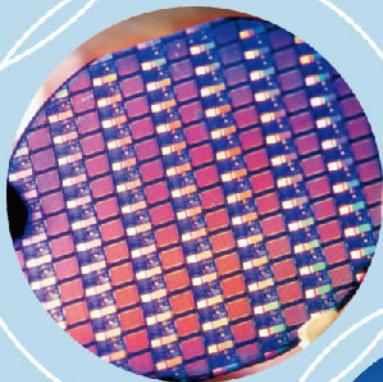


**FerroTec**

台灣飛羅得股份有限公司  
Ferrotec Taiwan Co.,Ltd

# A Diversified Technology Company



- 半導體/平板顯示  
Semiconductor/FPD Business



- 太陽能  
Solar Cell Business



- 電子材料  
Electric materials Business



- 精密機械  
Precision Mechanics Business

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# Ferrotec corporation

Ferrotec Corporation(日本磁性流體技術株式會社)自1992年進入中國,相繼在杭州和上海地區設立了多家子公司,總雇員數達10000餘人。

主要生產:磁流體密封真空傳動裝置、大型腔體製造、熱電導體製冷材料及元件、密真空部件、石英製品、瓷製品、單晶矽及晶圓、太陽能發電專用設備、數控設備、鋸片等。

產品通過 ISO9002、ISO9001、ISO14001、EN46001和TS16949等體系認證並在半導體、太陽能、光纖、航空航天、醫療器械電子材料和精密機械等諸多高科技產業領域得到廣泛應用。

## Ferrotec corporation 產品體系

- 大型腔體製造
- 磁流體真空密封傳動裝置
- 半導體晶圓片
- 精密洗淨
- 功率陶瓷載板
- 精密陶瓷
- 精密零部件
- 精密石英
- 單晶爐
- 熱電半導體材料
- 石英坩鍋
- 精密矽產品

### 2 亞洲其他地區

- Ferrotec Holdings Corporation
- Ferrotec Material Technologies Corporation
- Ferrotec Korea Corporation
- Ferrotec AMC Malaysia Sdn. Bhd.
- Aliontek Corporation
- Ferrotec Alion Corporation
- Ferrotec Taiwan Co., Ltd.
- Asahi Seisakusho Co., Ltd.
- Ferrotec Corporation Singapore Pte., Ltd.

### 3 歐美地區

- Ferrotec (USA) Corporation
- Ferrotec Europe GmbH (Germany)
- Ferrotec Nord Corporation (Russia)
- Ferrotec (USA) Corporation Santa Clara
- Ferrotec (USA) Corporation Bedford
- Ferrotec (USA) Corporation Livermore
- Ferrotec Europe GmbH Frankfurt
- Ferrotec Europe GmbH Unterensingen
- Ferrotec SARL
- Ferrotec (Iberia) S.A.
- Ferrotec Srl

# Vacuum 真空技術事業 Technology



真空技術事業總面積60000餘平方米，員工1350餘名。事業部下設製造部、銷售部、技術部、設計開發部、品質保證部、生產管理部，擁有先進的加工設備100餘台。

With an area of 60000 s.q.m and more than 1350 employees, Vacuum Technology Division owns lots of professional engineers and about 100 sets of advanced manufacturing equipments.

真空技術事業部在磁性流體真空密封傳動裝置、真空零部件、真空腔體、電子蒸發器等的開發和製造方面，具備強大的加工能力和豐富的加工經驗能為太陽能、光學應用、半導體、TFT-LCD製造行業提供各種真空密封技術解決方案以精密加工配套服務。是諸多國際知名半導體和光伏產業設備製造商首選的固定合作夥伴。

It mainly engages in vacuum feedthroughs developing and manufacturing, vacuum components, vacuum chamber, electron beam evaporator. Possessing strong machining capability and rich experience, it can offer vacuum sealing solution and precision machining services and is the reliable partner in high priority of famous home and abroad semiconductor and PV industry manufacturers.

**1968'**

美國Ferrofluidics公司成立，磁性流體技術從NASA的宇宙航太計畫正式進入商業化應用領域。

Ferrofluidics company (USA) founded for the purpose of developing commercial applications for ferrofluid from NASA.

**1996'**

導入磁性流體慣性阻尼器。  
Ferrofluid technology transferring to China.

