TH SERIES 2026.08

微信公众号
WeChat public account

官方网站
Website

服务热线：400-080-2622
Service hotline

www.cn-tanabe.com

喷油螺杆空压机
Oil-Injected Screw Compressor



TA系列螺杆式空压机
TA Series Screw Air Compressor
7.5~850kW



至美系列螺杆式空压机
Tech Master Series Screw Air Compressor
7.5~75kW



激光切割机专用空压机
Laser Cutting Air Compressor
11~37kW

无油空压机
Oil-Free Compressor



TN系列干式无油螺杆空压机
TN Series Dry Oil-Free Screw Air Compressor
37~630kW



TH系列离心式空压机
TH Series Centrifugal Air Compressor
100~15000kW



TW系列水润滑无油空压机
TW Series Water-Lubricated Air Compressor
11~470kW



TC系列磁悬浮空压机
TC Series Maglev Air Compressor
75~400kW

真空泵
Vacuum Pump



TB系列微油螺杆真空泵
TB Series Oil-Injected Screw Vacuum Pump
5.5~110kW



TBV系列旋片真空泵
TBV Series Rotary Vane Vacuum Pump
0.75~7.5kW



TBD系列无油真空泵
TBD Series Oil-Free Vacuum Pump
1.5~75kW

定制产品
Customized Products



二氧化碳专用压缩机
CO_2 Compressor



无油氮气增压机
Dry Oil-free N_2 Booster



干式无油空气增压机
Dry Oil-free Air Booster



TS系列中高压螺杆增压机
TS Series Medium/High Pressure Booster

运营中心
Operations Center

深圳田边精机有限公司
SHENZHEN TECBELL PRECISION MACHINERY CO.,LTD

地址：深圳市宝安区新桥街道中心路 102 号时代中心 A 座 12 层
Address: 12th Floor, Tower A, Times Center Building, No.102 Central Road, Xinqiao Street, Bao'an District, Shenzhen

制造中心
Manufacturing Center

田边（福建）智能装备有限公司
TECBELL (FUJIAN) INTELLIGENT EQUIPMENT CO.,LTD

地址：福建省武平县武平工业园区环城南路98号
Address: No.98, Huancheng South Road, Wuping Industrial Park, Wuping County, Fujian Province

田边精機 TECBELL



TH系列 TH SERIES

离心式空气压缩机
Centrifugal Air Compressors

关于我们 ABOUT US

田边精机于2006年3月在深圳前海创立，并于2007年相继注册运营“田边”“TECBELL”品牌。公司立足国际化视野，是集空气压缩机系统及真空负压系统产品研发、制造、销售、服务为一体的大型国际化公司。

Tecbell Precision Machinery was founded in March 2006 in Qianhai, Shenzhen. In 2007, the company officially registered and launched the “TECBELL” brands. With a global perspective, Tecbell has developed into a large-scale international enterprise integrating R&D, manufacturing, sales, and service of compressed air systems and vacuum systems.

企业产品 Enterprise Products

田边精机产品线涵盖永磁变频单双级螺杆式空压机、干式无油螺杆空压机、离心式空压机、水润滑无油空压机、螺杆真空泵、旋片真空泵、无油真空泵、磁悬浮空压机、磁悬浮鼓风机、激光切割机专用空压机、中高压螺杆增压机等系列节能产品。

Tecbell offers a comprehensive portfolio of energy-efficient solutions, covering permanent magnet variable frequency screw air compressors (single-stage and two-stage), oil-free and centrifugal compressors, advanced vacuum systems, and magnetic levitation (maglev) compressors and blowers. Our products also include specialized solutions for laser cutting applications, as well as medium- and high-pressure screw booster compressors.

生产基地 Production Base

田边精机在福建武平县兴建生产基地，成立田边(福建)智能装备有限公司，集自主研发、制造、销售、服务为一体;为进一步满足市场需求，田边再次投资建造一座占地面积40000㎡的现代化压缩机制造中心。

Tecbell is establishing a production base in Wuping County, Fujian Province, through the newly founded Tecbell (Fujian) Intelligent Equipment Co., Ltd. This integrated facility encompasses independent R&D, manufacturing, sales, and after-sale service. To further meet market demands, Tecbell is investing in construction of a modern compressor manufacturing center covering over 40,000 square meters.



