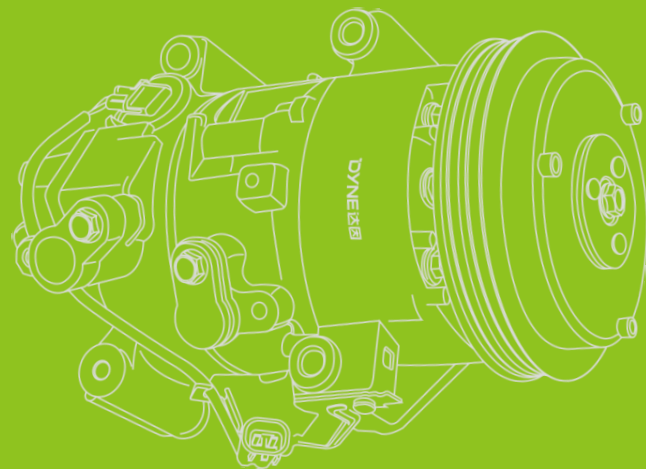



Anhui Dyne Auto Air Conditioner Co., Ltd.



DYNE达因

电装技术 品质达因

 www.chinadyne.com



PART 1

Introduction



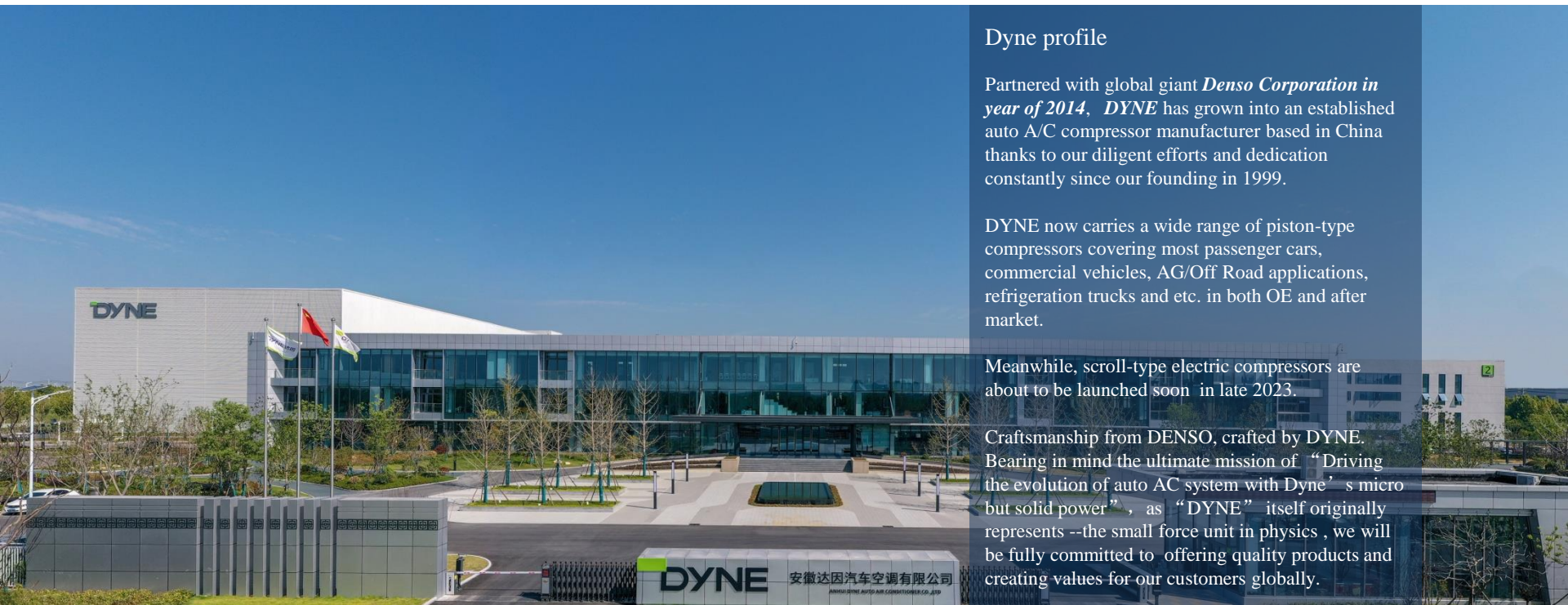
DYNE·微力量

Drive **Y**our **N**ew **E**nergy

Brand interpretation

DYNE originates from Greek δύναμις, means force.

In Physics , dyne, unit of force in the centimetre-gram-second system equal to the force that would give a free mass of one gram an acceleration of one centimetre per second per second. One dyne equals 0.00001 newton



Dyne profile

Partnered with global giant *Denso Corporation in year of 2014*, **DYNE** has grown into an established auto A/C compressor manufacturer based in China thanks to our diligent efforts and dedication constantly since our founding in 1999.

DYNE now carries a wide range of piston-type compressors covering most passenger cars, commercial vehicles, AG/Off Road applications, refrigeration trucks and etc. in both OE and after market.

Meanwhile, scroll-type electric compressors are about to be launched soon in late 2023.

Craftsmanship from DENSO, crafted by DYNE. Bearing in mind the ultimate mission of “Driving the evolution of auto AC system with Dyne’s micro but solid power”, as “DYNE” itself originally represents --the small force unit in physics, we will be fully committed to offering quality products and creating values for our customers globally.



