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能效牧风 节能先锋

More Air More Care

节能
SAVING-ENERGY

高效
HIGH-EFFICIENCY

环保
ENVIRONMENTAL-FRIENDLY

永磁同步变频空气压缩机

Permanent magnet synchronous inverter air compressor

MOAIR

苏州牧风压缩机设备有限公司
SUZHOU MOAIR COMPRESSOR EQUIPMENT CO.,LTD.

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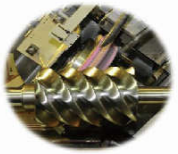
苏州牧风压缩机设备有限公司
SUZHOU MOAIR COMPRESSOR EQUIPMENT CO.,LTD.

公司简介
COMPANY PROFILE

苏州牧风压缩机设备有限公司位于江苏省常熟市高新经济技术开发区，是国内最先研发永磁空压机的企业。

牧风以最新的螺杆专利型线及加工设备，全力研发更为节能的压缩机，引领压缩机节能环保新潮流，相当产品已达到或超越国家一级能效。拥有国际先进的永磁同步驱动及控制技术，成为永磁同步变频常压系列、永磁同步低压系列、永磁同步两级压缩系列、无油压缩机等不同类型空压机产品的专业制造企业。

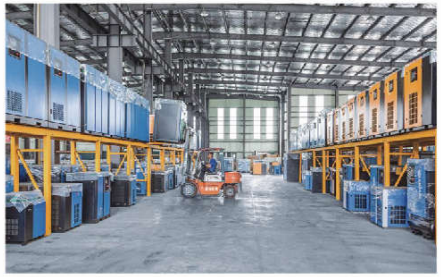
公司产品广泛应用于机械、轻工、纺织、食品、石油、化工、冶金、矿山、电力、城建、医学研究和国防科研等行业，为国家节约能源作出贡献。



Full-automatic CNC Grinder
—— KLINGELNBERG H35
全自动数控磨床（德国进口）
Imported from Germany

Located in Changshu High-tech Economic Development Zone, Changshu City,Jiangsu Province, Suzhou Moair Compressor Equipment Co., Ltd. is the enterprise firstly researching anddeveloping permanent-magnet air compressor in domestic.

Moair has completely researched and developed energy-saving compressor by the latest bolt patent line and processing equipment and introduced new trend of energy conservation and environment protection of compressor; and equivalent products have been reached or exceeded state level-I energy efficiency. Owning the international advanced permanent magnet synchronous drive and control technology, the Company has become the professional manufacturer for different types of air compressors, such as permanent magnet synchronous normal pressure series, permanent magnet synchronous low-pressure series, ,permanent magnet synchronous two-level compression series, oil-free compressor, etc.



资质证书
QUALIFICATION CERTIFICATE

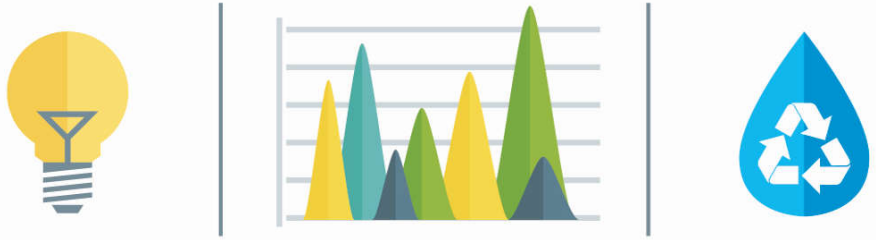
▶ 14001证书
14001 Certificate

▶ 质量管理体系证书
Quality Management System Certificate




▶ 产品认证证书
Product certification



节能 SAVING-ENERGY　　**高效** HIGH-EFFICIENCY　　**环保** ENVIRONMENTAL-FRIENDLY

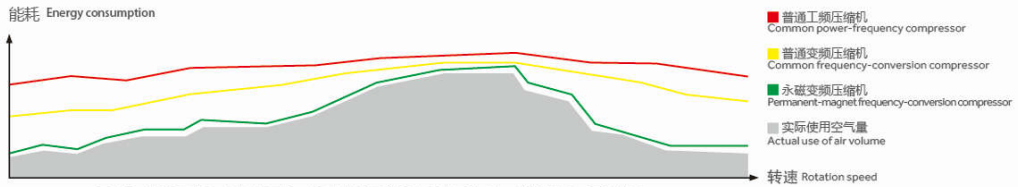
现有企业使用压缩机的状态及永磁机的优势
Situation of existing enterprises using compressors and the advantages of the permanent magnet machine

