

THE BEST OEM, ODM FACTORY OF POWDER METALLURGY

AURORAL SINTER METALS

旭宏專注於粉末冶金的製造與開發，秉持著管理求真、服務求善、品質求美的經營理念，不斷的以創新、求變的執著態度及追求完美永無止境的決心，立足台灣、放眼天下，打造出全球金屬零件供應界中最耀眼的一顆星。

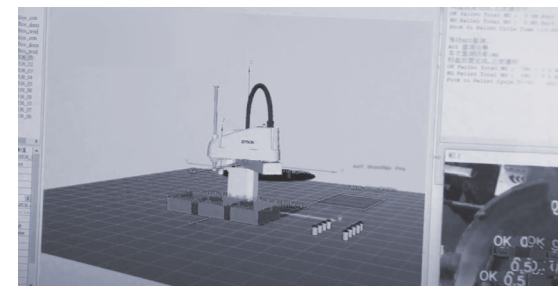
Auroral Sinter Metals focuses on the manufacturing and development of powder metallurgy products. We uphold the principles of integrity in management, consideration in services, and excellence in quality. Our determination in the endless pursuit of innovation, change, and perfection has resulted in the birth of a brilliant star in the global field of metal parts suppliers. While established in Taiwan, we aim to expand globally.

- 2024 ~ 執行 ESG 專案、ISO 14001 / 45001、14064、14067 專案
Execute ESG project, ISO 14001/45001, 14064, 14067 projects
- 2023 研發中心成立
Established R&D Center
- 2022 導入 AI 人工智慧生產系統，提升企業競爭力
Implemented AI production systems to boost enterprise competitiveness
- 2020 頭份新廠落成使用，使用面積達 23,000 m² 並購入 800 噸大型成型機。員工人數 160 人，資本額 12,000 萬元。
New Toufen Plant, with an area of 23,000 m² enters operations with the purchase a 800 ton compaction machine. Total of 160 employees with capital USD 4 million.
- 2018 榮獲德國工具大廠 Festool 頒發年度優良供應商。取得 IATF16949 品質認證。
Earned the distinction of an Excellent Supplier from major German high-end power tool brand Festool. Obtained IATF16949 quality certification.
- 2012 成為美國電動大廠 Tesla 合格供應商。
Certified as a qualified supplier by Tesla
- 2009 成功取得德國、日本、美國汽車 OEM 供應認證，正式供應汽車零配件。
Successfully obtained OEM supplier certifications for the automotive industry in Germany, Japan, and the U.S. to officially begin supply of car parts and accessories.
- 2008 取得 TS16949 品質認證。
Obtained TS16949 quality certification.
- 2006 造橋廠建廠完成，使用面積 7,000 m²，資本額 8,000 萬元。
Completion of Zaoqiao Plant with an area of 7,000 m² and capital of USD 2,600,000.
- 2004 取得 ISO9001 品質認證，資本額 3,600 萬元。
Obtained ISO9001 quality certification, capital of USD 1,200,000.
- 1999 旭宏公司成立於 1999 年初期資本額 1,000 萬元，員工 8 人。
Auroral Sinter Metals established in 1999 with an initial capital of USD 10 million and 8 employees.



導入智慧取料及數位檢測系統， 為未來自動化做準備

旭宏同時與工研院合作導入 AOI 智慧量測系統，透過物聯網從原料到零件產出一貫化的追蹤系統，整合所有製程的軟硬體設備並建立大數據平台，將生產流程透過電腦化自動記錄、包括設備生產條件與狀況。更詳細地掌握生產品質，並透過大數據統計找出生產盲點提高品質，縮短整體生產排程與交期，每個產品上刻有專屬身分的二維條碼，生產履歷透明化。將製造業格局放大又不失細膩，增強智能化製造，以提升智慧化之需求。



智慧製造 SMART MANUFACTURING

PREPARE FOR FUTURE AUTOMATION BY IMPLEMENTING SMART MATERIAL LOADING AND DIGITAL TESTING SYSTEMS

Auroral Sinter Metals has partnered with the Industrial Technology Research Institute to implement AOI smart measuring systems to utilize IoT in a system that tracks raw materials to finished products. All software and hardware adopted in manufacturing processes is integrated to establish a big data platform that automates records for all production processes including the conditions and statuses of production equipment. By implementing finer controls on production quality and adopting big data statistics to identify blind spots, we are able to improve quality, shorten production schedules, and delivery time. Each product contains a unique QR code for production resume transparency. Auroral Sinter Metals maintains refinement while scaling manufacturing by enhancing smart processes and increasing demand for smart manufacturing.





