

High Efficiency, energy-saving and convenient maintenance:

- Asynchronous screw air compressor, its main engine and motor are connected directly, central bracket, belt, belt sheave are not needed, the transmission ratio is 100% the efficiency is increased by 2-8% compared to the asynchronous motor with the same specifications. The electric motor has no bearing or oil seal, thus the fault points of motor bearing is eliminated, cost is saved and the daily maintenance is reduced.
- Simple structure, small volume and light weight:
- The volume of elements of the main engine of synchronous screw air compressor is 1/2 smaller than that of general three-phase motor, while the weight is 1/3 lighter. The structure of the whole machine is simple, its volume is small, the design is reasonable, and the size of the appearance is obviously reduced, thus increasing the space utilization rate.



Technical parameters of asynchronous screw air compressor

TYPE		MAAMT 7.5A	MAAMT 10A	MAAMT 15A	MAAMT 20A	MAPMT 7.5A	MAPMT 10A	MAPMT 15A	MAPMT 20A
MOTOR POWER	KW	5.5	7.5	11	15	5.5	7.5	11	15
AIR DISPLACEMENT/ EXHAUST PRESSURE	(m3/min) / MPA	0.9/0.7	1.2/0.7	1.65/0.7	2.55/0.7	0.9/0.7	1.2/0.7	1.65/0.7	2.55/0.7
		0.8/0.8	1.1/0.8	1.53/0.8	2.25/0.8	0.8/0.8	1.1/0.8	1.53/0.8	2.25/0.8
		0.69/1.0	0.95/1.0	1.32/1.0	1.82/1.0	0.69/1.0	0.95/1.0	1.32/1.0	1.82/1.0
		0.6/1.25	0.8/1.25	1.1/1.25	1.55/1.25	0.6/1.25	0.8/1.25	1.1/1.25	1.55/1.25
COOLING MODE		Air cooled	Air cooled	Air cooled	Air cooled	Air cooled	Air cooled	Air cooled	Air cooled
DRIVE MODE		Directly Connected	Directly Connected	Directly Connected	Directly Connected	Directly Connected	Directly Connected	Directly Connected	Directly Connected
STARTING MODE		Direct	Direct/Y-Δ	Y-Δ	Y-Δ	Soft Start	Soft Start	Soft Start	Soft Start
LengthxWidthxHeight (mm)	L	1535	1535	1535	1535	1535	1535	1535	1535
	W	600	600	700	700	600	600	700	700
	H	1450	1450	1585	1585	1450	1450	1585	1585
Net Weight	Kg	290	300	340	350	300	310	355	365
Noise	d B(A)	62±2	62±2	62±2	62±2	62±2	62±2	62±2	62±2
Diameter of Outlet Pipe		G3/4"	G3/4"	G3/4"	G3/4"	G3/4"	G3/4"	G3/4"	G3/4"
Tank Volume (m3)		0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

TYPE		MAAM 7.5A	MAAM 10A	MAAM 15A	MAAM 20A	MAAM 25A	MAAM 30A	MAAM 40A	MAAM 50A	MAAM 60A	MAAM 75A	MAAM 100A	MAAM 150A	MAAM 175A
MOTOR POWER	KW	5.5	7.5	11	15	18.5	22	30	37	45	55	75	110	132
DISPLACEMENT/ DISCHARGE PRESSURE	(m3/min) /MPA	0.9/0.7	1.2/0.7	1.65/0.7	2.55/0.7	3.22/0.7	3.6/0.7	5.2/0.7	6.58/0.7	7.36/0.7	10.8/0.7	13.5/0.7	21.6/0.7	25.2/0.7
		0.8/0.8	1.1/0.8	1.53/0.8	2.25/0.8	3.01/0.8	3.56/0.8	5.06/0.8	6.26/0.8	7.1/0.8	10.1/0.8	12.7/0.8	20.1/0.8	24/0.8
		0.69/1.0	0.95/1.0	1.32/1.0	1.82/1.0	2.52/1.0	3.07/1.0	4.53/1.0	5.8/1.0	6.47/1.0	8.5/1.0	11.3/1.0	17.5/1.0	21/1.0
		0.6/1.2	0.8/1.2	1.1/1.2	1.55/1.2	2.3/1.2	2.84/1.2	3.9/1.2	5.06/1.2	5.8/1.2	7.69/1.2	10/1.2	16/1.2	18.3/1.2
COOLING MODE		Air cooling												
DRIVE MODE		Direct Drive												
STARTING MODE		Direct	Direct	Y-Δ	Y-Δ	Y-Δ	Y-Δ	Y-Δ	Y-Δ	Y-Δ	Y-Δ	Y-Δ	Y-Δ	Y-Δ
LxWxH (mm)	L	840	840	910	910	1000	1000	1100	1150	1150	1600	1600	2000	2000
	W	600	600	700	700	750	750	900	950	950	1200	1200	1550	1550
	H	880	880	1000	1000	1090	1090	1360	1350	1350	1580	1580	2000	2000
Net Weight	Kg	185	205	245	255	370	390	580	630	630	1350	1450	2200	2300
Noise	dB(A)	60±2	60±2	60±2	60±2	62±2	62±2	62±2	62±2	62±2	65±2	65±2	68±2	68±2
Air Outlet Pipe Diameter		G3/4"	G3/4"	G3/4"	G3/4"	G11/4"	G11/4"	G11/4"	G11/2"	G11/2"	G2"	G2"	DN65	DN65



