



CHING CHAN
OPTICAL

TECHNOLOGY CO., LTD.

- 了解客戶的需求，超越顧客的期望 ●
Understand customers' requirements
Transcend customers' expectations.

精湛光學科技股份有限公司

**02.** 公司沿革 Company Profile**03.** 影像篩選機-可篩選項目參考圖樣(1~3) Ref. Illustrations for available sorting items**06.** 影像篩選機-可篩選物件 Ref. sorting objects

各機型介紹 Machine Introduction

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24. 台灣、大陸各據點、代工廠資訊

Branch offices and sorting centers

25. 專利、CE及ISO證書

Patents, CE and ISO certificates

26. 全球代理 Global Agents



- 1992 / 09 精湛公司成立，由兩人開始創業，專業創業資金NTD 40萬，設計、生產振動送料機等相關機械。
1999 / 03 開始從事各種螺絲螺帽包裝機之事業。
2000 / 04 開始螺絲影像篩選機之研發。
2003 / 07 成立螺絲篩選代工廠，服務國內客戶之品質管制。
2004 / 09 擴建廠房總面積1,600坪，螺絲篩選機由15台增至30台來服務螺絲業。
/ 10 開始銷售PS-1500-C2影像篩選機至國內外螺絲工廠。
2005 / 02 ISO 9001-2000認證取得。
/ 03 成功開發第三支鏡頭之螺絲影像篩選機：PS-1500-C3檢測頭裂、文字等。
2006 / 10 成立精湛東莞機械公司
2007 / 02 取得CE認證。
/ 04 成功研發LS-1501螺絲輪裂技術並取得多國專利
/ 09 成立昆山精湛新自動化設備有限公司。
2008 / 12 螺絲影像篩選機之銷售達到350台。
2009 / 03 台灣新辦公大樓啟用。
/ 04 新機型上市 PSD適用加長型螺栓 PSG PSC 適用螺帽類產品
/ 11 榮獲第16屆經濟部中小企業創新研究獎。
2010 / 03 昆山精湛新廠落成典禮暨新機發表會。
/ 12 影像篩選機之累積銷售達到600台。
2011 / 04 「精湛機械有限公司」正式更名為「精湛光學科技股份有限公司」。
/ 05 新機發表：正式推出PQA~C首件品檢報告機、PSC-3500輸送帶影像篩選機、PSG-6500雙玻璃盤影像篩選機。
/ 11 成立北部分公司，服務北部客戶。
2012 / 05 中國寧波分公司成立，以服務中國內陸客戶群為主。
/ 12 精湛成立20週年，台灣加大陸同仁人數達160人，篩選機累計銷售突破1000台。
2013 / 03 斥資3.5億興建高雄湖內廠辦，總部大樓，占地3000坪，建坪4000坪。
/ 12 成立中部辦事處，服務台灣的中部客戶。
2014 / 04 中國重慶辦事處成立，以服務中國內陸客戶群為主。
/ 08 成立成型機事業部。
/ 11 再次榮獲第21屆經濟部中小企業創新研究獎。
/ 12 篩選機累計銷售1700台，台灣加大陸同仁人數320人。
2015 / 01 台灣總部廠辦大樓落成啟用。

- 1992 / 09 CCM was established with only 2 persons and US \$ 12,000 capital, mainly on vibratory-feeder design and production.
1999 / 03 Started Packing Machine business.
2000 / 04 Started R&D on Optical Screw Sorting Machine.
2003 / 07 Set up a sorting center to serve local fastener customers on quality control.
2004 / 09 The factory site was expanded up to total 5,300 square meters. And the screw machines were increased to total 30 sets for serving fastener industry.
/ 10 Launched PS-1500-C2 Screw Sorting Machines into the market.
2005 / 02 Acquired "Certificate of ISO 9001-2000."
/ 03 PS-1500-C3 (3 Cameras) for sorting Head Cracks, Head Marks, etc.
2006 / 10 CCM DonGuang branch set up in China.
2007 / 02 Acquired "Certificate of CE".
/ 04 Upgraded the sorting technology of LS-1501 for sorting Screw Wheel Crack and got global patents.
/ 09 CCM KunShan branch set up in China.
2008 / 12 More than 350 Screw sorting Machines were installed in the world since 2004.
2009 / 03 Inauguration of Taiwan New office
/ 04 New Models launched, PSD for long bolts PSG PSC for nuts products.
/ 11 Awarded The 16th SMEs Innovation and Research Award from Taiwan Government
2010 / 03 CCM KunShan new factory grand opened.
/ 12 Machine worldwide sales reached 600 sets
2011 / 04 Renamed to "CHING CHAN OPTICAL TECHNOLOGY CO., LTD."
/ 05 New machines launched, including first article machine and PSC-3500, PSG-6500.
/ 11 CCM Taoyuan branch set up in north of Taiwan.
2012 / 05 CCM NingBo Branch set up in China, to serve inland customers.
/ 12 The 20th anniversary. Employment including Taiwan and China reaches 160 peoples and sales record breaks 1000 sets.
2013 / 03 Invested 350 million NT dollars on new factory and building, land occupied 10,000 sq. meters.
/ 12 CCM TaiChung branch set up in middle of Taiwan.
2014 / 04 CCM ChongQing branch set up in China for customers located in inland of China.
/ 08 Started business of bolt forming machine.
/ 11 Awarded The 21st SMEs Innovation and Research Award from Taiwan Government.
/ 12 Accumulated sales in optical sorting machine was reached 1700 sets. Employment including Taiwan and China reaches 320 persons.
2015 / 01 Inauguration of new factory and building.