1999~2011 Zhejiang Dyne



2012~2021 Hefei Dyne



2022 ~ Anhui Dyne



New Dyne

We are very pleased and excited to share with you that we just moved to the long-anticipated new plant early 2022

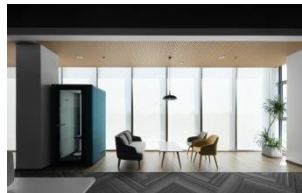
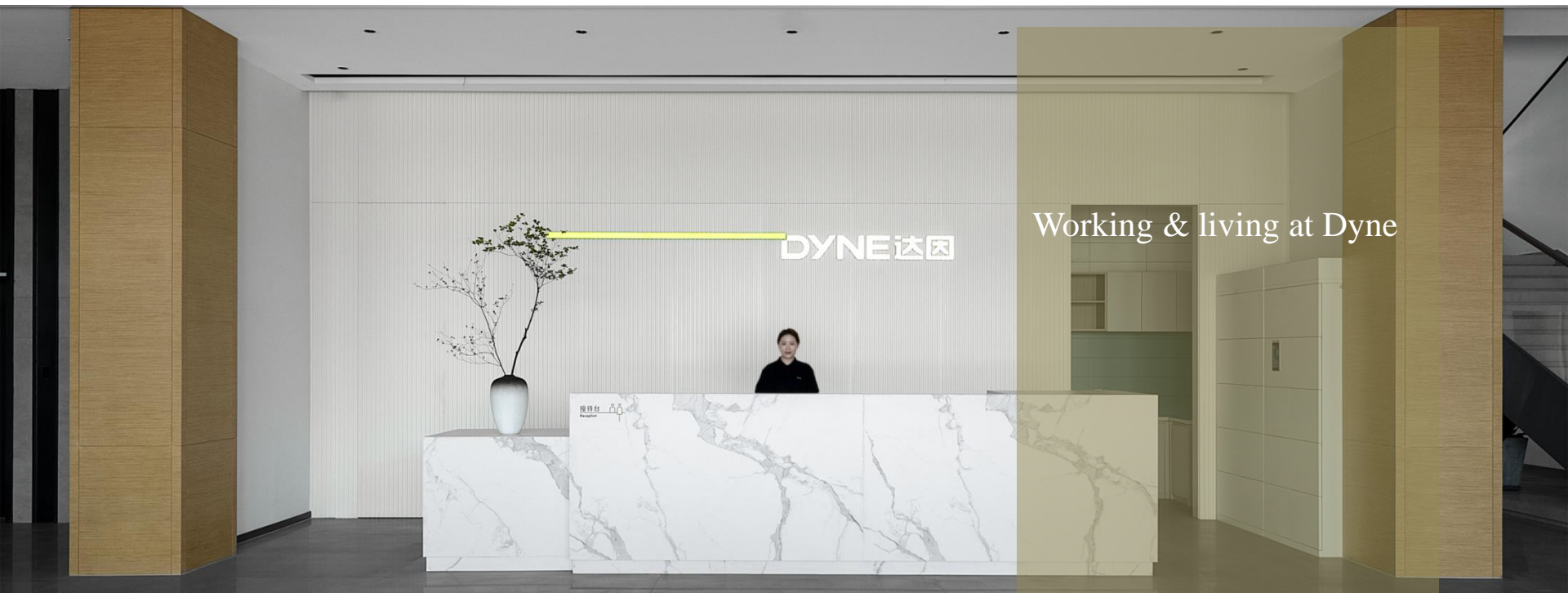
With all the state-of-the-art facilities, sophisticated manufacturing know-how we have been accumulating last 20 years and the top-notch design & engineering talents just recruited, we are confident that we will serve the market and our customers better and better .

New plant basics

Floor space : 100,000 m²

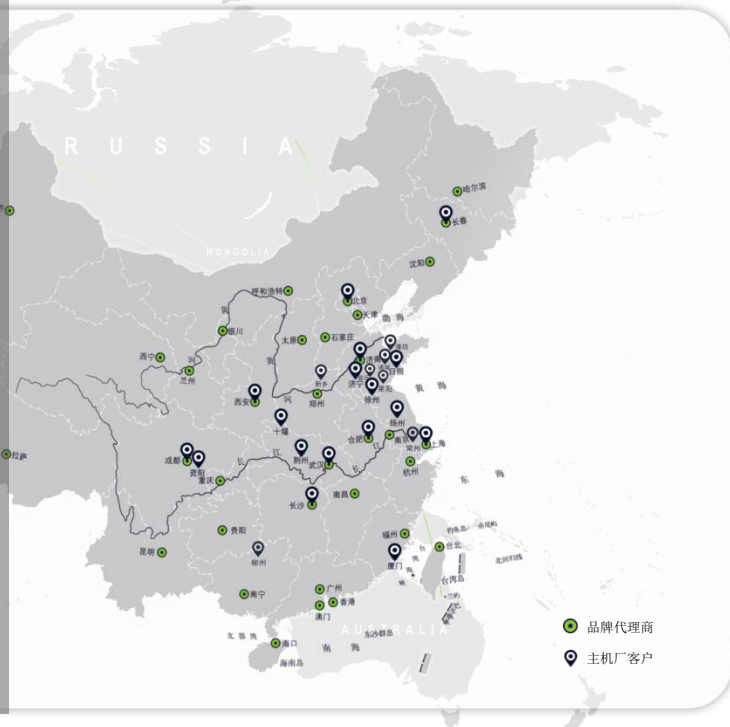
First-stage building area: 80,000m² with designed annual capacity at 2-million units

Consists of 1 R&D Building ,1 auto warehouse ,1 production plant and 2 staff dormitories .



