

AIR PERFECTLY ENGINEERED  
完美的空气动力设计

# High Performance Turbines

## 高性能涡轮

For Medical Technology  
适用于医疗技术



**micronel** 

# WE MOVE AIR 让空气流动



Our acoustics laboratory  
我们的声学实验室

We provide worldwide, perfectly engineered miniature high-performance fan and blower solutions for demanding air pressure, vacuum and flow applications.

我们在全球范围内提供完美设计的微型、高性能风机和涡轮解决方案,适用于要求严格的气压、真空和流量应用。

## Versatile Product Range 通用产品系列



### Radial Blowers | U-Line

Our radial blowers are Micronel's hallmark and known for highest pressure and suction power in the smallest of space. Quiet, efficient, robust and long-lasting. Specifically designed for medical breathing but also perfectly suited for various industrial applications.

### 径流式涡轮 | U系列

径流式涡轮是微力的标志性产品,以在最小空间内实现最高压力和吸力而著称。噪声低、效率高、经久耐用、使用寿命长。专为医用呼吸而设计,同时也完美匹配各种工业应用。

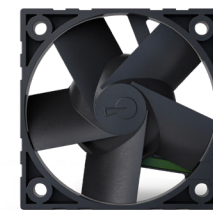


### Tube Fans | D-Line

Our powerful and compact tube fans provide high air flow rates with consistently high pressure behavior. The ideal solution for suction, ventilation and cooling applications of all kinds.

### 管轴式风机 | D系列

我们的管轴式风机功能强大、结构紧凑,提供高空气流量的同时,持续保持高压性能。为各种抽吸、通气和冷却应用提供理想解决方案。

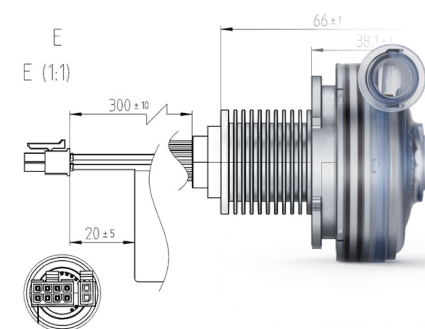


### Flat Fans | F-Line

Our world renowned flat fans are known for cooling electronics or dissipating heat and odors. The F-Line ensures long-lasting and reliable air transport for ruggedized environments.

### 平板式风机 | F系列

我们举世闻名的平板式风机以冷却电子电路、散发热量、消除异味而著称。F系列能够在恶劣环境下进行持久可靠的空气输送。



### Customized Developments

Our application experience and engineering competence make us the ideal project partner for customer-specific challenges.

### 定制开发

由于我们拥有丰富的应用经验、强大的工程设计能力,在应对客户特定挑战时,我们成了理想的项目合作伙伴。






# Radial Blowers

## 径流式涡轮

	Static Pressure 静压	Freeflow 自由流	Size 尺寸	Voltage 电压	Max. Power 最大耗电量	Integrated Electronic Motor Driver 集成式电子电路 电机驱动	For Medical Breathing Biocompatible 适用于医用呼吸、 良好生物兼容性	ISO 18562	O2 Resistance 耐氧	Dynamic Response 动态响应
Part Number 物料编码	Pa	l/min	mm	VDC	W					
U51D2-024KX-6	8 400	590	Ø 51	24	73		✓		✓	Mid 中
U51DL-012KK-4 <sup>(1)</sup>	4 200	440	Ø 51	12	32.8	✓	✓			Low 低
U51DL-012KK-5	5 200	410	Ø 51	12	35		✓			Mid 中
U51DL-024KK-4 <sup>(1)</sup>	5 400	500	Ø 51	24	41	✓	✓			Low 低
U51DL-024KK-5	4 500	460	Ø 51	22	32		✓			Mid 中
U65H4-024KX-6	6 950	330	Ø 65	18	60		✓		✓	Mid 中
U65HN-024KS-6	9 500	435	Ø 65	24	90		✓	✓	✓	High 高
U65ML-012KS-5	3 600	260	Ø 65	12	24		✓	✓		High 高
U65ML-024KT-5	4 300	295	Ø 65	24	35		✓	✓		High 高
U65MN-024KS-5	5 400	340	Ø 65	24	45		✓	✓		High 高
U65MN-024KS-6	5 400	340	Ø 65	24	45		✓	✓	✓	High 高
U65MN-024KT-6	8 000	390	Ø 65	24	62		✓	✓	✓	High 高
U85MX-024KE-4 <sup>(1)</sup>	12 300	860	Ø 85	21	183	✓	✓			Low 低
U85MX-024KE-5 <sup>(1)</sup>	12 300	860	Ø 85	21	183		✓			Mid 中
U100H4-024KA-4	18 000	860	106 x 106	24	250	✓				Low 低
Y133X-024K1-5 <sup>(2)</sup>	7 300	330	Ø 65	18	41		✓		✓	Mid 中