永續・旭宏

粉末冶金作為綠色製造技術，環保議題是旭宏所關注的。廠內導入能源管理可視化系統，監督每一項製程所產生的耗能，嚴謹管控不必要的能源浪費。從硬體的廠內太陽能板自行產生綠電到系統監督及內化吸收。ISO14001、14064、14067 等環境管理、碳足跡查證、溫室氣體排放等是旭宏未來十年對於環境的重要執行政策。也是旭宏為環境盡一份心力，且永遠陪伴客戶需求。

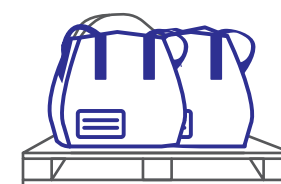
SUSTAINABILITY @AURORAL

Auroral Sinter Metals is dedicated to applying powder metallurgy in green manufacturing technology and environmental protection. A visualization system for energy management in our plant monitors energy consumption generated in every manufacturing process to rigorously manage unnecessary waste of energy. In terms of hardware, solar energy panels in each plant generates green energy that is monitored and internalized by the system. ISO14001, ISO14064, and ISO14067 make up key environmental policies for Auroral Sinter Metals over the next decade in areas such as environment management, carbon footprint verification, and greenhouse gas emissions. These are Auroral Sinter Metals' efforts toward the environment as well as always meeting the requirements of our customers.

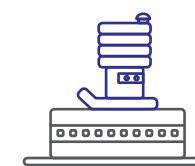
製程 PROCESS

精選全球最大粉末製造廠生產的原料，提供客戶最穩定的品質及高強度產品。旭宏擁有高精度的模具、成型、燒結、整型及機械加工設備，以及可靠的可行性評估。提供工業界最高技術與穩定的品質，成為旭宏最大的驕傲。

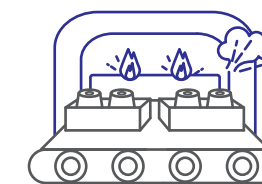
Careful selection of raw materials from the world's largest powder manufacturing supplier offers customers products of the most consistent quality and strength. Auroral Sinter Metals owns high precision equipment for molds, compaction, sintering, sizing, and machining in addition to our reliable feasibility assessment. We offer the industries most advanced technologies and consistent quality, which have become a great source of pride for the company.



