



申伍鑄造股份有限公司  
SUNWOOD FOUNDRY WORKS, LTD

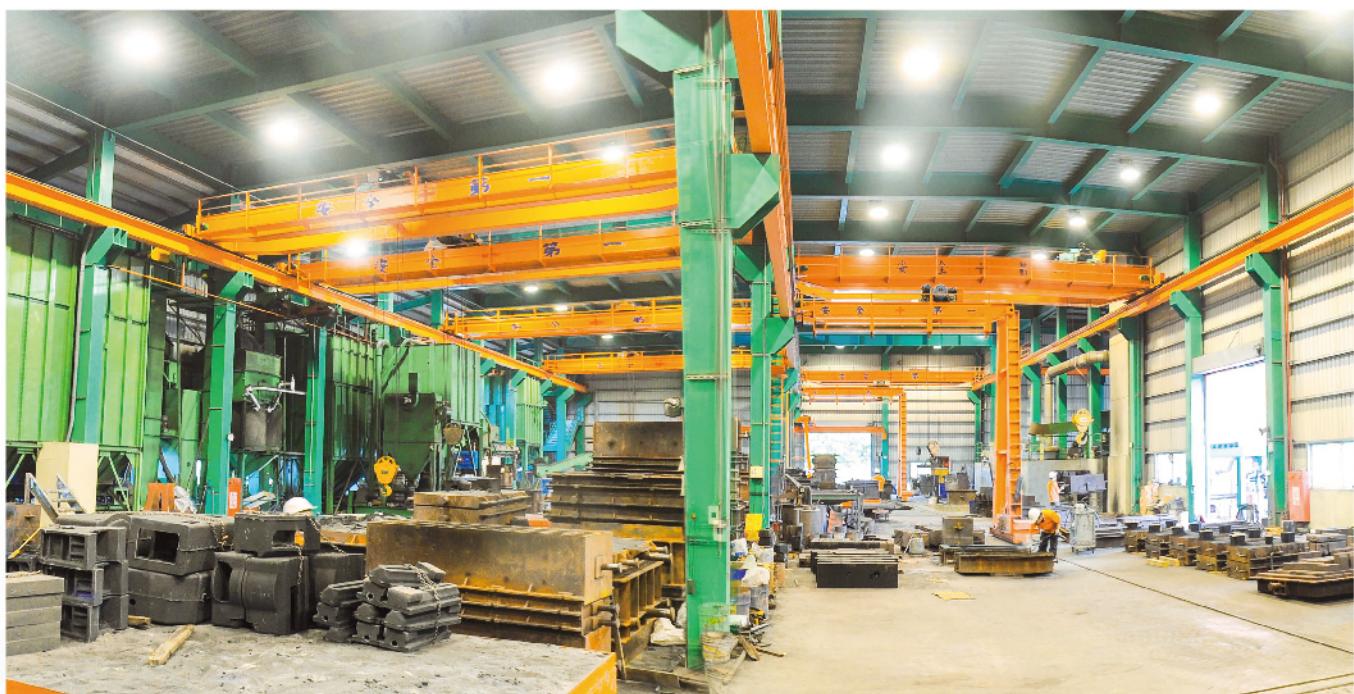
申得您心 · 伍可挑剔

鑄入心血 · 造就臻品

本公司於1980年創立至今。經營鑄造業超過30餘年。於民國2009年通過ISO國際認證。於2014年3月遷至新廠營運。同年9月加入臺灣地區授權生產米漢納鑄件工廠。於2015年增設川市機械股份有限公司(鑄件熱處理廠)陸續購置多項檢驗設備並設置獨立檢驗室(鑄件熔解及澆鑄溫度控制/鐵水出湯前碳矽分析/出湯前材質分光儀測試/金相分析/硬度檢測/拉力試驗)對於產品品質要求嚴格。每一爐次、每一批次鑄件皆能精準追溯製造日期及澆鑄成份以及鑄件成份的分析試片!對於產品品質相當要求!!要求品質TQC (Total Quality Control)

對於客戶的品質要求皆全力達成.擁有自己的回火廠.能有效掌控生產的每一環節進度有效為客戶掌握鑄件品質/價格/交貨日期提升顧客生產效率!!

Sunwood was founded in 1980 and has been ISO certified since 2009. We moves into the new factory to operate in March 2014. Our company has also been Meehanite authorized since September 2014. In 2015 we bolstered our facilities with a variety of testing equipment to go along with our independent laboratory to ensure product quality (casting melting and temperature control, molten silicon carbon analysis, spectrometer material testing, metallurgical analysis, hardness testing, tensile testing). Each set of manufactured precision casts is marked with its manufacture date as well as the specific casting components utilized to ensure proper record keeping and quality control. We pride ourselves on meeting the quality requirements of all our customers. Because we have our very own an annealing plant, we are able to effectively control every aspect of the production schedule. This in turn grants us a greater capacity with which to secure the quality, price and delivery date of our products for our customers.