<sup>(1)</sup> These products are available with option articles: with nozzles at in-, outlet or both.  
这些产品提供多种选配方案：可在进风口、出风口或同时在进风口和出风口安装喷嘴。

<sup>(2)</sup> Silent Unit with integrated blower U65H4-024KX-6 (for evaluation purposes only)  
含集成涡轮 U65H4-024KX-6 的静音装置 (仅供评测使用)

	<b>U51D2-024KX-6</b> Powerful two-stage, for medical breathing! 强力双级结构, 适用于医用呼吸!	<b>Typical applications:</b> Intensive care ventilation, transport ventilation, cough therapy <b>典型应用:</b> 重症监护通气、转运通气、咳嗽治疗
	<b>U51DL-012KK-4 / U51DL-024KK-4</b> Super compact, versatile, for medical breathing! 结构超级紧凑, 通用型, 适用于医用呼吸!	<b>Typical applications:</b> Emergency ventilation, Mattress thermal management <b>典型应用:</b> 急救通气、床垫热管理
	<b>U51DL-012KK-5 / U51DL-024KK-5</b> Super compact, versatile, for medical breathing! 结构超级紧凑, 通用型, 适用于医用呼吸!	<b>Typical applications:</b> Emergency ventilation, Mattress thermal management <b>典型应用:</b> 急救通气、床垫热管理

	<b>U65H4-024KX-6</b> High performance for intensive care ventilation! 高性能, 适用于重症监护通气!	<b>Typical applications:</b> Intensive care ventilation, neonatal ventilation, subacute ventilation <b>典型应用:</b> 重症监护通气、新生儿通气、亚急性患者通气
	<b>U65HN-024KS-6</b> Top of the range, highest speed, most dynamic behavior! 最高档、最高速、最具动态性!	<b>Typical applications:</b> Intensive care ventilation, neonatal ventilation, transport ventilation <b>典型应用:</b> 重症监护通气、新生儿通气、转运通气
	<b>U65ML-012KS-5</b> Versatile blower, for medical breathing! 通用涡轮, 适用于医用呼吸!	<b>Typical applications:</b> High-flow therapy, home care respiration, sleep apnea respiration <b>典型应用:</b> 高流量治疗、家庭护理呼吸、睡眠呼吸暂停呼吸
	<b>U65ML-024KT-5</b> Most economic blower for high volume requirements! 最经济的涡轮, 可满足大风量要求!	<b>Typical applications:</b> High-flow therapy, home care respiration, sleep apnea respiration <b>典型应用:</b> 高流量治疗、家庭护理呼吸、睡眠呼吸暂停呼吸
	<b>U65MN-024KS-5 / U65MN-024KS-6</b> Versatile mid range blower, higher speed motor, with Hall sensors! 通用中档涡轮, 含霍尔传感器!	<b>Typical applications:</b> Home care respiration, subacute ventilation, emergency ventilation <b>典型应用:</b> 家庭护理呼吸、亚急性患者通气、急救通气
	<b>U65MN-024KT-6</b> High performance, high speed with small dimensions! 高性能、高速度、小尺寸!	<b>Typical applications:</b> Intensive care ventilation, home care respiration, transport ventilation, subacute ventilation <b>典型应用:</b> 重症监护通气、家庭护理呼吸、转运通气、亚急性患者通气
	<b>U85MX-024KE-4</b> Powerful blower, where highest pressures are needed! 功率强劲的涡轮, 可满足最高压力需求!	<b>Typical applications:</b> Cough therapy, medical mattress inflation, hand dryers <b>典型应用:</b> 咳嗽治疗、医用床垫充气、干手机
	<b>U85MX-024KE-5</b> Powerful blower, where highest pressures are needed! 功率强劲的涡轮, 可满足最高压力需求!	<b>Typical applications:</b> Cough therapy, medical mattress inflation, hand dryers <b>典型应用:</b> 咳嗽治疗、医用床垫充气、干手机
	<b>U100H4-024KA-4</b> Super ruggedized industrial, versatile blower platform! 超级经久耐用的工业级、通用涡轮平台!	<b>Typical applications:</b> Electro surgery smoke aspiration, dental suction <b>典型应用:</b> 电外科烟雾抽吸、牙科抽吸
	<b>Y133X-024K1-5</b> Silencer box, U65H4-024KX-6 integrated. 涡轮壳套盒, 与 U65H4-024KX-6 集成。	<b>Typical applications:</b> Intensive care ventilation, subacute ventilation, high-flow therapy <b>典型应用:</b> 重症监护通气、亚急性患者通气、高流量治疗