压缩机是绝大多数企业的高耗电设备，据行业协会调查，98%的用户在空压机选型时因为考虑到压力损耗会在原统计用气量的基础上增加15-25%的余量，并且按照全部用气设备同时开启所需最大用气量来计算，直接导致绝大部分压缩机实际用气量在压缩机额定排气量的50-70%之间，而常规压缩机往往在95%用气量时能效达到最佳点，其能效随着客户用气量的降低会大幅度降低（详见能效曲线图）。

目前很多用户为了解决这个问题，采用了变频技术，即在用气量到某个平均值时，让压缩机电机也维持在相对应的转速，虽然比常规压缩机节能，但从所附的能效曲线图中我们可以看出，由于电机是异步电机，随着转速的降低其能效也会大幅度降低，导致节能效果不能达到理想状态，并且因为电机温升的提高而严重影响压缩机的稳定性。

而我司目前推出的牧风永磁同步变频压缩机，囊括了变频压缩机、同步电机及永磁稀土电机的各种优点，使得能效大幅度提升，经实验和大量用户实际使用证明，99%的客户可以节能20%-27%，80%的用户节能效果达到34%-46%。

Compressors are the high power consumption equipment of the vast majority of enterprises. According to the survey of industry association, 98% of users will increase the margin of 15-25% on the basis of the original air consumption in statistics after taking into account the pressure loss, and they will calculate at the maximum air consumption required for the running of all the gas consuming equipment at the same time, which directly leads to the result that the actual gas consumption of vast majority of the compressors are between 50 to 70% of the compressor rated displacement. While the conventional compressor can often achieve the best energy efficiency point when the gas consumption is at 95%, and the energy efficiency will be significantly reduced with the decreasing of customers' gas consumption (see energy efficiency curve for details).
At present, in order to solve this problem, many users resort to the use of inverter technology, that is, to maintain the compressor motor at the corresponding revolving speed when the gas consumption is at certain average. Although it is more energy saving than conventional compressors, we can see from the attached figure of energy efficiency curve, as the motor is an asynchronous type, its energy efficiency will be greatly reduced along with the decrease of the rotational speed; thus resulting in the energy saving effect cannot reach the ideal state. Moreover, the stability of the compressor will be seriously affected along with the rising motor temperature.
However, the Moair PM screw compressor introduced in the company has included the various advantages of the VSD compressor, synchronous motor and PM rare earth motor, which enables the significant enhancement of energy efficiency. As proved by the experiment and the actual use by a large number of users, 99% of the customers can save energy from 20% to 27%, and 80% of users can achieve 34% to 46%.



■ 相对普通工频和变频空压机，永磁变频压缩机在低使用率时，能耗更低，更节能！
Compared with common power-frequency and frequency-conversion compressors, the energy consumption of permanent-magnet frequency-conversion compressor is lower and has more energy conservation if it has low usage.

能效曲线图
Energy-efficiency curve diagram

TRL-PM系列永磁同步一体式螺杆主机

TRL-PM-series trl-pm series ipm motor drive air screw airends

压缩机发展趋势

Revolution of single-stage screw air compressor

永磁一体式主机替代常规主机

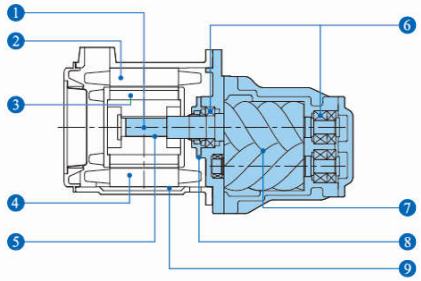
One-shaft motor air end replacing normal single-stage air end

常规单极压缩主机
Normal single-stage screw

永磁一体式单极压缩主机
One-shaft IPM motor screw

一体轴结构

One-shaft Structure



01

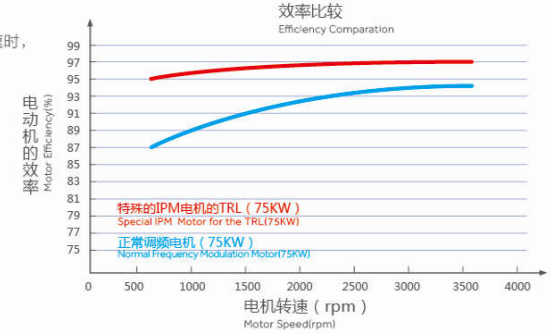
高效永磁电机与螺杆阳转子采用内嵌式一体轴直联结构，
传动效率100%。无齿轮箱、无皮带，无传动效率损失。

IPM motor and compressor are designed with one-shaft.
100%transmission efficiency
*IPM(Internal Permanent Magnet)
Direct drive.No gear box or belts.
No transmission efficiency loss.