**1998'**

導入精密真空零部件的生產。

Started production of precision vacuum parts.

**2002'**

真空技術事業部正式成立。  
參與國家重大科學工程——中科院蘭州近物所重離子加速器冷卻儲存環項目。

VF Division foundation.  
Participation in State key scientific project:Lanzhou HIRFL-CSR Project.

**2005'**

導入單晶爐真空腔體及零部件專案。  
導入分子泵項目。  
導入博世包裝項目。

Vacuum chamber and piece parts of single crystal furnace, molecular pump, Bosch project were put into production.

**2007'**

導入多晶爐真空腔體及零部件專案。  
導入法國Sidel項目。

Vacuum chamber and piece parts of multi-crystal furnace were put into production.  
Sidel project was put into production.

**2009'**

導入復旦大學專案。  
導入TIG自動焊工藝。

Fudan University project was put into production.  
TIG automatic welding process was put into operation.

**2011'**

導入鍍膜機項目、波紋管項目。  
獲得六項實用新型國家專利。

Electron Beam Evaporation system was put into operation.  
Bellow project was put into operation.

Ferrofluidics®密封技術正式註冊專利。

Ferrofluidics® patents the Ferrofluidic magnetic liquid seal for rotary applications.

半導體OEM

Semiconductor OEM.

**2000'**

單晶爐。  
中國真空學會全國代表團參觀真空技術事業部。

Single crystal furnace.  
National Delegation of Chinese Vacuum Society (CVS) visited VF Business Division.

導入電子束蒸發器項目。  
導入電子束焊工藝。

E-beam evaporator project was put into production.  
E-beam welding process was put into operation.

導入德國海德堡項目。  
導入美國Brooks項目。  
導入AMEC項目。  
導入切方機項目。

Heidelberg project,  
Brooks project,  
AMEC project,  
wire saw project was put into operation.

導入等離子自動焊工藝。  
導入G多項目。

Plasma automatic welding process was put into operation.  
G plus project was put into production.

**1970'**

導入磁性流體真空傳動裝置。

Started production of vacuum feedthrough.

**1997'**

**2004'**

導入電子束蒸發器項目。  
導入電子束焊工藝。

E-beam evaporator project was put into production.  
E-beam welding process was put into operation.

**2006'**

導入電子束蒸發器項目。  
導入電子束焊工藝。

E-beam evaporator project was put into production.  
E-beam welding process was put into operation.

**2008'**

導入德國海德堡項目。  
導入美國Brooks項目。  
導入AMEC項目。  
導入切方機項目。

Heidelberg project,  
Brooks project,  
AMEC project,  
wire saw project was put into operation.

**2010'**

導入等離子自動焊工藝。  
導入G多項目。

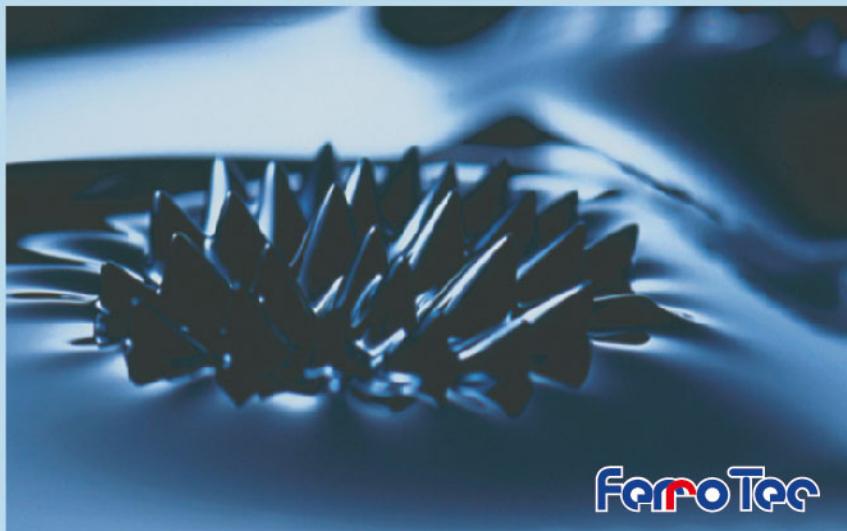
Plasma automatic welding process was put into operation.  
G plus project was put into production.