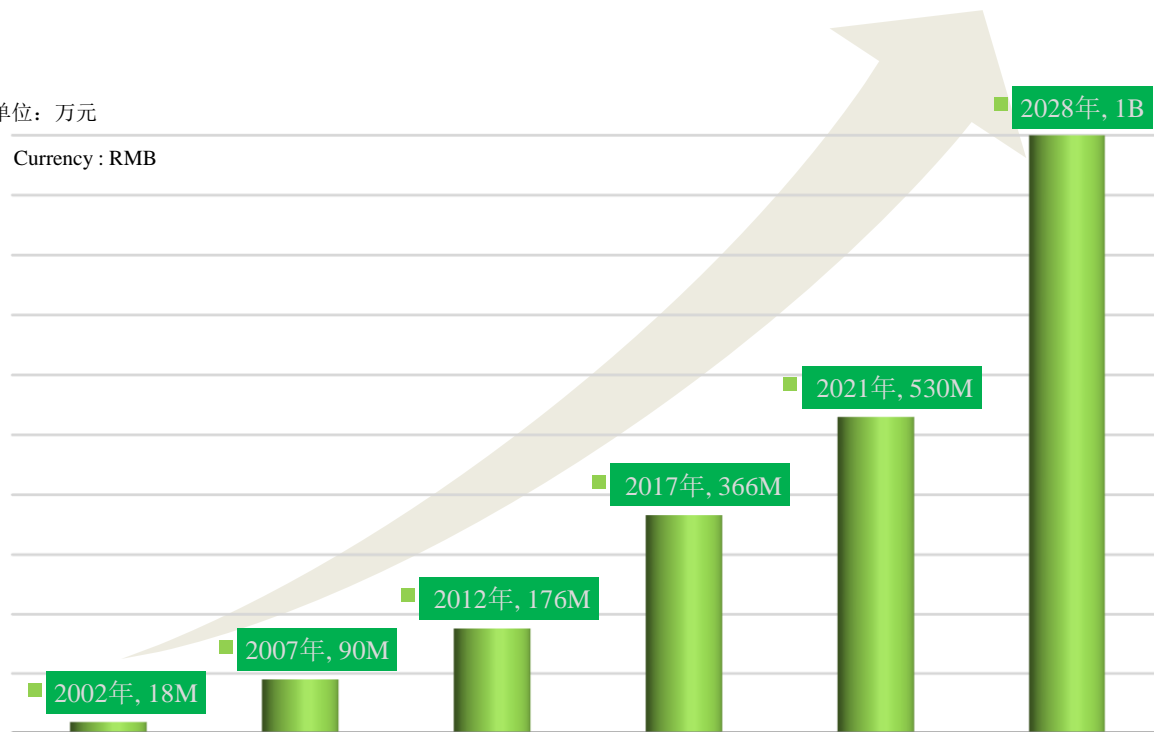
Market distribution

Over the last 20 years, we are humbled and proud to be recognized both by our domestic and overseas customers. Now our compressors under Dyne brand are distributed throughout the whole nation and we established long-time trustworthy partnership with scores of our overseas customers ,both in OE and aftermarket.



单位：万元

Currency : RMB





PART 2

Dyne
configuration





R&D technology

Denso's deep technical involvement assures that we get resources nothing short of the best available in the world in a comprehensive way, product R&D, testing facilities & criterion, on-site management and quality control to make us stand out from our peer competitors back in China and to compete in the global stage .

试验设备 Test equipment



■ 变排量测试台
VD Comp. Bench



■ 振动测试台
Vibration Bench



■ 噪音测试台
Noise Bench



■ 性能测试台
Performance Bench



■ 液击测试台
Slugging Tester



■ 综合耐久台
Comprehensive durability test bench



■ 耐久测试台
Endurance Bench



Quality control

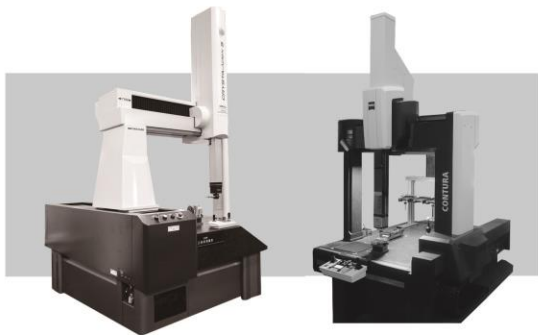
Our quality control is reflected in each and every of our process ,strict implementation of **IATF16949** system and adherence to principle of “I don’t accept NG part, I don’t produce NG part and I don’t deliver NG part “ . These all together are the guarantees of our offering sustained quality and stable products

检测设备

Inspection equipment



■ 控制阀检测台
CV/ECV Inspection



■ 三坐标测量机
CMM



■ 高低温试验箱
Temp.Chamber



■ 电磁离合器性能检测台
Clutch performance test



■ 轮廓仪
Profilometer



■ 耐压 / 爆破试验台
Burst tester



■ 影像仪
Image



■ 万能显微镜
Microscope



Machining workshop


To guarantee and deliver quality compressors to our customers, all the key parts and components are processed with in-house CNC precision machining.





Assembly lines

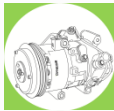
Dust-free workshop with constant temperature and humidity for assembling is the guarantee and 5 different lines are assigned according to the varying compressor structures and market demand :

- 1.Wobble plate fixed displacement comp.
 - 2.Swashplate 2-action fixed displacement comp.
 - 3.Variable displacement comp., internal control
 - 4.variable displacement comp. ,external control
 5. Electric comp. (in fabrication)
- 



Auto-warehouse

Newly launched auto warehouse equipped with specialized software system realizes the auto input & output of the raw material and components while guaranteeing the traceability of all the parts, components and finished products , which is both space and efficiency friendly.



PART 3

Dyne
compressors



Compressor category

Piston type

- *Wobble plate fixed displacement comp.
- *Swashplate 2-action fixed displacement comp.
- *Wobble plate variable displacement comp.
- * Swashplate variable displacement comp.

