

SDI Newsletter No.8



Innovation through Renovation

創新思維 嶄新樣貌

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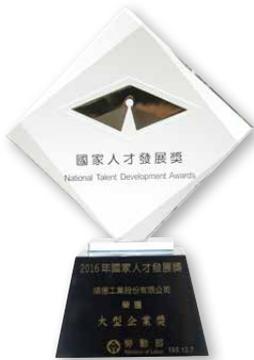
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順德工業集團董事長
陳朝雄

SDI Group Chairman
J.S. Chen

New buildings, New ideas The SDI's Prospects 穩健成長 嶄新樣貌

撰文／陳雅莉 · 攝影／沈孟達
Text / Chen, Ya-Li · Photo / Shen, Meng-Ta

回顧 2017 年，順德在企業營運、獲利成長及財務體質上，均有相當優異的表現。不論是電子事業或文具五金事業，每年都維持獲利穩定成長。除此之外，順德穩扎穩打與用心經營，亦獲得客戶與市場的肯定。

過去一年與往年最明顯不同之處，在於外資及法人對順德的持股比重增加，代表公司的產業前景及

未來發展受到外資與法人肯定，對我們來說是一大激勵。同時順德財務體質更健康，負債比率為歷年來最低，顯示企業經營不僅要對股東、員工、客戶負責任，還要確保財務結構穩健。

近年來，順德積極轉型，跨足車用電子領域，並開發多款應用於高階車用電源保護模組的單體高功率導線架，在去年已獲致顯著成果。隨著安全駕駛

In 2017, SDI did very well in its business operation, especially in terms of profitability and the financial constitution. SDI's electronic business and the stationery and hardware business grow steadily each year, while SDI's hard work and effort have been recognized by customers and the market.

What makes last year distinctive from all other years is the increase in SDI shareholding ratios by overseas investors and juridical persons; it suggests that overseas investors and juridical persons have confidence in the outlook of the industry as well as the future development of SDI. Meanwhile, SDI's

需求增溫，帶動車用電子需求成長，順德也因應市場趨勢，持續加重高附加價值車用產品的開發，並與國際大廠客戶合作，搶攻車用電子市場商機。

邁入 2018 年，因應全球政經局勢變化，加上貿易保護主義勢力抬頭、工業 4.0 蔚為風潮，順德除了聚焦於高附加價值（HVA）產品外，更強調「創新」是企業永續經營的基石。

在新的一年，我們將持續投入能源效率創新產業，研發更節能省電、更安全的電力應用產品。為滿足客戶需求，順德將推動產能及廠房擴充計畫，包括透過擴建廠房及設備更新來增加產能，加上技

術提升、投入新製程等，讓生產效率、產品精密度及穩定度達到一級水準；另也積極培養人才，滿足未來新創事業所需。

文具部門則持續研發環保無毒、節能省力產品，將部分生產線移回臺灣，並改為自動化生產，提升產能及維持高競爭力。

過去一年的表現，證明順德努力的方向是對的。迎接新的一年，順德將展現旺盛的企圖心，提升產品的附加價值、精密度及穩定度，擴大與競爭對手的差距，在產業供應鏈中扮演更積極且重要的角色。

financial constitution is getting better too, and its debt ratio has reached a record low. It is an indication that SDI is responsible to its shareholders, employees, and customers and its financial structure is solid.

In recent years, SDI has transformed itself by moving into the automotive electronic market. In fact, SDI last year had already developed numerous successful models of monomer high-precision lead frames for high-end automotive power protection modules. The escalating demand for safe driving has increased the need for automotive electronics. To take advantage of this new market trend, SDI has put efforts into developing high value-added automotive products and collaborating with big companies worldwide to expand its market share in automotive electronics.

Considering the volatile global political and financial situation and the rise in trade protectionism and Industry 4.0, SDI for 2018 will not only put emphasis on high value-added products but also work on innovation—the company's foundation for sustainable management.

This year, SDI will continue to expand its market

share in the energy efficiency and innovation industry by researching and developing more energy-saving and safe electrical products. To meet customer needs, SDI will implement several productivity enhancing and plant expanding projects to boost its productivity by building more plants, upgrading equipment, improving technology, and introducing new manufacturing processes so production efficiency and product precision and stability can reach the highest level. At the same time, SDI will also endeavor to cultivate talent for the new business.

In its stationery division, SDI will continue to work on the research and development of eco-friendly, non-toxic, energy-saving, and effortless products. SDI will move part of its production line back to Taiwan and implement automatic production for better productivity and competitiveness.

SDI's excellent performance last year suggests that SDI is on the right track. In addition to playing a more critical role in the supply chain, SDI this year will act more aggressively on not only increasing its products' added value, precision, and stability but also keeping itself further ahead of its competitors.

順德新訊 SDI Newsbreak

順德不斷精益求精，屢獲來自政府與客戶的肯定；擴展既有優勢，積極與市場發展趨勢接軌，開發多元及具高附加價值的產品，同時持續累積研發能量，配合市場需求，提升產能及競爭力，期待於 2018 年帶來嶄新面貌。

SDI's quest of constant improvement has been recognized by the government and its clients. While SDI maintains its existing strengths, it also strives to keep abreast of the market's trend development by developing diverse and high value-added products. At the same time, SDI also continues to build on its R&D capability to accommodate to the market's needs by enhancing its production capacity and competitiveness. It is hoped that these efforts will help usher in a new chapter for SDI in 2018.





ACCO Brands 供應商感謝狀

支持全球抗癌研究

A Certificate of Recognition by ACCO Brands

Supporting Cancer Treatment Research

於 2016 年 11 月舉行的 ACCO Brands 供應商高峰會，集團董事長 Mr. Boris Elisman 感謝順德工業對於「希望之城慈善高爾夫球賽」活動的多年支持，特頒獎給順德，由文具事業群的陳朝明副總代表授獎。此項榮譽除對順德產品品質與供應鏈表示肯定之外，更感謝順德參與抗癌研究，為全球的癌症研究貢獻一份心力。

「希望之城國家癌症醫療中心」成立於 1913 年，為美國國立癌症研究所指定的綜合癌症中心之一，為癌症、糖尿病和其他嚴重疾病的全球領先研究治療機構，願景是「我們每一種創新的治療方法都讓人們活得更長久、更美好及更完整」。愛心與關懷是實現這一切的核心，也是支持所有研究發現的驅動力。一如希望之城對於醫學創新研究的投入，順德亦致力於產品創新，期許未來 ACCO Brands 與順德工業的合作關係長長久久，共創雙贏格局。

During the Supplier Summit Conference hosted by ACCO Brands in November, 2016, Mr. Boris Elisman, the Chairman of the group expressed appreciation for the years of support for the City of Hope Charity Golf Tournament from SDI Corporation, and awarded SDI the certificate. Jerome chen, V.P. of Hardware & Stationery BU accepted the award on behalf of the company. The honor signified recognition of the quality of SDI's products and supply chain. It also showed appreciation for SDI's participation in global cancer research.

The City of Hope National Medical Center was founded in 1913, and is one of the centers designated and supported by the National Cancer Institute. It is a world leader in treatment of cancer, diabetes, and other critical illness. It endeavors to provide creative treatment to lengthen and improve people's lives. Love and care serve as the core of the center, and motivate all its research. Just as the City of Hope engages in medical improvement, SDI also endeavors to create innovation in its products, and expects to have a lasting partnership with ACCO Brands, and formulate a win-win situation.





英飛凌 BEST of the BEST 供應商最高榮譽

技術導向引領成長

The BEST of the BEST Supplier by Infineon Technologies

Improvement through Technical Advancement

英飛凌科技供應商晚會於 2017 年 11 月舉行，順德工業領先群雄，取得 BEST of the BEST 的供應商最高榮譽，自所有前端與後段材料供應商中脫穎而出，拔得頭籌，由電子事業群的陳維德副總代表受獎，以此肯定。順德連續兩年獲頒最佳供應商獎項，又因英飛凌車用產品需求比例很高，再次肯定順德在品質、交期及服務等全都達到超高水準。

基於順德擁有之精密模具技術及完整製程能力，自 2005 年開始，歐洲重要半導體廠商英飛凌與順德合作車用電子產品，其對於安全、穩定性要求極高；而順德亦將精益求精，並有計畫性的擴充產能，滿足客戶需求，也期待雙方能夠繼續緊密合作、共同成長。



During the supplier evening party of Infineon Technologies AG in November 2017, SDI was awarded the BEST of BEST Supplier, the highest honor for all suppliers of Infineon Technologies AG. Chen Wei-Te, V.P. of Electronic Components BU received the award.

Since 2016, SDI has won its second consecutive Supplier award, which means SDI has reached the highest level in every indicator, especially in car components, this award recognized SDI's high standards in quality of supply chain, due date, and service it provides.

SDI possesses intricate molding technique and the capability to manufacture products. Infineon, an important semiconductor manufacturer in Europe with exacting requirements for safety and stability, has been cooperating with SDI on electronic products for the automobile since 2005. We aim to improve our own works, and to progressively expand the company's capacity in order to satisfy customer demand. We also look forward to cooperating closely with Infineon, and attaining mutual success.





意法半導體導線架最佳供應商獎

長遠合作 共創雙贏

Best Supplier in the Lead Frame Category by STMicroelectronics

Cooperation Creates Win-win Situation

順德於2017年榮獲意法半導體集團總部(STMicroelectronics)頒發「2016年導線架最佳供應商」獎項(Best Supplier in the Lead Frame Category for 2016)，優質服務再次獲得肯定。

與客戶之長遠合作發展關係為順德的首要責任，並力求在品質、價格及交期上滿足客戶需求，在各方面提供優質服務。自2002年開始合作後，順德多次獲頒最佳供應商獎項，榮獲意法半導體集團的多次肯定。未來，順德將精益求精，不斷提升服務，也期待意法半導體能與順德緊密合作，創造長遠夥伴關係。



SDI has been awarded Best Supplier in the lead frame category for 2016 by STMicroelectronics in 2017, gaining another certification for its premium service.

SDI believes long-term cooperation is its capital responsibility. The company also endeavors to fulfill customers' demand for quality, price, and due date. Since its cooperation with STMicroelectronics in 2002, SDI has been awarded Best Supplier several times. In the future, SDI shall strive for the best and improve its service, hoping to consolidate its partnership with STMicroelectronics.



榮獲政府獎項肯定

優質工作環境 用心看得見

Government Awards for Good Working Environment

Great Working Environment of SDI

長期以來，順德工業自「人」出發，將人才視為組成公司的重要一環，具體落實在選才、育才、用才及留才上，並於 2016 年連獲政府機構肯定，展現多年來在人才培育上的用心。

產學攜手並進

彰化縣政府勞工處產學合作績優表揚

順德除了透過多種人力管道招募優秀人才外，亦長期與學術單位合作，提供企業轉型的教育課程與人才培養，養成青年學子實作能力，獲頒「彰化縣政府勞工處產學合作績優表揚」。

SDI has always taken a humanistic view, and considers talent a vital part of the company. It devotes a great deal of effort to choosing, training, and utilizing employees of various talents. These efforts were approved by the government in 2016, which reflects the effort it spent on training.

Promotion of Industry-University Cooperation

Award of Industry-University Cooperation

In addition to recruiting talent through various human resource platforms, SDI also cooperates with academic institutions, and offer training sessions on enterprise transformation, and improves the practical skills of students. The company was consequently awarded the Award of Industry-University Cooperation from the Department of Labor Affairs of Changhua County.





建構友善職場

- 🏆 彰化縣幸福企業二星獎
- 🏆 親善哺（集）乳室認證職場組績優單位獎
- 🏆 第二屆勞動典範獎獲頒團體獎

順德以建構友善職場為己任，重視員工的工作環境安全、職場健康促進，以及對性別平等及各項平權議題的關注，處處用心於日常，因此獲頒「彰化縣幸福企業二星獎」、彰化縣政府「親善哺（集）乳室認證職場組績優單位獎」及勞動力發展署中彰投分署所舉辦的「第二屆勞動典範獎獲頒團體獎」。

培養卓越人才

- 🏆 勞動部國家人才發展獎

順德以人力資本投資為思維，並以完整的訓練架構及知識管理連結人才培育，此次獲得由勞動部所主辦的「國家人才發展獎」，代表推動人才發展成效卓越的最高殊榮。

但順德並不會因得獎而自滿，除了發掘適合公司企業文化的人才，未來我們也將持續於人才培育上深耕，期待員工能與公司一起長期發展。



Produce a Friendly Workplace

- 🏆 County's Two Star Award of Happy Enterprise
- 🏆 Award of Nursing Room Certificate
- 🏆 the second Labor Paragon Prize

SDI aims to produce a friendly workplace, which highlights the working safety and health issues of employees, and improves equality in the workplace. For this reason it was awarded Changhua County's Two Star Award of Happy Enterprise, Award of Nursing Room Certificate, and the second Labor Paragon Prize of Taichung-Changhua-Nantou Regional Branch of the Workforce Development Agency, Ministry of Labor.

Development of Talent

- 🏆 National Talent Development Award

SDI values investment in human resources, and manages quality talent through complete training sessions. Winning the National Talent Development Award from the Department of Labor reflects the achievement of SDI's efforts in developing talent.

Yet SDI is not satisfied with simply winning awards. In addition to discovering talent who fit into our enterprise, we shall keep working on developing new talent, and improve our employees along with the company.



榮獲財政部關務署、英國標準協會 (BSI) 認證肯定 落實社會責任 永續經營發展

Government Approval for Corporate Governance

Fulfill Social Responsibility & Maintain Sustainable Development

順德工業以企業永續經營發展之理念出發，不將獲利視為唯一的經營之道，除了持續深耕於電子導線架及文具事業外，並積極主動落實企業公民的社會責任，朝向健康與良性發展。

政府機構績優肯定

延續取得財政部安全認證優質企業 (AEO) 認證

順德於 2016 年 12 月 13 日延續取得安全認證優質企業 (AEO) 認證，並由財務部關務署臺中關葉明星副關務長特別蒞臨本公司頒發 AEO 證書。公司於 2013 年 12 月 06 日首次通過核發安全認證優質企業 (AEO) 認證，於 2016 年 12 月 12 日公司取得認證資格期滿，提出 3 年重新申請換證，再次通過優質企業 AEO 認證。

發揮企業社會責任

AA1000 保證標準 (2008) 中度保證等級之聲明書

順德為兼顧並發揮企業的社會責任，公司自 2012 年

SDI Corporation is founded on the principle of sustainable development, and does not view profit as the first priority. In addition to building its electronic lead frame and stationery business, SDI also endeavors to meet its social responsibility.

Approval from Government

Extended the Certification from AEO

On December 13th, 2016, SDI extended the certification from AEO, and received the certificate from Ye Ming-Xing, the deputy director of Taichung division of Customs Administration, Ministry of Finance. On December 6th, 2013, the company received its AEO certification for the first time, which expired on December 12th, 2016. Later SDI issued an application for renewal for three years, and received AEO certification again.





起自行依循全球永續性報告 G4 版指南 (GRI G4) 自我宣告揭露企業社會責任報告書，並於 2016 年 12 月 29 日通過取得英國標準協會 (BSI) 驗證 2015 年企業社會責任報告書，正式取得符合 AA1000 保證標準 (2008) 中度保證等級之聲明書。

擁抱節能減碳趨勢

經濟部工業局 ISO 50001 能源管理系統認證

順德配合經濟部工業局鼓勵企業持續推動節能減碳方案—「105 年製造業能源管理示範輔導計畫」，公司依 ISO 50001 國際標準開始建置推動能源管理系統，並於 2016 年 12 月 3 日通過英國標準協會 (BSI) 驗證，正式取得 ISO 50001 能源管理系統認證。

未來，順德持續將永續經營視為長期競爭力的關鍵因素，並在組織成長茁壯的過程中，同時考量社會責任及永續發展，讓企業與個人為社會責任及節能、減廢共盡一份心力。

Put Social Responsibility as the Priority

Mid-Level Certification of AA1000 standard (2008)

In order to meet its social responsibility, SDI has issued reports on corporate social responsibility in accordance with GRI G4 since 2012. On December 29th, 2016, it received a certificate for its report on corporate social responsibility of 2015 from BSI, and received a declaration of mid-level certification of AA1000 standard (2008).

Embrace Reducing Waste and Saving Energy Trend

ISO 50001 energy management system certification

SDI operates under the carbon reducing act of IDB, the demonstration and assistance project for energy management for manufacturing industries of 2016, and has established an energy management system based on the ISO 50001 international standard. On December 3rd, 2016, the company received BSI approval and ISO 50001 energy management system certification.

In the future, SDI will keep taking sustainable development as a key factor for long-term competence, and put social responsibility as the priority in its development. SDI aims to play a vital part in reducing waste and saving energy over the long term.