側視(牙)檢測功能 Side View(thread) Inspection Items


螺牙內外徑/牙距/牙角
Major , Minor Diameter /
Pitch / Thread Angle

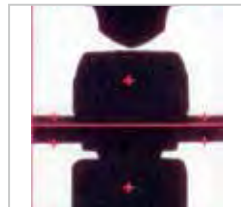
搓牙不良/牙品質
Thread quality

底部形狀/桿徑/頸下長度
Point shape / Shank
Dia /Length under head

拖尾/彎曲
bend point

高低牙
High-Low Thread

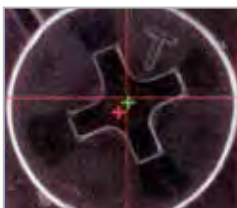

側視(頭部)檢測功能 Side View(head) Inspection Items


頭部高度、寬度
Screw-head height, width

斷針、針深(旋轉式)
Broken Pin&
Recess Depth(Rotating)

頭部套筒(旋轉式)
Head Socket (Rotating)

無效長(頸下牙高)
Ineffective Thread Length


上視檢測功能 Top View Inspection Items


針孔同心度/真圓度
Pinhole alignment/Roundness

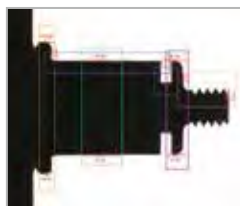
頭部文字、形狀
Head Mark

頭上裂痕
Head Crack

塞孔
Excess Material

對邊/對角/外徑
AF/AC/OD

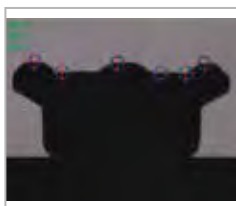
側視CCD檢測功能 Side View CCD Inspection Items



多段高度/寬度/厚度
Multi-Height/Width



倒角/夾角
Chamfer Comparison



焊接螺帽三&四點獨立檢測
3 or 4 Welding Points



焊點高度/桿徑/螺牙
welding points /
shank OD / thread /
pitch

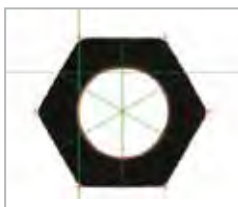


角度比對
Angle Comparison

上下視CCD檢測功能 Top View/Bottom View CCD Inspection Items



內外徑/同心度
OD, ID/ Concentricity



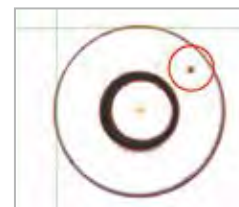
對邊/對角
AF/AC



齒數/牙距
Pitch number/
Pitch Distance



外型尺寸/兩圓孔距
Dimension/hole distance



表面瑕疵
Surface Flaw



頭裂
Head Crack



表面特徵(有無/直徑/
寬度/到中心距離)
Feature(presence/
diameter/Width/center distance)



印記有無
Mark presence



側邊特徵
Side Feature



螺帽毛邊
Burr



偏心
Off Center



印記混料
Mark/Material-Mix



電鍍不良
Plating quality



滾花齒數/牙高/面積
Knurl Number/Height/Area



斷針
Broken Pin

45° CCD檢測功能 45° CCD Inspection Items



有無牙
Thread: Yes or No



PS/PSL選配檢測功能

PS/PSL Optional Inspection Items



螺絲螺栓的輪裂
Wheel Crack of Bolts and Screw



電鍍螺絲的輪裂
Wheel crack of plated bolts



有無割尾
Cutter: Yes or No



彎曲
Bending



牙線角度
Helix Angle



螺絲牙傷(360°旋轉模組)
Thread Damage
(360° rotation module)