2006
成立
Established

40000㎡
现代化压缩机制造中心
Modern Compressor Manufacturing Center

20+
国内办事处
Domestic Offices Across China

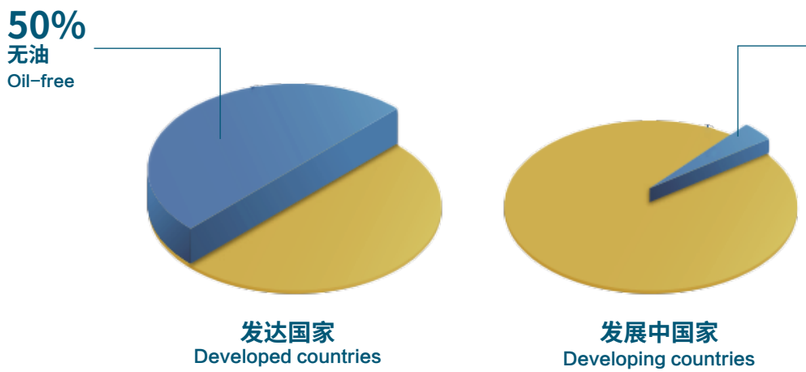
100+国家
countries
核心业务遍布全球
Core Business Presence in Worldwide

离心压缩机引领未来
Centrifugal Compressors Lead the Future

离心压缩机具有等温效率高、结构简单、可靠性高、维修费用低等优点。

Centrifugal compressors offer advantages such as high isothermal efficiency, simple structure, high reliability, and low maintenance costs.

无油压缩机市场使用占比
Oil-free Compressor Market Share

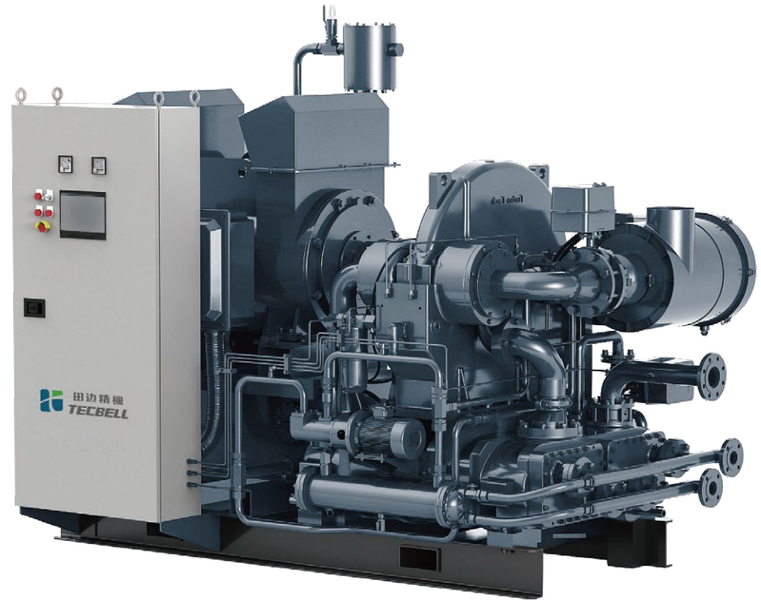


压缩空气含油的风险
Risk Of Oil-injected Compressed Air

- 员工健康损害
  Unhealthy to staffs
- 环境排放污染
  Environmental pollution
- 维护成本升高
  High maintenance cost
- 去除油污的高能耗
  High energy consumption
- 工厂生产产品不合格
  Low quality products
- 生产线用气设备寿命降低
  Short life of production line equipment
- 压缩空气系统设备寿命降低
  Reduced life of compressed air system equipment

整体式离心压缩机技术
Integrated Centrifugal Compressor Technologies

创新·高效
Innovation · High efficiency



- 可靠、安全、环保
  High reliability，high safety and enviromental protection
- 节能
  Energy saving
- 西门子 PLC 控制系统，界面友好，操作简单
  Siemens PLC + touch screen, friendly interface and easy operation
- 维护简便，成本低
  Easy maintenance and economical cost
- 无需仪表气
  No instrument gas required
- 无需特殊基础，无需预埋地脚螺栓
  No special base and anchor bolt required
- 无需密封气
  No sealing gas required
- 低噪音，低振动
  Low noise and low vibration
- 喘振保护
  Anti surge protection
- 整体撬装式，安装简单经济
  Integrated package and economical installation
- 无油 / 无硅
  Oil-free/Silicon-free
- 1-4 级可供选择
  1-4 stage option