# Electronics & Accessories

## 电子电路及配件

### Micronel Evaluation Motor Driver Box MDB-48/10

The versatile development tool for your application with an included configuration software. Sensored or sensorless operation.

微力评测用电机驱动盒MDB-48/10: 满足客户应用要求的通用开发工具, 内含配置软件。有传感器或无传感器均可操作。

	Part Number	物料编码	Features	特点	Suitable Products	适用产品
	H023B-048ZX-0	Box	12 to 48 V <sub>DC</sub>	10 A max.	Blowers with brushless motors	
	M450X-587A9		Adapter Cable	300 mm	U71HL, U85HL/MX/MN	
	M450X-588A9		Adapter Cable	300 mm	U51D2, U65H2/H4/HN/MN, U71HX/MX	

### Micronel Choke Module MCM-33/10

The module provides extra inductance to reduce ripple currents when operating low-inductance motors with Micronel driver electronics.

微力电感MCM-33/10: 该模块提供额外电感, 通过微力的驱动电子电路运行低电感电机时, 有助于减少纹波电流。

	Part Number	物料编码	Features	特点	Suitable Products	适用产品
	S0500-00001		3 x 33 µH	10.7 A max.	MDB-48/10 and MDM-48/10	

### Micronel Mini Smart Driver Module MSDM-24/10

This powerful and cost-effective compact driver can operate brushless and sensorless blowers and motors.

微力微型智能驱动模块MSDM-24/10: 这是一款功能强大、性价比高的紧凑型驱动, 可操作无刷和无传感器的涡轮与电机。

	Part Number	物料编码	Features	特点	Suitable Products	适用产品
	H353X-024ZX-0		12 to 24 V <sub>DC</sub>	10 A max. Sensorless, analog and PWM set-speed inputs	Blowers without integrated driver electronics & brushless motors.	

### Micronel Mini Smart Driver Module MSDM-24/10 Eval-Kit

The Eval-Kit comes preassembled with mating cables, a speed control potentiometer, and configuration switches.

微力微型智能驱动模块MSDM-24/10评测工具包: 评测工具包预装有配套电缆、速度控制电位器和配置开关。

	Part Number	物料编码	Features	特点	Suitable Products	适用产品
	H354X-024ZX-0		12 to 24 V <sub>DC</sub>	10 A max. Sensorless, potentionmeter and PWM set-speed inputs	Blowers without integrated driver electronics & brushless motors.	

### Micronel Rubber Buffer

Rubber buffer for protecting against vibrations.

