWG, DFX, IGES, SAT, VDA, etc.

Major equipment list:
- 28 units of die casting machines
- Fanuc Robodrill CNC milling machine
- Sodick EDM
- Charmilles EDM

Overseas presence:
- Suzhou, China

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ISO 9000 : 2000 Certifications
Miyoshi Precision was incorporated in 1987 as a private limited company and subsequently listed on the Singapore Stock Exchange in 2000. Since then, Miyoshi has evolved into an ‘integrated engineering corporation’ with a wide range of capabilities including tool design and fabrication, precision metal stamping, turning, machining, plastic injection moulding, PCB, OEM and EMS. The company engages actively with customers from new product development till mass production.

Serving key industries such as consumer electronics, data storage and medical, its regional business ring revolves around its headquarters in Singapore and manufacturing plants in Singapore, Malaysia, Indonesia, Thailand, Philippines and China. Over the years, Miyoshi has also ventured into other niche industries such as aerospace, safety and sensory.

Coupled with its partner in Japan, this strategy of locating its operations in cost-competitive hubs within Asia sites Miyoshi Precision in close proximity to its customers and strongly positions it to capitalise on opportunities in the region.

Key capabilities:
**ODM/OEM**
- EZkiosk and currency counter
- Liquid crystal module
- Electro-surgical tube knife

**EMS**
- Medical endoscope
- Sensor devices
- Home theater system

**Components**
- Tool design and fabrication
- Precision stamped components
- Precision machined and turned components
- Fast prototyping and short run/batch production
- Plastic injection moulded components
- Surface treatment
- Cleanroom assembly
- Design and fabrication of automated equipments
- Value-added sub-assembly

**Major equipment list:**
**Product Realisation Machinery**
Precision stamping machines, CNC milling machines, CNC turning machines, EDM machines, EDM wire-cut machines, cylindrical grinding machines, surface grinding machines, welding machines, NC riveting machines, injection machines, degreasing lines, de-ionized washing lines, electroluminescent nickel plating lines, electrolytic nickel plating, zinc plating lines, silver plating lines, clear chromating lines, cell production systems, surface mount lines, turret punch machine, laser cut machine, bender machines, box build assemblies and PCBA lines.

**Precision Measuring Equipment**
Coordinate measuring machines, non-contact CMMs, X-Ray machines, ion chromatography machines, gas chromatography-mass spectrometry machine, liquid particle counting machines, air particle counters, automated optical inspection machines, in-circuit test machines, micro-hardness tester, rubber hardness tester, surface roughness tester, peel strength machine, air-leak tester, XRF thickness tester.

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**Certifications**
- ISO 9000 : 2008
- ISO 13485 : 2004
- ISO/TS 16949 : 2009
- AS9100 Rev B
- ISO 14001 : 2004
- OHSAS 18001: 2007

MMI Holdings Ltd

MMI is a leading precision engineering components company serving global market leaders in technology-driven industries. Since its founding in 1989, the company has consistently won industry and business accolades including Enterprise of the Year 1999, Supplier of the Year awards with various OEMs, and a listing in Forbes Asia Best-Under-a-Billion.

MMI occupies a niche among major contract manufacturers thanks to its ability to provide manufacturing solutions of significant scope and scale with its precision mechanical engineering capabilities. The company’s depth comes from its 20 years of experience and continual development of process technology with investment in people and infrastructure to support the increasingly sophisticated needs of its customers. The breadth of its precision mechanical manufacturing technologies includes mechanical engineering design, precision casting, machining and metrology, precision assembly and testing, materials and surface treatment (plating/contamination/finishing) and industrial automation.

The company’s unique strength lies in its ability to provide customised strategic manufacturing solutions for electro-mechanical parts, assemblies and equipment. These address the diverse manufacturing strategies of its customers’ electro-mechanical products in multi-industry sectors. MMI’s partnership philosophy ensures its customers’ intellectual properties are protected through effective internal IP Protection policy and protocols, contributing to the company’s excellent reputation.