# Development 發展歷程 Course



# Vacuum Seals 磁流體密封技術專家 Experts

磁性流體真空傳動裝置是一種把旋轉運動傳入真空容器的裝置，其基本構成為一個永久磁場，兩個磁極，一個磁性轉動軸和磁性流體。傳動軸是一個多極結構，由磁極和轉軸組成。在每級環形間隙中，充滿了磁性流體。在理想狀態下，所有磁性流體密封在每一級極間與極之間，形成一系列的“磁性流體密封圈”每級“磁性流體密封圈”能承受的壓差0.15-0.2個大氣壓，整個區域的承受能力為密封圈總的承壓能力，為適應真空環境，磁性流體密封圈標準設計壓力大於個大氣壓並具有長壽命、可靠性、無污染、低阻尼和適應高速旋轉能力等特性。



FerroTec



Ferrofluidic Seals and Vacuum Feedthroughs is a device that transmits rotary motion into a vacuum chamber. The basic components are a permanent magnet, two pole pieces, a magnetic shaft and magnetic fluid. The driving shaft is a multi-stage structure, consisted of magnetic poles and shafts. In the ideal situation the ferrofluid is trapped and held between poles of each stage and between each magnetic pole, forming a series of "magnetic fluid seal rings" with intervening regions that are filled with air. The "ferrofluid seal rings" of each stage can typically sustain a pressure differential of 0.15-0.2 atmosphere pressure. The total pressure capability of the whole region equals to the whole sealing rings. The magnetic fluid seal rings are standard designed to sustain a pressure of greater than two atmosphere pressures, so as to apply to vacuum applications. It has a long service life, and several features including: high reliability, free of contamination, low damping and high-speed.





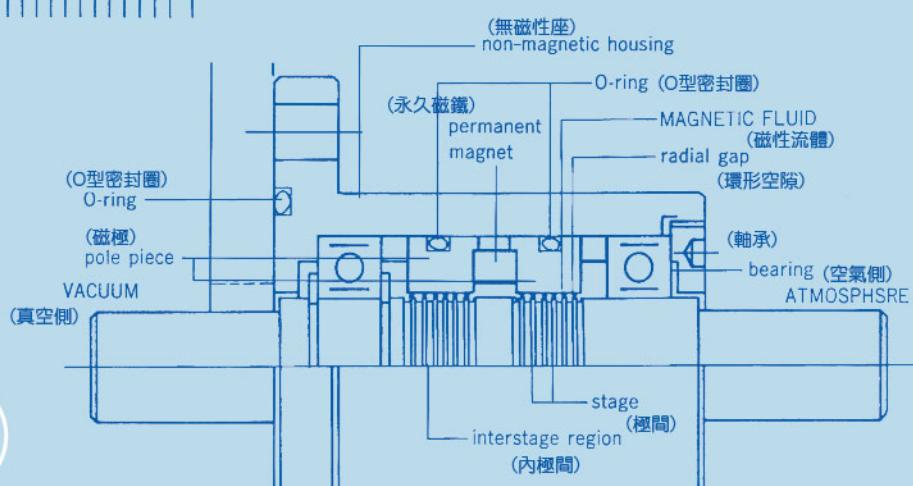
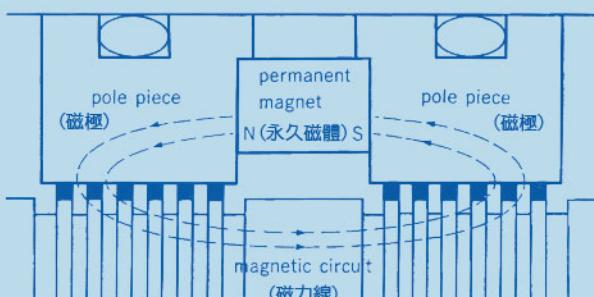
# Ferrofluidic Seals & Vacuum Feedthroughs

## 磁性流體真空傳動裝置

磁性流體真空傳動裝置廣泛應用於矽生長、目標位元電子指示器、濺射、等離子刻蝕、化學氣相沉積、液晶再生過程等。我公司是全球最大的磁性流體真空傳動裝置供應商。可以根據不同需求，為客戶提供與作環境相適應的高品質磁性流體密封技術應用產品及真空密封技術全套解決方案。

Vacuum feedthrough equipment has been widely used in silicon growing, EPI, sputtering, plasma etching, CVD and liquid crystal re-growing, etc.