微力橡胶缓冲装置: 用于防震的橡胶缓冲装置。

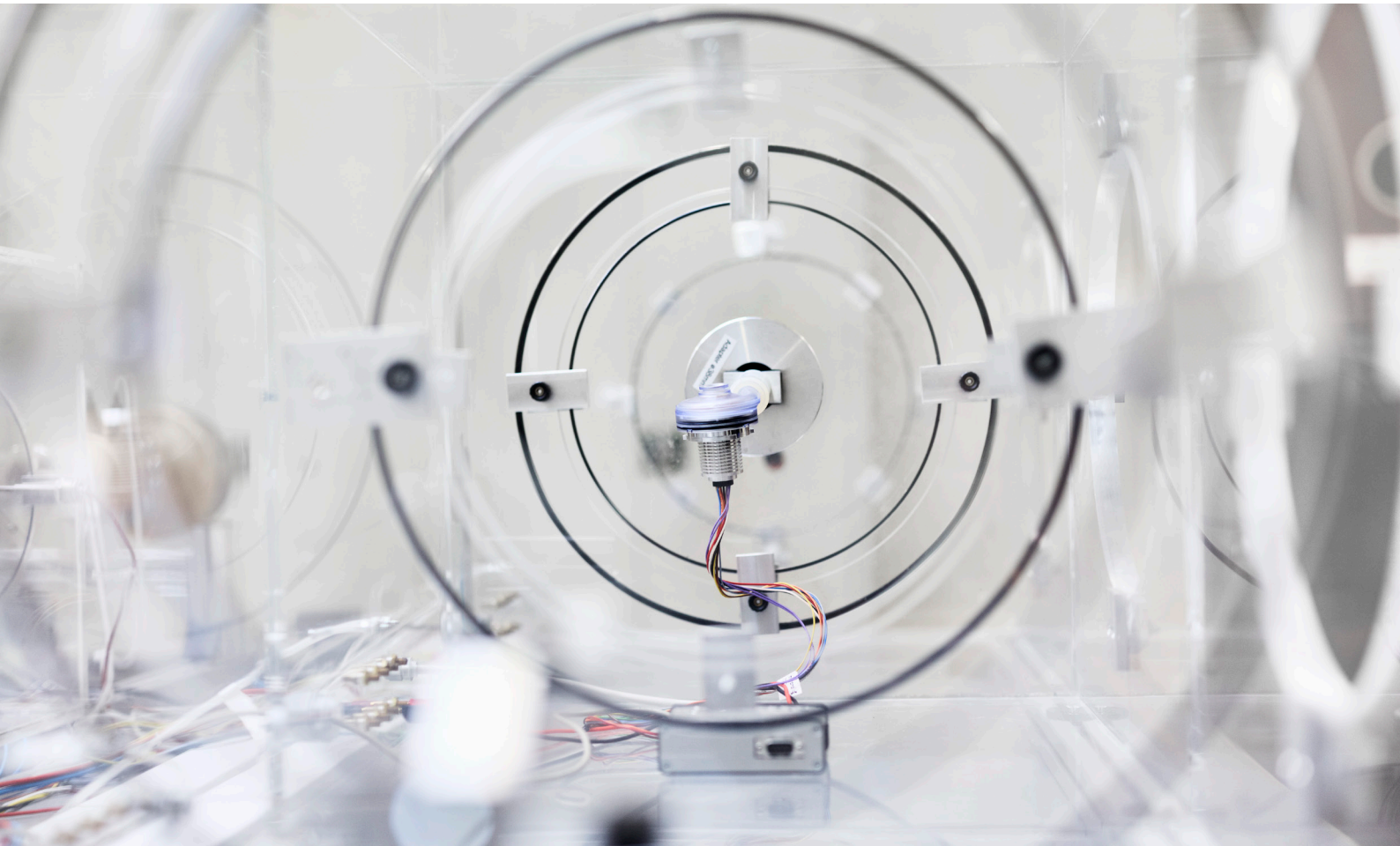
	Part Number	物料编码	Features	特点	Suitable Products	适用产品
	S5300-00001		M6, Ø 15 mm x 15 mm	1 pc	U100HL, U100UL, U100H4	
	S5300-00002		M6, Ø 15 mm x 20 mm	1 pc	U51DL /-42 /-43, U51HP-43	
	S5300-00003		M4, Ø 15 mm x 15 mm	1 pc	U85HL	

# Customized Solutions

## 定制解决方案

Our goal is to develop technologies that ideally fit the needs of our clients. In our in-house laboratories, applications can be simulated and optimally tested.

我们的目标是开发出最符合客户需求的技术。在我们的内部实验室, 可以对各种应用进行模拟和最优测试。



Our flow laboratory  
我们的流量实验室

With our range of fan and blower solutions, we become an integral part of your system. Our strength lies in identifying the perfect product, assisting in seamless integration, and making any necessary individual adaptations to ensure a perfect fit, both on a mechatronic and electronic level. Moreover, it's our commitment to guarantee the delivery timeline of our fan and blower solutions throughout the entire lifecycle of your end product. Listening to our customers, understanding their needs, and collaboratively implementing optimal solutions is our standard practice. Solution-oriented, creative, reliable.