Key capabilities:
- Complete state-of-art manufacturing operations for low-to-medium volume mission-critical components requiring complex precision machining and secondary processes on exotic metals
- Precision machining: Operates more than 1,000 CNC machining equipment daily throughout its operations, comprising single and multiple axis milling and turning process, Ram/Vire EDM process, surface and cylindrical grinding process, and specialty processes such as honing and gun drilling/deep hole boring
- Surface finishing: Capabilities include electrolytic/electro-less nickel, Teflon, gold plating, clear clad, and specialty high-velocity oxygen fuel (HVOF) thermal spray. Its laboratory is equipped to conduct XRF thickness, salt spray, and metal composition tests
- Access to upstream/downstream processes: Includes thermal spray, heat treatment, carbide/ceramic coating, anodising, plasma coating, welding and specialty NDT testing

Major equipment list:
- CNC turn-mill
- CNC lathe
- Deep hole boring
- Honing
- OD grinding
- Gun drill
- Universal machining centre
- CNC EDM
- CNC ED wire-cut
- CNC horizontal milling
- CNC vertical milling
- HVOF coating

Inspection:
- CMM, OGP scope
- Fiber/mini borescope
- Rockwell hardness tester
- Surface roughness tester

Overseas presence:
- Johor Bahru, Malaysia and Thailand
- Phoenix, Arizona, USA
- Multiple facilities in Jiangsu Province, China

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Certifications
- ISO 9001
- ISO 9002
- AS 9100
- API
Onn Wah is a "make-to-print" organisation specialising in precision CNC-machining of complex medium-size components in a high-mix low-volume environment. Since its inception in 1961, Onn Wah has been servicing various sectors including the semiconductor, oil and gas, biomedical and optics industries.

Having obtained AS9100 certification in 2007, the company has diversified into the aerospace market, which today accounts for 30% of its activity. This swift diversification stems from a combination of Onn Wah's operational strengths and Singapore’s outstanding infrastructure.

Today, the company and its subsidiaries boast a 300-strong workforce. Its business philosophy is based on continuous improvement towards world-class manufacturing practices.
Established in 1995, PLC Industries has built a reputation for excellent service and consistently delivering quality products on time and at competitive prices. It is often the principal and preferred partner to its clients. The company guarantees customer satisfaction and will go to any length to ensure customer expectations are not just met but exceeded.

PLC Industries continually strives to build long-term partnerships with its customers, suppliers and most importantly, its employees. This has helped the company to grow and prosper over the years.

Its machine shop features the latest CAD and CAM software, as well as the most modern CNC 5-axis milling and turning centres. Thanks to its manufacturing expertise, PLC Industries deftly handles any material, from standard aluminium to exotic metal machining including inconel®, monel, titanium, 17-4 ph and stainless steel, to name a few.

Key capabilities:
- 5-micron cylindricity accuracy or better
- Surface finish in R.a 0.2 micron = 200nm
- Flatness in 1.27 micron
- Perpendicularity in less than 5 arc sec (0.00138 deg)
- Turnkey solutions
- Box-built
- Sub-assembly of optics
- Key manufacturing/process equipment
- CNC turn/5-axis mill/turn-mill

Major equipment list:
CNC Machining (Turning):
- Okuma LCS 150/ Okuma LB 15/ Okuma LB 9/ Okuma LB 200/Turn - Mill/ Okuma LB 300C/ Okuma LB 270/ Mori Seiki/ LB 3000/ LB 2000/Turn - Mill/ Weiler (Turn - Mill)/ Index GS42 (Turn - Mill)/ Index GS30 (Turn - Mill)

Precision Lathe:
- Colchester/ SD-25A

CNC Machining (Milling):
- Mori Seiki (4 Axis)/Takisawa (MAC V-40)/ Brother (TC – 217)/ Howa (2 tables)/ Sirius 550 (5 Axis)