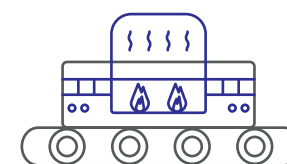
原料
Raw Material



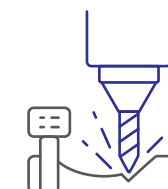
成型
Compaction



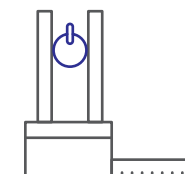
燒結
Sintering



熱處理
Heat Treatment



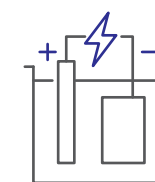
機械加工
Machining



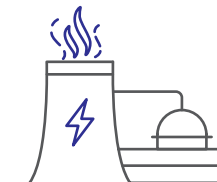
整型
Sizing



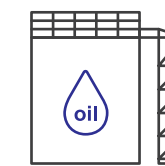
振盪研磨
Tumbling



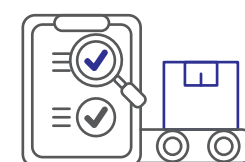
電鍍
Plating



染黑
Steam Treatment



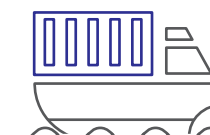
真空含油
Vacuum Oil
Impregnation



品檢
Quality Inspection



包裝
Package



出貨
Shipping

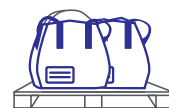


旭宏自 1999 年成立至今皆採用瑞典、美國生產微米級製造之原料，儲存倉更採用糧食級的存放方式，並以先進先出控管方式，以確保原料不會因為存放過久產生質變問題。

Since the founding of Auroral Sinter Metals in 1999, the company has only utilized nano-grade raw materials produced in the U.S. and Sweden. Our warehouses utilize food grade storage and are managed through the FIFO method to ensure the quality of raw materials remains consistent and prevent excessive storage periods.



原料 RAW MATERIAL

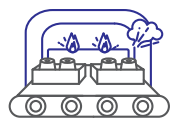


成型 COMPACTION

旭宏的一貫化作業，從模具的材質選用、設計均自主開發不假手他人，故在小齒輪精度上可達 JGMA2 級，在汽車零件生產上更可以達到多段差之複雜製造，更加強化汽車零件的結構性與耐用性，並達到高密度、高硬度的需求以滿足客戶要求。同時透過 PLC 連結物聯網，將設備生產狀況詳實紀錄。搭配具有 CCD 鏡頭高自動化機械手臂夾取並整合紅外線自動量測。不只因應少子化作準備，也為精確的品質把關。

Auroral Sinter Metals' one-stop operations ensures that all operations, from the material selection of molds to designs, are completed in-house which is why the precision of our pinions can achieve a level of JGMA2. This allows us to achieve greater complex manufacturing of automotive parts and strengthen both their structure and durability to satisfy the high density and hardness requirements of our customers. Additionally, the combination of PLC with IoT achieves detailed records of production status. Highly automated robotic arms equipped with CCD lenses are integrated with automatic infrared measurements. Not only does this prepare for the impending impact of a lowered birth rate, it also safeguards quality with precision.





燒結 SINTERING

旭宏金屬廠內計 9 條燒結爐生產線，透過高溫燒結掌控粉末冶金最重要的製程。於 2022 年新廠房落成，燒結製程的自動化與智慧化升級進一步提升。物聯網系統也在燒結水平展開，同時將燒結設備與非破壞性檢測設備做整合，將品質格局同步提高。持續投資與進步是旭宏給予客戶最大的承諾。



Auroral Sinter Metals' 9 sintering production lines utilize high temperature sintering to control the most critical manufacturing process in powder metallurgy. The automation and intelligence of our sintering manufacturing process was further upgraded in 2022 with the opening of our new plant. IoT systems have also been horizontally expanded in sintering to

simultaneously integrate sintering equipment and non-destructive test equipment and simultaneously raise the bar for quality. Auroral Sinter Metals' greatest commitment to customers is our continued investment into advancements.