主机
Air End



迷宫式密封 Labyrinth seal

非接触式设计，无磨损，零故障，寿命长，更换成本低，无需密封仪表气。采用水平剖分设计，维护检查方便。

Labyrinth seal, non-contact design, no wear, zero failure, long life, low replacement cost, and no sealing instrument gas required. The horizontal split design makes maintenance and inspection convenient.

齿轮箱 Gear box

轴承、密封均为水平剖分式结构，吊起齿轮箱上盖即可维护，设备检修方便简单。转子轴采用推力环结构，无须推力轴承，结构简单，传动效率高，可靠性更高。

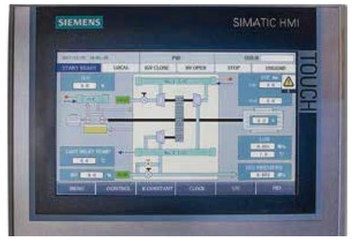
Horizontal split type for easy maintenance of the bearings and shaft seals.The rotor shaft adopts a thrust collar structure,which eliminates the need for thrust bearings. This makes the structure simpler, increases transmission efficiency, and provides higher reliability.

扩压器 Diffuser

扩压器将气体的动能转化为静压能，与叶轮匹配设计的扩压器才能使整机高效。MA工艺表面处理，获得HV1300以上的表面硬度，持久耐磨耐腐蚀，提高扩压器3倍使用寿命。

The diffuser converts the kinetic energy of the gas into static pressure energy. A diffuser designed to match the impeller is essential for the high efficiency of the entire machine.The surface hardness can reach HV1300 for MA treating method is adopted. At the same time the life span of the diffuser will expanded to 3 times.

先进的本地控制系统
The Advanced Local Control System



西门子PLC触摸屏控制系统
SIEMENS PLC
Touch screen control system

标配物联网 Standard IoT

先进的PLC控制系统 7英寸触摸屏，界面友好，操作简单。

The advanced Siemens PLC system +7” touch screen,friendly interface and easy opeartion.

提供自动双重，恒压控制和自平衡控制模式自动调节气量。

Options for auto dual, constant pressure control and self-balance control mode.

显示所有的运行参数，提供参数设定。

All operating parameters can be displayed and setted.

具有可调的各种报警和停机功能。

Features for various alarm and trip condition.

具备防喘振功能和喘振预测功能。

Features anti-surge and surge prediction functions.

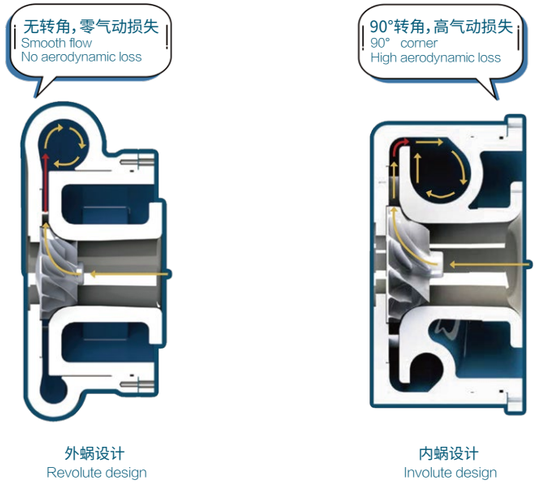
可通过DH+, Modbus, Profibus 或以太网协议进行通讯。

Communication to DCS by DH+, Modbus, Profibus OR Ethernet.

高效外蜗 High efficiency scroll

外蜗比内蜗气流少一次折流
效率提高2%。

The gas will enter the scroll directly for revolute type, but one vertical retrace will occur for involute type .
The efficiency is increased by 2%.