Nowadays, as the world's largest vacuum feedthrough supplier , Ferrotec can provide you with a full set of solutions on vacuum seals technology.



我們的優勢 / The Superiority

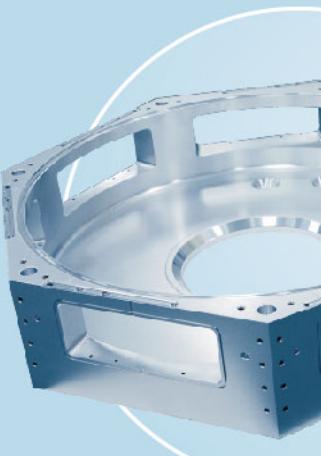
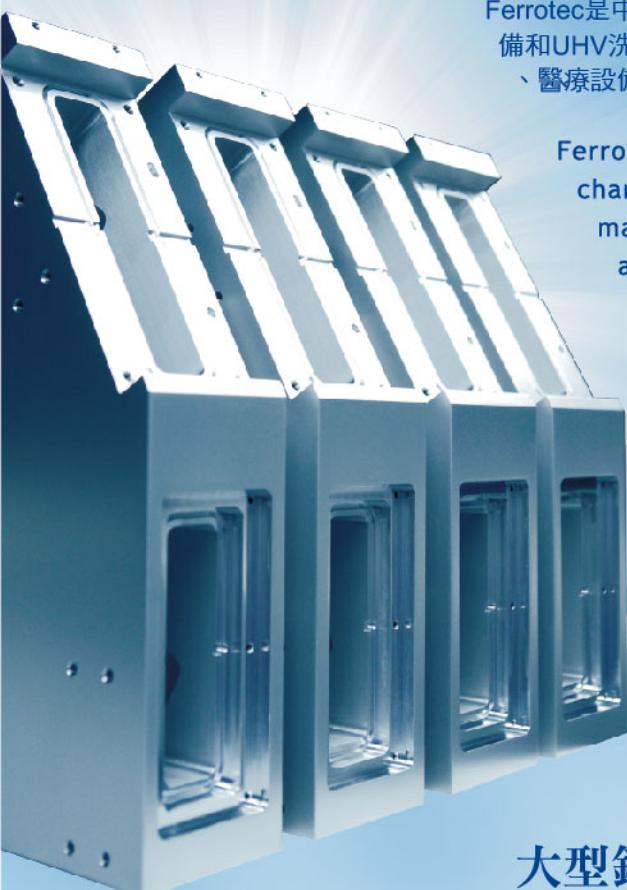
# Large-scale Vacuum Chamber Manufacturer

大

型腔體製造專家

Ferrotec是中國最大鋁腔體和真空不銹鋼焊接腔體製造商之一。擁有多大型腔體加工設備和UHV洗淨生產線，主要配套於如下行業：半導體、太陽能設備、光纖、食品機械、醫療設備、航空航天、通訊科技等行業。

Ferrotec is one of the biggest stainless steel and aluminum vacuum chamber machining companies in China. It possesses multiple big machines for chamber machining and UHV cleaning lines, mainly applied to industries such as semiconductor, Solar energy equipment, optical fiber, food machinery, medical equipment, aerospace, communication technology.



## 大型鋁腔體 Aluminum Chamber

承接各類真空子系統組裝單元  
Vacuum sub-system module&units can be achieved



UHV 洗淨生產線 / UHV cleaning line

## 我們的優勢 / The Superiority



### 大型不鏽鋼腔體 Stainless Steel Chamber

- PV用單晶爐腔體
- PV用PVD.PECVD等應腔體
- 半導體用CVD、PECVD、ALD、MOCVD等反應腔體
- 非標真空用反應腔體

PV用多晶爐・單晶爐腔體  
PV multi crystal furnace chamber  
& single crystal





我們的優勢 / The Superiority

# Precision Machining

Experts  
精密加工技術專家



根據客戶需求，按圖紙加工製造  
Capability of manufacturing according to what customers required



## 精密零部件 Precision parts



為客戶提供設計、製造、諮詢等全套精密加工技術解決方案

Solutions of designing, manufacturing, consulting of full sets of precision machining for customers etc.