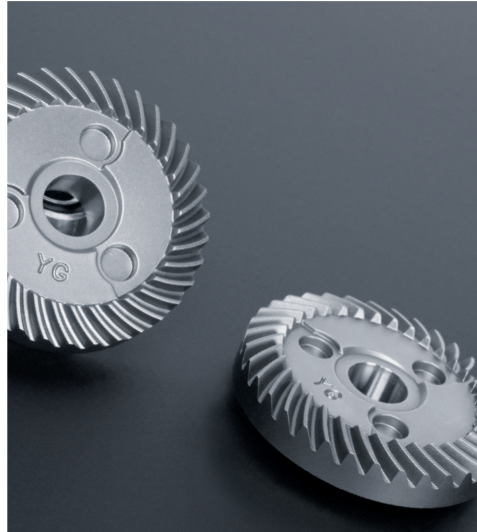
國際常規原料表 MATERIAL CHART

國際規範	International Code	密度分佈 Density	硬度分佈 Hardness	主要成份 Chemical Composition											
				Fe	Cu	C	Ni	Mo	Mn	P	Si	S	Cr	Tin	Zn
JIS 規範 JIS Standards	SMF4030	6.4-6.6	HRB40 ↑	殘	1-5	0.2-1.0									
	SMF4040	6.6-7.0	HRB60 ↑	殘	1-5	0.2-1.0									
	SMF5030	6.8-7.2	HRB70 ↑	殘	0.5-3	0.8 ↓	1-5								
	SMF5040	6.8-7.2	HRB80 ↑	殘	0.5-3	0.8 ↓	2-8								
	SMF6055	7.2-7.4	HRB80 ↑	殘	15-25	0.3-0.7									
DIN 規範 DIN Standards	Sint-C11	6.4-6.8	HRB40 ↑	Bal.	1-5	0.4-1.5									
	Sint-D11	6.8-7.2	HRB60 ↑	Bal.	1-5	0.4-1.5									
	Sint-C39	6.4-6.8	HRB70 ↑	Bal.	1-3	0.3-0.6	1-5	0.8 ↓							
	Sint-D39	6.8-7.2	HRB80 ↑	Bal.	1-3	0.3-0.6	1-5	0.8 ↓							
MPIF 鐵系規範 MPIF Steel Standards	F-0000	6.6-7.2	HRF40 ↑	Bal.		0.3 ↓									
	FY-4500	6.8-7.2	HRB40 ↑	Bal.		0.3 ↓				0.5-0.6					
	FC-0205	6.4-6.8	HRB40 ↑	Bal.	1.5-3.9	0.3-0.6									
	FC-0208	6.8-7.2	HRB60 ↑	Bal.	1.5-3.9	0.6-0.9									
	FD-0208	6.8-7.2	HRB80 ↑	Bal.	1.3-1.7	0.6-0.9	1.55-1.95	0.4-0.6	0.05-0.30						
	FD-0405	6.8-7.2	HRB80 ↑	Bal.	1.37-1.70	0.3-0.6									
	FLNC-4408	6.8-7.2	HRB80 ↑	Bal.	1.0-3.0	0.6-0.9	1.0-3.0	0.65-0.95	0.05-0.30						
MPIF 不銹鋼規範 MPIF Stainless Standards	SS303-N1 L	6.5-7.0	HRB50 ↑	Bal.		0.15 ↓	8-13			0.20 ↓	1.0 ↓	0.15-0.3	17-19		
	SS304-N1 L	6.5-7.0	HRB50 ↑	Bal.		0.08 ↓	8-12			0.04 ↓	1.0 ↓	0.03 ↓	18-20		
	SS316-N1 L	6.5-7.0	HRB50 ↑	Bal.		0.08 ↓	10-14			0.04 ↓	1.0 ↓	0.03 ↓	16-18		
	SS410HT	6.5-6.7	HRB90 ↑	Bal.		0.25 ↓			1.0 ↓		1.0 ↓	0.03 ↓	11.5-13.5		
MPIF 銅系規範 MPIF Copper Standards	CZ-2000	7.6-8.0	HRH70 ↑		77-80										Bal.
	CT-1000K-19	6.0-6.4	HRH75 ↑		87.2-90.5									9.5-10.5	
	CT-1000K-26	6.4-6.8	HRH75 ↑		87.2-90.5									9.5-10.5	

1. 以上硬度皆為未做熱處理之硬度。

2. 本表格內之成份與數據，皆為參考值，詳細內容仍以 MPIF、JIS、DIN 規範為準。
1. The hardness above is measured before Heat Treatment.

2. The chart is for general reference only, please refer to SMF code of JIS standard or MPIF code or DIN standard for access to specific information.