Scroll type

- * Electric comp. for EVs to be launched soon



01

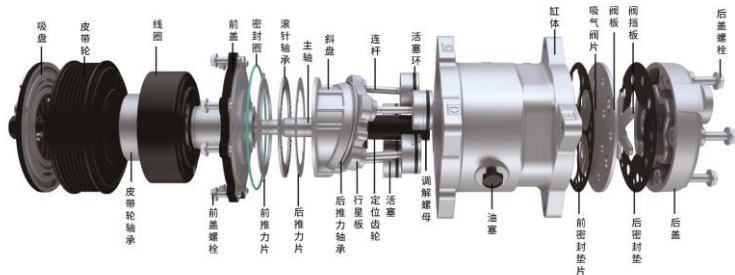
摇盘式固定排量

分类: 根据气缸数分为5缸和7缸; 根据排量分为: 108cc、138cc、129cc、155cc。

优势:摇盘式固定排量压缩机拥有更高的可靠性,能适应各种恶劣的工作环境,性价比高,被普遍应用在卡车、工程车、农用机

代表机型: DY5H09系列,DY5H11系列,DY5H14系列,
DY7H13系列,DY7H15系列。

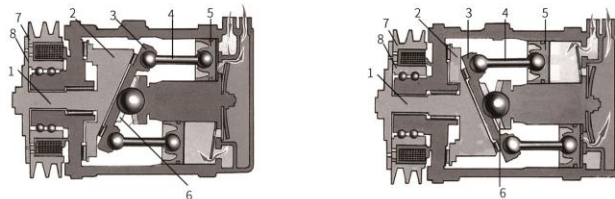
摇盘式固定排量汽车空调压缩机产品爆炸图



工作原理:(如下图A、B)

发动机启动后,皮带轮(7)保持与发动机同步转动。通电后,电磁离合器(7、8)吸合,电磁离合器转动同步带动主轴斜盘总成(1、2)旋转。主轴斜盘总成(1、2)将离合器的旋转运动转变为活塞(5)的轴向运动,活塞(5)的轴向往复运动,即可使压缩机产生吸气、排气功能。

1-主轴 2-斜盘 3-摇盘 4-连杆 5-活塞 6-圆锥齿轮 7-皮带轮 8-吸盘



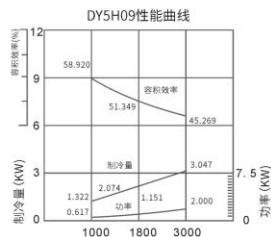
DY5H系列 压缩机技术参数

压缩机型号	5H09	5H11	5H14
排量(ml/r)	87	108	138
缸径 × 行程	φ35×18.1mm	φ35×22.6mm	φ35×28.6mm
缸数	5	5	5
最大连续转速(rpm)	6000	6000	6000
最大瞬时转速(rpm)	7000	7000	7000
润滑油	PAG	PAG	PAG
制冷剂	HFC -R134a	HFC -R134a	HFC -R134a
离合器额定电压(V)	12V 或 24V	12V 或 24V	12V 或 24V

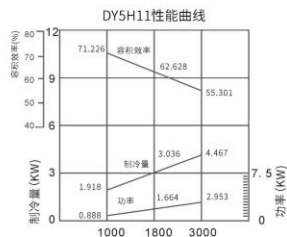
DY5H系列 压缩机性能曲线



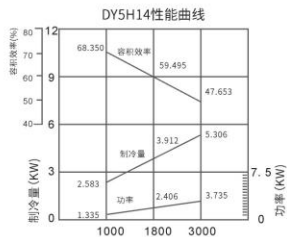
DY5H09系列



DY5H11系列



DY5H14系列



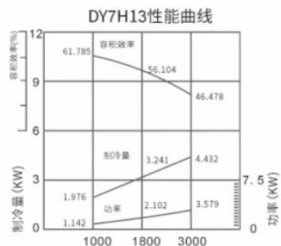
DY7H系列 压缩机技术参数

压缩机型号	7H13	7H15
排量(ml/r)	129	155
缸径 × 行程	φ29.3x27.4mm	φ29.3x32.8mm
缸数	7	7
最大连续转速 (rpm)	6000	6000
最大瞬时转速 (rpm)	7000	7000
润滑油	PAG	PAG
制冷剂	HFC -R134a	HFC -R134a
离合器额定电压 (V)	12V 或 24V	12V 或 24V

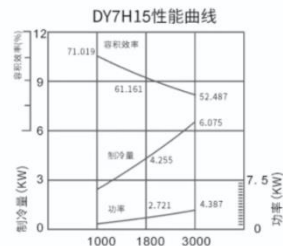
DY7H系列 压缩机性能曲线



DY7H13系列



DY7H15系列



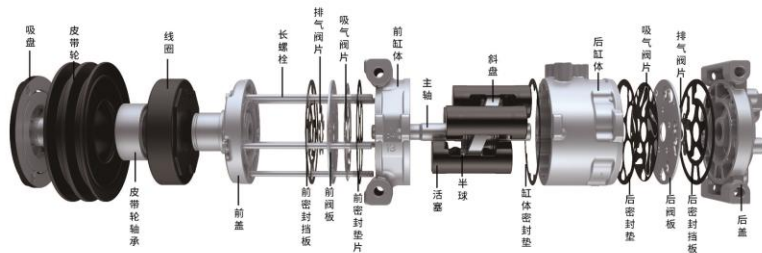
02

斜盘式固定排量

特性：源于合资方日本电装的双向10S机型，由主轴带动斜盘，推动5个活塞在10个气缸中往复做功，实现进气、压缩、排气的目的。在电装的大力协助下，达因的斜盘式固定排量产品在结构设计，制造工艺，质量管理等各方面得到显著的优化和提升，打造出了好性能、高品质的全系配套机型。

优势：小型化，轻量化，高转速，高效率。广泛适用于乘用车和商用车。

斜盘式固定排量汽车空调压缩机产品爆炸图



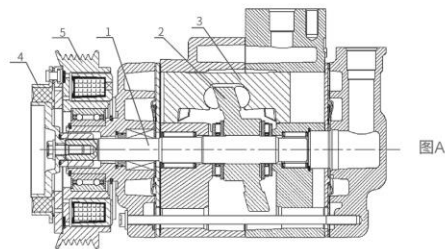
机型分类：

DY10S机型：沿用日本电装成熟的双向产品技术。
根据排量分为DY10S11系列，DY1S13系列，DY10S15系列，DY10S17系列，DY10S20系列。

DY10X 机型：达因自主研发，结合OE市场的需求进行了轻量化和高效化改良升级。
根据排量分为 DY10X11系列，DY10X13系列，DY10X15系列。

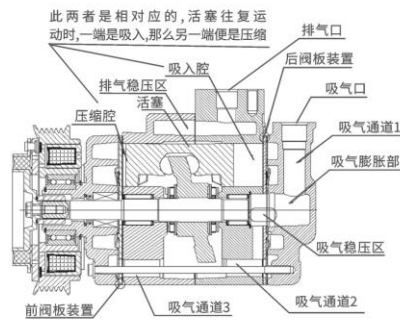
工作原理：(如下图A)