Permanent Magnet Synchronous One-Piece Air End

HIGHLY-EFFICIENT PERMANENT MAGNET SYNCHRONOUS MOTOR

- High temperature resistance rare earth permanent magnet is adopted to ensure no demagnetization
- The motor has high power factor, small power dissipation, and efficiency higher than ordinary motor by 5-8%
- Frequency application scope (0Hz- 200Hz) is wide, and motor efficiency under different load is constant
- The motor has big torque, strong adaptability and loaded start up
- The motor has strong follow-up ability

REDUCING TOTAL OPERATION COST OF AIR COMPRESSOR

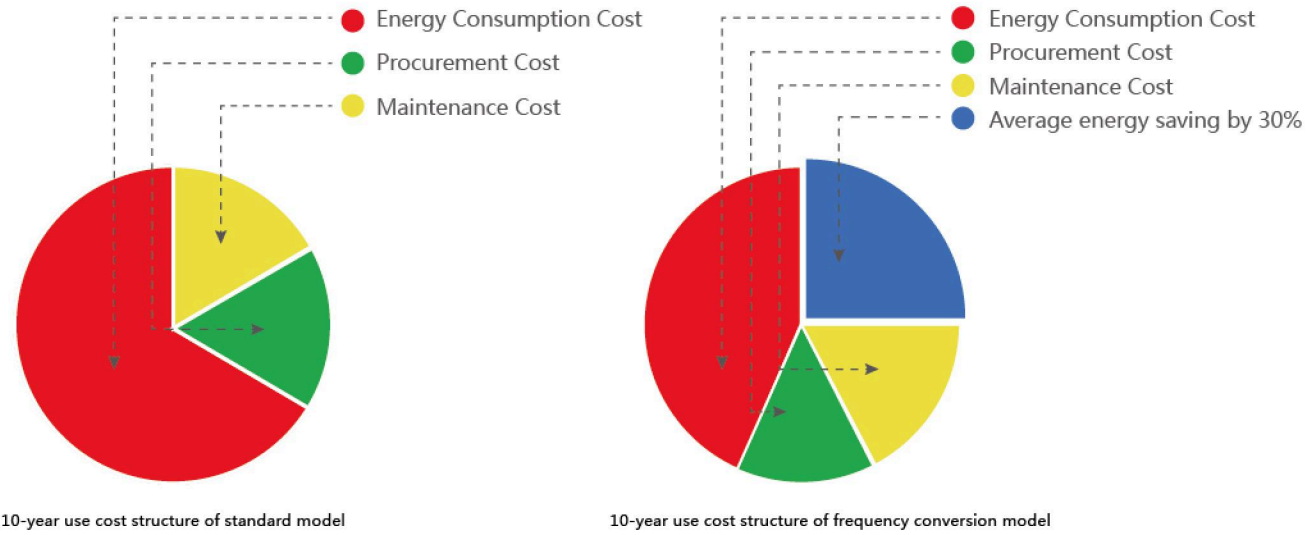
- The total cost consists of procurement, maintenance and energy cost in the life cycle of air compressor. The energy cost accounts for a considerable proportion. Energy consumption can be lowered by frequency conversion control system, thereby significantly reducing total cost of air compressor

SYNCHRONOUS DESIGN:

- When screw machine is stably operated, rotor rotation speed and power grid frequency are constant without slip ratio. If the frequency of the power grid is kept constant, rotation speed of synchronous motor during steady state is a constant without relation to load

Technical Parameters of permanent magnet synchronous one-piece screw air compressor