通过我们的风机和涡轮解决方案, 我们成了客户系统不可分割的一部分。我们的优势在于识别完美产品, 协助实现无缝集成, 并进行必要的个性化调整, 以确保在机电一体化和电子电路层面均实现完美配合。此外, 我们还承诺, 在客户最终产品的整个生命周期内, 保证风机和涡轮解决方案的交付时间。

倾听客户心声、了解客户需求, 并协同实施最优解决方案, 是我们的标准做法。以解决问题为导向, 富有创造力, 值得信赖。



# Applications and Markets

## 应用与市场

Micronel fans, blowers and customized solutions are used worldwide across 26 market segments. Over 100 companies trust our Swiss-made innovations and expertise. 微力风机、涡轮和定制解决方案遍布全球26个细分市场。100多家公司信赖我们瑞士制造的创新技术和专业知识。

### Hospital Care

We provide powerful and reliable blowers for **intensive care ventilation**, **neonatal ventilation**, and **high-flow oxygen therapy**, meeting the highest standards of dynamic, precision, and oxygen resistance.

#### 医院护理

我们为重症监护通气、新生儿通气和高流量氧疗提供功能强大、性能可靠的涡轮，满足动态、精度和耐氧等方面的最高标准。



### Home Care

For **homecare ventilation**, **subacute ventilation**, **sleep apnea therapy**, and **cough therapy**, we offer compact, durable, and dynamically controllable blowers - ideal for home use.

#### 家庭护理

对于家庭护理通气、亚急性患者通气、睡眠呼吸暂停治疗和咳嗽治疗，我们提供结构紧凑、经久耐用、可动态控制的涡轮，非常适合家庭使用。



### Transport Ventilation

We supply robust, responsive blowers for **transport ventilation** and **emergency ventilation**, ensuring maximum reliability and mobility in rough environments.

#### 转运通气

我们为转运通气和急救通气提供经久耐用、反应灵敏的涡轮，确保在恶劣环境中具有最大的可靠性和机动性。



### Dental Suction

For **aspiration** in mobile dental units, we offer compact, lightweight, and low-noise blowers. Our solutions provide reliable negative pressure, ideal for portable and battery-operated devices.

#### 牙科抽吸

对于移动式牙科设备抽吸，我们提供结构紧凑、重量轻、噪声低的涡轮。我们的解决方案能够提供可靠的负压，是便携式设备和电池供电设备的理想选择。



### Electrosurgery Smoke Aspiration

Our durable, heat- and moisture-resistant blowers enable **aspiration** in electrosurgery smoke extraction. Their flat, robust design meets the highest demands in medical applications.

#### 电外科烟雾抽吸

我们的涡轮经久耐用、耐热防潮，可用于电外科烟雾抽吸。其扁平、坚固的设计满足医疗应用的最高要求。



### Medical Mattress Inflation

Our blowers ensure efficient pressurizing for **hospital air mattresses**, providing whisper-quiet operation, high airflow, and rapid pressure build-up. Their energy efficiency enables long battery life.