Profile Projector:
- Mitutoyo (PM-3500)

CMM:
- Brown & Sharp

CMM (CNC):
- Wenzel

Pin Gauges:
- Vermont Gauge

Slip Gauges:
- Mitutoyo

Trimos:
- Tesa/Micro-Hite

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Certifications
- ISO 9001: 2008
- ISO 13485: 2003
Precision Products Singapore Pte Ltd

Precision Products Singapore (PPS) is a wholly owned subsidiary of Singapore Technologies Aerospace. It is a leading player in the precision investment casting industry in which it manufactures casting and mould toolings for customers in the aerospace, defence, commercial, and oil and gas industries.

With a $15-million annual turnover, PPS is the largest non-ferrous and ferrous foundry in Singapore.

Capabilities:
- Aluminium castings – materials 356, A356, A357 and C355
- Steel castings – carbon and low alloy steel, Cr-Ni stainless steel, precipitation hardening stainless steel, grey iron, Ni-resist
- Super alloy castings - nickel-based Inconel 713LC and Inconel 718
- Inspection and test – FPI, radiographic inspection, tensile testing, hardness test, chemical analysis

Major equipment list:
- Wax injection machines
- Slurry sand coating system
- De-waxing boilerclave
- High frequency melting furnace
- Aluminium melting furnace c/w vacuum chamber
- Vacuum melting furnace
- Roll-over furnace
- Aluminium heat treatment furnace
- Aging furnace
- Blasting machine
- Pre-heat & firing gas furnace

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Certifications
- ISO 9001 : 2000
- AS 9100 : 2001
- NADCAP AS 7114, NDT
- NADCAP AS 7102, Heat Treating
A specialist in precision CNC machined parts, TMO consistently draws return customers thanks to its quality work, competitive pricing and willingness to explore new techniques and technologies. Today, TMO is an established business that boasts a multinational clientele in the medical, bioscience and life sciences industries. It is synonymous with reliability and competitive costs.

The company has extensive experience in machining ferrous and precious metals such as silver, gold, calcium, molybdenum, nickel, tantalum, zirconium, etc. It also machines a wide range of high-performance engineering plastics such as PEEK, PTFE, PPO, PVDF, turcite, torlon and others.

Over the years, the company has expanded its services to cover modular higher assembly of equipment for its existing customers — a testament to its commitment to exploring a wider range of services in order to satisfy its customers’ ever-expanding requirements.

Key capabilities:
- Machining of components and parts, including exotic materials with purity up to 99.9% (metals) and engineering plastics
- Sub-assembly of modules and equipment

Major equipment list:
Manufacturing equipment
- Hurco Performance Advantage series
- Hurco vertical machine centres
- Cincinnati Milacron vertical machine
- Taft Peirce precision grinding machine
- Mazak horizontal CNC lathe
- CNC tapping centre Mdl:TC217
- Mark Plus CNC milling and drilling machine

Measuring equipment
- Micro-Hite base instrument
- Brown & Sharpe 2000 CMM
- OGP Smartscope
- Mitutoyo profile projector
- Mitutoyo Toolmasters microscope
- Helmel Checkmaster 216-142 CMM

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ISO 9001

Certifications

ISO 9001
Optical Components & Sub-Assemblies
Established in 1988, II-VI Singapore was the first to bring world-class CO2 laser optics manufacturing to Asia. Its mission is to supply infrared optics of the highest quality and at the best value. These optics are used in a variety of laser systems, such as CO2, Erbium and Yb, for cutting and welding as well as for medical and table top manufacturing applications. A dedicated II-VI Singapore and China team of technicians strives hard to deliver total customer satisfaction.

In 1996, the company established a subsidiary, II-VI Optics Suzhou Company Limited, located in the China-Singapore Suzhou Industrial Park in Suzhou, China. This subsidiary focuses on optical fabrication for a wide variety of infrared and near infrared optical components. After fabrication, optics are shipped to Singapore for application of thin film coatings in the company’s state-of-the-art coating facility.