合格
OK

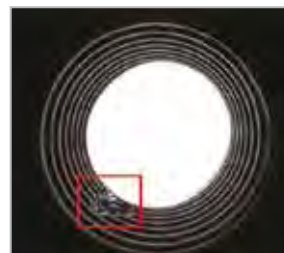


不合格
NO



PSG/PSC 360° 內部牙傷檢測

PSG/PSC 360° Internal thread inspection



360° 內螺牙牙傷
360° Internal Thread Damage



PSG/PSC 360° 外部特徵/瑕疵檢測

PSG/PSC 360° External feature / defect inspection



OK

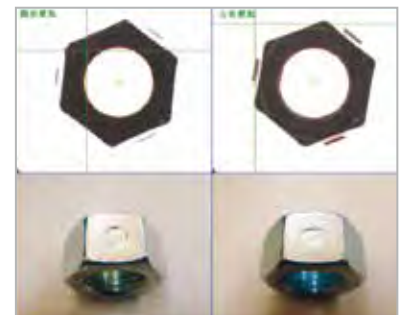


NG

外部瑕疵檢測
External defect Inspection



凸緣螺帽輪裂 Wheel crack of flange nut



360° 外部檢測
360° External Inspection





針孔檢測
Pinhole Inspection



針孔檢測機構
Pinhole Inspection mechanism

專利機台・仿冒必究

- 適用M3~M8螺絲螺栓，頸下長80mm以內。
- 可加裝2~5支相機。
- 可加裝旋轉機構檢測針深或斷針。
- 可加裝輪裂檢測系統。
- 可加裝底部檢測系統，檢測有無割尾。
- 可加裝彎曲檢測模組檢測彎曲。
- 可加裝渦電流檢測模組，檢測材質混料與熱處理有無。
- For M3~M8 Screws and bolts, under head length less than 80mm.
- Available for 2~5 cameras.
- Can install rotating mechanism to inspect recess depth or broken pin.
- Optional : wheel crack checking system (LS-1501)for head crack inspection.
- Optional : bottom sorting system(LS-1503)for inspecting cutter presence.
- Optional : Bending checking module.
- Optional : Eddy current system for material mixup or heat-treatment or not.



螺絲螺栓的輪裂檢測
Wheel crack of bolts



LS-1501 輪裂檢測系統
LS-1501 Wheel Crack Sorting System



Patented Machine.
Counterfeit will be sued.

- 適用M8~M16螺絲螺栓，
額下長150mm以內。
- 可加裝2~8支相機。
- 法蘭螺帽與拉帽也適用，可以加裝雷射檢測有無牙。
- 可加裝輪裂檢測系統。
- 可加裝旋轉機構檢測針深或斷針。
- 可裝底部檢測系統，檢測有無割尾。
- 可加裝彎曲檢測模組檢測彎曲。
- 可加裝360度牙傷檢測模組。
- 可加裝渦電流檢測模組，做裂痕檢測或是材質混料與熱處理有無。
- For M8~M16 Screws and bolts, under head length less than 150mm.
- Available for 2~8 cameras.
- Can install rotating mechanism to inspect recess depth or broken pin.
- Optional: wheel crack checking system (LS-1501) for head crack inspection.
- Optional: bottom sorting system (LS-1503) for inspecting cutter presence.
- Optional: Bending checking module.
- Optional: 360° rotation module for thread damage inspection.
- Optional: two kinds of Eddy current systems:
1. for head open crack inspection.
2. material mixup or W/WO heat-treatment.



可篩選物件
Sorting Objects

專利機台・仿冒必究

- 適用M3~M16螺絲螺栓，頸下長80mm以內。
- 可加裝2~4支相機。
- 螺絲、拉帽可懸吊之扣件高速檢測。
- 確保良品的排料設計與擋料機構。
- For M3~M16 Screws and bolts, under head length less than 80mm.
- Available for 2~4 cameras.
- High speed checking for screws, rivets which can be hung on the metal disc.
- Thoughtful design to secure accepted parts not being mixed with NG parts.



內部特寫
Internal View



Patented Machine.
Counterfeit will be sued.

- 適用M8~M16螺絲螺栓，
頸下長125~250mm。
- 可加裝2~7支相機。
- 可加裝輪裂檢測系統。
- 可加裝彎曲檢測模組檢測彎曲。
- 可加裝360度牙傷檢測模組。
- 可加裝渦電流檢測模組，做裂痕檢測或
是材質混料與熱處理有無。
- For M8~M16 Screws and bolts, under head length
125~250mm.
- Available for 2~7 cameras.
- Optional : wheel crack checking system (LS-1501)for
head crack inspection.
- Optional : Bending checking module.
- Optional : 360° rotation module for thread damage
inspection.
- Optional : two kinds of Eddy current systems:
1. for head open crack inspection.
2. material mixup or W/WO heat-treatment.