TYPE		MAPM 7.5A	MAPM 10A	MAPM 15A	MAPM 20A	MAPM 25A	MAPM 30A	MAPM 40A	MAPM 50A	MAPM 60A	MAPM 75A	MAPM 100A	MAPM 150A	MAPM 175A
MOTORPOWER	KW	5.5	7.5	11	15	18.5	22	30	37	45	55	75	110	132
DISPLACEMENT/ DISCHARGE PRESSURE	(m3/min) / MPA	0.84/0.7	1.12/0.7	1.72/0.7	2.28/0.7	2.92/0.7	3.6/0.7	5.17/0.7	6.85/0.7	8.20/0.7	10.67/0.7	13.71/0.7	20.22/0.7	24.72/0.7
		0.79/0.8	1.05/0.8	1.61/0.8	2.13/0.8	2.73/0.8	3.36/0.8	4.83/0.8	6.41/0.8	7.67/0.8	9.98/0.8	12.81/0.8	18.90/0.8	23.10/0.8
		0.69/1.0	0.92/1.0	1.41/1.0	1.87/1.0	2.39/1.0	2.95/1.0	4.24/1.0	5.62/1.0	6.72/1.0	8.75/1.0	11.24/1.0	16.58/1.0	20.26/1.0
		0.63/1.25	0.84/1.25	1.29/1.25	1.71/1.25	2.18/1.25	2.69/1.25	3.86/1.25	5.12/1.2	6.13/1.25	7.98/1.25	10.25/1.25	15.12/1.25	18.48/1.25
COOLING MODE		Air cooling												
DRIVE MODE		Direct Connection												
STARTING MODE		Soft Start												
LxWxH (mm)	L	840	840	910	910	1000	1000	1100	1150	1150	1570	1570	2200	2200
	W	600	600	700	700	750	750	900	950	950	1200	1200	1550	1550
	H	850	850	1000	1000	1150	1150	1300	1360	1360	1500	1500	2000	2000
Net Weight	Kg	195	215	260	270	385	405	600	650	680	1350	1380	2250	2350
Noise	dB(A)	62 ± 2	62 ± 2	63 ± 2	63 ± 2	63 ± 2	65 ± 2	65 ± 2	65 ± 2	68 ± 2	72 ± 2	72 ± 2	75 ± 2	75 ± 2
Outlet Pipe Diameter		G3/4"	G3/4"	G3/4"	G3/4"	G11/4"	G11/4"	G11/4"	G11/2"	G11/2"	G2"	G2"	DN65	DN65











10-year use cost structure of standard model

10-year use cost structure of frequency conversion model

SRS5-80G






- Features:
- Air/ Energy Efficient
 - Space Utility
 - Ensure proper maintenance intervals
 - Ease of Maintenance
 - Minimal noise pollution
 - Low RPM to minimise wear and tear
 - Double voltage design (230V / 460V)
 - F Class Insulation

MODEL	HP/KW	RPM	TANK L/GAL	AIR DELIVERY L/MIN CFM	PRESSURE PSI/BAR	N.W Kg/Lbs	PACKAGING L x W x H
							 unit mm
SRS5-80G	5/3.7	1320	300/80	425/15	175/12	275/607	1000x737x1867
SRS10-120G	10/7.5	1975	450/120	680/24	188/13	350/772	1054x775x1968











MRS55-300H

MODEL	HP/KW	RPM	TANK L/GAL	AIR DELIVERY L/MIN CFM	PRESSURE PSI/BAR	N.W Kg/Lbs	PACKAGING L x W x H
							 unit mm
MRS55-300H	5.5/4	1690	300/80	501/17.7	145/10	268/590	1760x590x1350



MRS100-400H

MODEL	HP/KW	RPM	TANK L/GAL	AIR DELIVERY L/MIN CFM	PRESSURE PSI/BAR	N.W Kg/Lbs	PACKAGING L x W x H
							 unit mm
MRS100-400H	10/7.5	3200	400/105	950/33.5	145/10	320/705	1980x670x1380



MRS150-400H









MODEL	HP/KW	RPM	TANK L/GAL	AIR DELIVERY L/MIN CFM	PRESSURE PSI/BAR	N.W Kg/Lbs	PACKAGING L x W x H
							 unit mm
MRS150-400H	15/11	2480	400/105	1450/51.2	145/10	410/904	1980x670x1380









MIRS100-80G



MIRS100-300H



MODEL	HP/KW	RPM	TANK L/GAL	AIR DELIVERY L/MIN CFM	PRESSURE PSI/BAR	N.W Kg/Lbs	PACKAGING L x W x H
							 unit mm
MIRS100-80G	10/7.5	3584	300/80	821/29	175/10	380/838	1100x690x1920

MODEL	HP/KW	RPM	TANK L/GAL	AIR DELIVERY L/MIN CFM	PRESSURE PSI/BAR	N.W Kg/Lbs	PACKAGING L x W x H
							 unit mm
MIRS100-300H	10/7.5	3584	300/80	821/29	175/12	370/816	1700x600x1250

Direct Drive Screw compressor fixed speed

Characteristics of belt driven

- 1.The machine has simple structure, can be applied to the transmission occasions with large center distance of two axes.
- 2.Smooth and noise-free transmission, buffering and vibration absorption.
- 3.When the machine is over loading, the belt will slip on the belt pulley to prevent the damage of the weak parts, it plays a security role.
- 4.The accuracy of transmission ratio is slightly worse.