獲 MSCI 全球指數認可

MSCI 將 SDI 納入全球小型指數台灣成分股

Approved by MSCI Index

MSCI has included SDI into Taiwan stocks in global minor index

MSCI 於 2017 年 11 月 14 日公布最新半年度調整，將順德納入 MSCI 全球小型指數台灣成分股，對公司來說是一大肯定。

MSCI 全球指數，是摩根士丹利資本國際公司 (Morgan Stanley Capital International) 所編製的證券指數，指數類型包括產業，國家，地區等，範圍涵蓋全球，為歐美基金經理人對全球股票市場投資的重要參考指數。MSCI 指數是在投資界最為廣泛使用、用以代表各國家或地區資本市場表現的參考指數。全球有超過 80% 的基金經理人以 MSCI 編列的全球指數，作為資金配置與避險策略的參考指標，其任何指數調整都直接左右國際資金的方向，對台股來說，也是外資投資的重要參考依據。

近幾年來，有鑑於環保意識抬頭，綠能及電動車為未來發展趨勢，順德同步積極投入布局車用電子領域，擴大導線架產品應用範圍；對外則與英飛凌、意法半導體等國際 IDM 大廠合作，於營收及獲利上皆有亮眼的表現。未來，順德將持續發展技術優勢、挑戰技術極限，近期更大規模投入設備及廠區相關資本升級；立足於現有基礎，順德將展望未來，積極擴大新市場版圖與規模。

On November 14th, 2017, MSCI released its latest semiannual adjustment, adding SDI into Taiwan stocks of MSCI's global minor index. It marks a milestone for SDI.

MSCI Index is the stock market category formulated by Morgan Stanley Capital International, which includes industries, nations, and regions, covering all factors globally. It serves as an important indication for reference for western fund managers in regards to investment in the global stock market. The MSCI Index is the most widely-used standard by investors, representing performance of capital markets of various nations and regions. Over 80% of fund managers around the globe use the MSCI Index as reference for fund distribution and risk-decreasing strategy. It also serves as a vital reference for foreign investment for Taiwanese investors.

In recent years, due to awareness of the environment, green energy and electric vehicle have become the future trend for development. SDI is highly engaged in investing in electronic appliances for automobiles, expanding the ranges of framing products. SDI also collaborates with international IDM manufacturers such as Infineon and STMicroelectronics, which results in considerable profit. In the future, SDI plans to keep improving technical factors, stretching the limits of technology, and investing in upgrading of equipment and facilities. SDI endeavors to expand its market and company scale based on the current technical foundation.





日本氫能燃料電池展

展現核心技術實力

FC EXPO 2017 (International Hydrogen & Fuel Cell Exposition)

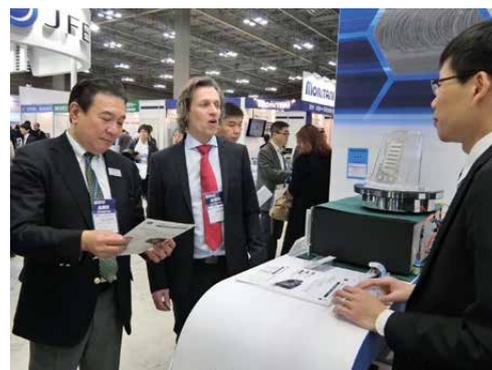
Core Technique Demonstration

順德工業參與台經院臺灣燃料電池夥伴聯盟團，於2017年3月1日~3日參加「日本氫能燃料電池展 (FC EXPO)」進行「燃料電池金屬雙極板」之展出，並與相關企業聯合共組成臺灣館，汲取國際最新發展資訊。

順德分享展示今年執行之「燃料電池金屬雙極板製造開發計畫」，並表示結合工研院、金屬中心及日本、瑞典、美國等多家協力廠，已成功開發質子交換膜燃料電池 (PEMFC) 的關鍵零組件金屬雙極板，並運用雷射熔接、表面防蝕處理技術，組成燃料電池電堆系統並完成電性相關測試。金屬雙極板能比傳統的石墨板電池堆顯著地縮小體積，並擁有高氣密、高強度、高導電性及輕量化等優點，未來將可廣泛應用於電動機車、無人飛機及電動堆高機等，打造無碳、無汙染生活。

SDI Corporation has participated in the Taiwan Fuel Cell Partnership the Taiwan Institute of Economic Research, and participated in the FC EXPO to demonstrate fuel cell metal bipolar plates. SDI also worked with related enterprises for the Taiwan Exhibition, in order to absorb the latest international information.

SDI demonstrated the Development Project for Fuel Cell Metal Bipolar Plates, and combined efforts from ITRI, Metal Industries Research and Development Centre, and manufacturers in Japan, Sweden, and the USA. The company has successfully developed the key metal bipolar plates of PEMFC, and conducted related tests of electrical properties through laser welding and anti-corrosion treatment, completing electric pile system for fuel cells. Metal bipolar plates are substantially smaller than the fuel cell stack of graphite plate, and has advantages like high airtightness, high intensity, high conductivity, and light weight. Future applications include the electric scooter, drone, and electric lift truck to build a carbon free and clean life.





管理大樓改建計畫

迎接未來的嶄新樣貌

Administration Building Renovation Project

The New Look of SDI

因應順德永續經營發展，伴隨順德工業成長歷經 43 年的彰化本廠管理大樓將進行改建，並於 2016 年 12 月開始動工，預計將於 2018 年完工，樓層面積由原本的地上 4 樓擴增為地下 1 樓、地上 7 樓，可額外增加約 150% 的樓板使用面積，預計規畫可作為客戶來賓接待、教學、會議及多功能辦公區使用。同時，新大樓結合「生態、節能、減廢、健康」的綠建築設計概念，發展更現代、更環保、更節能的环境。



In order to keep in step with SDI's expansion of management for sustainability, Administration Building in Changhua headquarters that has stood for 43 years will be renovated. The renovation started in December 2016, and is expected to be completed in 2018. The building has been expanded from four stories above ground to one story underground and seven stories above. The floor area will increase by 150%, and can be used for guest reception, lectures, conferences, or as a multi-functional office. Meanwhile, the new building combines ecology protection, energy saving, waste reduction, and health into its own design concept of green architecture, which helps in securing a modern environment that is environmentally friendly and wastes no energy.





3D 智慧設計標準化

接軌智能化模具趨勢

Standardization of 3D Smart Design

The Future Trend of Smart Tooling

工業 4.0 是以智慧整合感控系統及物聯網為基礎，期待建構新型智慧工業世界，並透過大數據分析，提供充分滿足客戶的產品。

因應科技發展趨勢及未來智能化生活，順德持續精進及優化公司內部管理系統，為健全研發設計及加工資訊平台，不但在 2014 年成功導入無紙化管理，更自 2016 年開始啟動研發 3D 智慧化／標準化設計專案，將 3D 設計繪圖軟體進一步結合公司獨有的設計標準化及設計導引，可直接將專家及老師傅經年累月的知識經驗建立於資料庫中，改變過去不同人工設計模具上的不一致性，最終可產生標準化的電子產品設計與模具設計，大幅縮短電子產品設計與模具設計時間，提升設計品質及效率。近期順德也將逐步建置完成 3D 看板管理、工程智能導引、智能製程管理 等，提前為「智慧工廠」的到來作準備。

轉型後對公司的價值



Industry 4.0 is founded upon a cyber-physical system and IoT. It is expected to establish a new type of smart industrial world, and provide product satisfaction to customers through big data analysis.

To deal with developments in technology and intelligent life in the future, SDI keeps improving and optimizing the inner management system of the company. In order to improve the information platform for R&D, SDI had established paperless management in 2014.

Since 2016, SDI initiating design project of 3D intellectualization and standardization, enabling 3D illustration program to combine with SDI's own standardization of design and guidelines, saving years of experiences of experts and craftsmen into database, and removing inconsistencies in tooling designs.

A standardized design for electronic products and tooling can be produced eventually, which shortens the design period for such products, raising the quality and efficiency of design. Shortly, SDI will be finishing projects such as management of 3D signboards, industrial smart guidance, and the management of smart production. SDI aims to be prepared for becoming a smart manufacturer.



全球行銷業務策略會議

重視客戶需求 共創雙贏未來

Global Marketing Strategy Conference

Create a Win-win Prospect for Customers

科技發展日新月異，而順德也持續思考如何在產品、服務、技術及流程精進革新，以確保產品規格、價格、需求量都能符合客戶的需求，並以提升顧客滿意及培養顧客忠誠度為首要任務。

順德連續多年舉辦行銷業務策略會議，邀請全球各地的海外業務回臺共同參與，並進行業務方向、顧客服務等交流對話。2017年，邁入第13年的業務策略會議，以「重視顧客需求，共創雙贏未來」為主軸，於12月1日及2日假福容大飯店圓滿結束；順德重視顧客管理，清楚聚焦市場發展，並在電子關鍵零組件市場提供更多元、完整、優質的解決方案，期待能與顧客維持一輩子的長久關係。

With the development of technology, SDI has been working on how to ensure improvement over products, service, technology, and manufacturing process, in order to guarantee that the format, price, and quantity of the product meet customers' demand. SDI's priority is elevating the level of satisfaction and loyalty of our customers.

For many years, salespersons around the world have been invited back to Taiwan to participate in the marketing strategy conferences, and conducted discussions over our business direction and customer service.

In 2017, the 13th marketing strategy conference focused on emphasizing customer management, and creating a win-win prospect. The conference took place in the Fullon Hotel in Taichung from December 1st to 2nd. Customer management is highly valued by SDI, in addition to a strong focus on market development, aiming to provide more diverse, complete, and superior solutions for the key electronic components market, in order to maintain a long-term connection with customers.





工業局前來參訪

分享創新理念 提升競爭力

Visit of Industrial Development Bureau

Share Innovation and Improve Competency

經濟部工業局推動「傳產維新淬鍊加值計畫」，辦理企業觀摩取經活動，並由經濟部工業局副局長呂正華帶領近百位傳產業者及技術法人前往順德工業觀摩參訪。

順德工業董事長陳朝雄分享了順德如何從金屬文具起家，並在 1983 年取得經濟部「策略性工業獎勵辦法」的獎勵資格後，進而投資生產電子導線架。順德始終以創新作為公司核心經營理念之一，以期讓公司能夠持續有創新與突破的關鍵，同時亦歡迎企業到廠觀摩，相互交流學習，以共同提升產業競爭力。



The Industrial Development Bureau is promoting its project of improving traditional industries, and hosting training sessions for various companies. Lu Zheng-Hua, Deputy Director of IDB, led approximately 100 entrepreneurs and technicians on a visit to SDI Corporation.

J.S. Chen, the chairman of SDI Group discussed how SDI started its business producing metal stationery. After receiving an award through IDB's policy of rewarding strategic industries, it began to invest in and produce electric lead frames. In order to maintain the company's competency in making breakthroughs, SDI always holds innovation to be one of the core values of the company. Entrepreneurs are welcome to visit SDI's factories, and improve each other through the process.





直液替換式白板筆

舒適筆觸 革新體驗

Free Flow Whiteboard Marker

Smart Stationery Design

SDI 專業版「直液替換式白板筆」即將上市，將為使用者帶來全新的書寫體驗！相較於一般白板筆，「直液替換式白板筆」將能在更長的書寫距離，提供超清晰、濃、飽和的視覺感受；而輕巧、好替換的濃墨卡水，更可滿足不間斷的書寫需求。

「直液替換式白板筆」長效濃黑的祕密來自於領先業界的大容量卡水，不需費力按壓即可連續穩定供墨，即使長時間連續書寫，依然可以「濃」到最後一刻；有別於傳統白板筆填充墨水之不便，全新設計的濃墨卡水不費吹灰之力就便能輕鬆轉入，讓高品質、大用量不再是一種負擔。

結合了源自日本工藝的專業筆頭、便利的濃墨卡水以及連續穩定供墨優勢，SDI 專業版「直液替換式白板筆」邀您一同體驗白板筆的新世代！

SDI pro free flow whiteboard marker is about to be released, and will unleash a whole new writing experience for users! Compared to common free flow whiteboard marker, the SDI whiteboard marker with free-flowing ink provides clearer and more powerful visual presentation over a longer distance. The light and easy-to-replace ink cartridge is also suitable for heavy use.

This free flow whiteboard marker with free-flowing ink cartridge's specialty over its rich black ink lies in the unique high-capacity cartridge. Ink is continuously supplied without pressing on the cartridge. Thick ink can be sustained for a long time. Unlike traditional whiteboard marker, the newly designed ink cartridge can be easily installed with little effort, which provides customers with a large capacity of high-quality ink.

Combining a professional pen point designed with Japanese craftsmanship, and a convenient ink cartridge and continuous supply of ink, the SDI pro free flow whiteboard marker is your best choice for a new era in writing!





**單管多孔式滲透管
專利申請中**

Single tube and multi-hole penetrated design, patent pending.

**旋入安裝式卡水
輕鬆好施力**

Rotational assembly ink cartridge is easy to use.



**業界首創
複合熱封膜卡水**

First industry ever, composite film thermal packaging cartridge.



**墨水擦拭性與續航力
力拼市場第一**

The erasable and sustainable ink is the No. 1 free flow whiteboard marker in the Market.



特色說明

- 日本製筆頭，品質最佳
- 濃墨色，再遠也看得清楚
- 複合熱封膜卡水，方便替換卡水，方便、經濟、環保
- 書寫兩週後，一樣好擦拭
- 超強續航力，供墨穩定，書寫順暢
- SDI 特製墨水，無毒與無刺鼻味

Feature:

- Japanese made high quality tip
- Intense color with great visibility.
- Composite film thermal packaging cartridge is easy to exchange. Convenience、Economy、Environmentally friendly.
- The whiteboard marks can still be easily erased after written for 2 weeks.
- Long-lasting ink provides a smooth writing experience.
- Non-toxic ink is specially formulated to be low-odor.



刀片研磨設備 技術再突破 精度更精進

Automatic Blade Grinding equipment

The Elevated Precision of the Blades

順德工業秉持精益求精的態度，自 2016 年規畫導入自動化刀片研磨機，將刀片研磨角度由 2 角度刀刃製程提升為 3 角度刀刃製程，大幅提升刀片精度，讓刀片角度對稱度小於 1° 、刀尖對稱度小於 0.01mm 及刀尖退火硬度小於 1° ，有助於提高刀片鋒利度及產品品質水準。

過去，刀片在 2 角度刀刃製程中，常出現退火而造成硬度降低，進而降低刀片使用壽命；再者，也常因人工的主觀及經驗調整，容易有刀片中心度及角度偏斜產生的利度偏低問題。順德積極導入自動化刀片研磨機，可降低人員操作上的失誤，維持一定的刀片鋒利度；亦可自動監控砂輪磨耗狀態，達到即時調整修改，減少因人工失誤而流出研磨品質較低的刀片。未來，順德將有能力突破現有技術，開發出更鋒利耐用的刀片產品。

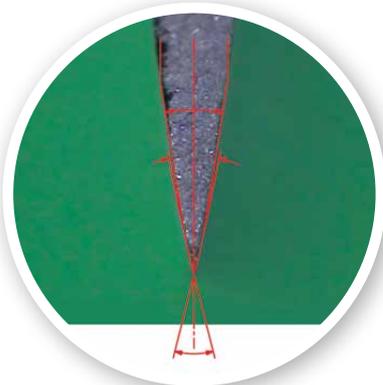
SDI Corporation purchased automatic blade grinding equipment in 2016, which improves the precision of the blades through replacing the two-degree grinding blade with a three-degree blade. It allows for a knifepoint symmetry of less than 0.01mm, and an annealing hardness of less than 1° . Such equipment helps make blades sharper and improve the overall quality of our products.

In the past, the hardness of blades was often lowered due to annealing during manufacturing of two-degree blades. Human factors, such as personal experiences of the manufacturers, could have lowered the sharpness due to crooked centrality and angle of the blade. Consequently, SDI introduced an automatic grinding machine for blades in order to decrease human error and maintain blade sharpness. It will also monitor wear on the grinding wheel and provide instant modification, eliminating human error and production of low-quality blades. In the future, SDI will make a breakthrough in technique, and develop more precise blades.



三道研磨，更加鋒利

**Three-times grinding,
we make blades sharper**





AOI 自動光學檢測設備

檢驗自動化 效率大提升

Automated Optical Inspection equipment

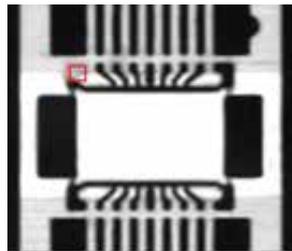
Examination of Automation Improves Efficiency

「品質並不是單靠製造及檢查出來的」，對於順德工業而言，自源頭設計提升品質更是經營管理的實踐重點。近年來，順德除了運用精密模具的設計能力，搭配完善的電鍍沖壓製程，並積極投入自動光學檢測 (Automated Optical Inspection ; AOI) 設備，透過檢驗自動化，可大量取代人工肉眼檢驗，達到檢測一致性、縮短檢測時間、提升品管檢驗品質及效率。

過去使用人員進行檢驗時，會有人工肉眼檢視產生疲勞問題、檢驗標準不一致……等人為因素所產生的缺失，順德自 2011 年成立專責自動化部門，重新規畫及開發順德專有的 AOI 管理系統，包含各製程線上 AOI 設備及 FQC 自動全檢機。並透過線上 AOI 設備，達到即時及全程的生產監控，並快速收集生產異常資料，未來也會再透過運用大數據分析來找出問題根源，提供模具設計及製程進行預防改善，進一步再提高產品品質水準及出貨穩定性。

SDI believes that inspection is not only checking, and quality should be improved upon even from the design's inception. In recent years, SDI has not only implanted intricate modules in plating stamping system but also invested a lot in automated optical inspection (AOI).