发动机启动后，皮带轮 (5) 保持与发动机同步转动。通电后，电磁离合器(4、5)吸合，电磁离合器同步转动带动主轴斜盘总成 (1、2) 旋转。主轴斜盘总成将离合器的旋转运动转变为活塞 (3) 的轴向运动，活塞的轴向往复运动，即可使压缩机产生吸气、排气功能。



1-主轴 2-斜盘 3-活塞 4-吸盘 5-皮带轮

结构图: (如下图B)



图B

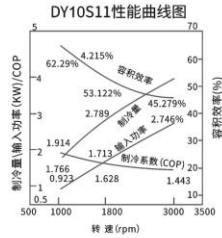
DY10S系列 压缩机技术参数

压缩机型号	10S11	10S15	10S17	10S20
排量(ml/r)	117	167	188	215
缸径×行程	Φ28.5×18.3mm	Φ32×20.8mm	Φ32×23.4mm	Φ32×26.7mm
缸数	10	10	10	10
最大连续转速(rpm)	7000	7000	7000	7000
最大瞬时转速(rpm)	8000	8000	8000	8000
润滑油	PAG46	PAG46	PAG46	PAG46
制冷剂	HFC -R134a	HFC -R134a	HFC -R134a	HFC -R134a
离合器额定电压(V)	12V 或 24V	12V 或 24V	12V 或 24V	12V 或 24V
机体尺寸(长×宽×高)	200×140×160	195×160×175	213×160×175	219×160×175
机体重量	4.5Kg	5.5Kg	6Kg	7Kg

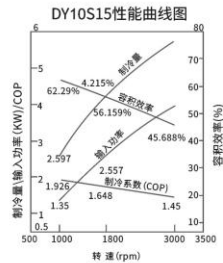
DY10S系列 压缩机性能曲线图



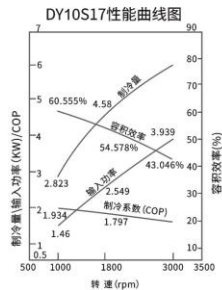
DY10S11系列



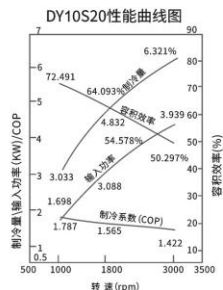
DY10S15系列



DY10S17系列



DY10S20系列



DY10X系列 压缩机技术参数

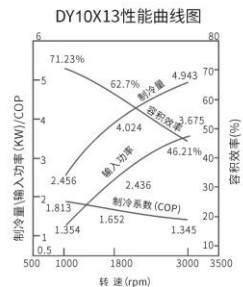
压缩机型号	10X11	10X13	10X15
排量(ml/r)	124	143	167
缸径×行程	Φ29.5x18.1mm	Φ29.5x21mm	Φ32x20.8mm
缸数	10	10	10
最大连续转速(rpm)	7000	7000	7000
最大瞬时转速(rpm)	8000	8000	8000
润滑油	PAG46	PAG46	PAG46
制冷剂	HFC -R134a	HFC -R134a	HFC -R134a
离合器额定电压(V)	12V 或 24V	12V 或 24V	12V 或 24V
机体尺寸(长x宽x高)	195x140x150	203x130x140	195x160x175
机体重量	4Kg	4.5Kg	5.5Kg

DY10X系列 压缩机性能曲线图

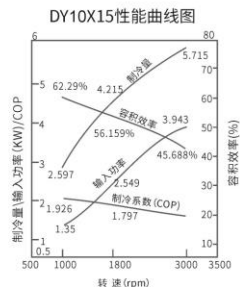
试验工况：(测试条件:Ps/Pd=0.282/1.8MPa SH(过热度)/SC(过冷度)=10/0°C)



DY10X13系列



DY10X15系列



03
摇盘式变排量

特性:摇盘结构,控制阀进行调节实现排量可变。

分类:根据气缸数分为5缸,6缸,7缸;根据排量分为: 10~151cc、6.2~125.1CC、18.79~157.46cc。

优势:带有机械或电控式控制阀,根据系统信号调节排量,功耗低,节能环保;可靠性好,可实现高转速连续运转;有吸盘,降低吸合次数,减小冲击,运转平稳,噪声小,舒适性好。广泛用于乘用车。

代表机型: DYV5 系列, DY6V12 系列, DY7V16 系列, DY6C12 系列, DY7C16系列。



DYV5 系列



DY6C12 系列



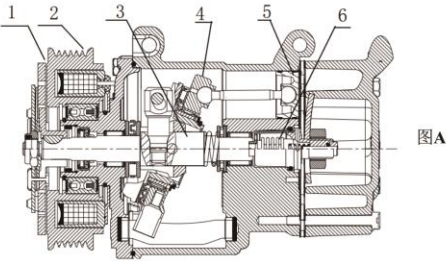
DY7V16 系列



DY7C16 系列

工作原理: (如下图A)

发动机启动, 皮带轮 (2) 保持与发动机同步转动, AC开关打开, 电磁离合器 (1、2) 通电吸合, 带动主轴斜盘总成 (3、4) 旋转。主轴斜盘总成将离合器的旋转运动转变为活塞的轴向运动, 活塞的轴向往复运动, 即可使压缩机产生吸气、排气功能。控制阀 (6) 自动调节吸气压力, 实现排量变化。