Tri-Unity Heavy Load Screw Air Compressor
Technical Parameter(Belt Driven)

Model	Power Kw	Exhaust Volume m³/min	Pressure Mpa	Dimension(L*W*H) mm	Weight (kg)	Noise Level	Air Outlet Pipe Diameter
MA-10A	7.5kw	1.2	0.7	800 × 720 × 950	250kg	64 ± 2	G1½"
		1.1	0.8				
		0.9	1.0				
		0.75	1.2				
		0.65	1.3				
MA-15A	11kw	1.65	0.7	980 × 800 × 1190	350kg	66 ± 2	G¾"
		1.5	0.8				
		1.3	1.0				
		1.1	1.2				
		1.0	1.3				
MA-20A	15kw	2.5	0.7	980 × 800 × 1190	400kg	67 ± 2	G¾"
		2.3	0.8				
		2.1	1.0				
		1.9	1.2				
		1.7	1.3				
MA-25A	18.5kw	3.2	0.7	1150 × 880 × 1300	550kg	69 ± 2	G1"
		3.0	0.8				
		2.7	1.0				
		2.4	1.2				
		2.1	1.3				

*Welcome to negotiate other exhaust pressure, (max 15bar)equipment.
*We will constantly ameliorate the product and keep the alteration right, we will not additionally inform you, if the parameter is changed.

Tri-Unity Heavy Load Screw Air Compressor
Technical Parameter(Belt Driven)

Model	Power Kw	Exhaust Volume m³/min	Pressure Mpa	Dimension(L*W*H) mm	Weight (kg)	Noise Level	Air Outlet Pipe Diameter
MA-30A	22kw	3.8	0.7	1150 × 880 × 1300	600kg	69 ± 2	G1"
		3.6	0.8				
		3.2	1.0				
		2.7	1.2				
		2.3	1.3				
MA-40A	30kw	5.3	0.7	1150 × 880 × 1300	650kg	71 ± 2	G1"
		5.0	0.8				
		4.5	1.0				
		4.0	1.2				
		3.6	1.3				
MA-50A	37kw	6.8	0.7	1300 × 960 × 1420	800kg	72 ± 2	G1½"
		6.2	0.8				
		5.6	1.0				
		5.0	1.2				
		4.5	1.3				
MA-60A	45kw	7.4	0.7	1300 × 960 × 1580	900kg	73 ± 2	G1½"
		7.0	0.8				
		6.2	1.0				
		5.6	1.2				
		5.0	1.3				
MA-75A	55kw	10.0	0.7	1600 × 1170 × 1580	1300kg	74 ± 2	G1½"
		9.2	0.8				
		8.5	1.0				
		7.6	1.2				
		6.9	1.3				



Direct driven screw air compressor

Direct driven
The best transmission mode
of air compressor

Characteristics of direct driven

1. Easy to install, operate and maintain, anti oil pollution and corrosion.
2. Compact structure, high transmission efficiency, can improve efficiency and save energy.
3. Ensure accurate transmission, the damping vibration isolating characteristic can effectively eliminate the vibration and impact caused by the air end.
4. The production cost is higher than the belt transmission.



1. Efficiency

The efficiency of direct driven and gear driven reach up to 98%-99%, the efficiency of belt driven is 94%-98%

2. No-load Power Consumption

For gear transmission, the no-load pressure is generally maintained at more than 2.5bar, some even up to 4bar, to ensure the lubrication of the gear box. In the case of direct driven and belt driven, the no-load pressure can theoretically be 0, because the oil sucked in by the rotor is sufficient to lubricate the rotor and bearing. For general safety, the pressure is maintained at 0.5 bar. For example, the 160kw geared air compressor operates for 8,000 hours per year, of which 15% (it means 1200 hours) is no-load. This machine will consume 28800kwh more electricity each year than the same power air compressor of direct driven or belt driven. (Suppose the no-load pressure difference between two machines is 2 bar, about 15% difference in energy consumption.). In the long run, it will cost a lot.