Through automatic inspection, physical inspection can be replaced, which can lead to consistency in inspection, shorten inspection times, and improve the quality and efficiency of quality inspection. In the past, when employees directly conducted inspection, there tended to be visual fatigue and inconsistency in inspecting standards, which are all human factors. To solve such issues, SDI has had a department of automation since 2011, which rearranges and develops exclusive AOI management systems for them, including AOI equipment on SDI assembly lines and FQC automatic inspecting machines. Through AOI equipment, instant and complete surveillance over factories can be achieved and information on anomalies can be collected quickly. In the future, big data analysis will also be used to locate sources of problems, providing improvement in the design of modules and production, and maintaining both product quality and processing stability.



沖壓回填異常 100% 檢出
Plating stamping backfill abnormal 100% detected

最小規格 0.2x0.2mm
Minimum size: 0.2x0.2mm

沖壓線上 AOI 全程品質監控

Automated Optical Inspection for plating stamping system

誠摯溝通 可靠品質

順德與 LION 合作的穩固基石

撰文 / 陳冠甫 · 圖片提供 / LION

Text / Chen Guan-Fu · Photo / LION

Sincere communication and reliable quality

The foundation of cooperation between SDI and LION

LION 事務器股份有限公司介紹

LION事務器股份有限公司(以下簡稱LION)的歷史由今津屋小八郎於1792年在大阪創立「今津屋」為始，草創之時主要以經營筆、墨等文房用具買賣為主。創業至今225年，LION不斷思索著如何製造出帶給使用者良好的使用以及生活體驗的產品。因此在積極因應時代的變遷以及回應客戶需求下，LION跨足了文具、辦公室用品及辦公事家俱生產等面向，一點一滴擴大事業版圖。也因為堅持著這個初衷，現在除了辦公室用品之外，LION更一步步向ICT環境、教育以及社福相關領域發展。

順暢的溝通以及品質上的信用不但是合作的基礎，更能跨越國境以及企業歷史文化差異，互相激盪迸發出無限的可能。

Clear communication and trustworthiness not only serve as the foundation for cooperation, they also help parties across various countries and cultures develop infinite possibilities for collaboration.

LION 事務器股份有限公司 (以下簡稱 LION) 與順德的交流始於 1997 年。當年 LION 於臺北成立當地法人，從此開始與順德交流日本市場以及中國、臺灣的文具生產相關資訊。

與 LION 真正的合作關係則是始於 2000 年長尾夾的製造委託。當時日本國內文具夾陷入了價格競爭的紅海，許多廠商紛紛將日本製造

的產品透過外包或是設廠等方式轉至中國等海外地區；對於日本廠商而言，將生產轉移至海外雖然能夠降低不少成本，但相對的面臨了品質不穩定的風險。LION 與順德多次的合作中，順德細心地聽著 LION 對於品質的需求及重視，雙方在此良好的溝通下建立了共通的品質規格，加上順德的品質也相當穩定可靠，所以彼此的合作關係也將持續發展。

Lion Office Products Corp. (LION) began its cooperation with SDI in 1997. LION founded a local branch in Taipei that year, starting to share product information concerning the stationery market in Japan, China, and Taiwan.

SDI's actual cooperation with LION began in 2000 with a production request for binder clips. The market of binder clips had fallen

into a quagmire of price competition. Many vendors transferred products manufactured in Japan through outsourcing or setting up facilities to China. From the point of view of Japanese vendors, while moving production lines abroad lowered the

順德是一家注重細節、品質穩定的好公司，即使是平價商品也毫不馬虎；進一步的表示，順德亦十分具有開發新產品的能量。

SDI is a company that values detail and stability of quality, and even pays attention to low-priced merchandise. He further implies that SDI is highly suitable for developing new products.



LION
LION事務器股份有限公司
社長 高橋俊泰 Takahashi Toshiyasu

LION 公司社長高橋俊泰 (Takahashi Toshiyasu) 提到，與順德十幾年來的合作中，印象最深刻的是無論在新產品的開發設計或是企畫的大小會議上，順德五金文具事業群副總經理陳朝明先生也都會親自出席參與討論，甚至在順德江蘇廠的會議上，LION 也能從順德與會的員工身上，深刻地感受到順德對 LION 的重視，以及對雙方未來合作的期待，這令 LION 感到十分感動。



cost, stable quality could not be assured. Through various times of cooperation between LION and SDI, SDI had been keenly interested in LION's emphasis on quality, and created a mutual format for products' quality through excellent communication with each other. Moreover, the quality of SDI's production technique is also highly reliable, which ensures the continual development of cooperation between the two companies.

合作無間 造就明星商品

在順德與 LION 的合作關係之中，最令人津津樂道的莫過於 2013 年上市的明星商品——省力平針釘書機「かるホッチ」。這個產品在開發企畫之時，LION 便與順德保持著密切的聯繫，最後透過結構的設計，省力平針釘書機將市面上 10 號針只能裝釘 20 張影印紙的極限，更進一步提升到 30 張 (2013 年上市時為 25 張)，除此之外，這個產品也十分輕便、省力、順手。而另一方面 LION 在日本進行詳細的市場調查以及研究後，省力平針釘書機以平實的定價在日本市場推出，上市後更成為了極

Takahashi Toshiyasu, Head of LION mentioned that over more than a decade's partnership with SDI, he has been most impressed with how Mr. Jerome Chen, Vice President of Department of Hardware and Stationery, participated in both the design of new products and various meetings concerning new projects. Even on the conference for SDI's Jiangsu Factory, LION could sense SDI's respect and its expectation for future collaboration with LION, which left a strong impression with LION.

Introduction to Lion Office Products Corp.

Lion Office Products Corp. (LION) was founded by IMAZUYA KOHACHIRO in Osaka in 1792 as IMAZUYA. From its inception, it mainly focused on selling stationery such as writing brushes and ink. 225 years later, LION is still creating better products and experiences for consumers. In order to meet the ever-changing demands of customers, LION has begun production of stationery, office products and furniture, expanding little by little the scope of its production. Due to the company's resolve, in addition to office products, LION is developing such aspects as the ICT environment, education, and social welfare.

具競爭力的商品，除此之外，也很幸運地被日本國內各大電視節目以及雜誌傳媒介紹推薦。省力平針釘書機除了受到市場的肯定之外，更獲得了 2013-2014 年度日本雜誌「MonoMax 別冊」文具獎裝訂類最優秀獎的殊榮。明星產品的誕生並非偶然，而是奠基在雙方十多年來的合作以及切磋砥礪、相互成長上。

注重細節 奠定信賴關係

順德與 LION 的合作絕非偶然，除了奠定於彼此信任的合作關係上，加上順德也持續地研究日本文具市場，並以滿足消費者的喜好為目

標持續地開發產品。據社長高橋俊泰說明，順德是一家注重細節、品質穩定的好公司，即使是平價商品也毫不馬虎；進一步的表示，順德亦十分具有開發新產品的能量。

在變化迅速的日本文具市場中，LION 是一家有著長久歷史的綜合文具事務用品製造商。LION 認為，在這樣的背景之下，生產出能滿足客戶需求的產品是 LION 恆久以來不變的使命。未來 LION 也將持續研究追蹤日本文具市場的風向，並希望在與順德的合作關係之下，持續推更優質的產品。

Collaboration makes perfection

During the collaboration between SDI and LION, the most popular project was the reduced effort stapler, かるホッチ . During its development, LION maintained close contact with SDI. Due to its new structural design, the reduced effort stapler pushed the 20-sheet limit of No. 10 pins to 30-sheet (25-sheet during its launch in 2013). Moreover, the product was also light and convenient to use. After LION conducted a detailed market survey in Japan, the reduced effort stapler was released to the Japanese market with a fair price, and became a highly competitive product after launch. In addition, the stapler was promoted by various Japanese TV programs and magazines. It was also awarded the Best Stationery Prize by MonoMax magazine for 2013-2014. Such success was not random, but rather resulted from collaboration between the two parties over more than a decade.

Attention to details contributes to mutual trust

The collaboration between SDI and LION is not only founded upon mutual trust. SDI continues to do research on the stationery market in Japan, and develops new products according to customers' demand. According to Takahashi, SDI is a company that values detail and stability of quality, and even pays attention to low-priced merchandise. He further implies that SDI is highly suitable for developing new products.

In Japan's fast-changing stationery market, LION is a manufacturer with a long history. LION believes that, with such a background, making products that satisfy customers should be its everlasting goal. In the future, LION shall keep tracking the latest trends in the stationery market, and create more great products in collaboration with SDI.

Ingenuity

The Best Tool for Precise Cutting

職人用工藝刀 精準切割 最佳幫手

撰文／陳雅莉 · 攝影／沈孟達 · 圖片提供／SDI

Text / Chen, Ya-Li · Photo / Shen Meng-Da · Picture / SDI



結合美工刀與筆刀功能，可精準切割又安全可靠，更贏得國內外大獎的肯定。

Combining a pen knife and box cutter, the knife provides safety and precision in cutting, and has won several awards both domestically and internationally.

刀，是專業職人的生命。好的工藝刀，對於專業職人切削材料或雕刻作品時，絕對有加分的作用。所謂「工欲善其事，必先利其器。」對專業職人而言，唯有順手合用的工藝刀，在創作時才能得心應手。否則，技藝再精湛、刀工再厲害的高手，手上握著不合用的工藝刀，也難以創作出精彩非凡的作品。

由順德工業所開發新一代的「職人用工藝刀」(Ingenuity)，結合美工刀與筆刀的功能，比傳統美工刀多了操作順暢、精準切割、安全可靠等特點；於 2015 年 6 月首先於日本開賣，2016 年初則在臺灣公開銷售。

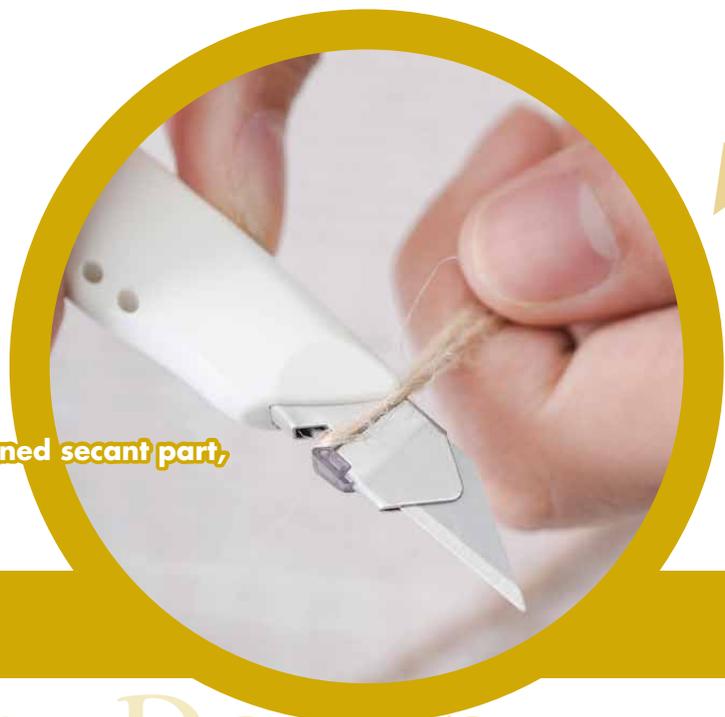
A knife is an expert's life. An excellent knife provides proper assistance for sculptors to cut or carve their works. A fine tool elevates a craftsman's skill. Only with a suitable craft knife is the sculptor able to demonstrate his skill at work. A well-experienced expert cannot create refined products if he uses an unsuitable knife.

The new version of craft knife, Ingenuity, which was developed by SDI Corporation,

combines the functions of box cutter and pen-knife, and provides efficiency, precision in cutting and safety. Ingenuity was released in Japan in June, 2015, and was later released in Taiwan in early 2016.

職人用工藝刀可以用來割線。
僅需將線卡入專門設計的割線部位。
輕輕一拉，既迅速又安全。

Staff with a knife can be used to cut off,
Only need to line into the specially designed secant part,
Gently pull, both quickly and safely.





職人推薦

好設計 讓生活更便利

Better Design, better Life

秉持著發揚在地文化與虛心求教的精神，順德團隊前往彰化鹿港小鎮，邀請了兩位職人與我們分享創作的經驗，以及對於「職人用工藝刀」設計與使用方式的專業見解，讓我們來一探究竟吧！

國寶級職人簡歷

木雕—李秉圭老師

走進「松林居」，便能感受到一股獨特的藝文氛圍，讓人的步伐不由得慢了下來，心靈也隨之寧定。因興趣使然，李秉圭老師自幼便隨著父親李松林大師——首屆國家薪傳獎得主學習，一脈相承的木雕技藝，對於李秉圭老師而言，可不僅僅是日常工作或閒暇時的興趣，更是一門融入了他一生心血的絕藝。

談起木雕時，李秉圭老師顯得格外神采飛

揚。對於立體空間的掌握，在細膩處的反覆琢磨，可以感受到每一刀、一刻皆有其匠心獨運之處，可以感受到創作者投注其中的精神；而這份專注也轉化為特有的一股靈氣，傳遞出神、佛、歷史人物等作品的神韻與其性格特質。

職人推薦

終生與雕刻刀具為伴的李秉圭老師表示，初見「職人用工藝刀」便能感受到設計細節的用心——在他的觀察中，特別選用的30度角刀片、多樣化的抓握方式等優點尤其突出，大大改進了傳統美工刀的缺點，對常用刀、需要切割功能的創作者而言，這把刀會是個好幫手，能夠支援多樣化使用情境的需求。

多元化使用情境 兼顧筆刀優點

事實上，新一代的職人用工藝刀誕生背景，源自於順德文具研發處希望改良上一代美工刀無法安裝30度刀片、採用四角握持等不足之處。

In order to carry forward the Taiwan traditional art, SDI Stationery Team went to the Lukang, we interviewed two craftsmen to share their thought of creativity, and applied the Genuity in their daily work!

Craftsman profile

Wooden sculpture--Mr. Li Bing-Gui

Walking into the "Song-Lin Mansion", the atmosphere there makes visitors feel calm and relax. Mr. Li Bing-Gui has interested in wooden

sculpting since his childhood, and learned about it from his father Li Song-Lin, the winner of the first Folk Art Heritage Awards. To Li, wooden sculpting is not just a work or hobby, it is a kind of artistic creation.

With each dedicate stroke and the understanding of three-dimensional space, Li conveys and depicts the unique characteristics of deities and historical figures, which are so realistic, and highly praised.

一般人對美工刀的期望，僅是割紙或包裝袋。如果希望像「筆刀」一樣能精細切割，就必須設計三角握持點、更尖銳的刀鋒、刀片須穩定而不晃動、輕巧纖細的刀身，以及其他貼心的附屬功能。

在「職人用工藝刀」的設計中，順德文具研發處選擇 30 度刀片，並在工藝刀口前端處增加一個小塑膠零件，用來提高控刀穩定性；由於良好的刀片限位效果，大幅降低了刀片晃動程度。因此，新一代職人用工藝刀既可當美工刀用，又能當筆刀用，一舉數得。

從用途來看，職人用工藝刀可用來精細切割，清除模型毛刺；或是從事紙雕、皮雕、橡皮章等精細雕刻；或適用於製作美勞、手創小

物。若要充分運用，還可用來割線，凡是 2 釐米左右的細線，包括縫紉線、羊毛線、棉線、麻線、尼龍線、釣魚線等，甚至是打包繩，只要輕輕一拉，均可快速割斷，而且刀身不會勾線，可避免意外發生。

- 「職人用工藝刀」(Ingenuity)，有三種不同的握法，可適應不同切割握姿，應用在不同的使用情境。
- There are three different grips for Ingenuity that enable the adaptations to different cutting grip that is applied in different situation.



Craftsman Recommendation

Working with sculpture knives for decades, Mr. Li indicated that he could perceive the craftsmanship within the Ingenuity. It's 30-degree blade and versatile gripping method could substantially assist creators who need something to cut with.

Versatile Gripping Method

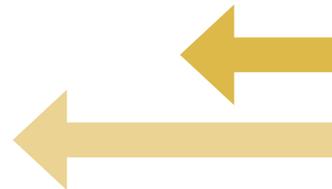
The brand new Ingenuity results from SDI's department of stationery development. It endeavors to improve the last version, which could not have a 30 degree blade installed, and had a faulty handle.

A craft knife is usually considered for cutting paper. In order to maintain the pen-knife's precision in cutting, special attention has to be given to the triangular holding point, sharper

blade, stability and lightness of the blade.

To meet various demands, SDI's department of stationery development chose 30-degree blades, and implements a small plastic part on the front side of the craft knife for stability. The part helps reduce bouncing in the blade. Therefore the new version of Ingenuity can be used as both craft knife and pen-knife.

Ingenuity is suitable for precision cutting and cleaning stubs on models. It can also be used in paper carving, leather carving, or rubber stamps such precision works. It may also applicable for handcrafts as well. It can be used to cut 2 mm wide string, such as sewing thread, wool thread, cotton thread, linen thread, nylon thread, fishing line, and packing rope. The knife cuts through such thread with ease, without getting entangled with strings.