# 產品 介紹

PRODUCTS

03



灰口鑄鐵 FC250~FC350 / 球墨鑄鐵 FCD400~FCD500  
合金鑄鐵 / 鑄件退火處理 ➤➤➤

Flake graphite cast iron FC250~FC350  
Spheroidal graphite cast iron FCD400~FCD500  
Alloy cast iron / Casting Annealing Technology



機械零件-主軸頭±150kg  
Machinery



機械零件-HMT機身±500kg  
Machinery



機械零件-HMT滑座±400kg  
Machinery

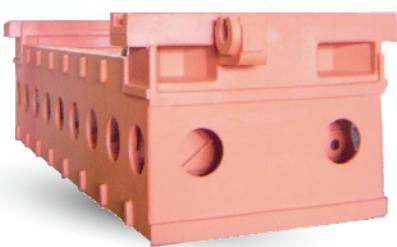


機械零件-機身±350kg  
Machinery



# 產品 介紹

PRODUCTS



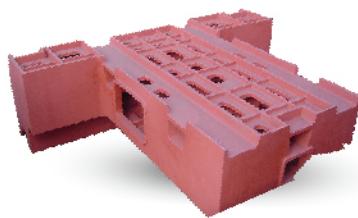
機械零件-橫樑±2600kg  
Machinery



機械零件-電子機械  
鑽孔機用底座±2900kg



機械零件-立車機身±14000kg  
Machinery



機械零件-磨床底座±3500kg  
Machinery



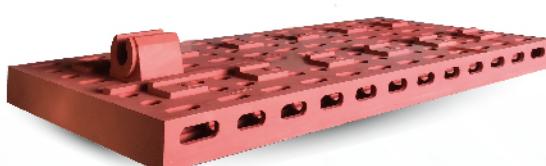
機械零件-旋盤底座±7500kg  
Machinery



機械零件-銑床機底座±2100kg  
Machinery



機械零件-棟樑式底座±14000KG  
Machinery



機械零件-龍門洗床工作台±3700KG  
Machinery

04



# 生產流程

PRODUCTION  
PROCESS

05



獨立檢驗設備以確保產品品質  
Independent laboratory to ensure product quality



溶解溫度控制  
Casting melting and temperature control



碳當量分析  
Molten silicon carbon analysis



分光分析儀測試與調質處理  
Bath analysis爐前分析  
Spectrometer material tests & Modification



冷激試驗  
Chill tests



出湯溫度控制  
Tapping temperature control



接種後分光分析儀測試與調質處理  
Inoculation Spectrometer material tests & Modification



樣本製作  
The sample manufactures



澆鑄溫度與時間控制  
Pouring temperature & Pouring time control



模內應力消除  
In-mold Stress relief

06



退火爐溫度與時間控制  
Annealing furnace temperature& time control



金相分析  
Metallurgical analysis



硬度測試  
Hardness tests



產品流水編號  
Products Serial Number



退火-應力消除  
Annealing furnace  
Stress relief



拉力測試  
Tensile tests



服務  
設備  
SERVICES  
AND  
EQUIPMENT

# 服務設備

SERVICES  
AND  
EQUIPMENT

PRODUCTION VOLUME ( annual tons) 年產量 : 6000 tons		
鑄件材質 Material	灰口鑄鐵	Flake graphite cast iron FC250~FC350
	合金鑄鐵	Alloy cast iron
	球墨鑄鐵	Spheroidal graphite cast iron FCD400~FCD500
Casting size (鑄件大小)	最大可鑄造18 tons / piece	

## MAIN FACILITY (主要生產設備)

設備名稱 Equipment	效能 / 規格 Effect	數量 Quantity
<b>熔解(MELTING)</b>		
中週波感應誘導電爐 (medium frequency furnace)	5噸(Ton)/H	2座(Set)
<b>造模(MOULDING)</b>		
呋喃自硬性造模線 (Furan molding line)	22噸(Ton)/H	1座(Set)
呋喃造模設備 (furan molding)	10噸(Ton)/H	1座(Set)
模型. 砂心. 塗裝槽 (mold and core coating)		2座(Set)
砂再生設備 (reclamation equipment)	15噸(Ton)/H	1座(Set)
獨立式低震頻震砂室 (molding sand test equipment)		1座(Set)
烘模機 (mold dry machine)		1座(Set)
懸吊式洗砂機 (hang type shot blast machine)	15噸(Ton)	1座(Set)
懸吊式洗砂機 (hang type shot blast machine)	5噸(Ton)/H	1座(Set)
退火爐 (annealing furnace)	60噸(Ton)	1座(Set)
<b>檢測儀器(INSPECTION)</b>		
浸入式鐵水測溫器 (Immersion thermometer)		2台(Set)
紅外線鐵水測溫器 (Infrared thermometer)		1台(Set)
勃式硬度計 (Brinell hardness tester)		1台(Set)
碳矽分析儀 (C.E MATER)		1台(Set)
冷激塊試驗 (wedge tester)		1組(Set)
直讀式光譜分光儀 (spectrometer)	130nm~780nm	1台(Set)
金相分析儀 (microstructure inspection)	50~500 times	1台(Set)
萬能式驗機 (Universal tensile test machine)	50噸(Ton)	1台(Set)
資本額 Capital	NT\$96,000,000	