# Making A Part the Same Way

## 品質精良 / 始終如一 Every Time

- 精益求精的製造管理—精益製造

Ever-improving manufacturing management—Lean Manufacturing

採用精益化管理，結合日美先端的製造管理理念，在降低成本、提高生產製造效率、縮短交貨期方面，不斷改善，從而為客戶贏得價值最大化持續成長。

Lean management, advanced Japanese and European management concept is adopted to reduce cost, improve manufacturing efficiency, reduce lead time, continuously improve and maximize customers value.

- 精准高效的資源管理—ERP(企業資源計畫)

Accurate and efficient resource management—ERP(Enterprise Resources Planning)

專業完善的生產管理團隊，加之強大的ERP系統支援，能實現務資料的集成化和業務流程體系的標準化管理，從而監控生產進度和合理安排訂單、庫存、採購等單元。對重要客戶還能提供生產進度查詢介面。

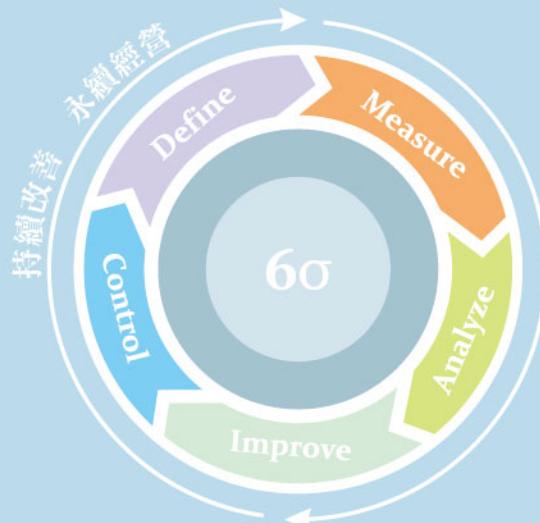
Possessing professional production management team and strong ERP system support, it can realize integration of business data and standardization management for reasonable production progress monitoring; PO, inventory, purchasing arrangement and production inquiries interface.



動態測試儀 /



檢漏儀 /



## ● 追求完美的品質管理—6σ

Pursuit of perfect quality management—6σ

關注客戶需求，嚴格實行COPYEXACT，應用SPC進行程序控制，追求零缺陷，  
精准對接全球頂級半導體，太陽能設備等行業的要求。

Attention to customer needs; application of COPY EXACT, SPC; Pursuit of Zero defect; Precision standard aiming at the world's top semiconductor and solar industry requirement.

## ● 科學規範的文件管理——DCC文件控制中心

(DOCUMENT CONTROL CENTER)

Scientific and standardized document management—DCC (Document Control Center)

不斷創新、升級、審核的動態檔控制系統。由DCC統一進行管理，包含S09001品質體系檔、客戶資料保密體系(TCP)、EDM圖紙管理系統等，以滿足客戶資料保密和安全管理的需要。

Innovate, upgrade and verification of dynamic document control system; DCC contains ISO9001 quality system documents, the confidentiality of customer information(TCP), EDM management system which can meet the confidentiality of customer information and security management needs.



光譜分析儀 /

三坐標測量儀 /

# Assembly Capacity 組裝能力介紹

## Introduction

主要面向真空，半導體行業的關鍵子系統、核心元件和機械大部件的組裝。可提供各種真空傳輸平台，反應腔室等組裝和空測試；可提供運動部件：電機、導軌、絲杠、皮帶傳動等運動部件的集成調試組裝；可供真空閥門、流量計、氣體管道等部件的集成調試組裝；可提供機械手，升降提升機構等核心部件的組裝測試。

公司擁有100級，1000級組裝車間，極限真空測試系統，檢漏儀，Particle測試儀，真空烘箱等組裝和測試儀器設備。

公司擁有10年以上真空，半導體行業組裝工程師3名，擁有10年經驗的組裝高級技工10名，專業檢查人員2名，具有豐富的該行業調試組裝經驗。

我們也提供與客戶共同開發設計組裝項服務，以最高的效率縮短客戶的新品開發週期，為客戶供最優質的產品組裝服務。





1000級淨空房 / 1000 class clean room



# You can find us everywhere

## 全球分布 in the world

遍佈全球的銷售網站。在歐洲、美洲、亞洲，在世界的每個角落，  
都有Ferrotec的技術專家恭候您的光臨。

With global sales network in Europe, America, Asia, technical experts of Ferrotec are always available to you.