Be it one custom laser optics or several thousand OEM components, II-VI Singapore can provide the quality, value and quick response that its global customers have come to expect.
Opto Precision offers one of the best optics assembly, optics component manufacturing and coating facilities in Southeast Asia. It has excellent IP-protection systems and strategically located and talented manpower resources in Singapore. These allow the company to provide excellent products, faster turnaround time and competitive pricing to its customers worldwide.

Its precision optics department facilities include several state-of-the-art German-made machines with the ability to create extremely precise optics that are customised to its customers’ specifications. Opto Precision’s customer base includes markets for industrial, biomedical, optoelectronics, semiconductor, military, telecommunication and the institutional fields.

Key capabilities:
- Optical design
- Optical coating
- Optical system assembly
- Optics component manufacturing
- Optics coating
- Consultancy
- Sales of specialty materials
- Linos products SEA distributor

Major equipment list:
- Leybold coating machines
- 2 spectrophotometer (Perkin Elmer)
- Ultrasonic line
- Zygo interferometer
- Trioptics
- Disco dicing system

Overseas presence:
- USA
- Europe
- China
- Middle East
- Southeast Asia

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A subsidiary of the Qioptiq Group, Qioptiq Singapore is a one-stop optics solutions provider with more than 30 years of experience in the design and manufacture of optical components and sub-assemblies for a broad range of defence and commercial applications.

Today, Qioptiq Singapore is the leading company for the Group’s precision optics division, housing a team of approximately 700 dedicated professionals with experience and expertise to develop optimal solutions for the most complex and demanding optics applications.

Qioptiq offers some of the most advanced optical technologies and manufacturing processes available today. It brings together expertise in optical, mechanical and metrology disciplines to provide comprehensive design, build and manufacture of optical components, sub-assemblies, modules and systems. This breadth assures its customers of the convenience and expediency of a single source for their optical requirements.

Key capabilities:
- Design and manufacture of optical components and electro-optical assemblies
- Produces biotech filters, endoscopy couplers, ophthalmic modular assembly, large venue projection components and semiconductor sub-assemblies in clean-room environments
- Produces night-vision equipment, vehicle displays, lasers and fire control systems for defence industries

Major equipment list:
- Grinding machines
- Polishing machines
- Centering machines
- Coating machines
- Interferometers
- Spectrophotometers
- Ultra-precision machines
- Ultrasonic cleaning machines
- Co-ordinate measuring machines (CMM)

Overseas presence:
- USA
- Europe

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Certifications
- ISO 9001
- ISO 14001 (in progress)
- AS 9100 (in progress)
- ISO 13485 (in progress)
Secondary Processes & Supporting Industries
For more than 25 years, ACP has built a first-class reputation as a metal surface finisher, supporting the aerospace, bio-medical, consumer electronics, optical, ordnance and semi-conductor sectors in Singapore. ACP’s principal activities centre on specialised surface treatment and finishes that serve the function of corrosion, scratch and wear resistance, electrical insulation, cleanliness and aesthetic enhancement. With the opening of ACP Aerospace in December 2006 to serve the MRO market, grinding, machining, grit blasting and stress relief services are offered. Today ACP operates with 170 trained personnel in Joo Koon Circle, Singapore.
Aluputer Industrial Pte Ltd is a specialist in the surface treatment industry. Established in 1983, it caters to the needs and high specifications of its clients, ensuring perfect product delivery on schedule at minimal cost.

The entire company gears itself towards its main objective of customer satisfaction. Aluputer attributes its success in the surface treatment industry to the traditional belief in the power of satisfied customers. The company counts computer peripheral, audio and video manufacturers of international renown among its clients, all of whom are confident of the quality and reliability of Aluputer’s strength and service.

In 1993, the company extended its operations to Johor Bahru, Malaysia and today boasts a skilled workforce of about 350.