02

装备了高效永磁电机，节能性能卓越。尤其在低频低速时，
仍能保持很高的电机效率。
电机体积小，一般约为普通电机体积的1/3。

Very high IPM motor efficiency IE3
Low-frequency,low-speed,high motor efficiency
Compact:Small size of the IPM motor.



03

○ 永磁电机采用高性能钕铁硼永磁体，使用寿命超过15年。
○ 电机定子采用变频器专用耐电晕漆包线，绝缘性能卓越，使用寿命更长。
○ 软启动：运行时，电机电流不会超过满载电流。减少了对电网设备的冲击。

The high-performance permanent magnet materials.
The specialized corona-resistance enameled wire is applied to stator coil.
Soft-start,less damage for electrical equipment.

04

高效永磁电机入围国家第6、7批《节能惠民工程高效电机推广》产品目录。
享受国家政策支持，有利于整机推广。
Chinese government support it.

05

无电机轴承：电机转子直接与阳转子共轴，电机无轴承。消除了电机故障点。
No motor bearing,no trouble for motor.

06

采用顶级品质进口轴承。
Top-level quality bearing.

07

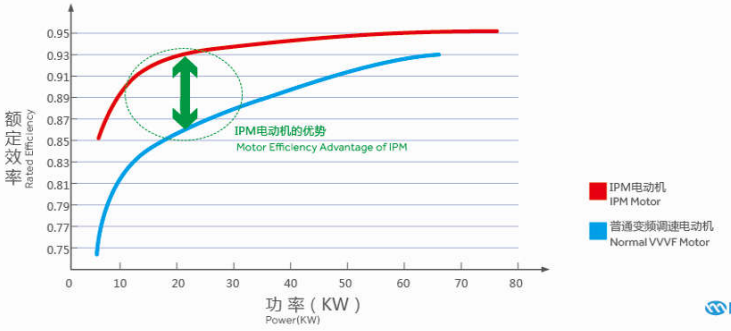
采用最新研发转子型线，大转子、大排量、低转速、低噪音。
Big rotor,lower rotor speed,lower noise.

08

特殊密封结构设计，100%防止润滑油渗漏，无渗漏烦恼。
Specially seal structure designed,100% to prevent oil leakage.
No trouble for the oil leakage.

09

特殊电机壳设计，电机独立风冷冷却，无需依赖于压缩机冷却系统。运行更加稳定。
可提供IP23防护等级和IP54防护等级产品。
Specially motor shell designed.Independent air cool.
No need to depend on the compressor cooling system.IP23&IP54.



E系列永磁同步变频压缩机

E-series permanent magnet synchronous frequency conversion low pressure air compressor

驱动电机：高效永磁同步电机 IP54

- 入围国家第6、7批《节能惠民工程高效电机推广》产品目录。
  Motor:IPM（Internal Permanent Magnet）Motor IP54
- 特殊密封结构设计，100%防止润滑油渗漏，无漏油烦恼。
  Specially seal structure designed,100% to prevent oil leakage,No trouble for the oil leakage.
- 压力≤4bar，系统必须配置油泵，以保证主机正常运行。
  Pressure≤4bar,need the oil pump in the compressor system.

节能 Energy saving:

采用高效节能的永磁同步电机、损耗率极低的专门为牧风永磁机定制的矢量控制变频器、粗铣精磨的高效率牧风永磁机专用主机，使得E系列永磁机无论满负载还是轻负载状态，均达到国家一级能效标准。

High-efficiency and energy-saving permanent magnet synchronous motor, vector control converter with extreme low loss rate and specifically formulated to MOAIR permanent magnet machine and special host for rough milling and refining high-efficiency MOAIR permanent magnet machine are adopted, so that E-series permanent magnet machine can reach state-level I energy efficiency standard whether in full loading state or light loading state.