可檢測 ▶ 不同材質混料
有無熱處理混料

Available Sorting Items ▶
Material Mixedup
Mixup of Heat treatment and non-heat-treatment



專利機台・仿冒必究

- 適用M3~M16螺絲或圓棒物件，長度115mm以內。
- 貫穿式探頭，檢測全部，自由落體速度。
- 渦電流檢測材質混料或是熱處理有無。

- Suitable for M3~M16 screws, studs or cylinder-type objects.
- Coil type probe, testing whole piece, speed of free fall
- Eddy current system checking material mixup or W/WO heat-treatment.

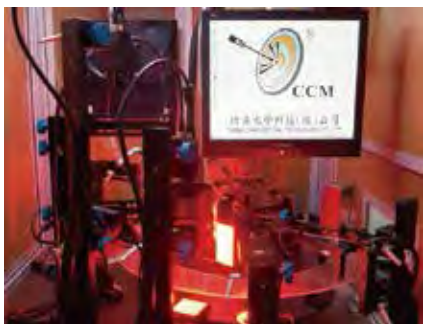


送料
Feeding mechanism

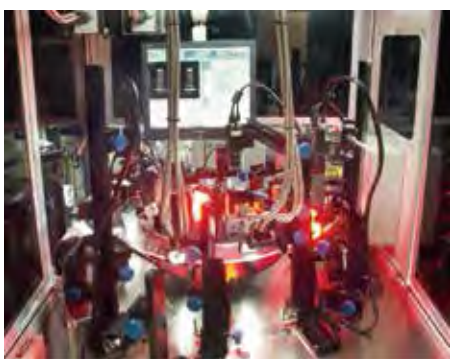
Patented Machine.
Counterfeit will be sued.

- 適用螺絲、螺帽或圓棒物件。
- 貫穿式探頭，檢測全部，可以控制速度。
- 渦電流檢測材質混料或是熱處理有無。

- Suitable for screws, bolts, nuts, pins objects.
- Coil type probe, testing whole piece, speed is adjustable by conveyor.
- Eddy current system checking material mixup or W/WO heat-treatment.



PSG-1700內部(近)
 PSG-1700 Internal view



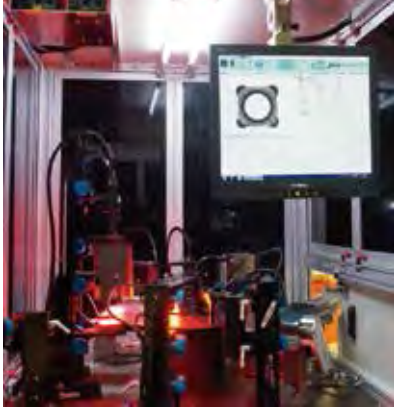
PSG-1700內部(遠)
 PSG-1700 Internal View



專利機台・仿冒必究

- PSG-1500可加裝2~4支相機, PSG-1700可加裝2~6支相機。
- 利用玻璃高透光性, 物件可以平穩放在盤面上者, 皆可檢測。
- 玻璃下可加相機, 檢測該面尺寸、特徵或瑕疵。
- 可加裝渦電流檢測模組, 檢測材質混料與熱處理有無。
- 可加裝菱鏡檢測模組檢測螺栓的牙傷。
- 可加裝外360或內360度鏡頭, 檢測牙傷或特徵或表面瑕疵。

- Available for 2~4 cameras for PSG-1500 and 2~6 cameras for PSG-1700.
- High transparent glass dial. Fit for grease-free parts which can be placed on the glass plate steadily.
- Can place camera under glass to inspect dimension, feature and defects.
- Optional: Eddy current system for material mixup or heat-treatment or not.
- Optional: Prism system to inspect thread damage of bolts.
- Optional: external / internal 360° lens to inspect thread damage, feature or surface defects.



內部特寫
Internal View



Patented Machine.
Counterfeit will be sued.

- PSG-2500可加裝2~4支相機, PSG-2700可加裝2~6支相機。
- 利用玻璃高透光性, 物件可以平穩放在盤面上者, 皆可檢測。
- 玻璃下可加相機, 檢測該面尺寸、特徵或瑕疵。
- 可加裝渦電流檢測模組, 檢測材質混料與熱處理有無。
- 可加裝外360或內360度鏡頭, 檢測牙傷或特徵或表面瑕疵。
- Available for 2~4 cameras for PSG-2500 and 2~6 cameras for PSG-2700.
- High transparent glass dial. Fit for grease-free parts which can be placed on the glass plate steadily.
- Can place camera under glass to inspect dimension, feature and defects.
- Optional: Eddy current system for material mixup or heat-treatment or not.
- Optional: external / internal 360° lens to inspect thread damage, feature or surface defects.