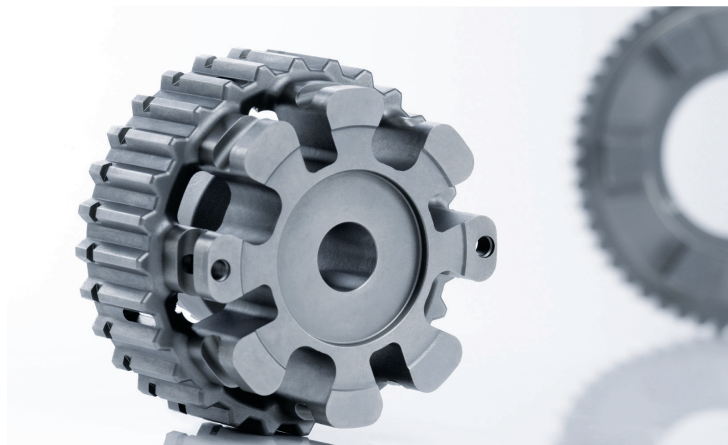
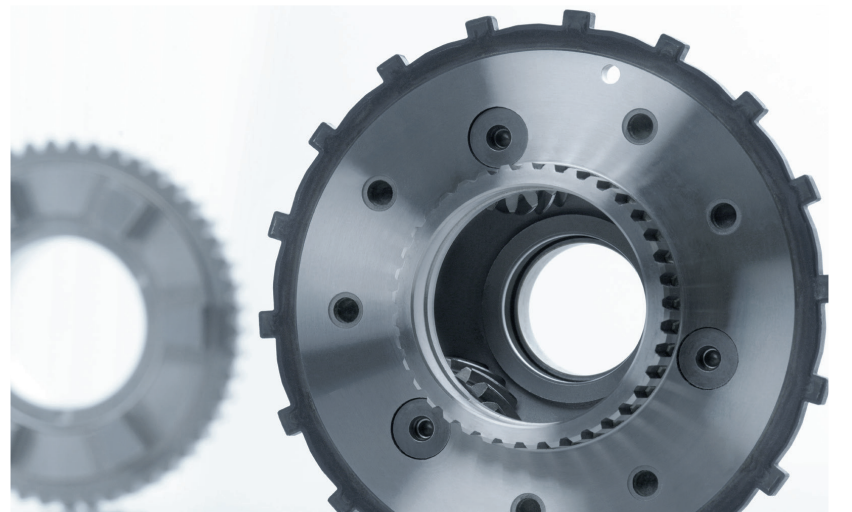
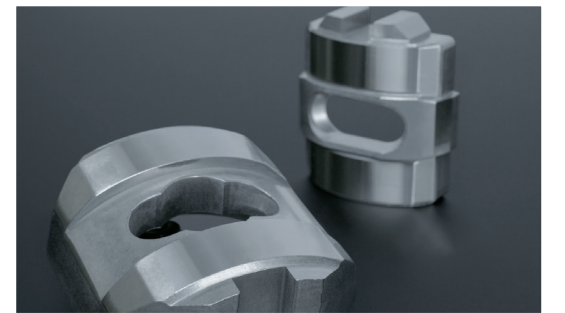
產業應用

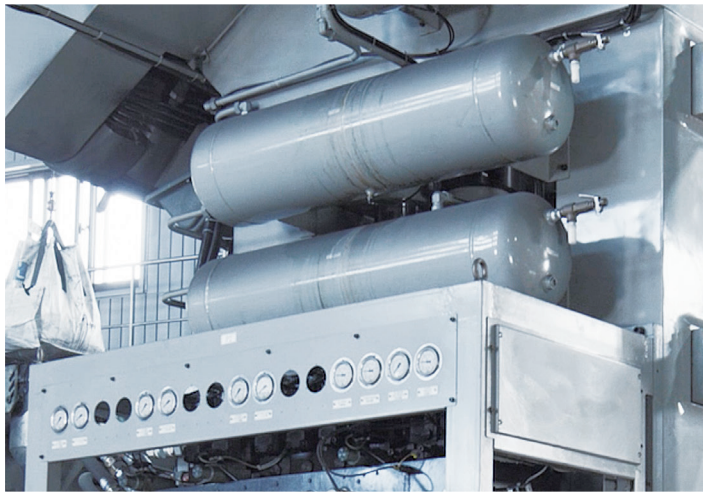
旭宏擁有完善的生產製造及品質管理系統，藉於滿足客戶幾近苛求的要求。我們仰賴著高精度生產設備及檢驗儀器，供應全球客戶各類工業零件的需求。如：汽機車零件、電動、氣動工具、電動車零件、運動器材、紡織、縫紉機零件、電子、醫療、五金等零件...