信息智能化 Information intellectualization:

内置物联网系统，用户随时可以开启此功能。
The user can start the functions of internal system of Internet of Things at any time

1、系统如实记录设备的报警信息，并且以快照的形式将报警时的状态展示出来，让您第一时间做出正确的判断及故障处理！
The system must record the alarm information of the equipment actually and show the alarm state in a snapshoot manner, so that you can make judgment actually and treat the fault for the first time.

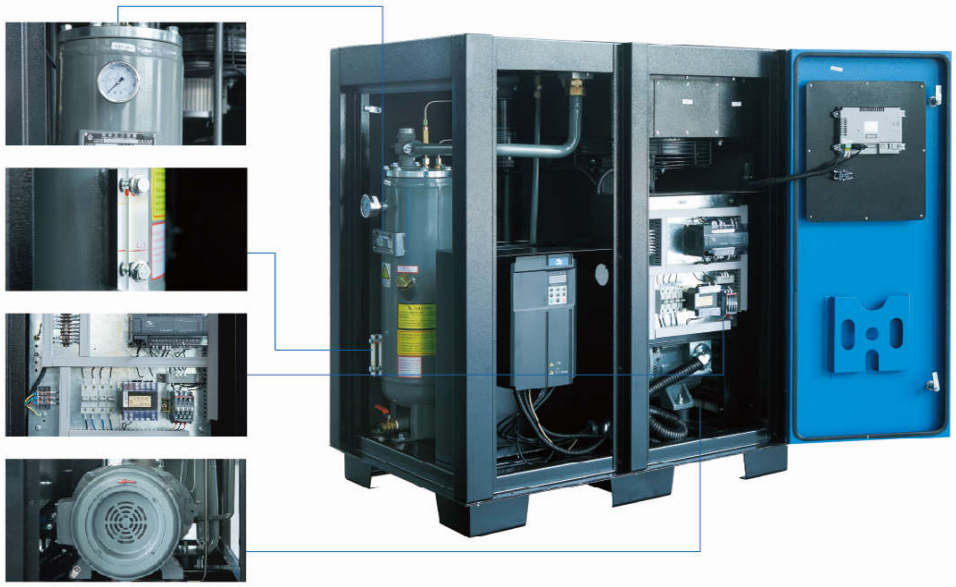
2、以图表的形式展现“一周报警走势图”；管理者可以根据图表分析服务工程师的工作状态！
One-week alarm trend chart shall be shown in the chart form; and the manager can analyze the working state of the service engineer according to the chart.

3、系统提供压缩机备件的维保设置提醒和记录功能，以便更加合理的安排机组维护保养工作，确保机组的正常稳定运行；
The system must provide the maintenance reminding and recording functions of the spare parts of the compressor so as to arrange the unit maintenance rationally and ensure the normal and stable operation of the unit.

4、“走势图”作为工业4.0大数据的基础，可以作为改进设备性能的数据参考；
The trend chart is used as the foundation of industrial 4.0 big data; and it can be used as the data reference improving the equipment performance.

5、该智能管理系统可以根据压缩机运行的状态，“智慧”地提供压缩机的节能分析报告。根据压缩机以往运行的数据指标，系统作为行业专家的知识和经验可以自动分析压缩机的运行能耗指标。为压缩机行业的节能提供数据保证！
The intelligent management system can provide the energy-saving analysis report of the compressor smartly according to the running state of the compressor. The running energy consumption indexes of the compressor can be automatically analyzed according to the former running data index of the compressor as well as knowledge and experience of the system used as the industrial expert. Data guarantee can be provided to the energy conservation in compressor industry.

6、可以随时随地观察到机组的实时运行情况，让您用得更放心！
The actual running condition of the unit can be observed at any time and any place, so you can use the product securely.