07



木模管理-兩座廠區將客戶模具妥善保存與維護. 愛惜客戶資產  
米漢納鑄鐵台灣區授權生產工廠Meehanite Licensee in Taiwan / ISO9001 certificated 認證合格工廠

我們擁有自己的退火爐，嚴格管控退火升溫與降溫溫度與退火所需的時程，保證退火工藝達到預期成效，減少鑄件殘留應力。

鑄件在冷卻過程中，其固態收縮受到阻礙時，就會在鑄件內部產生應力，稱為鑄造應力，該應力是鑄件產生變形、冷裂和熱裂等缺陷的主要原因。如果鑄件存在內應力，則鑄件處於一種不穩定狀態，鑄件厚的部分受拉應力，薄的部分受壓應力，如果內應力超過屈服極限時，則鑄件本身總是試圖通過變形來減緩內應力，因此，細而長或大又薄的鑄件易發生變形。

The fact that we have our own annealing furnace is very beneficial. We are able to control the increase and decrease of temperature during the annealing process; residual stresses are thus reduced. During the under cooling process casting stress can lead to problems which may ultimately beget distortion in the casting. Our precise control of this process allows us to circumvent potential distortions.

### 鑄造應力按產生原因的不同可分為熱應力、相變應力和收縮應力

Casting stresses can be categorized according to their cause: thermal load, stress variance, and contraction stress.

(1) 热應力 · 热應力是由於鑄件壁厚不均勻，各部分的冷卻速度不同，以致在同一時間內，鑄件各部分收縮不一致而造成的 · 通常，熱應力使鑄件的厚壁處或心部受拉伸，薄壁處或表層受壓縮 · 合金的固態收縮率越高、鑄件的壁厚差越大，熱應力也越大 · 預防產生熱應力的基本途徑是盡量減小鑄件各部分的溫度差，使鑄件均勻地冷卻 · 設計鑄件結構時，應盡量使鑄件壁厚均勻，取同時凝固原則。

#### (1) Thermal Load.

Issues with thermal load result in an unevenness of the casting wall. The unevenness means that various parts cool at differing rates resulting in a non-uniform casting. The ideal prevention method of thermal load stress requires a minimization of temperature differences along the casting

(2) 相變應力 · 鑄件各部位在不同的時間產生相變而引起的應力稱為相變應力。

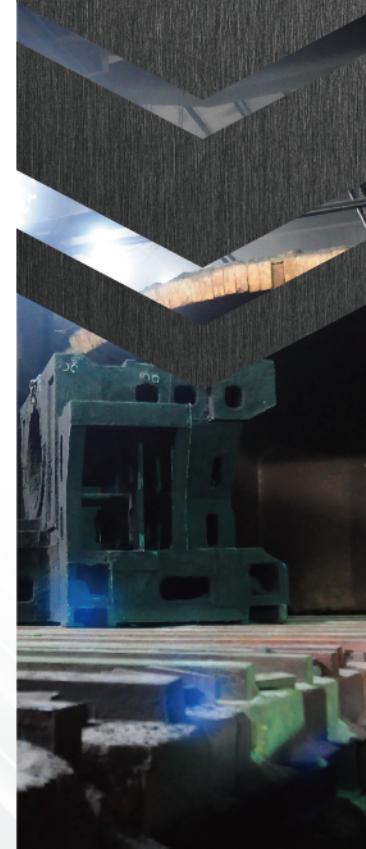
#### (2) Stress Variance

Individual locations along the casting may receive stresses at erratic times which leads to an overall irregularity.

(3) 收縮應力 · 它是鑄件收縮受到機械阻礙而形成的應力，因此又稱為機械應力。這種應力是暫時的，故又稱為暫時應力 · 當機械阻礙的原因一經消失，應力即自行消失 · 由於鑄件高溫強度低，當應力超過其高溫強度時，在應力集中的部位，容易產生裂紋(熱裂)。

#### (3) Contraction Stress

Contraction stress, also known as mechanical stress, is stress related to a mechanical hindrance. Contraction stress typically is temporary as the stress will dissipate on its own. Because casting strength is lower at high temperatures, it is possible for the stress level to surpass the strength of the casting eventually leading to a crack.





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機械零件-灰口鑄鐵FC250~FC350 | 球墨鑄鐵FCD400~FCD500 | 及各種合金鑄鐵 | 哨吶造模 | 機械零件回火處理

Machinery-Alloy cast iron.Flake graphite cast iron.Spheroidal graphite cast iron.

FC250~FC450 / FCD400~FCD500 Annealing furnace