With its wealth of integrated expertise and the latest machinery, Aluputer is well geared to meet the specific needs of its customers for years to come.

Key capabilities:
- Chromating
- Chemical cleaning
- Hard anodising
- Selective nickel plating
- Electroless nickel (high corrosion resistant)
- Prism assembly line
- Optics fabrication
- Optical coating
- Powder coating
- Spray painting
- Silk-screen
- Tempo printing
- Blueing
- Phosphating
- Sand casting
- CNC machining
- Heat treatment - Annealing

Major equipment list:
- Fisherscope MMS betascope
- Perkin Elmer spectro-photometer
- Zygro interferometer
- Minolta colorimeter
- Agilent gas chromatography
- Coordinate measurement machine (CMM)

Overseas presence:
- Malaysia (Johor)

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ISO 9001 : 2000
ISO 14001 : 2004
Applied Total Control Treatment Pte Ltd (ATC)

From a humble start-up in 2004, ATC has transformed to become a leading player in the metal finishing industry. The company complies to the stringent Aerospace Quality Standards and has achieved AS 9100 and NADCAP certification for the aerospace industry.

In order to maintain its strong capabilities and technical expertise, the company emphasises continuous improvement within its team. ATC ensures internal growth by continuous skills training that helps its team to be well-equipped and readily take on new challenges to meet the stringent quality expectations in metal finishing.

ATC also attributes its success to its ability to adapt and work closely with customers to fulfil their increasing sophisticated needs and special requirements for secondary processes. It is through consistency of quality, timely delivery, and service reliability that ATC forges strategic partnerships with its growing clientele and achieves total customer satisfaction.

Key capabilities:
One-stop solutions, specialising in metal finishing services:
- Electroplating, plating, conversion coatings e.g. aluminium anodising, aluminium conversion coating, zinc plating, nickel plating, electroless nickel, silver plating, gold plating, stainless steel passivation and electropolishing
- Coating services such as powder coating and spray painting
- Special cleaning processes

Major equipment list:
- Plant area: 35,000 sq ft (3,251 sq m) metal finishing facility and 10,000 sq ft (930 sq m) coating facility
- Class 1000 Cleanroom for special cleaning processes
- Well equipped Laboratory and Testing facilities
- Fully automated plating line
- De-ionised water system
- X-ray machine
- Spectrophotometer
- Sigmascope

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www.atc-treatment.com
CEL Coatings Industries Pte Ltd

CEL Coatings has been specialising in surface treatments since 1984. With its team of dedicated managers, engineers and workers, the company has grown to encompass over 200 employees and manufacturing facilities occupying more than 40,000 sq m (430,556 sq ft) today. Its production lines are a mix of semi- to fully automatic lines and cater for both high and low volume production requirements.

In 1995, in recognition of the emergence of a world-class cluster of industries and support services in Singapore, CEL Coatings upgraded its services from basic electroplating activities to high-quality and complex surface finishing services. The company has also successfully re-engineered its production capacity to deliver huge volumes of products with consistent and superior quality.

With state-of-the-art facilities and best-in-industry operating processes, CEL Coatings has evolved to become a sought-after specialist in surface treatment services. Its consistently high quality, fast turnaround and competitive pricing make for a winning formula that has helped the company become a leader in the high precision metal finishing industry.

Key capabilities:
- Yellow, blue and black zinc on steel
- Passivation on steel
- Electroless nickel on cold rolled steel, aluminium, zinc die-cast and magnesium PTFE-electroless nickel composite coating for steel
- Black electroless nickel on steel
- Satin tin cobalt on magnesium and steel
- Clear and yellow chromating on aluminium
- Gold on kovar steel and aluminium
- Copper on steel
- PTFE coatings on steel
- Copper, nickel, chrome on ABS
- Anti-friction coating
- Insulation coating

Overseas presence:
- China (Suzhou)

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Certifications
- ISO 9001 : 2000
- ISO 14001 : 2004
- OHSAS 18001 : 2007
Established in 1986, Hitech specialises in providing heat treatment services of metals and alloys for the manufacturing industries. These include the automotive, marine, aviation, precision machining, mould making, oil and gas and medical sectors. It is a one-stop heat treatment solutions provider that offers value-added services which include failure analysis, interpretation of a report to customers, blueprinting solutions to problems, heat treatment consultancy, laser welding repair services, sourcing of special materials and consumables/equipment, plus training and cost improvement consultancy for toolings.