外蜗设计
Revolute design

内蜗设计
Involute design

轴承
Bearing

五瓣式可倾瓦，自动调芯能力强，抗冲击耐喘振，高导热高强度CC瓦块，有效降低轴承温度，提高转子系统长效可靠性。

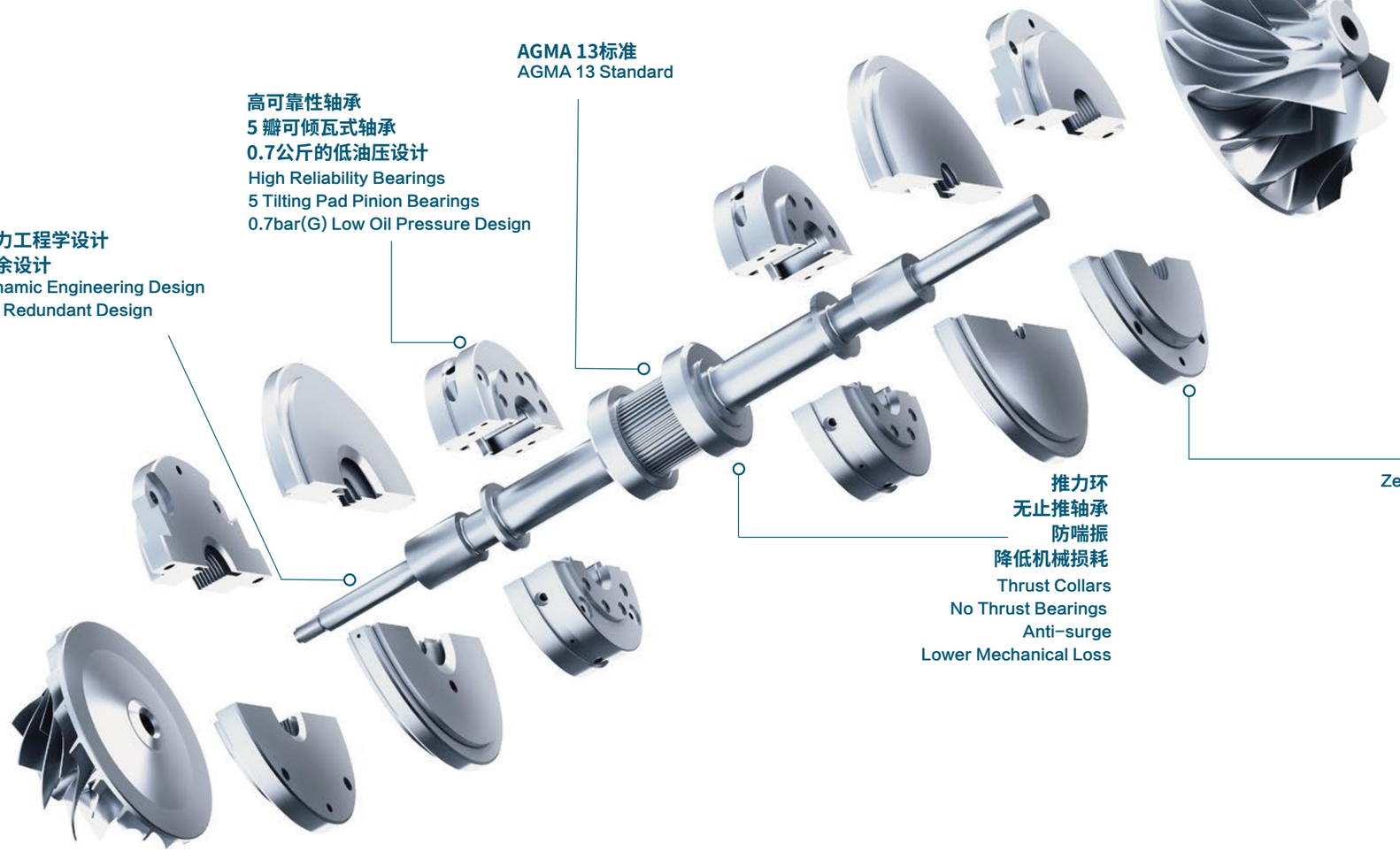
Tilting pad journal bearing realize high-speed and stable operation. Pad tilt will self adjust when the bearing load changes.CC pad of high heat conductivity and high strength can decrease the bearing temperature and promote the stability of the rotor system.