國寶級職人簡歷

鹿港繡線花—謝雅秀老師

繡線花，又稱纏花。為過去歲時節慶時必備的婦女頭飾，是一項十分細膩、講究細節的手工藝技巧。曾因機械化生產日漸式微的纏花產業，在各地職人的堅持，與政府近年來對傳統文化的重視下，重新發揚光大。

傳承自母親手藝，個性爽朗的謝雅秀老師表示，除了對傳統意象新娘花的保存以外，現在的繡線花製作也時常結合流行、時尚的全新思維；更顛覆既定印象，為這門傳統技藝再升級，投入了大型作品的製作，開拓出全新的創作領域，讓這門技法不再只是民俗裝飾品，而能成為具有觀賞性的藝術主體。

職人推薦

在創作中，「職人用工藝刀」多樣化的握持方式在謝雅秀老師的使用

中表現得淋漓盡致；除此之外，為追求極致的細膩工藝，若有任何不完美處，謝雅秀老師便會當機立斷、拆掉重來，此時，「職人用工藝刀」便能派上用場。使用獨家的割線功能，在不需出刀的狀況下，可確保安全，更能迅速的將線裁斷，讓創作的過程更省時、便利。

人性化貼心設計 安全可靠

因此，在新一代的職人用工藝刀，順德文具研發處為使「職人用工藝刀」更容易握持與使力，觀察消費者的使用習慣，最後決定改為三角握持的操作方式，使握把更符合人體工學的要求，不論在何種狀況下，都能達到控刀穩定的目的。

除了在工藝刀前端加設安全切線口，方便縫紉與編織人員快速割線之外，因為多了自動鎖定裝置，還能承受高達5公斤的重力切割力量，甚至是即使強力夾持，刀片也不易被拉出，大幅提高使用安全性；同時，工藝刀底部採圓弧

Craftsman profile

Embroidery of Lukang--Miss Xie Ya-Xiu

A head-dress of flower embroidery used to be a common accessory for women during festive times, which was a dedicated, all hand-made. At one time it was out of fashion, and replaced by mass manufacturing products, but is recently making a comeback.

Miss Xie has inherited the skill from her mother. In addition to traditional images, she also combines it with fashion imagery, and produces large-scale works. The whole new creative field makes the head-dress of flower not just embroideries anymore, which can be

display independently as great artworks now.

During her creation, Miss Xie use the Ingenuity with versatile gripping method, also in pursuit of elegance, she always needs to reconstruct her works. Ingenuity exclusive line cut enables her to produce her creations more effectively and safely.

Special design that provides safety

In order to make a craft knife that was easy to hold, SDI's department of stationery development created a triangular handle according to users' actual practices, offering good stability when process sculpting and cutting works.



造型，讓刀子無法站立，避免孩童誤觸刀片而受傷的安全性考量，加上全刀身包覆設計，除了有效防鏽外，更讓使用上更加地好握持，處處顯見順德的用心與貼心。

全新設計 大受肯定

職人用工藝刀獲得各界一致的好評，唯一囊括臺灣金點設計獎、日本 Design Award 及德國 iF 設計大獎，堪稱是美工刀界的「三冠王」。之所以受到國內外設計大獎評審一致的青睞，秘訣在於前端的握持區設計。由於傳統美工刀使用至最後 3 節時，皆會受到調節器干擾而難以握持。相較之下，職人用工藝刀採取頂端握持空間設計，讓工藝刀即便使用至最後一節，依然好用。

透過順暢的操作、貼心的設計、精準的切割以及完善的附加功能，順德期待能為所有職人用工藝刀的使用者打造良好的使用體驗！



職人用工藝刀八大特色 8 functions of Ingenuity

1. 符合人體工學 Ergonomic Handle
2. 防晃動功能設計 Anti-shaking
3. 30度刀片設計 30-degree Blade
4. 精準切割 Precise Cutting
5. 自動鎖定裝置 Auto-Lock System
6. 承受力達5kg Withstand up to 5kg of force
7. 全刀身包覆 Encased Blade
8. 安全切線設計 Safely Thread Cutting



影片連結
Video link

In addition to safe tangent fitting for quick cutting, the auto-lock device can hold up to 5 kg of cutting force. The blade could not be pulled out easily, thus making it safer to use. The bottom of the knife is crafted in an arc, which prevents the knife from being placed vertically on the table, and lessens possible harm to children. The whole blade is coated, which not only prevents it from rusting, but also makes handling easier.

Recommendation & Approval of Awards

Ingenuity has also won various awards to date, such as Taiwan Golden Design Award, Japan Design Award and also IF Design Award,

it is the only product to win above three awards in one. The key to the success of our award-winning Ingenuity lies in its frontal handle. The traditional box cutter tends to be interfered by the regulator when the last three sections are used, thus rendering the blade difficult to hold. Ingenuity places the handle atop the knife, so that even at the last section of the blade the knife can still be used efficiently.

With efficiency, great design and precision in cutting, Ingenuity is widely praised due to SDI's considerations for the consumer, we wish that all users have good user experience while creating their artwork!

Magnetic Hook for Various Curved Surfaces

A Convenient Tool for Home and Office

輕鬆收納 居家辦公好幫手

自由曲面磁鐵掛勾

撰文 / 陳雅莉 · 攝影 / 沈孟達 · 圖片提供 / SDI

Text / Chen, Ya-Li · Photo / Shen Meng-Da · Picture / SDI

自由曲面磁鐵掛勾擁有超強磁力，可吸附於平面、角面或曲面上，還能荷重高達 5 公斤。

The hook with curved surface is highly magnetic, enabling it to be attached to various surfaces, and can hold up to 5 kg.

不論是居家或辦公室收納，如果想要利用牆面來吊掛日常雜物，但又不希望因敲打或鑽洞而破壞壁面，磁鐵掛勾應該是不錯的選擇，能解決不少家庭主婦或上班族的困擾。

由順德工業開發的「自由曲面磁鐵掛勾」，擁有超強磁力，不僅可自由吸附於平面、轉角或曲面上，還能荷重高達 5 公斤，幫助家庭主婦、上班族及學生輕鬆收納各種物品，讓居家環境與工作場所變得更加清爽，也營造出良好的生活質感及工作氛圍。

When it comes to storage within the home or office, a magnetic hook is a fine choice, since it prevents the wall from being damaged by drilling while still providing a place for hanging materials. Such a piece of hardware would be able to solve many problems for housewives and white-collar workers alike.

The magnetic hook for all curved surfaces produced by SDI is a highly magnetic one. Not only it can attach to flat surfaces, corners, and curved surfaces, but also hold up to 5 kilograms. It can help housewives, office workers, and students to store various items.

順德團隊這次來到了「吳敦厚燈鋪」，邀請第二代傳人吳怡德老師為我們分享創作的經驗；而在分享的過程裡，順德團隊也推薦了「自由曲面磁鐵掛勾」以及「職人用工藝刀」，邀請吳怡德老師將這兩款產品融入創作與生活中！

Thus the hook makes your home and working space cleaner, and helps improve users' daily life and work environment.

SDI Stationery Team went to Wu Dun-Hu Lamp Shop, invited Mr. Wu Yi-De to shared his experience of creative work; SDI also recommended “Magnetic hook for various curved surfaces” and “Ingenuity” products to Mr. Wu, to make his daily life and artwork display more convenient!

- 相較於一般角度較尖銳的勾面，「自由曲面磁鐵掛勾」特別變寬的勾體設計，可以將手提包握把平順地掛在上頭，而不產生形變或扭曲。



- Compared to the common sharp angle surface, the design of the “Magnetic hook for various curved surfaces” with its particular widening body enables the hanging of the handbags smoothly without causing any deformation or distortion.

職人推薦

好設計 讓生活更便利

Better Design, Better Life

國寶級職人簡歷

吳敦厚燈鋪—吳怡德老師

經過廟宇時，抬頭望去，一排排富有文化意涵及傳統意象的燈籠便映入眼前；不論是作為中式建築或是傳統店鋪的點綴，這些燈籠上的題字與圖畫，為華人間普遍共有的文化回憶。

被譽為「文化國寶」、更曾榮獲國家薪傳獎的傳統燈籠彩繪大師—吳敦厚先生，其所創立的「吳敦厚燈鋪」，早已成為當地著名的文化景觀，不僅時常有政治人物前來拜訪，而國際巨星女神卡卡在造訪臺灣期間，亦曾特別安排到此參觀的行程；如今，這份遵循古法的絕藝，已傳承到第二代吳怡德老師手中。

在順德團隊造訪燈鋪時，熱情好客的吳怡德老師特別邀請我們一同參與繪製燈籠的過程，



Craftsman profile

Wu Dun-Hu Lamp Shop--Mr. Wu Yi-De

When you walking through the Chinese temple and looking up, you will notice there are so many tradition lanterns hanging there. These beautiful artworks were so common on ancient Chinese buildings, which have been cultural memories among all Chinese people.

The skills of traditional lantern painting of Mr. Wu Dun-hu, who received Folk Art Heritage Awards, has now been passed down to Mr. Wu Yi-De. Wu Dun-hu lamp shop has become a landmark in the Lu-Kang. Some local politicians always visited here, even the famous singer Lady Gaga also came here during her visit to Taiwan.

從紙張的裁割、題上文字、繪製圖案、到整體上色；最終一同看著隨風搖曳的美麗燈籠，順德團隊在心中充滿了成就感之餘，也對吳怡德老師的深厚功力與細心指導益加佩服。

職人推薦

繪製燈籠時，需先將紙張割成適當大小，才能進行繪製，在完成後再將作品掛在高處展示；吳怡德老師先為我們展示了「職人用工藝刀」穩定的刀身及多樣握法於切割紙張時的便利性；隨後更發揮巧思，利用「自由曲面磁鐵掛鉤」強大的磁鐵吸力，將整排燈籠穩定地吊掛於高處，可見順德產品能夠確實地融入生活與創作中，使創作、展示都更加便利。

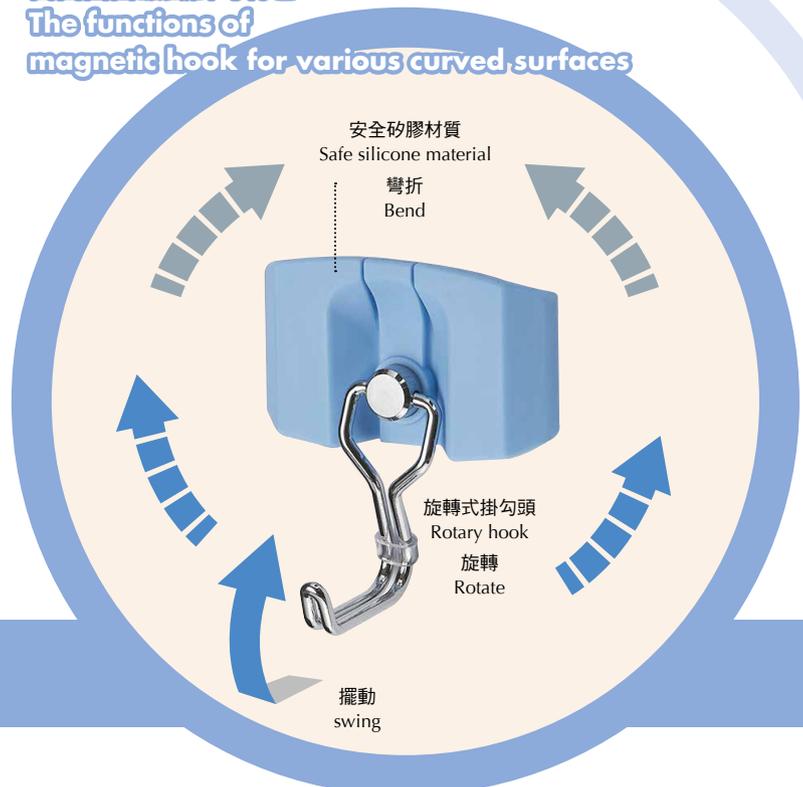


When SDI Stationery team visited the lamp shop, Mr. Wu invited us to join the creation of his artwork. He taught us how to cut the paper to proper size first, then wrote some sentences on it carefully with Chinese brush, and colored it. We really admired the careful guidance by Mr. Wu, and had a sense of accomplishment after finished the lamp.

Craftsmen Recommendation

Mr. Wu creates his works by cutting paper to the proper size and painting on it, which will be displayed high after finished. His exhibits can be assembled more easily through the stability of the “Ingenuity” and the magnetism of the “Magnetic hook for various curved surfaces”, enabling his beautiful lanterns to be hung with ease.

自由曲面磁鐵掛勾特色 The functions of magnetic hook for various curved surfaces



好設計 讓生活更便利

日本向來是全球數一數二的文具市場，市售文具及辦公用品琳瑯滿目，順德努力思考如何使用者的需求一一實現，並在競爭激烈的環境中搶佔商機。

此次，順德與 SDI Japan 日本銷售辦事處合作，外型看似簡單的磁鐵掛勾，其實挑戰性極高，因為必須同時符合能自由彎折（軟性材質）、可承重、結構簡單、不能形變等種種條件。在諸多要求下，順德設法克服難題，終於改變傳統平面式磁鐵掛勾的限制，成功跨足曲面式磁鐵掛勾的領域，讓消費者使用範圍更加

廣泛，更榮獲 2016 年日本文紙 FAIR 大賞銅賞的肯定。

磁力超強，吸附曲面

自由曲面磁鐵掛勾的最大特色是磁力超強，可自由吸附於鐵櫃、門板、鐵管、圓管等轉彎處或畸零處，以懸掛物品。超強磁性的關鍵在於採用釹鐵硼磁鐵，這是一種強力磁鐵，含有大量的釹、鐵及硼等稀土元素，因具有優異磁性而被稱為「磁王」。

舉凡是鑰匙、剪刀、馬克杯、小餐具、小盆栽、水壺、耳機線、小飾品及女用提包等大小

Better Design, Better Life.

Japan is a leading market in stationery market, and has produced a variety of quality stationery and office implements with great practical value. In order to fulfill all the needs of customers, SDI cooperated with SDI Japan, and manufactured the magnetic hook for all curved surfaces, which may have a simple appearance, but its creation has been highly

challenging. It has to have flexibility (soft material), load endurance, and a simple and solid structure. SDI has managed to solve such issues, and overcome the limits of traditional magnetic hooks, and expands the various functions the hook is capable of. It won the bronze prize in the 2016 Japan Paper Fair Contest.



平面掛
dangling with flat surface



曲面掛
attached with curve



轉角掛
attached along with corner



懸掛
vertical hung

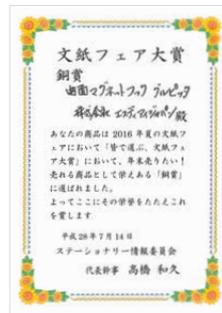
物品，自由曲面磁鐵掛勾均能滿足居家或辦公收納時的使用需求。若是懸空吊掛物品，約可荷重 1.5 到 2 公斤；假如是轉角貼覆，可承重 3 到 4 公斤；如果是正常平面吊掛，最大荷重則可達 5 公斤，十分穩定。

無毒材質更安心

自由曲面磁鐵掛勾的荷重雖可達 5 公斤，但採用軟性材質的掛勾本體難免會因負重久了之後，出現變形現象。為解決此問題，順德除了提高材質的穩定性之外，也在掛勾本體上增加曲線設計，透過造型變化來減少變形的情況。上下曲線造型的另一好處是方便取下，無論是

要吸附或移除掛勾時，都很輕易且便利，不傷害牆面或吸附的表面材質。

順德用心處處看得見，在本體上特別選擇觸感舒適、可耐高溫、環保無毒的安全矽膠材質，讓消費者在生活中使用都能更安心。



自由曲面磁鐵掛勾榮獲2016日本文紙FAIR大賞銅賞肯定。

“Magnetic hook for various curved surfaces” won the 2016 Japanese paper fair award.

High Magnetic Force, Improved the stability

The magnetic hook is known for its powerful magnetic force, which enables it to attach to a metal closet, door, steel plumbing, round tube, or corners in order to provide places for hanging. The hook uses a neodymium magnet, which is a highly magnetic material containing large amounts of neodymium, iron, and boron. Because of its high magnetic force, it is also known as the “king of magnet”. Therefore, whether it's keys, scissors, a mug, dish, potted plant, kettle, headphone cord, accessory, or purse, the magnetic hook for various curved surfaces would be able to handle them within the home or office. If the item is vertical hung on the hook, it may handle 1.5 to 2 kilograms. If it is attached along with corner, it can handle 3 to 4 kilograms. As for dangling with flat surface, it may handle more than 5 kilograms.

No Toxins, More Safety

Despite the fact that the magnetic hook for various curved surfaces can suspend 5 kilograms, the hook made with soft material could still be distorted by carrying weight over a long term. To solve the issue, SDI has improved the stability of the material, and added a curved design on the hook in order to lessen the chance of distortion. One advantage of the curved design is convenience in removal. It can be easily attached to or removed from a surface without damaging it.

SDI has paid attention to every detail, ensure all customers can use it with safety. The magnetic hook itself is made of silicon, which can endure high temperatures and produces no toxins, in addition to being anti-bacterial and easy to clean.