At Hitech, quality is built, not inspected. Such is its continual quest for excellence in its field of work. The company has established and consistently maintained an effective and dynamic quality system, which ensures that it is relevant and meets the requirements of every customer. Its decades' worth of experience has also endowed the company with a keen sense of key standards required for the various industries.

Hitech was the first company to receive NADCAP accreditation in the Asia Pacific region from PRI, Inc, USA.

Key capabilities:
Vacuum heat treatment:
- Hardening and tempering
- Solution treatment/homogenising
- Precipitation hardening/ageing
- Magnetic annealing/hydrogen cleaning
- Stress relieving/degassing
- Normalising annealing
- Baking/intering/stabilisation
- Brazing, braze and harden
- Carburising/recrystallisation
- Customised heat treatment

Surface treatment:
- Plasma nitriding/nitrocarburising (Plasnit)
- Plasma nitriding and oxidation (Plasox)
- Plasma assisted CVD coating
- Plasma carburising of stainless steels
- Gas nitriding/nitrocarburising and oxidation

Protective atmosphere heat treatment:
- Hardening and tempering
- Carburising/carbonitriding
- Stress relieving/normalising/annealing/homogenising
- Austempering/marquenching
- Solution treatment and ageing

Other Services:
- Cryogenic (subzero) treatment
- Shrink-fitting
- Induction hardening/soldering
- Automated degreasing
- Induction hardening/soldering
- Automated degreasing
- Laser welding (mould repair/electronic parts weldings, etc.)
- Sales of specialty materials/heat treatment equipment and supplies
- Heat treatment consultancy/failure analysis/metalurgical laboratory services

Major equipment list:
- Vacuum furnaces
- Nitriding furnaces
- Protective atmospheric furnaces
- Conveyor-belt furnaces
- Shaker furnace
- Tempering furnaces
- Roll automated washing machine
- Laser welding machines
- Metallurgical laboratory

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Certifications:
- ISO 9001 : 2008
- EN/JISQ/AS 9100 : 2004
- AS 9104A
- NADCAP AS 7003
Established in 1987, Speedy is a leading manufacturer of wire harnessing, cable assemblies, moulded cables and electro-mechanical assemblies. It also manufactures printed circuit board assemblies and box builds, and handles contract manufacturing projects.

Speedy is a total solutions provider, able to provide a flexible range of services to meet the demands of customers from diverse business sectors. Customers who require quick turnaround on multiple products have the option of Speedy’s high-mix low-volume service. The company’s sales, purchasing, and manufacturing teams work closely to ensure that customers get products that meet their specifications.

Speedy’s commitment to fast turnaround times and quality products has earned it contracts with leading names in the electronics, information technology, life sciences and precision equipment industries.

Key capabilities:
- Wire harness and cable assemblies
- Higher sub-assemblies and routings
- Printed circuit-board assemblies
- Box build
- Sheet metal products and services
- Precision engineering services

Major equipment list:
- SMT lines
- Wave soldering lines
- PVA conformal coating machine
- Aqueoustech batch cleaning machine
- Teradyne in-circuit tester
- Brady Wraptor labelling machine
- Wire processing equipment
- Citrix testers
- Portable XRF analyser
- Class 10K cleanbooth

Overseas presence:
- Malaysia
- China

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Certifications
- ISO 9001
- ISO 14001
- UL (Underwriters Laboratory)