利佛摩  
聖吉拉拉  
聖約瑟

### 合作伙伴 / Our Partners



ASM



infineon



MICROCHIP



SUMCO

TEL  
TOKYO ELECTRON



NAURA  
北方华创

HG 华虹宏力



華潤  
与您携手 携手共进



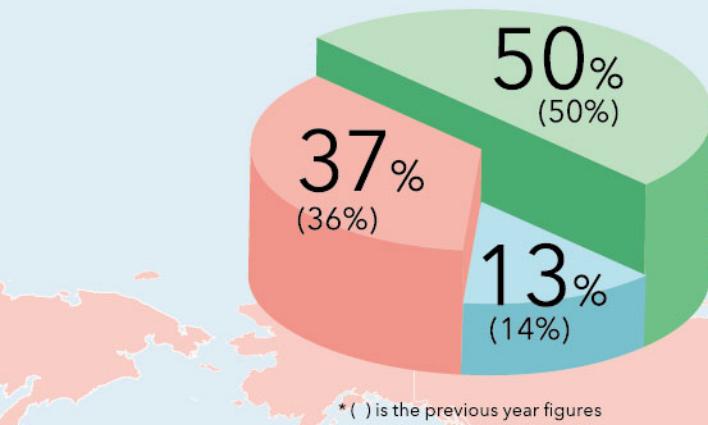
# Eyes on the World

Ferrotec Group has developed a "Spirit of Craftsmanship" as a manufacturer all across the world. The United States' marketing and R&D expertise, Japan's industrial technology, China's development of mass production, Europe's own unique development capabilities, and the expanding technology infrastructure of Asia. In anticipation of production and sales, we have placed bases taking root around the globe. We are truly a transnational company.



Sales Offices

Production Bases



\* ( ) is the previous year figures

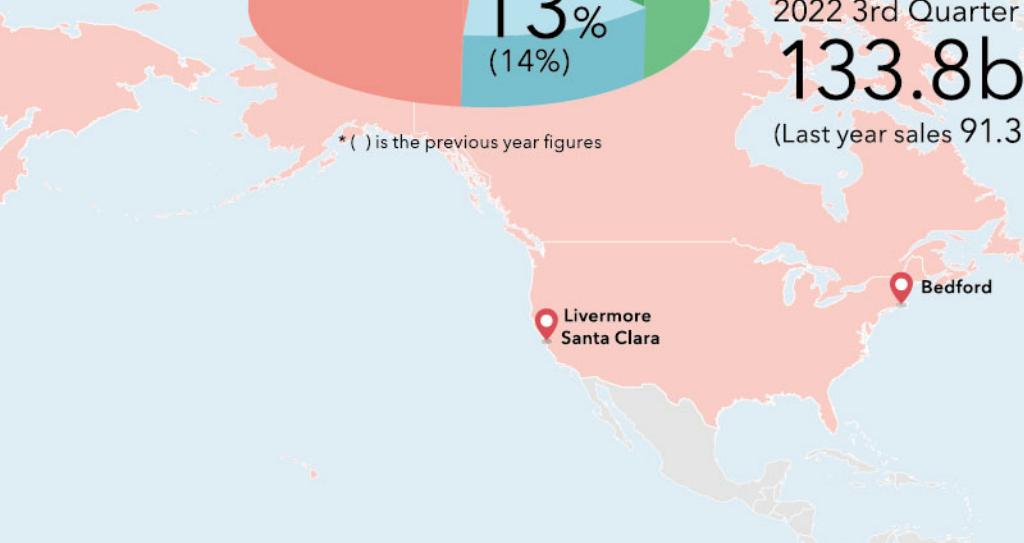
## Consolidated Net Sales

<span style="color: green;">■</span> Asia	67,158 (Millions of yen)
<span style="color: blue;">■</span> Japan	17,675 (Millions of yen)
<span style="color: red;">■</span> Europe and America	48,987 (Millions of yen)