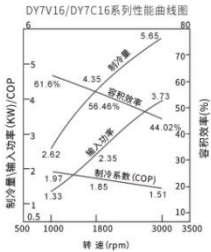
摇盘式变排量 压缩机技术参数

压缩机型号	DY7V16	DY7C16	DY6V12	DY6C12	DYV5
排量(ml/r)	157.46	157.46	125.1	125.1	151
缸径 × 行程	φ29.3×33.36	φ29.3×33.36	φ29.3×30.9	φ29.3×30.9	φ36.1×29.5
缸数	7	7	6	6	5
最大连续转速 (rpm)	7000	7000	7000	7000	6000
最大瞬时转速 (rpm)	8000	8000	8000	8000	7000
润滑油	PAG46	PAG46	PAG46	PAG46	PAG46
制冷剂	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a
离合器额定电压 (V)	12V	12V	12V	12V	12V或24V
外控阀额定电压 (V)	/	/	/	/	/
控制阀类型	内控	外控	内控	外控	内控

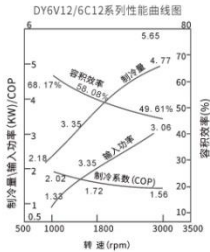
摇盘式变排量 压缩机性能曲线图



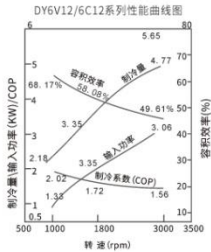
DY7V16/DY7C16系列



DY6V12/6C12系列



DYV5系列



斜盘式变排量

内控特性：主轴带动斜盘总成转动，推动活塞在气缸孔中往复运动。控制阀根据外界热负荷的变化，自动调节吸气压力，改变斜盘的受力，引起斜盘角度的变化。实现活塞行程变化，带来排量变化，从而改变制冷剂的流量。

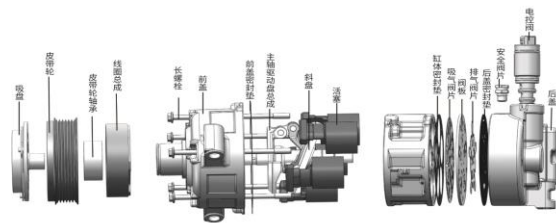
外控特性：主轴带动斜盘总成转动，推动活塞在气缸孔中往复运动。控制阀根据外界热负荷的变化，由控制系统输出不同的电流，来改变控制阀的开度，引起斜盘角度的变化。实现活塞行程变化，带来排量变化，从而改变制冷剂的流量。

优势：排量可变、变化平稳、节能提效、噪音小。

分类：根据气缸分为5缸、6缸、7缸；

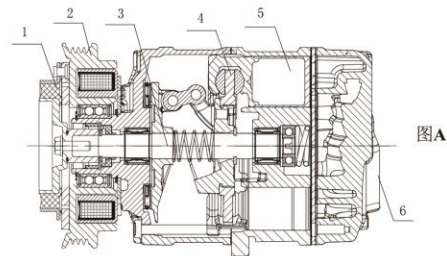
代表机型：DY7SE17系列，DY6SE16系列，DY6SE14系列，DYCVC125系列，DY5SE12系列，DY5SE12系列。

斜盘式变排量汽车空调压缩机产品爆炸图



工作原理: (如下图A)

发动机启动，皮带轮 (2) 保持与发动机同步转动，AC开关打开，电磁离合器 (1、2) 通电吸合，带动主轴斜盘总成 (3、4) 旋转。主轴斜盘总成将离合器的旋转运动转变为活塞的轴向运动，活塞的轴向往复运动，即可使压缩机产生吸气、排气功能。控制阀 (6) 自动调节吸气压力，实现排量变化。



斜盘式变排量 压缩机技术参数

压缩机型号	DY7SE17	DY7SB17	DY6SE16	DY6SB16	DY6SE14	DY6SB14
排量(ml/r)	169.99	169.99	162.88	162.88	139.86	139.86
缸径 × 行程	φ32×30.2mm	φ32×30.2mm	φ33.4×31mm	φ33.4×31mm	φ32×29mm	φ32×29mm
缸数	7	7	6	6	6	6
最大连续转速 (rpm)	8000rpm	8000	8000	8000	8000	8000
最大瞬时转速 (rpm)	9000rpm	9000	9000	9000	9000	9000
润滑油	PAG46	PAG46	PAG46	PAG46	PAG46	PAG46
制冷剂	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a
离合器额定电压 (V)	12V	12V	12V	12V	12V	12V
外控阀额定电压 (V)	12V	/	12V	/	12V	/
控制阀类型	外控	内控	外控	内控	外控	内控

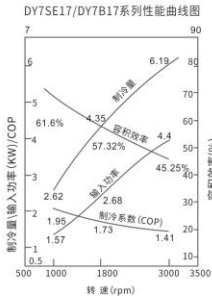
斜盘式变排量 压缩机技术参数

压缩机型号	DYCVE125	DYVCVC125	DY5SE12	DY5SB12	DY5SE09	DY5SB09
排量(ml/r)	127.81	127.81	123.08	123.08	90.43	90.43
缸径 × 行程	φ32×26.5mm	φ32×26.5mm	φ35×25.6mm	φ35×25.6mm	φ32×22.5mm	φ32×22.5mm
缸数	6	6	5	5	5	5
最大连续转速 (rpm)	8000	8000	8000	8000	8000	8000
最大瞬时转速 (rpm)	9000	9000	9000	9000	9000	9000
润滑油	PAG46	PAG46	PAG46	PAG46	PAG46	PAG46
制冷剂	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a
离合器额定电压 (V)	12V	12V	12V	12V	12V	12V
外控阀额定电压 (V)	12V	/	12V	12V	12V	12V
控制阀类型	外控	内控	外控	内控	外控	内控