#### 医用床垫充气

我们的涡轮可确保医院气垫床的高效加压，提供低噪声运行、大风量和快速加压。其能量效率高，电池寿命长。





**Climate Control**  
Fresh, heated air  
supply for harsh  
environments

气候控制  
为恶劣环境提供加热  
新风

**Cabin Ventilation**  
Fresh air supply for  
cabin cooling

舱室通气  
供应新风进行舱室冷却

**Suit Pressurizing**  
Purified air-inflated  
full body suits

套装加压  
净化空气充气全身套装

**Spraying**  
Pressurized aerosol  
spraying

喷雾  
加压气溶胶喷雾

**Medical Breathing**  
Life critical, intensive  
care lung ventilation

医用呼吸  
生命医疗、重症监护  
肺通气

**Mattress Inflation**  
Smooth air mattress  
operation for comfort-  
able patient care

床垫充气  
气垫床平稳运行，为病  
人提供舒适的护理服务

**Gas Mask Respiration**  
Powered, purified  
air supply

防毒面具呼吸  
动力净化空气供应

**Dental Suction**  
Spittle and secretion  
suction

牙科抽吸  
唾液和分泌物抽吸

**Lamp Cooling**  
Solarium UV lamp  
cooling

灯管冷却  
日光室紫外灯冷却

**Smoke Aspiration**  
Electrosurgical smoke  
evacuation

烟雾抽吸  
电外科排烟

**Clean Blowing**  
In-line air cleaning  
and drying for food  
processing

清洁吹扫  
为食品加工提供在线空  
气清洁和干燥

**Hand Dryer**  
Powerful air stream  
for hand drying

干手机  
提供强大的气流用于手  
部烘干

**Electronic Cooling**  
Silent cooling of  
infotainment system

电子电路冷却  
信息娱乐系统静音冷却

**Fuel Cell Gas  
Circulation**  
Continuous, high  
density air flow

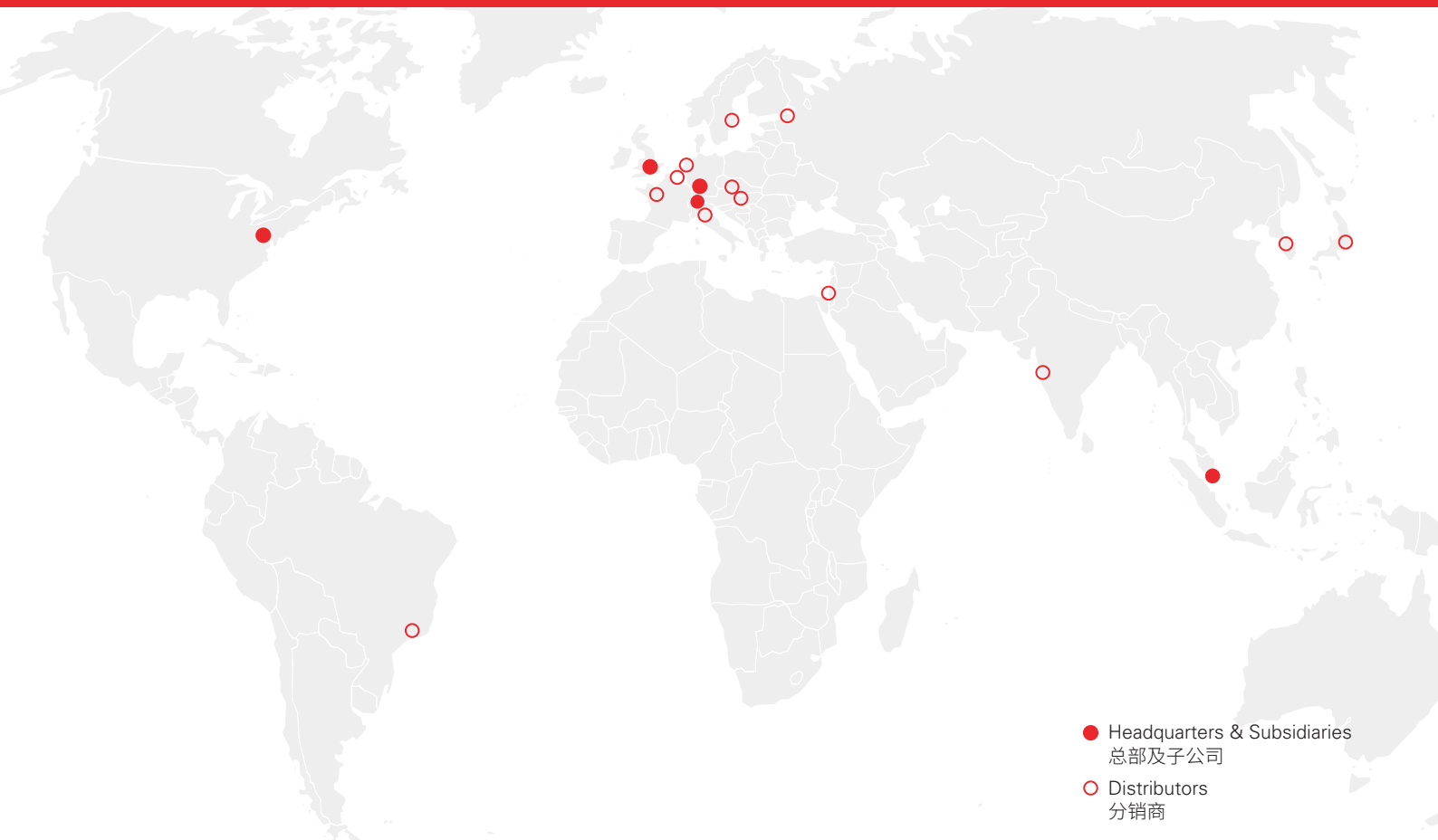
燃料电池气体循环  
持续提供高密度气流

**Air Cushion Inflation**  
Instant, on-site  
packaging inflation

气垫充气  
现场包装即时充气



# Locations 地点



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