INDUSTRIAL APPLICATIONS

Auroral Sinter Metals' comprehensive production and quality management system can meet the most stringent demands of our customers. We rely on high pricise production equipment and testing instruments to supply the demand for various industrial parts of our

global customers. For example: automotive parts, electric/pneumatic tools, electric vehicle parts, sports equipment, textile, sewing machine parts, electronics, medical, hardware, and other parts...





成型機 Compacting Machine	3 噸 ~ 800 噸 3 ~ 800 tons	40
燒結爐 Sintering Furnace	一般溫度燒結爐 General Temperature	9
整型機 Sizing Machine	3 噸 ~ 630 噸 3 ~ 630 tons	30
蒸氣染黑爐 Steam Treatment Furnace		3

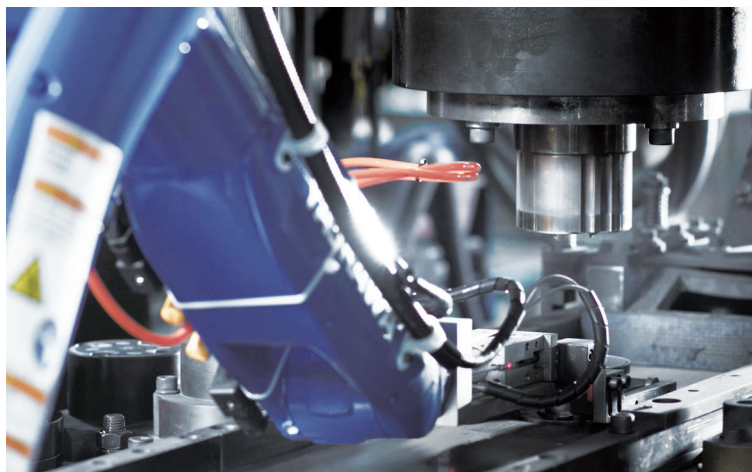
PRODUCTION EQUIPMENT

The powerful powder metallurgy, precision machining, molds, and diverse services provided by Auroral Sinter Metals are achieved through the introduction of high precision powder metallurgy smart manufacturing equipment from Japan and Germany. The 9 sintering production lines in our plant are achieved with 800 ton powder compacting press provided by Taiwan Yoshizuka. The powerful multi-stage function completes complex forming at once with great precision to eliminate the need for additional processing. This saves time, labor, achieves excellent yield and the exceptional manufacturing capabilities exhibited in the compaction of large parts places it as the absolute benchmark of powder metallurgy manufacturing processes in Taiwan.



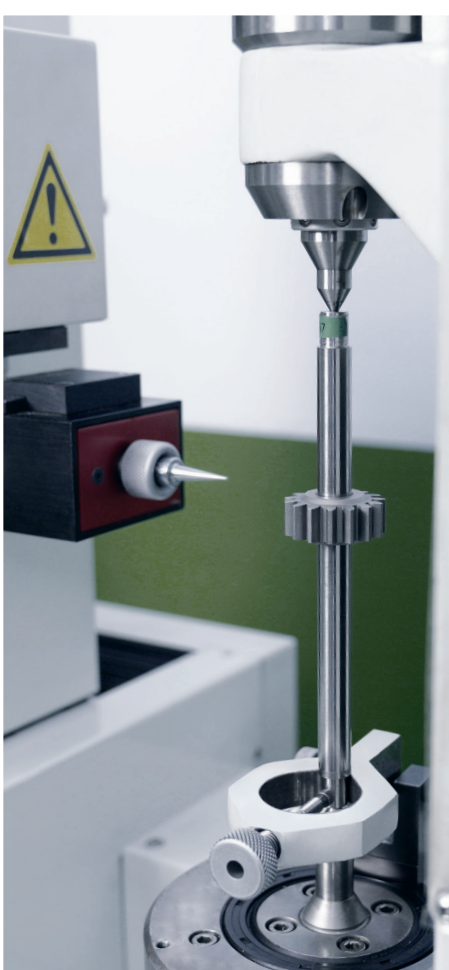
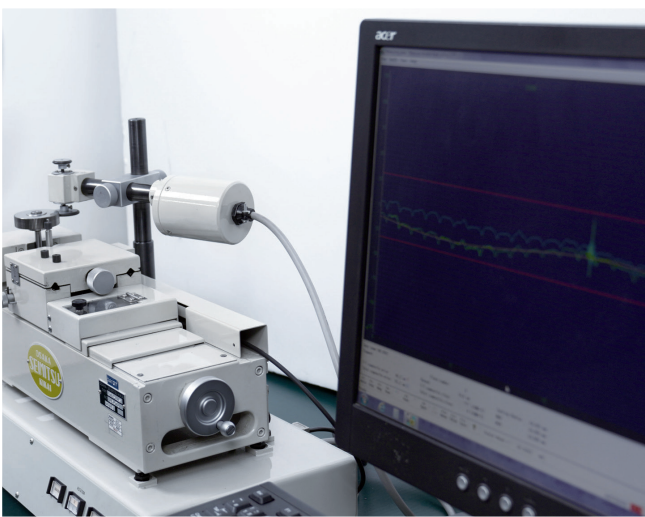
生產設備