卓越的空气动力学性能
钛合金叶轮
效率超过93%
Excellent Aerodynamic Performance
Titanium Alloy Impellor
Efficiency Over 93%

AGMA 13标准
AGMA 13 Standard

高可靠性轴承
5 瓣可倾瓦式轴承
0.7公斤的低油压设计
High Reliability Bearings
5 Tilting Pad Pinion Bearings
0.7bar(G) Low Oil Pressure Design

航空动力工程学设计
柔性冗余设计
Aerodynamic Engineering Design
Flexible Redundant Design



双迷宫密封
100%无油
无需仪表气
Dual Labyrinth Shaft Sealing
100% Oil-Free
Zero Instrument Air Consumption

推力环
无止推轴承
防喘振
降低机械损耗
Thrust Collars
No Thrust Bearings
Anti-surge
Lower Mechanical Loss

叶轮
Impeller

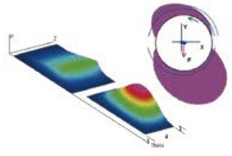
耐腐蚀特殊镀层叶轮，简称黄金叶。
Anti-corrosion special coating impeller, named golden impeller.



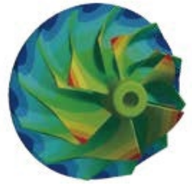
- 航空级高效率高可靠性钛合金叶轮。
  Aviation class high efficiency and high reliability titanium alloy impeller.
- 加强型耐腐蚀特殊镀层叶轮（简称黄金叶轮），抵抗特殊气体侵袭。
  Anti-corrosion special coating impeller used for high corrosion industry.
- 五轴精密加工锻造三元流后弯设计叶轮，更高的空动效率。
  Five-axis precision machining forging three-dimensional flow back-curved design impeller, with higher aerodynamic efficiency.
- 长短叶片大流量设计。
  Splitter blade design for large flow.
- 更低的流动损失，和更好的变工况适应能力。
  Low flow loss and better adaptability for off-design conditions.



最佳的气动效率
The best aerodynamic efficiency



最稳定可靠的转子系统
The best stability and reliability of rotor system



避免叶轮拍振和应力集中
Avoid beat vibration and stress concentration

钛合金和不锈钢性能对比
Performance comparison between stainless steel and titanium alloy

项目 Item	钛合金 Titanium Alloy	不锈钢 Stainless Steel
密度 Density	4.4 g/cm³	7.8 g/cm³
比强度 Specific Strength	161 N·m/g	109 N·m/g
允许线速度 Max.Linear Velocity Allowed	600m/sec	410m/sec
耐腐蚀性 Anti-corrosion	优秀 Excellent	良好 Good
加工性 Machinability	难 Difficult	容易 Easy
耐磨 Wear Resistance	优秀 Excellent	良好 Good

专利型高效高可靠性冷却器
Patented High Efficiency and High Reliability Cooler

1.直管设计，维护时免抽芯，易维护，维修时间节约90%。
Straight tube design, no need to pull out the core during maintenance, easy to maintain, saving 90% of maintenance time.



2.无易损件，维保费用低。
No wearing parts and low maintenance costs.

3.加大型设计，高效换热，耗水量低，超低气体压损，比传统结构节能1-2%。
Large-scale design, high-efficiency heat exchange, low water consumption, ultra-low gas pressure loss, 1-2% more energy-saving than traditional structures.

4.专利变截面设计，气液分离效果好。
Patent variable cross-section design for effective gas-liquid separation.

5.不锈钢托芯设计，降低锈蚀风险。
Stainless steel cartridge core design reduces the risk of corrosion.

6.无紧固件，掉落打坏叶轮风险为0。
No fasteners means no risk of loose parts falling and damaging the impeller.



7.两端支撑，冷却器芯共振损坏风险为0。
The risk of resonance-induced damage to the cooler core is virtually zero with the two-end support design.

8.超长寿命疏水阀，不生锈，强力疏水，零气损。
Ultra-long life drain valve, no rust, strong drainage, and zero gas loss.