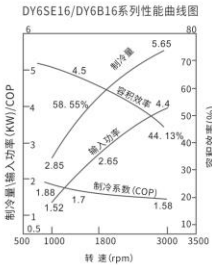
斜盘式变排量 压缩机性能曲线图



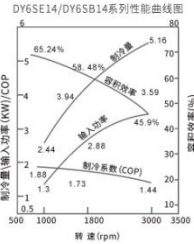
DY7SE17/DY7B17系列



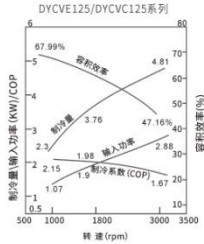
DY6SE16/DY6SB16系列



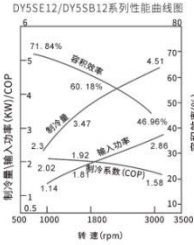
DY6SE14/DY6SB14系列



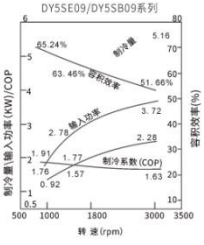
DYCVE125/DYVCVC125系列



DY5SE12/DY5SB12系列



DY5SE09/DY5SB09系列



05

电动涡旋式

特性：定子通过电磁力驱动主轴转子旋转，偏心轮驱使动涡盘总成运动做功，实现进气、压缩、排气的目的。

分类：根据涡盘直径及高度的不同，压缩机可分为27cc、34cc、45cc等；

优势：① 涡旋压缩机结构简单、体积小、重量轻；

② 无吸排气阀,易损件减少,降低吸排气阻力损失及噪音、振动,易于实现变速；

③ 无余隙容积，容积效率高；

④ 不直接接触，采用油膜密封，摩擦损失小，机械效率高；

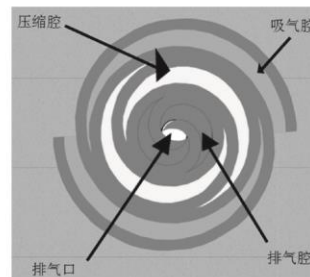
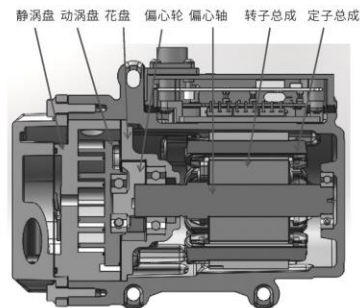
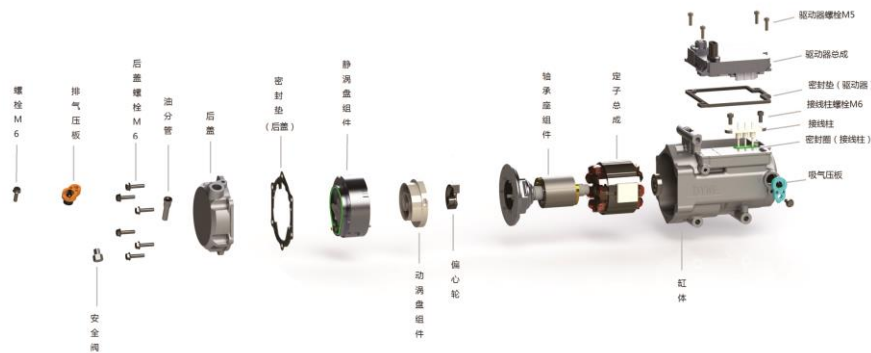
⑤ 多压缩室同时工作，工作连续，压缩力矩变化平稳。

代表机型：DYES27系列、DYES34系列。

工作原理:

动、静涡旋盘的型线均是圆渐开线，形状相同但角相位置相对错开 180° 。动涡旋盘由偏心轴带动，其轴绕着静涡旋盘轴线做公转平动。工作中两个涡旋盘在多处向切形成密封线，从而形成多个月牙形气腔。两个涡旋盘公切点处的密封线随着动盘的公转而沿着涡旋曲线不断转移，使这些月牙形气腔的形状大小一直在变化。压缩机的吸气口开在静盘外壳的上部。当偏心轴顺时针旋转时，冷媒从吸气口进入吸气腔，相继被吸入到外围的与吸气腔相通的月牙形气腔里。随着这些外围月牙形气腔的闭合而不在与吸气腔相通，其密闭容积便逐渐被转移向静盘的中心且不断缩小，气体被不断压缩而压力升高，后从静盘排气孔排出。动涡旋盘随偏心轴进行公转运动，由动涡旋盘与花盘之间的销孔机构来防止动涡旋盘自转。

电动涡旋式汽车空调压缩机产品爆炸图



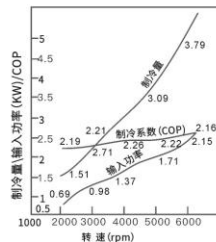
DYES系列 压缩机技术参数

压缩机型号	DYES27	DYES34
排量/cc	27	34
额定电压	DC320V	DC320V
转速范围	1000~6000	1000~8000
润滑油	POE	POE
制冷剂	R1234yf/R134a	R1234yf/R134a
通讯协议	PWM/CAN	CAN/LIN