技術扎根 展望未來

發揮既有優勢，掌握新興商機全面出擊

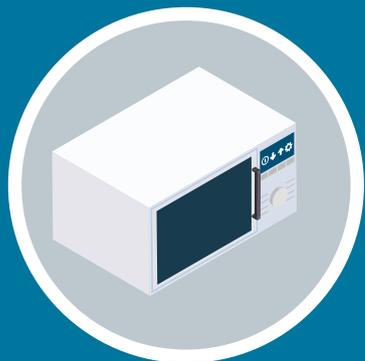
撰文 / Karen · 攝影 / 沈孟達 · 圖片提供 / SDI

Text / Karen · Photo / Shen Meng-Da · Picture / SDI

面對瞬息萬變的產業態勢以及新一代應用的快速崛起，對企業來說，如何掌握先機、順應變局，以期在激烈競爭的市場環境中保持優勢，是無可避免的重要挑戰。

以金屬沖壓與模具技術奠定深厚基礎的順德工業，在導線架市場打下一片江山之後，近年來更是積極提升技術實力，擴展產品佈局，不但成功以 HPAK、鉚接導線架、以及壓接 (press fit) 接腳等高品質產品跨入車用市場，甚至進軍燃料電池零組件製造，以因應最新的環保節能趨勢。

然而，隨著科技的持續進展，新一代應用，包括電動車、物聯網等正快速崛起，為了掌握相關零組件的龐大商機，順德又進一步發揮其在金屬沖壓、塑膠射出成形、以及電鍍等各領域的技術優勢與綜效，投入 IGBT 模組、感測器導線架、以及智慧卡 (SmartCard) 等產品研發，成效斐然。這些策略行動，充分展現出順德靈活求變、突破新局的思維與行動力，可望帶動公司全新的成長契機以及穩健的長期發展。



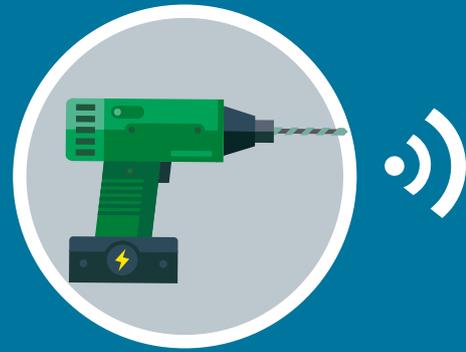
Forecasting the Future Trend

Maintain the Advantages, Face the New Challenges

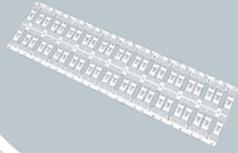
Facing ever-changing business trends and the latest generation of applications, enterprises have to perceive new prospects and adapt to a new environment, in order to maintain their own advantages in a competitive market.

SDI was founded upon techniques of metal stamping and molding, and became a leader in the lead frame market. In recent years, SDI has progressively improved its own technical prowess, and expanded its own range of products. It successfully entered the automobile market with high-quality products such as HPAK, riveting lead frame, and press fit tooling. SDI even crossed into manufacturing components of fuel cell in order to meet the latest trend in environmental protection and energy saving.

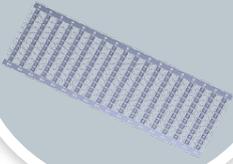
However, with the continual development of technology, the latest generation of applications, including electric cars and the Internet of Things, are quickly rising to prominence. In order to take advantage of the immense business opportunity of related components, SDI has further brought its own advantages and efficiency in aspects such as metal stamping, plastic injection molding, and plating, in addition to conduct research and development on IGBT modules, lead frame of sensor, and SmartCard, and achieved considerable success. Such strategies exhibit the creativity and innovation of SDI, which hopefully will contribute to new growth and long-term development for the company.



IPM/Power Module Lead frames
for Powertrain System
動力傳動系統



LED Lead frames
for Lighting System
照明系統



接軌 SiC/GaN 功率半導體材料趨勢 提供完整的 IGBT 模組解決方案

Connecting the Trend of SiC/GaN Power Semiconductor Materials
Construct a Complete Solution for IGBT Module



IGBT Module

有鑑於環保意識的興起以及電池價格的快速下滑，電動車 (EV) 市場近來表現亮眼，並且未來的前景看好。根據 Bloomberg New Energy Finance 的研究預測，到 2040 年，全球電動車銷售量將達到 4100 萬輛，佔所有新車銷售量

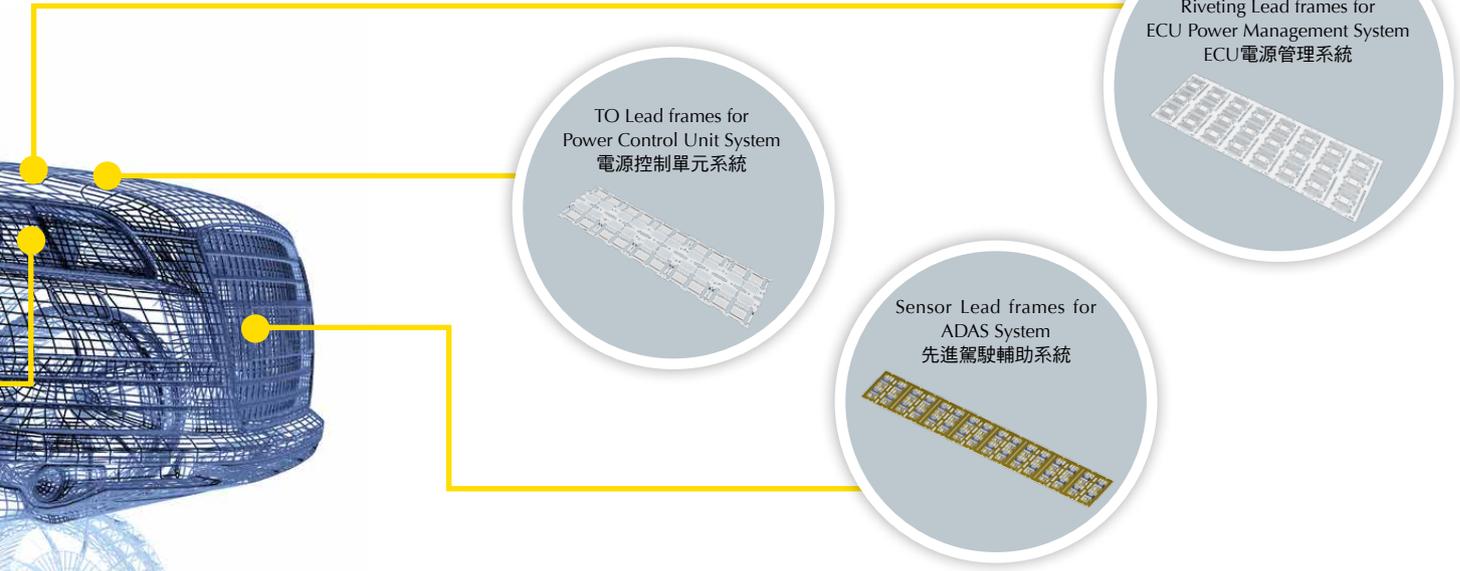
的 35%。相較於 2015 年電動車銷售量為 46.2 萬輛，成長幅度幾乎達 90 倍，非常驚人。

IGBT(絕緣雙閘極電晶體) 模組是一種高功率的交流 / 直流或直流 / 直流轉換器，更是電

Due to the rise of environmental awareness and the drop in battery prices, the EV market has performed rather well recently, and is considered to have a great future. According to the prediction of Bloomberg New Energy Finance, the global sales volume of EV will reach 41,000,000 in 2040, making up 35% of the sales volume of new vehicles. Compared to the EV sales volume of 462,000 in 2015, this is an extraordinary growth of roughly 90-fold.

An IGBT (Insulated Gate Bipolar Transistor) module is a high-powered AC/DC or AC/AC transistor, and the irreplaceable key component in the AC output control of EV motors. Its main advantage is its high power and fast switching speed. In addition to EV, it can also be applied to high speed trains, MRT systems, solar power generation, uninterruptible power supply, wind power, and air conditioning. Certain industrial applications can involve several thousand volts.

你可以在哪裡看到 SDI 產品 (導線架)
Where are the SDI Lead Frame Products?



動車交流電動機輸出控制中不可或缺的關鍵零組件。它的主要特點是高效率及切換速度快，除了電動車，還可應用在高鐵、捷運、太陽能發電、不斷電系統、風力發電、以及空調系統等，針對某些工業應用，電壓可達數千伏特。

功率半導體材料轉變 加快綠能與電動車發展

由於半導體元件技術的精進，其中如功率半導體材料碳化矽 (Silicon Carbide ; SiC) 及氮化鎵 (Gallium Nitride ; GaN)，為兩大新興車用寬能隙材料，可解決傳統矽功率半導體的極限，並具有低導通電阻、高耐壓、高速、高溫環境下應用的優點，更能符合電動車等行動裝

置快速充電、省電、提升能源轉換效率的需求，而如何減少功率損耗、以及提高散熱效率，是設計 IGBT 模組時的重要考量。

就 IGBT 模組的組成來看，除了 IGBT 晶片之外，還包括基板 (Base Plate)、陶瓷板、壓接 (Press Fit) 端子、散熱片 (Fin Pin) 以及外殼等重要零件。除了陶瓷板，基板、壓接端子和散熱片都是金屬製程，而外殼屬於塑膠射出成形件，這些都是順德既有專精的技術領域。

因此，即使 IGBT 模組的產品特色和應用與傳統導線架並不盡相同，但看好綠能與電動車

The Transformation of Power Semiconductor Materials Has Accelerated the Development of Green Energy and EVs

The semiconductor component technology has seen great improvement. For example, the emerging adoption of power semiconductor materials such as Silicon Carbide (SiC) and Gallium Nitride (GaN) as the wide bandgap materials in automobiles has pushed the limit of traditional silicon power semiconductors. Not only do SiC and GaN boast the strengths

of low on-state resistance and high voltage withstand capability that can be applied at high speed and high temperature, but they also meet the demands of EVs and mobile devices for quick charging, power saving, and higher energy conservation efficiency. At the same time, it is also important to factor how to reduce power loss and improve heat dissipation into the process of designing IGBT modules.

In regards to the components of IGBT

未來的發展性，公司仍決定朝此方向擴大發展。

順德表示，由於 Press Fit 接腳技術已經開發成功，因此現階段 IGBT 模組的開發工作主要是以基板為主，為了提高散熱效率，基板材料的選用及曲率的掌握顯得相對重要，而目標是在短期內先建立基板的量產能力，於此同時，長期亦將投入採用金屬射出技術的散熱片、以及採用燒結技術的陶瓷基板研發，期望最終能建構出完整的 IGBT 模組解決方案。

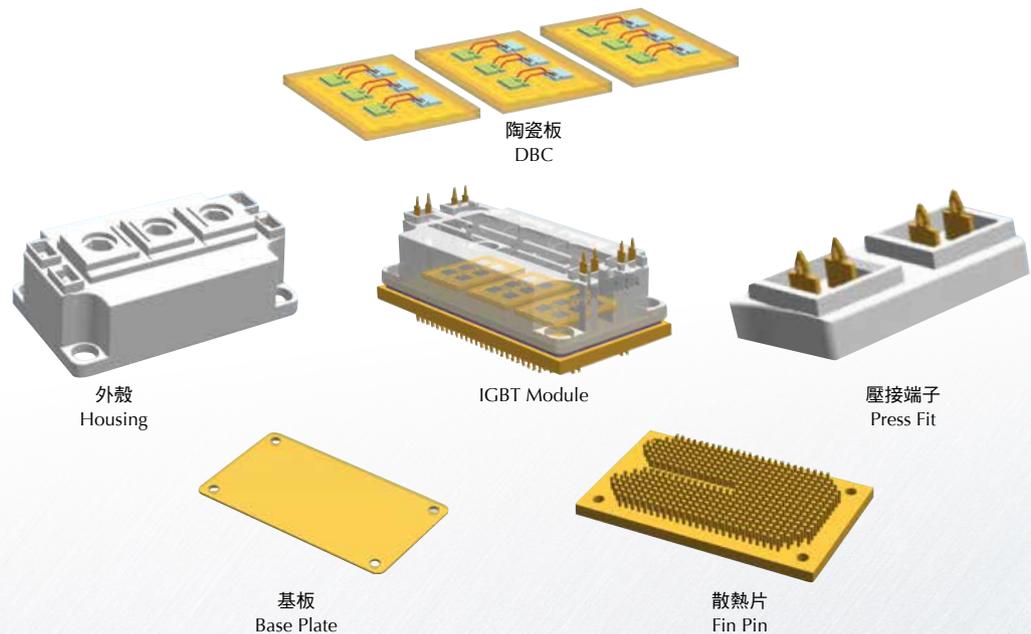
克服基板預彎的技術挑戰

基板的作用主要是用來承載陶瓷板與晶片，

但由於兩種材料的熱膨脹係數並不匹配，在運作時會因承受溫度負載而產生翹曲現象。通常銅的熱膨脹係數是 IGBT 晶片的 3 倍，若在高功率模式下承受 1000 次的熱循環，往往就會從焊接處分層脫離，進而影響 IGBT 模組的效能，甚至造成損壞。

因此，即使基板看起來只是一片簡單的平板，但在製造時仍需克服許多的困難。首先，為了解決翹曲問題，必須先將基板予以預壓成形，也就是說先在室溫時將基板壓彎，使其在工作溫度下再膨脹成為平坦，以符合實際運作的需求。

IGBT Module 組合示意圖



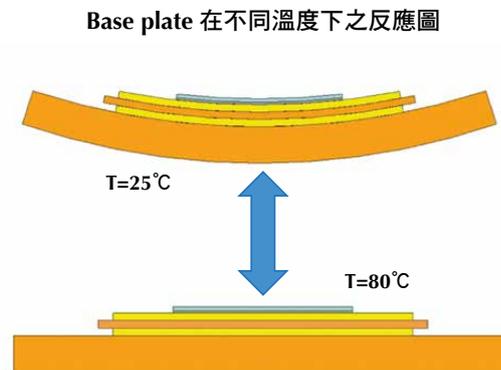
module, in addition to IGBT chip, base plate, Ceramic (DBC), Press Fit pin, Fin Pin, and housing are also highly important. Besides ceramic (DBC), the base plate, Press Fit pin, and Fin Pin are formed by metal, while the housing belongs to plastic injection molding.

These are all professional specialties of SDI.

Therefore, even though the specialties and application of IGBT modules are not quite the same as traditional lead frame, SDI has still decided to expand with such trend.

此外，基板是平面的，因此曲率還需有 X 軸與 Y 軸兩個方向的考量。如何設定基板的預彎程度，需要精細的考量，包括模具設計、材料特性、甚至晶粒大小等，才能成功達到要求。

預彎曲率的設定與材料的結構、特性以及模組的導電、導熱條件均息息相關，必須進行詳盡的分析。此外，針對不同的規格，基板的預彎曲率還需依客戶需求進行客製化設計。對此，順德與客戶展開了密切的合作，並透過 CAE (電腦輔助工程技術) 進行熱應力模擬，而獲得了良好的掌握度，因此可調整出最佳化的曲率，並在預壓後維持基板曲率的穩定度。



基板之預彎曲率，透過CAE進行熱應力模擬，已獲得了良好的掌握度。
Through thermal-stress simulation from CAE, the pre-bending curvature of the base plate has obtained mastery.

SDI implies that due to the successful development of the Press Fit pin, the current development of the IGBT module is mainly focused on the best plate. To yield higher heat dissipation efficiency, material selection and curve bending of base plates are critical. SDI aims to formulate production capability of the base plate in the short term, meanwhile developing the Fin Pin through metal injection molding, and the ceramic (DBC) by sintering. It is expected that a complete solution for the IGBT module will be developed eventually.

Solve the technical challenge of pre-bending the base plate

The base plate functions to bear the ceramic (DBC) and chip, but due to the inconsistency in coefficient of thermal expansion of these two materials, warping occurs due to temperature overload. The CTE of copper is usually 3 times more than that of an IGBT chip. If it encounters 1000 times of heat cycle in high-power mode, it may break at the welded layer, and affect the function of the IGBT module, causing possible

damage.

Therefore, even if the base plate appears to be a simple plate, many difficulties still need to be solved during manufacturing. First, in order to solve the warping issue, the base plate has to be pre-bented, involving having the base plate bent at room temperature, and make it expand to flatness at working temperature to fit the demands of the actual function.

Moreover, the base plate is flat, therefore axis X and axis Y have to be taken into consideration with curvature. Detailed estimation has to be considered with the setting of the degree of pre-bending of the base plate, including module design, material characteristics, even the size of die, in order to meet the demand.

The setting of the pre-bending curvature of and the structure and characteristics of the material, along with both electric and heat conduction of the module are highly connected, thus detailed analysis is required. In

研發進度穩定 將投入量產

順德從 2016 年第二季開始投入基板研發，目前已經開始小批量產。至於 Press Fit 也已通過認證，進展順利。儘管車用市場的驗證耗時，但由於順德已與 IGBT 模組的主要供應商在其他車用產品有合作關係，藉此基礎，可大大降

低開拓新市場的風險。

對順德來說，由於對銅材料的掌握度佳，並設有基礎實驗室可進行完整的分析驗證，因此能找出滿足客戶需求的特性。此外，順德具備的 CAE 模擬分析、模具設計能力，以及快速試模機構，亦可加速產品的開發時程。另一個重要的優勢是，順德擁有足夠的生產線產能，能夠確保量產穩定性，以及供貨的能力。

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For SDI, with the mastery of copper materials, along with the fundamental research division that provides complete analysis.

這是順德發揮既有技術優勢，擴大新市場的最好案例。除了歐美市場，中國對於電動車的發展也是不遺餘力，這也將是順德未來鎖定的重要目標。

addition, facing different specifications, the pre-bending curvature of the base plate has to be customized in accord with customer requests. Thus, SDI initiates close cooperation with clients, and obtains mastery through thermal-stress simulation from CAE, thereby creating the maximized curvature, maintaining the balance of curvature of the base plate after pre-bending.

Get Ready for Mass Production

SDI has been developing its base plate since Q2 2016, which has conducted a small amount of production currently. It is estimated that a small amount of production can be conducted in Q2 this year. Press Fit has also received approval, having been developed smoothly.