专利型油气冷一体化设计
Patented compact design for air & oil cooler

1.结构紧凑，管程短，节约安装空间，安装方便。
Compact design, short tube passes, space-saving, and easy installation.



2.等压供水，降低抢水风险。
Equal pressure water supply, reducing the risk of water rushing.

精准节能的调节模式
Smart Energy Saving Control Mode

进口导叶阀
Inlet guide vane

调节平稳高效，自带防护罩，操作安全且防尘，采用拨叉式结构，可靠性高。
Smooth and efficient adjustment, with an integrated protective cover for safe and dustproof operation. It adopts a fork-type structure for high reliability.



IGV比开关蝶阀的优势
The advantages of IGV over the butterfly valve

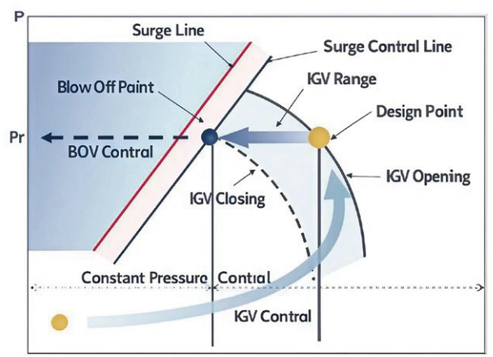
采用IGV的压缩机比采用蝶阀的压缩机效率高7-9%，因为IGV具有进气预旋作用，使气体与叶轮相同的角度进入叶轮。此外，IGV还可以提供更宽的调节范围，让气流扰动小，调节平稳。

The efficiency of compressors with IGV is 7-9% higher than those with butterfly valves, because IGV provides a pre-swirl effect on the inlet, allowing the gas to enter the impeller at the same angle. Furthermore, IGV can provide a wider turndown range, which results in less airflow disturbance and smoother adjustment.

0-100%流量调节说明
0-100% Flow adjustment instructions

压缩机采用高可靠的放空控制阀，可在0-100%流量范围内工作，每年可加卸载20万次。

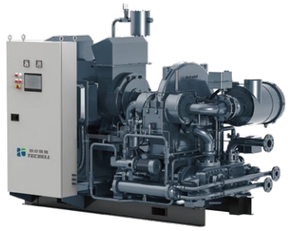
The working flow range of the compressor can be 0-100% by high reliability BOCV, which can load/unload 200000 times per year.



全恒压模式

离心压缩机参数
Parameters

TH-S系列
TH-S series



流量范围：Capacity Range	25-100m³/min
排气压力：Discharge Pressure	0.6-11bar(g)
主电机功率：Main Motor Power	100-600kW
主电机电压：Main Motor Voltage	380V/3KV/6KV/10KV/50Hz/3Ph
基座尺寸：Base Size	3400mm×2200mm
重量：Weight	7000kg-8000kg

TH系列
TH series



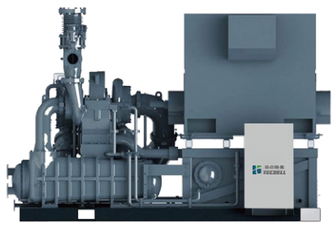
流量范围：Capacity Range	100-240m³/min
排气压力：Discharge Pressure	0.6-16bar(g)
主电机功率：Main Motor Power	300-1350kW
主电机电压：Main Motor Voltage	380V/3KV/6KV/10KV/50Hz/3Ph
基座尺寸：Base Size	4000mm×2300mm
重量：Weight	9000kg-11000kg

TH-M系列
TH-M series



流量范围：Capacity Range	200-400m³/min
排气压力：Discharge Pressure	0.6-11bar(g)
主电机功率：Main Motor Power	600-2000kW
主电机电压：Main Motor Voltage	3KV/6KV/10KV/50Hz/3Ph
基座尺寸：Base Size	5000mm×2300mm
重量：Weight	16000kg-20000kg

TH-L系列
TH-L series



流量范围：Capacity Range	400-1800m³/min
排气压力：Discharge Pressure	0.6-150bar(g)
主电机功率：Main Motor Power	1000-15000kW
主电机电压：Main Motor Voltage	3KV/6KV/10KV/50Hz/3Ph
基座尺寸：Base Size	12000mm×6500mm
重量：Weight	20000kg-70000kg