型号 (Model)	功率 (kW)	排气量 / 排气压力 (m³/min) / (Mpa)					机组重量 (kg)	外形尺寸 (L*W*H)mm	出口尺寸 Diameter
E7.5A	7.5	1.24/0.6	1.05/0.7	1.03/0.8	0.92/1.0		160	800*620*940	G3/4
E11A	11	2.13/0.6	1.96/0.7	1.91/0.8	1.53/1.0		360	970*800*1220	G1
E15A	15	2.89/0.6	2.29/0.7	2.22/0.8	1.97/1.0		380	970*800*1220	G1
E22A	22	4.09/0.6	3.81/0.7	3.70/0.8	3.09/1.0		460	1150*780*1300	G1 1/4
E30A	30	6.00/0.6	5.50/0.7	5.00/0.8	4.40/1.0		500	1300*900*1510	G1 1/2
E37A	37	7.46/0.6	6.80/0.7	6.51/0.8	5.67/1.0		700	1300*900*1510	G1 1/2
E45A	45	9.99/0.6	8.79/0.7	8.47/0.8	7.39/1.0		950	1600*1150*1600	G2 1/2
E55A	55	11.48/0.6	10.29/0.7	9.87/0.8	8.46/1.0		1010	1600*1150*1600	G2 1/2
E75A	75	14.38/0.6	13.36/0.7	13.25/0.8	11.77/1.0		1160	1650*1070*1735	G2 1/2
E90A	90	19.11/0.6	17.72/0.7	16.30/0.8	14.08/1.0		1790	2200*1200*1980	DN65
E110A	110	21.93/0.6	21.26/0.7	20.13/0.8	16.65/1.0		1830	2200*1200*1980	DN65
E132A	132	27.02/0.6	23.73/0.7	23.54/0.8	20.86/1.0		2070	2200*1200*2030	DN65
E250A	250	45.00/0.6	44.00/0.7	43.00/0.8	38.50/1.0	35.00/1.25	5100	3070*1610*2300	DN100

※ 本公司对产品不断研究、改进，如技术参数变更，恕不另行通知。如需实时准确数据，请联系我司。
Our Company researches and improves the product continuously; and the technical parameters may be changed without prior notice. Please contact with our Company for actual and accurate data.

※ 本公司接受特殊规格的订货。
Our Company can accept the ordering with special specification.

L系列永磁同步变频低压机

L-series permanent magnet synchronous frequency conversion low-pressure machine

● 牧风永磁同步变频低压机是专门为纺织、水泥、玻璃、食品等用气压力要求低的客户量身订制的机型。

MOAIR permanent magnet synchronous frequency conversion low-pressure machine is the machine type specifically tailored for the customers with low requirement on air pressure, such as textile, cement, glass, food, etc.

低压机和常规机型用于低压工况对比举例：当用户的压力需求为0.4MPa时，如果选用了0.8MPa的空压机，机器实际上是把空气压缩到0.8MPa再通过减压阀或其他途径将压力降至0.4MPa使用，也就是说，用户真正承担了0.8MPa的能耗。 例如，牧风45KW/0.4MPa低压机的实测排量为10.84m³/min，电机实际耗功44.8KW，比功率为4.13kw/m³，同样45KW的普通0.8MPa机器，按二级能效计算，比功率为8.1kw/m³，按此计算，0.4MPa专业低压机和普通机型比较，节能近49%。

Comparison and example that the low-pressure machine and the common machine type are used for low-pressure working condition: when the pressure demand of the user is 0.4MPa, if 0.8MPa air compressor is selected, the air is actually compressed to 0.8MPa by the machine, and then the pressure is reduced to 0.4MPa by a reducing valve or other approaches; in other words, the user assumes 0.8MPa of energy consumption finally. For example, the actually measured displacement of MOAIR 45KW/0.4MPa low-pressure machine is 10.84m³/min; the actual power consumption of the motor is 44.8kW; the specific power is 4.13kw/m³; similarly, 45KW common 0.8MPa machine is calculated according to level-II energy efficiency, and the specific power is 8.1kw/m3. Calculated like this and compared with the common machine type, the energy conservation of 0.4MPa special low-pressure machine exceeds near 49%.

我司采用的低压主机为牧风专门基于低压力设计的主机，而非直接采用普通压力的主机，普通主机用于低压机，是先过度压缩后再释放，造成不必要的功耗，以至于耗功高。专业低压主机比普通主机节能在10-20%。

The low-pressure host adopted by our Company is the host specially designed by MOAIR based on low pressure. Generally, the common Company adopts the host with common pressure; the common host is used for low-pressure machine, it is released after being transited and compressed, so it can result in unnecessary power consumption, even high power consumption. The energy conservation of special low-pressure machine is 10-20% higher than the common host.