Due to SDI's cooperation with other main suppliers of IGBT module on automobile products, despite of the approval of automobile market being time-consuming, such advantage serves as the key to lower the risk of developing a new market.

For SDI, with the mastery of copper materials, along with the fundamental research division that provides complete analysis, the company is able to discover the special aspects that satisfy the need of customers. In addition, SDI's superiority over CAE simulation and analysis, module design capability, and facilities that provide quick mold trail, will help increase the speed of development of products. The other advantage of SDI is the efficiency capacity of its production line, which ensures the stability of mass production and supply capability.

This is the best example of SDI expanding into a new market with its existing technical advantages. Besides the western market, China also spares no effort in developing EV, and such market is one of the important goals for SDI in the future.



物聯網快速興起 感測器將無所不在

Rise of IoT Leads to the Rise of Sensors

Sensor

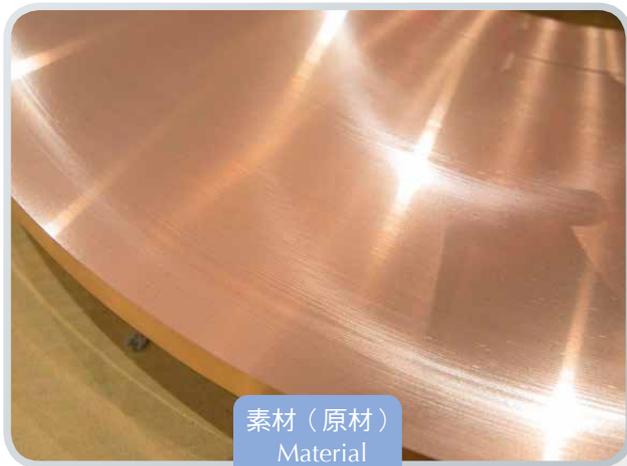
物聯網 (IoT) 是近年來業界最受矚目的新興趨勢。透過讓各種裝置具備連網及感知功能，能夠收集包括溫度、壓力、濕度、運動等各種資料，經由進一步的分析，能夠產生出有意義的訊息，進而促進各類智慧化服務的實現。它的應用涵蓋智慧家庭、智慧城市、醫療、車聯

網、以及工業應用，在帶來龐大商機的同時，更將能提升人們的生活品質與便利性。

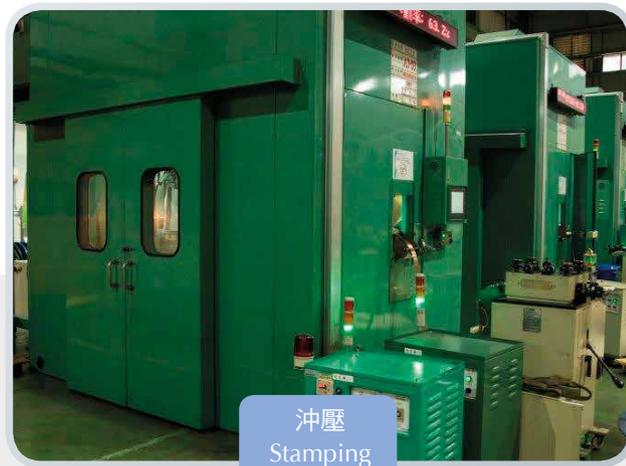
在物聯網裝置中，感測器是負責收集資料的重要元件。隨著物聯網願景的實現，未來各類感測器也將無所不在，扮演著協助裝置感知周

Among all the latest trends in the industry, IoT is the most well-regarded one. Through enabling various devices to acquire Internet accessibility and sensory function, collecting data like temperature, pressure, humidity, and exercise, along with advanced analysis, meaningful messages can be conducted, and

further enhances smart service in every aspect. Its application covers smart family, smart city, medical services, connected cars, and industrial applications. In addition to bringing great business opportunities, it also improves people's quality of life and convenience.



素材 (原材)
Material



沖壓
Stamping

遭環境的角色。舉例來說，車用的胎壓感測器，能夠即時偵測車胎壓力，發出預警，降低駕駛的風險，又如安全監控用的影像感測器、以及製造生產線上能夠感知物件定位的光線與距離感測器等，各式各樣的實例已經獲得業界的廣泛應用，未來的發展更是潛力無窮。

運用埋入式射出技術 投入感測器導線架開發

感測器導線架基本上是一種結合金屬件與塑膠件的製程方式。過去，順德利用 Pre-Mold

技術開發 LED 導線架產品已有豐富的經驗。所謂 Pre-Mold 是指將金屬支架透過塑膠射出製程，將塑膠融化後射入到模具腔體中等待冷卻，形成成品所需之形狀的一種製程。

而感測器導線架採用的則是與 Pre-Mold 類似的埋入式射出 (Insert Molding) 技術。它是先將金屬件置入射出模具中，再將融化後的塑料射入腔體與金屬件做結合，並於出貨後交由客戶進行晶片封裝，使產品具有散熱、電子訊號傳遞、控制裝置等功能。

In IoT devices, the sensor is the vital component that collects data. With the realization of IoT, the presence of sensors will be wide-spread in the future, which assist the device in perceiving the surrounding environment. For example, the tire-pressure sensor for automobiles is able to detect tire-pressure in time and set off alarms, in order to lower risk in driving, along with the visual sensor for safety surveillance, and the light and distance sensor for sensing item on production lines. Various types of actual application have

been widely applied by the industry, which also has great potential in the future.

Combine Insert Injection and Develop the Sensor Lead Frame

Sensor lead frame is a manufacturing process that combines metal and plastic components. In the past, SDI had many experiences using Pre-Mold technique to develop LED lead frame products. Pre-Mold is a type of plastic injection manufacturing process that forms the metal frame, melting the plastic and injecting into the



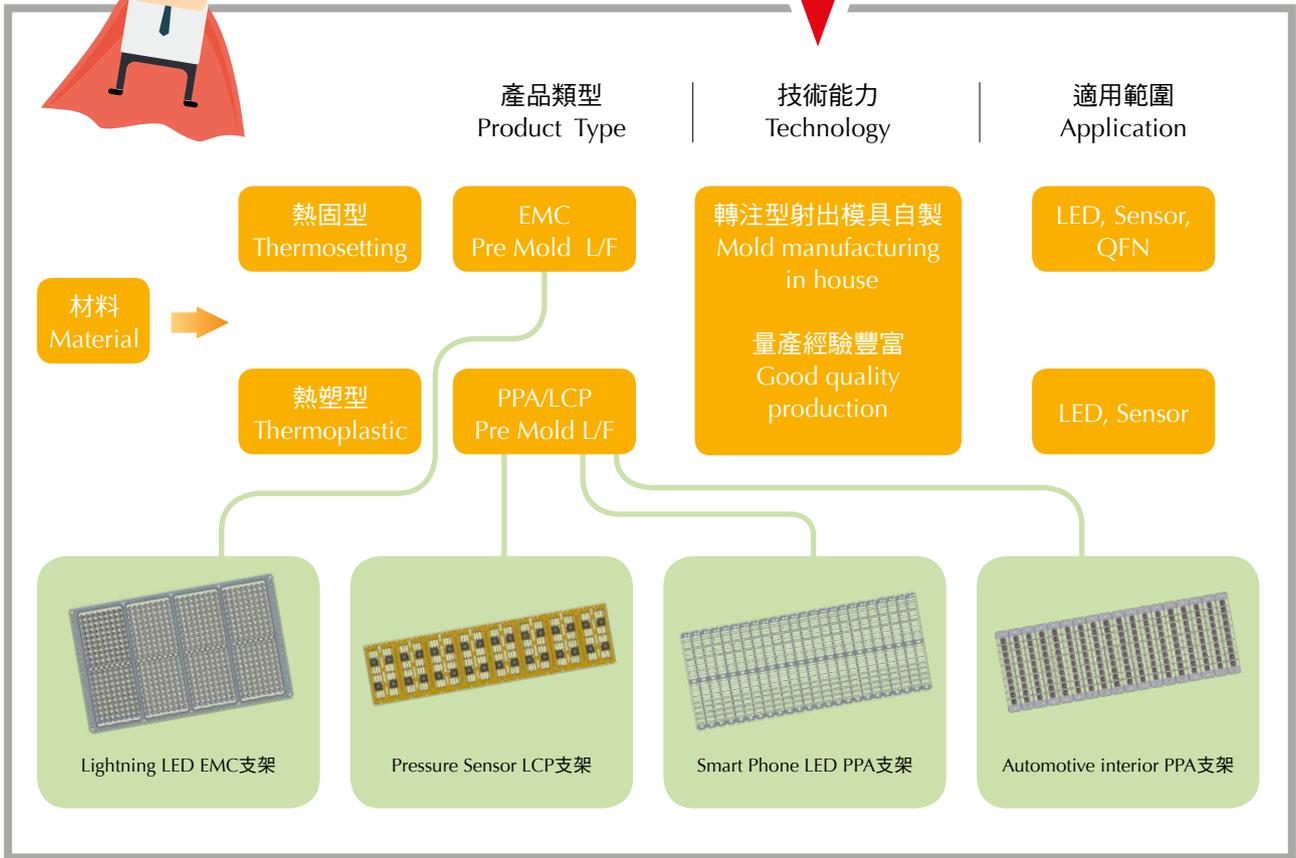
電鍍
Plating



射出
Injection /
Molding



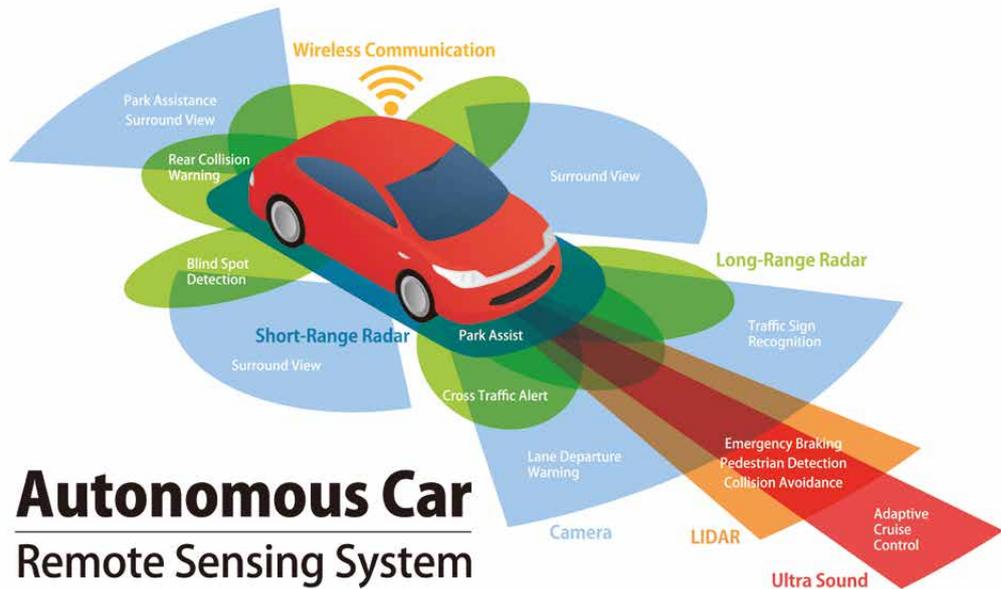
裁斷
Down set



順德利用 Pre-Mold 技術開發 LED 導線架產品已有豐富的經驗。
SDI had many experiences using Pre-Mold technique to develop LED lead frame products.

胎壓監測系統(TPMS)與防鎖死煞車系統(ABS)等相關感測器正逐漸從高階汽車快速向下滲透至中低階車款，帶動感測器需求快速攀升。

Tire pressure monitoring system (TPMS) and anti-lock braking system (ABS) and other related sensors are gradually going down from the high standard cars to the lower standard cars, this makes the demand for the sensors to go up rapidly.



Autonomous Car Remote Sensing System

埋入式射出的技術重點在於：金屬支架與塑膠殼進行組裝過程時，如何達到無塑膠溢膠與金屬毛刺，並確保客戶使用晶片的功能不會受到任何的影響。

順德是從 2015 年中開始評估感測器市場。雖然對此產業並不熟悉，且其導線架對機械件的強度需求與 LED 並不相同。但是，有鑒於它的物料是以黑色塑膠 LCP 為主要射出材質，銅材均以高導熱、高導電銅為主；而在射出技

術方面，順德一直在減少流道、降低射出周期上不斷精進與提升，這都與公司多年來發展的埋入式射出技術相符，因此就技術上來看，這些問題都是不難克服的，因此毅然決定正式投入。

事實上，順德擁有將近 10 年金屬支架與塑膠射出的相關經驗，並有眾多的射出產品實務經驗及射出模具設計人才，且相關模具均在廠內自製，可於短時間內達到客戶之需求。

mold for cooling in order to create the required shape.

The sensor lead frame uses Insert Molding technique, which is similar to Pre-Mold. It places the metal component into an injection mold, and injects melted plastic material into the mold and combines it with the metal component, offering it to the client for sealing the chip after launch, in order to equip products with functions like heat dissipation, transferring of electric signal, and device control.

The key function of Insert Molding is as follows: during the process of assembling the metal frame and plastic hull, it is important to create no leaking gel and metal burr, and ensure that the function of chip is not affected.

SDI began to evaluate the sensor market in mid-2015. However, the company was not familiar with the industry, and its lead frame's requirement for the endurance of mechanical components are different from LED. Nevertheless, it uses black plastic LCP

投入市場 展現絕佳優勢

整體來看，順德擁有能夠在埋入式射出市場中佔有一席之地的絕佳優勢：

首先，順德對於塑膠材料特性的掌握度非常高，包括 LCP、PPA、PA-9T 等高絕緣性材料，可針對材料特性進行射出模具設計值之調整，減少初期之失誤率，進而大幅縮短樣品送樣及認證時間。

此外，順德擁有車用電子、消費型電子之相關產品品質認證系統，如 ISO9001、

as the main injection material, while the copper material consists mainly of copper of high heat and electric conductive copper. In terms of injection molding, therefore, SDI has kept improving in the aspect of lessening runner and lowering the injection period. All this is connected with insert molding of the company's plan for years, therefore such issues are not difficult in their technical aspect. This is why SDI decided to join the industry.

In fact, SDI retains roughly a decade of experience in manufacturing metal lead frame and plastic molding, and also possesses a lot of talent related to molding products and mold design. SDI can also manufacture its own brand of molds, which enable the company to reach customers' requirements in time.

SDI demonstrate advantage in the market

On the whole, SDI has an excellent advantage that would enable the company to acquire a certain position in the insert molding market.

IATF16949、QS80000，且該系統經由國際 IDM 大廠每年進行稽核改正，目前也已獲得有些客戶免入料檢 (Ship to line) 的認證，直接可上生產線生產，這也代表製造品質有一定的水準以上。

順德擁有將近 10 年金屬支架與塑膠射出的相關經驗，並有眾多的射出產品實務經驗及射出模具設計人才。

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First, SDI knows very well the characteristics of plastic material, including highly insulated material including LCP, PPA, and PA-9T, and is able to make adjustments to the design value of injection molds according to material characteristics, in order to lessen initial percentage of error, and shorten the time spent on sampling and requesting certification.

Moreover, SDI possesses a product quality certificate system of related products to automobile and consumptive electric products, such as ISO9001, IATF16949, and QS80000. The system has been checked by IDM every year, and currently it has received Ship to Line approval from certain clients, which enables the company to directly initiate the production line, demonstrating the quality of the manufacturing standard.

從消費性市場出發 再逐步邁向高階應用

基於以上的技術資源與優勢，順德於 2017 年一月完成光感測器的開發送樣，2017 年底開始量產。目前，除了埋入式射出技術就緒之外，亦積極提升相關的電鍍技術，並已開始與客戶接洽，確定可滿足其規格需求。

在市場開拓方面，由於順德與日系客戶在 LED 導線架產品方面有長期的合作經驗，而且許多日系客戶在感測器市場也擁有一席之地，因此將以此為基礎，先鎖定日本市場的消費性感測器產品，包括光線、壓力、距離等各類感測器。

From Consumer Market to High-level Applications

Based on the above technical resources and advantages, SDI completed the development and sampling of light sensors in January 2017, and embarked on a small amount of production in the end of 2017. Currently, in addition to the completion of its insert molding technique, related plating technique has also been improved, while clients have also been notified in order to make sure of their demand on the product's format.

In terms of expanding the market, due to SDI's long-term cooperation with Japanese clients on LED lead frame products, and the clients' influence in the sensor market, such cooperation would serve as the basis for expansion. The consumer sensor products of the Japanese market will be targeted first, including sensors for light, pressure, and distance.

But for industrial and automobile application,

but for industrial or automobile application, due to the higher environment and temperature requirements, the precision over the size of the colloid is higher as well, and it has to pose no risk of separating colloid from plated frame under the influence of temperature. Faced with such a challenge, SDI deployed the roughening technique developed successfully last year, and improved the adhesion between metal lead frame and the packing material through techniques of surface etching and plating roughening, in order to give the packed product better tolerance in terms of quality and lifespan, and place a step down on the market for high-level automobile sensor lead frame.

Sensors are an application that are small in number but have great diversity. Except for the mechanical type, SDI currently provides a sensor lead frame that is partially based on a chip. Therefore SDI is deeply confident about demonstrating its own existing advantages and is expanding to new application markets, controlling the latest business trend for IoT.