旭宏挾強大的粉末冶金製造能力，與精密加工、模治具等多元化服務，並引進日、德等國高精密粉末冶金智慧生產設備，廠內 9 條燒結爐生產線，配備台灣良塚 (TAIWAN YOSHIZUKA) 噸級粉末冶金成型機，強大的多段式功能，繁雜工件成型一次完成、精度佳，可省去二次加工工序，省時、省工、超高良率，在大型工件成型展現優異製程能力，穩居台灣粉末冶金製程標竿。



檢測設備 TESTING EQUIPMENT

德國三次元 German 3D Coordinate Measuring Machines	2
磁粉探傷自動探傷機 Magnetic Particle Inspection Automatic Flaw Detection Machine	2
音頻探傷機 Sonic Flaw Detector	2
齒形嚙合機 Gear Meshing Measure	1
齒形精度檢測機 CNC Gear Accuracy Machine	1
輪廓儀 Profilometer	1
扭力檢驗機 Torque Testing Machine	2
材料檢驗機 Materials Testing Machine	1
影像投影機 Profile Projector	1
硬度測試機 Hardness Testing Machine	3



「台灣製」粉末冶金 “MIT” POWDER METALLURGY

身為台灣粉末冶金製品標竿企業 - 旭宏金屬，不斷突破製程限制，克服冶金毛細孔問題，大幅提高機械強度，展現優異的粉末冶金製造力，品質通過汽車廠 IATF 16949 驗證，長期供應歐美日等全球一、二線的燃料車及電動車廠。為迎合全球各車廠驗證要求，廠內配備日、德及瑞士等國的 CNC 三次元檢測設備，以及德國的磁粉探傷機、美國的音頻探傷機與多部日本齒輪嚙合機、齒形檢驗機等高階品檢設備，是業界極少數配備完整檢測設備廠商，也讓「台灣製」粉末冶金，具有高良率、產品進入市場的時間交期準確、高生產力的三大優勢，傲視全球。

As the benchmark enterprise of powder metallurgy in Taiwan, Auroral Sinter Metals continues to surpass the limitations of manufacturing processes to overcome the issue of metallurgy pores and drastically enhance mechanical strength. Our outstanding manufacturing capabilities in powder metallurgy have passed the quality standards of IATF 16949 certification for the automotive iindustrial supply chain, thereby allowing Auroral Sinter Metals to serve tier 1 and 2 traditional cars from major US, European, and Japanese automotive manufacturers as well as electric vehicle plant. In order to meet the certification requirements of automakers, our plants are equipped with CNC 3D testing equipment from countries such as Japan, Germany, and Switzerland. We are one of the few industrial suppliers with comprehensive testing equipment such as magnaflux flaw detector particle inspection machines from Germany, audio sonic flaw detector from the U.S., and many tooth meshing, tooth profile testing, and advanced quality inspection equipment from Japan. This allows powder metallurgy "Made in Taiwan" to overwhelm global industrial competitors by unlocking the 3 major advantages of high yield, on-time delivery when products enter the market, and high productivity.