牧风永磁同步变频设计，更节能：低压机由于使用压力范围比普通机器范围更小，例如0.8MPa普通机器，通常设置的卸载压力为0.8MPa，加载压力为0.7MPa，而例如0.4MPa普通低压机，通常是卸载压力为0.4MPa，加载压力为0.35MPa，这样会造成机器频繁加卸载，造成电源浪费极大、电机寿命缩短、电网冲击频繁等不良后果。而牧风永磁机控制系统通过压力传感器所传递的用户用气实际状况，自动调节电机的频率来调节机器的排气量，以适合现场工况，将耗费降到极致。

MOAIR permanent magnet synchronous frequency conversion design is more energy-saving: the low-pressure machine has smaller range of using pressure than the common machine; for example, the usually setting unloading pressure of 0.8MPa common machine is 0.8MPa; the loading pressure is 0.7MPa; the usual unloading pressure of 0.4MPa common low-pressure machine is 0.4MPa; and the loading pressure is 0.35MPa. It shall result in frequent loading and unloading of the machine as well as bad consequences of great power waste, short motor service life, frequent impact of power grid, etc. The control system of the MOAIR permanent magnet machine can adjust the gas displacement of the machine by the actual gas condition of the user delivered by the pressure sensor and adjusting the motor frequency automatically; and it must match with the working condition in the field to minimize the waste. The consumption rate is minimized.

牧风永磁同步变频低压机整机系统均为低压机设计，零配件的选择都是根据低压状态量身定制，整机压差小，比功率好，超大处理量的油分桶和油分芯，确保含油量低于2PPM。

The complete machine of MOAIR permanent magnet synchronous frequency conversion low-pressure machine is the design of low-pressure machine; the selection of parts is customized according to the low-pressure state; and the small differential pressure of the complete machine, good specific power, oil dividing bucket with extra-big handling capacity and oil core can ensure that the oil content is lower than 2PPM.

节能 Energy saving

采用高效节能的永磁同步电机、损耗率极低的专门为牧风永磁机定制的矢量控制变频器、粗铣精磨的高效率牧风永磁机专用主机，使得E系列永磁机无论满负载还是轻负载状态，相当产品已达到国家一级能效标准。

High-efficiency and energy-saving permanent magnet synchronous motor, vector control converter with extreme low loss rate and specifically formulated to MOAIR permanent magnet machine and special host for rough milling and refining high-efficiency MOAIR permanent magnet machine are adopted, so that E-series permanent magnet machine can reach state-level I energy efficiency standard whether in full loading state or light loading state. The related products have reached to first-class state energy efficiency standard.

型号 (Model)	功率 (kW)	排气量 / 排气压力 (m^3/min) / (Mpa)	机组重量 (kg)	外形尺寸 (L*W*H)mm	出口尺寸 Diameter
L3-37A	37	11.62/0.3	960	1655*1140*1765	DN80
L3-55A	55	17.38/0.3	1185	1800*1280*1935	DN80
L3-75A	75	24.66/0.25 24.09/0.3	2280	2400*1300*1835	DN100
L3-110A	110	35.77/0.3	3160	3000*1900*2000	DN125
L3-132A	132	41.82/0.3 38.30/0.35	3160	3000*1900*2000	DN125
L4-37A	37	9.83/0.4	1050	1655*1140*1765	DN80
L4-45A	45	10.84/0.4	1050	1655*1140*1765	DN80
L4-55A	55	15.27/0.4	1750	2260*1300*1990	DN80
L4-75A	75	19.74/0.4	1750	2260*1300*1990	DN80
L4-90A	90	23.08/0.4	1950	2260*1300*1990	DN80
L4-110A	110	29.69/0.4	3160	2600*1900*2035	DN125
L4-132A	132	35.62/0.4	3160	2600*1900*2035	DN125
L5-37A	37	8.34/0.5	1050	1655*1140*1765	DN80
L5-45A	45	10.32/0.5	1050	1655*1140*1765	DN80
L5-55A	55	13.92/0.5	1750	2260*1300*1990	DN80
L5-75A	75	18.11/0.5	1750	2260*1300*1990	DN80
L5-90A	90	21.25/0.5	1950	2260*1300*1990	DN80

※ 本公司对产品不断研究、改进，如技术参数变更，恕不另行通知。如需实时准确数据，请联系我司。
Our Company researches and improves the product continuously; and the technical parameters may be changed without prior notice. Please contact with our Company for actual and accurate data.

※ 本公司接受特殊规格的订货。
Our Company can accept the ordering with special specification.