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成功開發更薄、更複雜的 Smart Card 產品

Smart Card Product : Now Thinner, and More Complicated

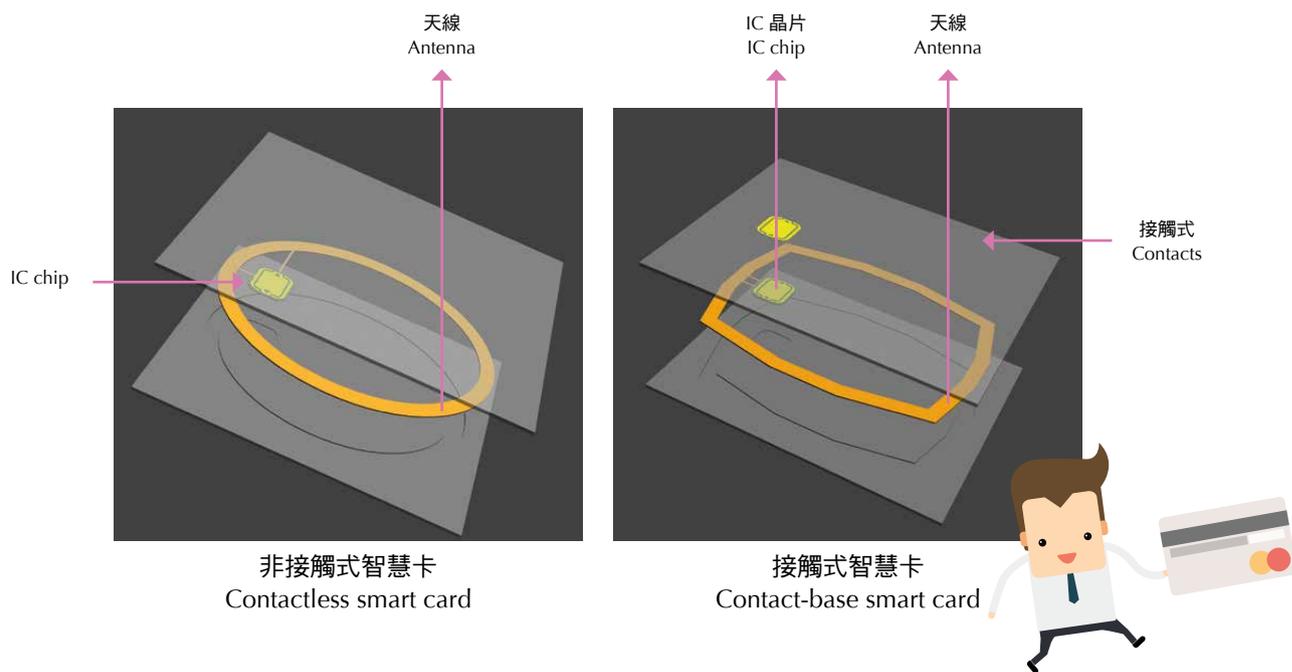
Smart Card

隨著身分辨識、塑膠貨幣等應用的普及，現代人的生活已少不了各式各樣的智慧卡，像是金融、通訊、交通運輸、門禁管制、會員儲值等各種卡片，都已經成為我們便利生活中不可或缺的一部分。

簡單來說，智慧卡是一張嵌入微晶片的塑膠卡片，若以智慧卡與讀卡機的溝通方式來區分，可分為接觸式與非接觸式兩大類。接觸式是指透過智慧卡表面的金屬接點與讀卡機內部的接點相互接觸，以讀取或寫入資料；而非接

With the popularity of applications like identification and plastic currency, modern people cannot live without various types of smart cards, such as finance, communication, transportation, door access control, and membership deposit. These cards have become a vital part of our life.

To put it simply, a smart card is a plastic card with a micro chip etched in. Based on the different communicative methods of smart card and card reader, there are contact type and non-contact type cards. A contact type card functions through the connection between the metal contact on the surface of the smart card with the



觸式則是透過隱藏在內部的天線以無線電波與讀卡機進行資料的讀寫。由於智慧卡的應用多元，又以非接觸式為未來市場發展的主流應用，近年來市場規模也持續成長，2015 年全球智慧卡市場營收為 66 億美元，預計到 2020 年將成長到 119 億美元，前景極佳。

順德表示，看好非接觸式智慧卡的成長潛力，再加上智慧卡載體採用沖壓製程，可視為既有沖壓導線架技術的延伸，因此決定投入開發，以擴展更多的商機。

事實上，順德幾年前曾與台灣廠商合作開發智慧卡載體，但由於對厚度的要求較低，技術難度並不高。若要贏得領先 IDM 大廠客戶的訂單，必須具備開發出更薄、更複雜產品的能力，因此從去年起全力朝此目標邁進。

挑戰技術極限 產品開發順利達陣

智慧卡載體的製造流程可分為 coin(壓印)沖壓、精密電鍍、以及 AOI(自動光學檢測)檢驗包裝三大階段，而每個階段都有其技術挑戰需要克服。

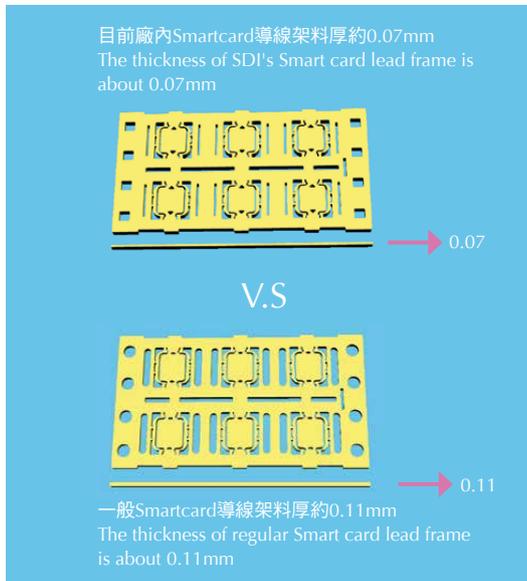
interior contact within the card reader for both input and output of data. The non-contact type functions through antenna within to communicate with the card reader via radio waves.

Due to the versatility of the smart card's application, along with the fact that the non-contact type will become the mainstream application for future market development, the market scale has grown steadily in recent years. The profit from the global smart card's

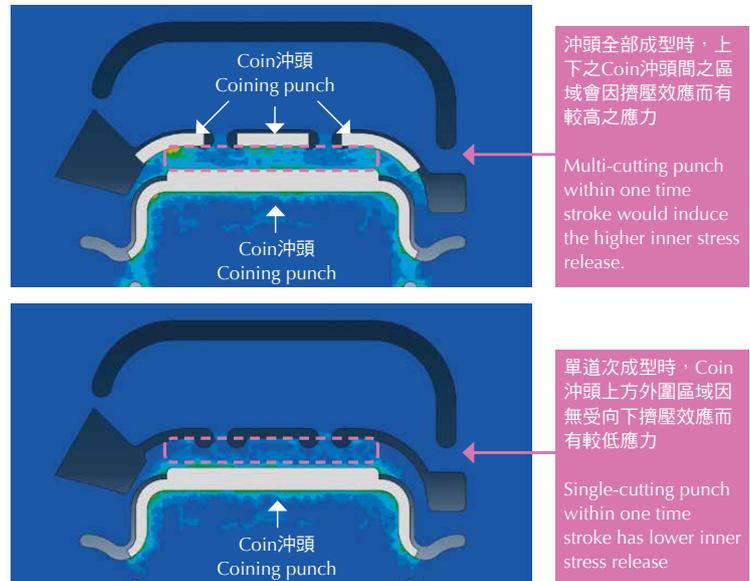
market in 2015 was USD 6.6 billion. It is estimated that it will grow to USD 11.9 billion, which provides an excellent future.

SDI has stated that the growth potential for the non-contact type of smart card is highly important to the company. Moreover, the smart card is manufactured through stamping, which can be viewed as an extension of the existing technique of stamping lead frame, therefore SDI decided to begin development on the

Smartcard 導線架厚度對比 Thickness of Smart card lead frames



COIN 應力變化 Coining punch



順德表示，為了因應更輕薄短小的設計需求，IDM 客戶要求智慧卡載體的厚度為 0.05mm 至 0.075mm 之間。由於料片很薄，因此在沖壓時，送料精度會難以掌握，這是其中的一大挑戰。

此外，以載體的形狀來看，它還有全周 Coin 的要求，此設計主要是用來咬膠用，以 0.075mm 的料片為例，Coin 深度為 0.03mm 以上，幾乎是一半的料厚，再加上是全周的大面積 Coin，由於料薄容易變形，使得穩定深度

更為困難。

在電鍍方面，同樣地，由於料片薄，也遭遇到送料精度難以掌握的挑戰，再加上料片薄，外觀易受底材影響，需精細調整電鍍參數，才能取得最佳的結果。

為了降低產品開發失敗的風險，順德還在開發初期便導入 FMEA 失效模式與影響分析，有助於提高產品的良率。

field in order to expand its own business opportunities.

In fact, SDI cooperated with Taiwanese contractors on developing smart card carriers several years ago, but due to its lower requirement over the thickness of cards, the technical difficulty was not high. In order to receive orders from leading IDM manufacturers, the main goal of the company is to develop thinner and more complicated

products.

Complete the Development of the Products

There are three stages of manufacturing smart card carriers: coin stamping, precise plating, and AOI (Automated Optical Inspection) inspection of the package. Every stage has its own technical challenges to overcome.

目前，智慧卡的前幾大廠商皆為 SDI 目前的國際 IDM 客戶，由於多年合作的信任感，SDI 順利的獲得客戶的認同並合作進行開發。

經過一年半的開發，目前 0.075mm 的智慧卡載體已經通過測試，準備開始量產，而 0.05mm 的產品也已進入測試階段。

精益求精 挑戰製程新極限

順德表示，公司原有的鍍銀製程能力，材料限制為 0.1~0.4mm，但目前開發 SmartCard 產品的料厚為 0.05~0.075mm，可以說是挑戰既有製程的極限，耗費了許多的功夫才終於達到

規格要求。

為了解決送料精度以及材料易變形的問題，順德設計了送料緩衝 (buffer) 輪，利用拉力 / 張力來做精細調整，同時也透過提升模具精度，並充分掌握藥液與溫度對製程的影響，來找出最佳的濃度、溫度等製程參數。同時，在電鍍時，還設計了特定形式的定位孔及定位針，以固定料片的位置。

此外，為了提升出貨品質，在 AOI 檢測部分，也絲毫不能馬虎，必須確認偵測能力的設定，不至於因為太嚴謹誤判多而影響生產，或

SDI has said that in order to face design requests for a smaller and thinner design, IDM clients require the thickness of smart card carrier be set between 0.05mm to 0.075mm. Due to the thinness of the material, the precision of the material during stamping would be hard to control. This is a major challenge for us.

In addition, judging from the shape of the carrier, it also demands for the whole Coin perimeter. The design is used to contain the anti-seize function. Take the material flake of 0.075mm for example. The depth of Coin is more than 0.03mm, which takes up almost half of the thickness. In addition, it's a large-scale Coin with whole perimeters, and tends to be deformed due to its thinness, which makes stabilizing depth even more difficult.

For plating, meanwhile, due to the thinness of material flake, the accuracy at feeding is hard to control as well. The thinness of the material flake tends to be influenced by its appearance due to the material of the bottom as well. The plating parameter has to be carefully adjusted in order to obtain the best result.

In order to lower the risk of failure in development, during the initial period of developing, SDI introduced FMEA failed mode and analysis over the influence, which has been helpful for increasing the yield.

Currently, several major smart card contractors are all current national IDM clients of SDI. Thanks to the trust built over years, SDI successfully gains customers' recognition, and conducts development with them.

After development over a year and a half, currently the smart card carrier of 0.075mm has passed the test, and is ready to enter mass production. The products of 0.05mm have also entered the test phase.

Challenge the Technical Boundaries

SDI states that the original silver plating capability has the limit of material between 0.1mm to 0.4mm. However, the current thickness of the products of SmartCard range between 0.05mm to 0.075mm, which poses a challenge for existing production. The company is sparing no effort in reaching the demand.

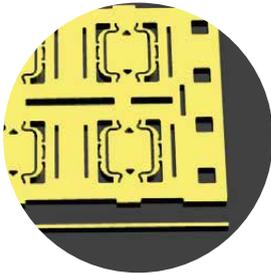
In order to solve the issues of feeding

是太寬鬆造成缺陷流出。

現在，順德已建構了完整的 AOI 能力，透過自動化管理系統以及雲端參數管理，可針對電鍍完成後尺寸、光澤均勻度、以及虛鍍 / 漏鍍等表面缺陷進行產品外觀以及料片尺寸全檢。

順德表示，智慧卡載體是公司運用既有的沖壓、電鍍以及 AOI 檢測能力，力圖開創的全新市場，隨著產品已通過測試，等於已經取得了進入比賽的入場券，相信未來將能享有絕佳的成長空間。

沖壓
Stamping



料片薄，載體厚度為0.05~0.075mm之間，掌握送料精度。
It's crucial to control the feeding precision while the material thickness is during the 0.05-0.075mm.

Coin(壓印)沖壓，穩定深度。
Coining Stamping process is used to stabilize the depth.

電鍍
Plating



料片薄，掌握輪鍍精度及最佳電鍍參數
With thin workpiece, it's crucial to control the plating precision and optimize plating parameters.

檢驗包裝
AOI Package



AOI檢測，自動化管理及雲端參數管理，確保出貨品質
Product quality can be guaranteed by using AOI, automation management, and cloud parameter management.

accuracy and the material's tendency to deform, SDI has designed a feeding buffer wheel, which uses pulling force/tension to conduct precise adjustment. Meanwhile the accuracy of the mold is elevated, and the influence of chemical fluid and temperature's influence will be fully controlled, in order for the manufacturers to discover the best concentration, temperature, and other parameters of production. Meanwhile a special locating hole and pinpoint pin has been installed during plating in order to stabilize the position of the material flake.

In addition, in order to improve the quality of the goods, the AOI inspection can not be overlooked. The sensory capability has to be verified, so as not to influence production due to misjudgment, or cause flaws at the launch

due to lack of caution.

SDI has now constructed full AOI capability, which enables the company to conduct examination over the completed size after plating, the fullness of the gloss, and the false plating/missed plating of the product appearance and size of material flake through automatic management system and management of cloud parameter.

SDI states that the smart card carrier is the result of the company using its own existing stamping, plating, and AOI inspection capability in order to open a whole new market. Since the products have passed the test, it would just be like winning a ticket to the game. We believe there is a great room for growth in the future.



創新求變 擘畫願景

短中長期廠房擴充計畫

撰文／陳雅莉 · 攝影／沈孟達

Text / Chen, Ya-Li · Photo / Shen, Meng-Ta

Embracing Innovation and Drawing Up the Vision

Short-, medium-, and long-term plant expansion projects

因應客戶需求，順德積極擴建廠房與增購新設備，以提升產品的附加價值、精度及穩定度。

SDI expanding the plants and purchasing new equipment to increase product value added, precision, and stability expected by customers.

在快速且競爭激烈的環境中，順德巍然挺立 60 餘載。歷經多年淬煉與轉型後，如今順德在高階車用單體高功率導線架與音圈馬達 (VCM) 彈片上，深獲國際大廠客戶的青睞。為因應客

戶需求，順德不斷創新求變，擘畫企業願景與藍圖，並推動「短、中、長期廠房擴充計畫」，展現團隊旺盛企圖心與執行力，以開創未來成長的新契機。

Established more than 60 years ago, SDI has continued to prosper even in this fast-evolving and highly competitive environment. After years of preparation and successful transformation, SDI's high-end automotive

power discrete Leadframes and voice coil motors (VCM) springs have won approval from top IDM customers. To meet customer demand, SDI strives for innovation and has built its corporate vision and blueprint for short-,

擴建廠房 滿足中長期生產需求

目前，順德聚焦於智慧型汽車及環保綠能等關鍵零組件市場，未來還將跨足醫療、航太等具有高附加價值、門檻難度較高的產品。近年來，隨著客戶訂單湧現及產能需求持續增溫，順德積極擴充興建廠房，以滿足未來營運所需。

經凝聚共識後，自 2016 年底起，順德已著手推動「短、中、長期廠房擴充計畫」，包括彰化本廠管理大樓改建工程、南投廠區廠房新建工程、彰化二廠沖壓區（緩衝）新建工程、

彰化本廠沖壓區改建工程，以及彰化本廠加工區 / 生活區改建工程。

坐落於彰化本廠的舊管理大樓，將改建為 7 層樓高的管理大樓，屆時於 2018 年完工啟用後，將成為順德集團領導、管理與企業營運的中樞，引領員工迎向未來新挑戰。

因應客戶需求及產能持續擴充，則進行南投廠區廠房新建工程，未來新建廠房竣工後，鉚合、裁斷成型、電鍍等生產流程將集中於同一棟廠房，有助於提高生產效率及管理。

medium-, and long-term plant expansion, demonstrating SDI's ambition and executive power in finding new opportunities for future development.

Expanding plants to satisfy medium- and long-term production needs

Currently, SDI is focused on the market of key components of smart cars and green energy. In the near future, SDI will also include medical and aerospace products, which are known to have a higher added value and entry barrier. Because of a big increase in orders placed by customers as well as productivity need in recent years, SDI has started to expand the plants in full force for future business operation.