2022 3rd Quarter Total Sales

# 133.8billion yen

(Last year sales 91.3billion yen)



## JAPAN

■ Hsinchu (Taiwan) ■



■ Singapore ■



■ Kuala Lumpur (Malaysia) ■



■ Kulim (Kedah Malaysia) ■

■ Uiwang-si (South Korea) ■



■ Tokyo [Headquarters] ■



Products:  
Vacuum Seals, Ferrofluid (Chiba)  
Fine Ceramics (Hyogo/ Ishikawa)  
CVD-SiC (Okayama)  
Industrial Equipment (Kanagawa)  
Quartz (Yamagata)  
Thermistor (Saitama/ Aomori)  
Industrial Knife (Miyagi)



■ Osaka ■

■ Kumamoto ■

■ Sendai ■

## AMERICA

■ Bedford, NT ■

Products:

Vacuum Seals, Ferrofluid



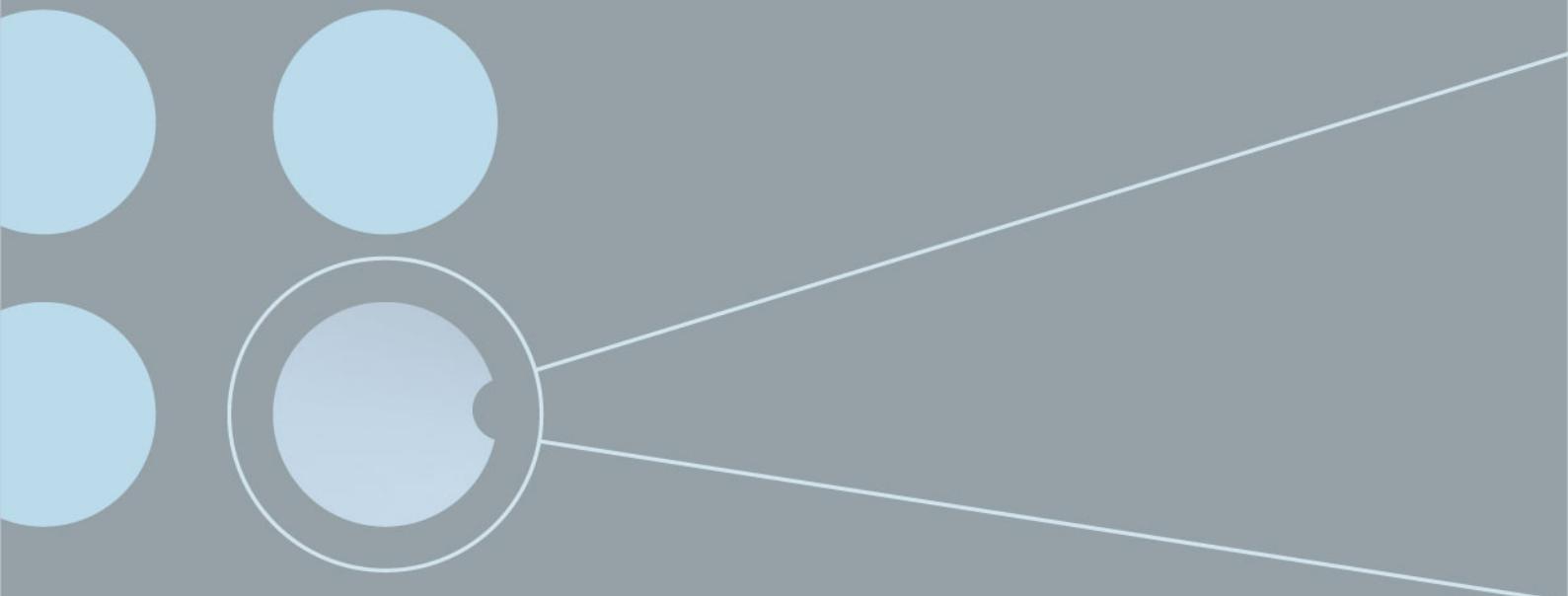
■ Livermore ■

Products:

Vacuum Coating System



■ Santa Clara, CA ■



# FerroTec

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