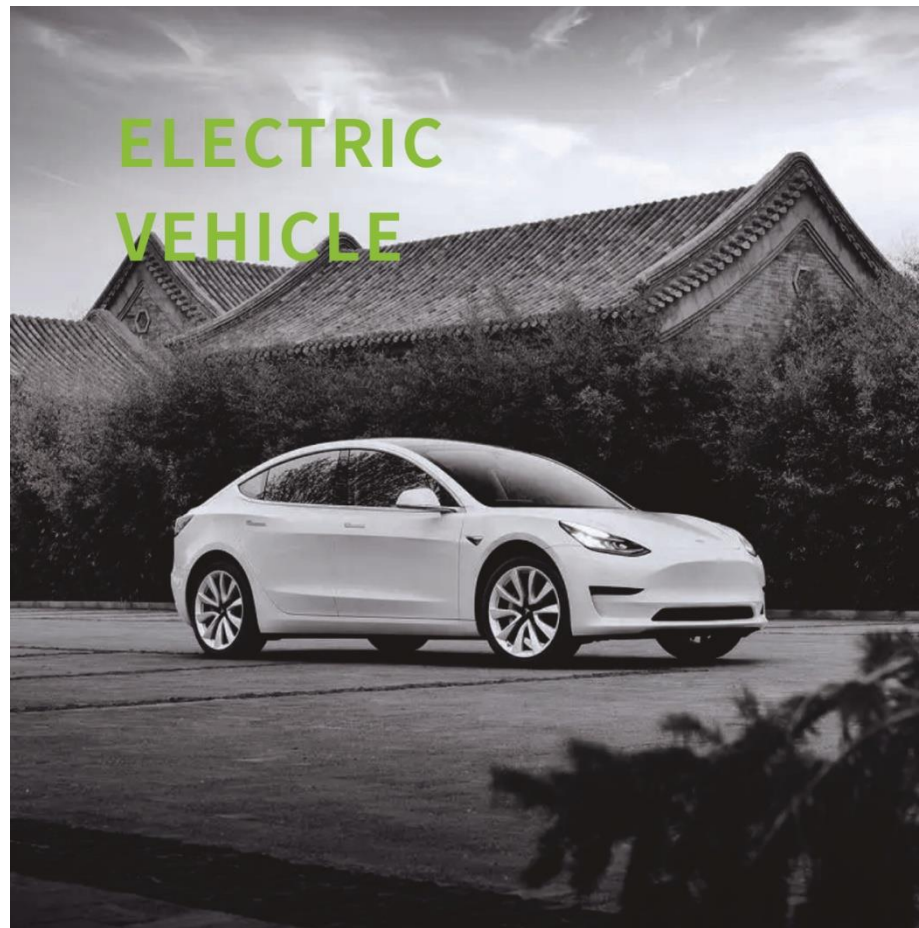
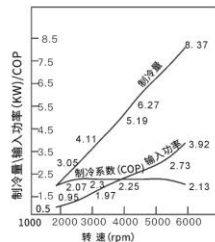
DYES系列 压缩机性能曲线

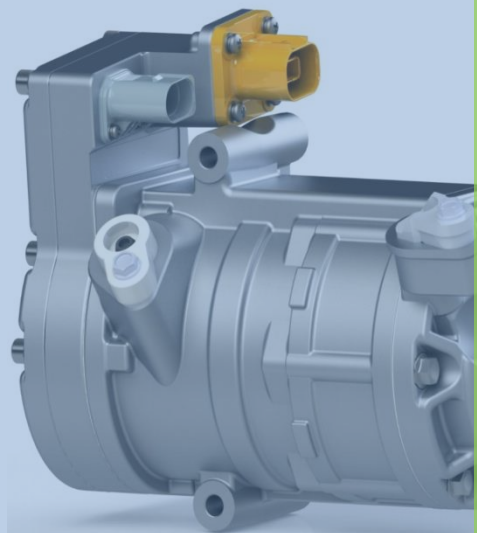


DYES27 性能曲线图



DYES34 性能曲线图



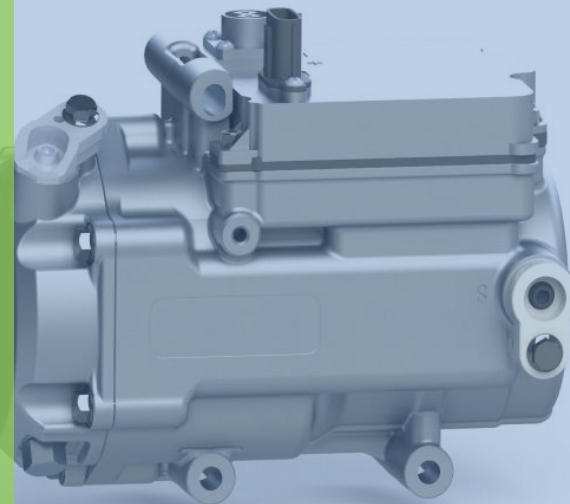


E-compressor for EVs

Stationing in Dyne for 2 years , e-compressor expert and veteran from Denso helped establish our own e-comp. R&D team .

Up to now , we have paved all the way for its final launch into mass production by achieving from picking up right models , early-stage research ,standard creation, engineering & design , supply chain introduction to business planning .

And the veil is about to be uncovered.





Agriculture machinery

雷沃重工 LOVOL
东风农机 DONGFENG
沃得集团 WORLD
中联重机 ZOOMLION



Construction machinery

徐州徐工	XCMG
厦门厦工	XGMA
上海龙工	LONKING
三一重工	SANY
山东临工	SDLG



Commercial vehicles

中国一汽	FAW
北汽福田	FOTON
中国重汽	SINO TRUCK
扬州江淮	JAC
山东五征	WUZHENG
东风商用车	DONGFENG
四川现代	HYUNDAI
四川南骏	CNJ
华菱重卡	CAMC

Passenger vehicles

Our range of comp. choice covers almost all the mainstream car brands and models globally in the aftermarket .

our fully fledged R&D team is capable of designing and developing various kinds of compressors meeting diverse needs of our customers as per local climatic conditions.





PART 4

Dyne
value & mission



A background image showing two business people in suits shaking hands. The image is split vertically: the left side shows a person in a blue suit, and the right side shows a person in a dark suit. The central part of the image is a solid blue rectangle containing white text.

Value & mission

Bearing in mind the ultimate mission of “Driving the evolution of auto AC system with Dyne’ s micro but solid power” , as “DYNE” itself originally represents in the physical world , we will invariably be humbled and motivated to be fully committed to creating values for our customers all over the world by offering quality products and climatic solutions .

Being a genuine and trustworthy auto ac compressor supplier is something we are always proud to pursue and achieve .



THANKS

DYNE达因