Since 2016, SDI has begun implementing its short-, medium-, and long-term plant expansion projects, namely, the administration building renovation project for the Changhua headquarters, the plant construction project for the Nantou branch, the stamping area construction project (buffering) for Changhua

plant No. 2, the stamping area renovation project for the Changhua headquarters, and the processing area/work environment renovation project for the Changhua headquarters.

The old building of Administration Building at the Changhua headquarters will be rebuilt into a seven-story administration building. Once completed (in 2018), the building will become the leadership, management, and business operation center of SDI for leading the staff to embrace new challenges in the future.

To meet customers' demand and continuously increase productivity, SDI has also started to build a new plant at the Nantou branch. When the new plant is ready, riveting, down-setting, plating, and other production processes will be housed in the same building, helping to improve production efficiency and fortify management.

Another project is the stamping area construction project (buffering) for Changhua Plant No. 2. It is a preparation (buffer) for the

另規畫進行執行彰化二廠沖壓區(緩衝)新建工程,作為彰化本廠沖壓區改建之前哨站(緩衝)。彰化本廠沖壓區改建工程將規畫為沖壓區、模具修護區、洗淨與包裝區、倉庫、新事業發展預留區,將前後製程整合並集中在同一棟樓內,可持續改善製程、增進生產效率,並大幅提升產能。

除了工廠設施之擴充外,「人才」也是順德的重要資產,公司持續不斷培育人才外,為推動工作與生活平衡,打造使員工安心工作的環境,未來順德將規畫進行彰化本廠加工區/生活區改建工程,讓員工能有優質工作環境與平衡生活空間。

renovation of the stamping area at Changhua headquarters. After the overhaul, the area previously used for stamping at Changhua headquarters will be divided into the stamping area, the tooling maintenance area, the degreasing and packaging area, the warehouse, and an area reserved for new business in the

future. Integrating pre- and post-manufacturing processes in the same building will significantly improve the manufacturing process, production efficiency, and productivity.

Aside from expanding and upgrading its plants and equipment, SDI also cares about

產能擴充規畫

Vision for productivity expansion projects



單頭高精度電鍍機	讓產品電鍍公差達到±0.05mm以內,符合精度高及穩定度高的產品要求。
條料粗化機	延長零件壽命,提升金屬導線架與封裝塑料間的結合力。
蝕刻機	德輝透過捲帶式蝕刻的生產優勢及擴充產能,滿足客戶期待。
條料表面清洗機	加強表面處理技術,增加產品可靠度。
Single-head high-precision plating machine	It has a plating tolerance of ±0.05mm. With this machine, SDI products can better meet customers' expectation for high precision and high stability.
Surface roughness machine	It is excellent for extending component shelf life, increasing the bonding between lead frames and molding compounds.
Etching machine	To meet SDI customers' expectation, TBT has the reel-to-reel etching method and boost productivity aggressively.
Surface treatment machine	It is used to fortify surface treatment and increase product reliability.

添購新設備 提升產品可靠度

為配合順德集團電子事業群開發高附加價值 (HVA) 新產品，以及關係企業德輝科技音圈馬達彈片與蝕刻導線架的需求增加，須擴充沖壓成型、蝕刻及表面處理等相關設備。2017 年順德購置新機計畫，將包括沖床、鍛造沖床、單頭高精度電鍍機、條料粗化機、裁斷成型機、條料表面清洗機等。

隨著市場對電子產品的需求越來越要求輕薄短小，順德添購單頭高精度電鍍機，可使未來產品的電鍍公差達到 $\pm 0.05\text{mm}$ 以內，符合客戶對精度高、穩定度高的產品要求。針對車用電子設備，客戶通常會特別要求關鍵零組件如導線架耐高低溫的能力；順德購入條料粗化機，將有助於延長零件壽命，有效提升金屬導線架與封裝塑料間的結合力，同時避免水氣侵入導



順德聚焦於智慧型汽車及環保綠能等關鍵零組件市場，未來還將跨足醫療、航太等具有高附加價值、門檻難度較高的產品。

SDI is focused on the market of key components of smart cars and green energy. In the near future, SDI will also include medical and aerospace products, which are known to have a higher added value and entry barrier.



its employees, an important asset of SDI, and wants to provide them with a safe and comfortable work environment. As a result, SDI will implement this processing area/work environment renovation project for Changhua headquarters to create an excellent work environment and a wonderful living space for the staff.

New equipment for better product reliability

To support SDI electronic division's development of high value-added products as well as to accommodate an increasing demand for SDI affiliate TBT's VCM springs and etched lead frames, SDI will purchase more stamping, etching and surface treatment equipments. In 2017, SDI will buy press machine, forging press machine, single-head high-precision plating machine, surface roughness machine,

down-set machine, surface treatment machine, and more.

Because slimming is key market trend for electronic products, SDI recently purchased a single-head high-precision plating machine that has a plating tolerance of $\pm 0.05\text{mm}$. With this machine, SDI products can better meet customers' expectation for high precision and high stability. As for automotive electronic equipment, customers normally would request key components, such as lead frames, to be both low- and high- temperature resistant. To meet the need, SDI has purchased a surface roughness machine, which is excellent for extending component shelf life, increasing the bonding between lead frames and molding compounds preventing adverse effects due to moisture entering into lead frames, and making car components durable and stable.

廠房擴建計畫時程與願景

Schedule and vision for plant expansion projects



大陸二廠改建工程
時程：短期
願景：因應大陸擴充電子事業，進行整廠、設備配置。

Renovation project for China plant No. 2

Schedule: Short-term
Vision: For the growth of SDI's electronic business in China, this project included the renovation of plant No. 2 and the purchasing of new equipment.



南投廠區廠房新建工程
時程：短期
願景：順德集團電子事業群與德輝科技未來擴充產能之用，以創造雙贏局面

Plant construction project for the Nantou branch

Schedule: Short-term
Vision: It boosts the productivity of SDI's electronic business and TBT's business by building a win-win foundation.



彰化本廠管理大樓改建工程
時程：短期
願景：企業管理與營運中樞，引領員工迎向未來新挑戰

Administration building renovation project for Changhua headquarters

Schedule: Short-term
Vision: It shall be the company's management and operation core for leading the staff embracing future challenges.



彰化二廠沖壓區(緩衝)新建工程
時程：短期
願景：因應電子事業群擴充產能，作為本廠沖壓區改建之緩衝

Stamping area construction project (buffering) for Changhua plant No. 2

Schedule: Short-term
Vision: For enhancing electronic business productivity, this project is used for buffering while renovating the stamping zone of the plant.



彰化本廠沖壓區改建工程
時程：中期
願景：整合集中前後製程，改善製程、增進生產效率

Stamping area renovation project for Changhua headquarters

Schedule: Medium-term
Vision: It integrates the pre- and post-manufacturing processes, improves the overall manufacturing process, and boosts production efficiency.



彰化本廠加工區/生活區改建工程
時程：長期
願景：為員工打造優質工作環境與平衡生活空間

Processing area/work environment renovation project for the Changhua headquarters

Schedule: Long-term
Vision: It provides the staff with a wonderful work environment and living space.

線架內部而影響效能，達到車用零件耐用、穩定的要求。

德輝科技的生產線採用捲帶式蝕刻方式，可以捲料、條料及整片方式出貨。相較於其他同業，德輝最大優勢在於捲料蝕刻。由於客戶下單或追加訂單及轉單量增，使得德輝現階段產能已呈現滿載，購置蝕刻機，將有助於德輝提高產能，滿足客戶的期待。

條料表面清洗機則可加強表面處理，增加產品可靠度。待相關設備陸續擴充及更新後，將

有助於順德提升技術製程及生產效率，滿足客戶對高精度、高穩定度產品的期待。

自動化生產 擴增產能

近年來，考量到貿易保護主義及工業 4.0 等因素，順德決定將五金文具事業群的修正帶等部分產品生產線移回台灣，並添購修正帶自動組裝機及採用自動化生產。同時也將針對省力型釘書機，開發釘書機自動組裝機，以提升產能及維持高度競爭力優勢。



順德推動「短、中、長期廠房產能擴充計畫」，以滿足未來市場發展及客戶需求。

SDI implements its short-, medium-, and long-term projects to meets future trend and customers' demand.



At the SDI production line, the reel-to-reel etching method is used so the products can be shipped in reel, stripes, or sheets. Because of reel-to-reel etching, SDI's greatest advantage over its competitors, orders have increased steadily, including those from new customers and others added by or transferred from existing customers. Presently, SDI production capacity is fully taken up, and therefore, it is important to purchase more etching machines to increase SDI productivity to meet SDI customers' expectation.

Surface treatment machines are used to fortify surface treatment and increase product reliability. The above equipment can improve SDI's manufacturing process and production efficiency,

allowing SDI to better satisfy customers' expectation for high precision and stability.

Automatic production for boosting productivity

In recent years, the rise in trade protectionism and Industry 4.0 have prompted SDI to move its correction tape production line and some other hardware and stationery business back to Taiwan. SDI has purchased a correction tape automatic assembling machine for automatic production. In addition, an automatic stapler assembling machine has been developed for SDI's reduce effort staplers; it will boost productivity and help SDI maintain its competitiveness

奉獻愛心十年不懈 順德擴大社會責任服務區域

自十年前設立順德公益慈善基金會後，盡力支持彰化地區的慈善機構，同時也用心耕耘與在地社區及學校的關係，關照弱勢族群及社區居民。如今十年有成，要將愛傳得更遠，將慈善公益觸手擴及南投地區。

撰文／何星瑩 圖片提供／SDI



創立超過一甲子，並且以邁向百年企業為目標的順德工業，深諳永續經營的重要性，因此，公司於 2007 年成立順德公益慈善基金會，十年來以彰化地區為重心，透過扶助弱勢、人才培育等相關計畫，善盡社會責任。

基金會宣布今年設立南投分所，擴大服務區域，並迎接十周年里程碑。事實上，公司多年來即與南投學校進行產學合作，並積極協辦在地公益活動，成立分所的決定，除了更堅定服務及關懷當地弱勢的心意，也能就近提供完整的服務。

上下一心 齊力扶助弱勢

基於對障礙者、老人等弱勢族群的同理心與

關懷，順德長年支持彰化在地的慈善機構，如服務身心障礙者的聖智啟智中心、慈愛殘障養院、喜樂保育院，以及服務獨居老人的弘道老人福利基金會，而支持的計畫方案因應各機構需求，提供資金添購或更新復健器具、生活設備，以改善院友的活動能力及生活品質；或用於培育照顧服務人員、購入電腦設備等，提升照護品質與效率。

以 2016 年喜樂保育院擴充復健設備計畫為例，順德贊助 3 台輪椅垂直律動機的購買，讓保育院得以向二林、萬合兩院區近 240 名心智障礙者，提供垂直律動課程。這項課程能於室內進行，並且在不增加心肺負荷情況下，達到全身運動鍛鍊效果，能有效幫助腦性麻痺者或

Charity for a Decade: Expanding the Scope of SDI's Social Responsibilities

Since SDI set up the charity foundation ten years ago, it has tried its best in supporting charity organizations in Changhua. At the same time, the foundation is improving its relations with the local community and schools, taking care of minority groups and local residents. A decade later, the foundation endeavors to extend a helping hand to Nantou.

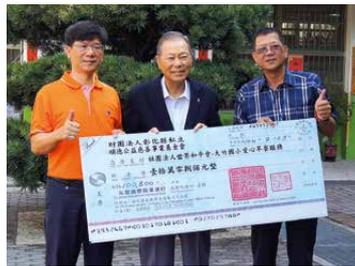
Text / Lola Ho • Photo / SDI

Founded over sixty years ago, SDI Corporation endeavors to prosper for another century, and the company understands the importance of managing for sustainability. Therefore, SDI Charity Foundation was founded in 2007, and has focused on Changhua for a decade. It helps minorities and sustains talent around the neighborhood, and plays its social role well.

The foundation has announced the establishment of its Nantou branch this year in order to extend its service and celebrate the milestone of a decade. As a matter of fact, the company has been conducting industry-university cooperative projects with schools in Nantou, and hosted local charity events. The local branch would be able to provide complete service to local minority groups in addition to providing undivided attention for them.

Cooperation for helping minority

Based on empathy for minority groups like the handicapped and seniors, SDI has been supporting local Changhua charity groups for several years, such as Holy Wisdom Training Center for Special Needs, Tsz-



↑響應世界和平會『搶救受飢兒愛心早餐服務』

Response to “Breakfast Rescue Mission to the Hungry Children” by WorldPeace.



↑喜樂保育院蔡淑萍副院長致贈感謝狀

The Associate Dear for Erhlin Happy Christian Homes Shunian-Tsai presented the certificate of appreciation.



↑創世基金會植物人安養活動致贈感謝狀

Genesis Social Welfare Foundation presented a certificate of appreciation to the nursing activities of the people in persistent vegetative state.

↓捐贈彰化縣消防局住宅用火災警報器，予以頒發感謝狀

Residential fire alarms were donated to Changhua County Fire Department.



Ai Mercy Hospice at Changhua County, Xi Le Nursery Home, and HONDAO Senior Citizen's Welfare Foundation. The supporting projects provide funds for purchasing or renewing rehabilitation

輪椅使用者，改善身體搖晃、不穩定或打頭、自傷等行為；也能改善腸胃蠕動，讓行動不便者不再為便秘所苦。

值得一提的是，公司員工也受基金會的愛心所感染，大力響應家扶中心二林服務處珠簾班於2016年4月舉辦的義賣活動，刷新服務處的單次義賣金額，顯示做愛心、回饋社會的精神已深植於公司全體人員心中。

致力社區經營 愛心早餐捐助貧童

順德總公司位於彰化縣大竹里，長年來藉由創造就業機會、響應社會福利及公益活動，帶動當地大竹社區發展；同時也積極協助社區美化、再造鄰里公園，推動大竹社區發展及經營，扎扎实實的建立與社區之間和諧共融的關係。

對於鄰近的大竹國小，順德也是最有力的支持企業，除了每年提供清寒獎學金外，還從2015年開始，響應世界和平會「搶救受飢兒愛心早餐服務」活動，持續捐助21位弱勢學童愛心早餐，並同時贈送文具，幫助他們能順利成長與學習。

藝術饗宴回饋在地 攜手共創美好社會

在關懷弱勢、經營社區關係之外，順德也參與兩性議題推動，贊助勵馨基金會在彰化舉辦的「讓愛多走一哩路」募款音樂會，透過藝術表演，呼籲在地民眾、各界人士關注家暴、性侵問題，並鼓勵實際行動參與、協助防治計畫。

同樣是希望借助優質的藝術表演力量，順德也於2017年3月11日邀請知名兒童劇團紙風車至彰化演出經典劇碼「武松打虎」。當日，紙風車劇團以專業且富涵創意的歌舞特技、隱含善念及自然保育觀念的幽默劇情，讓台下的大小朋友盡興而歸。這同時也是慶賀順德公益慈善基金會十年的獻禮，期望鼓勵所有人與順德一起，抱持感念之心，持續為打造更美好的社會環境盡力。



↑贊助國立彰化高中籃球隊球衣

Basketball team jerseys were donated to National Changhua High School.



→邀請兒童劇團紙風車至彰化演出經典劇碼「武松打虎」

Kidsmile Theater was invited to Chunghua to perform the "WuSong Tigers".

equipment according to various needs of different institutions, in order to improve inmates' mobility and quality of life. It will also be used to train caretakers, purchase computer equipment, and improve caretaking quality and efficiency.

Take as an example the expansion project of rehabilitation equipment of Xi Le Nursery Home in 2016. SDI sponsored three wheel chair vibrators, so that the nursery home can provide vibrating sessions for close to 240 mental patients in Erlin and Wanhe. This session can be conducted indoors, and would enable patients to train their whole body without burdening their heart and lungs. It may also assist patients with cerebral palsy or wheel chair users in improving body shaking, instability, head hitting, or self-inflicted injury. It may also improve handicapped patients' digestion issues.

Moreover, SDI employees have also been influenced by the charity foundation, and become highly supportive of the charity sale hosted by Bead Curtain class of Erlin branch of the Taiwan Fund for Children and Families in April 2016. The single charity sale broke the record at that time, and demonstrated how charitable ideas exist among SDI employees.

Community management: breakfast for children in need

The headquarters of SDI is located in Dagzu Borough, Changhua County. For years, it has been creating career opportunities, social welfare, and charity events, in order to improve the development of Dagzu community. It also assists in the improvement of the community's appearance, built parks in the neighborhood,

and enhanced the local development and management of Dagzu, solidifying the relationship between neighborhoods.

SDI has been the most vital supporter for Dagzu Elementary School nearby. In addition to providing scholarships for the poor every year, SDI has also been donating breakfast and stationery to 21 minority group children, in accordance with the Charity Breakfast Service for Children of the World Peace Foundation since 2015.

Local art development for a better society

While showing concern for minority groups and managing its connection with local community, SDI has been promoting gender issues. It sponsored The Garden of Hope Foundation's Go the Extra Mile charity concert in Changhua, endeavoring to promote social awareness of issues such as domestic violence and sexual assault. It also encourages locals to participate in participation of the anti-domestic violence program.

Continuing the trend of collaborating with art performers, SDI also invited the famed children's theatre, Paperwindmill Theatre, to perform their classic Wu Song Fights the Tiger on March 11th, 2017. Paperwindmill Theatre depicted idea of natural protection within a humorous plot and creative stunts in order to entertain an audience of all ages that day. It is also a celebration of a decade of the SDI Charity Foundation. We hope everyone can help improve our society with a heart of gratitude with SDI.