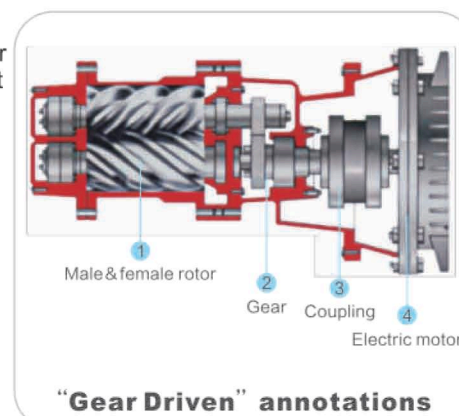
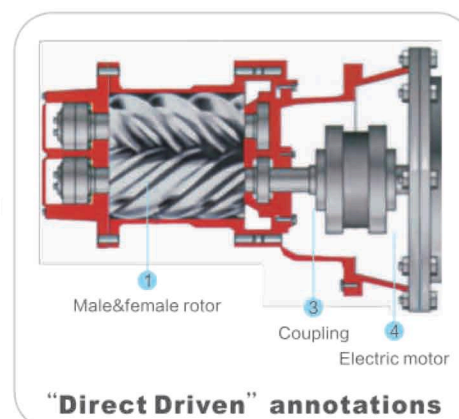
3. Installed air compressor pressure change

Customers want to change the pressure of air compressor due to actual air consumption requirement changes. It is difficult for gear driven air compressor to change the pressure. However, it only need to change pulley and belt in belt driven air compressor and also quite easy in direct driven air compressor.

4. Maintenance and repair cost

The screw air compressor all use a seal which needs replace when it use for a long time. If you want to change the seal in gear driven air compressor, you have to separate motor and coupling. It will cost you a lot of time and energy. However, it is very convenient to direct and belt driven air compressor to change the seal, you only need change the coupling and pulley. When the motor or rotor bearing is damaged, it will often damage the important parts directly or indirectly in gear driven air compressor. For the direct and belt driven air compressor there is no such situation.

Form above analysis of performance, efficiency, price and user operation cost, direct driven is the best transmission model of air compressor



Tri-Unity fully integrated variable frequency air compressor

High efficiency and low electricity consumption

Let more users feel the joy of saving electricity

1. Advanced JF variable frequency air compressor
2. Only a single point of electrical connection is required
3. No energy loss
4. Connect with variable frequency motor, high efficiency and long service life
5. Variable frequency air compressor providing Frequency Starting and Star Delta Starting



High efficiency and low electricity consumption

With the variable speed control technology, the exhaust volume of our air compressor can perfectly combine with gas consumption to avoid the loss of the power of unloading. In the state of using gas intermittently, peak current and torque are avoided by zero load through soft start. Therefore, the machine can be unlimited start and stop. Achieving 0-100% infinitely variable speed, maximum control loss of useless work. It saves 14% of the energy directly because the machine has 2 bar less pressure. 7% energy loss can be saved for every 1 bar of working pressure reduced.

Set the pressure randomly, keep the air compressor with constant supply pressure

Meet user's requirement to set the pressure at the range of 3~14 bar, and don't need to change gear or belt. (Note: please make sure the highest pressure value before you buy the compressor.) Under the setting pressure, the machine will always maintain a constant pressure supplying gas and keep 0.2 bar differential pressure. When the gas consumption increases, the air compressor can increase the rotor speed to meet the increased gas volume. Ensure constant pressure air supply by no pressure dropping. When the gas consumption decreases, the air compressor can slow down the rotor speed to control the excess part of the gas production. Ensure constant pressure air supply by no pressure rising.

Tri-Unity variable frequency compressor has significant effect on saving electrical energy



- ▶ Running Display
- ▶ Pressure Display
- ▶ Voltage Display
- ▶ Rotor Speed Display
- ▶ Frequency Display
- ▶ Power Display

Advanced remote control function

Our air compressor adopts advanced controlling, supervisory and telecommunication system, users can easily get technology assistance from supplier on the Internet from all over the world.

More reliable

Frequency soft start avoids electrical and mechanical impact. Exemption of harmful factors from long time high speed running. Exemption of the 2 bar high pressure and reducing the rate of system leakage.

Energy saving, environment protection and running immediately

Tri-Unity variable frequency air compressor we recommend required no special foundation installation, it has a low speeding axial flow fan and modern vibration isolation and noise reduction measures, which make the lowest noise when the compressor is working. Thus, it is convenient for users to place the production site. Only if the machines arrive and the pipes are connected well, it can run immediately.

TU heavy load screw air compressor technical parameter (direct driven)

Chart 01

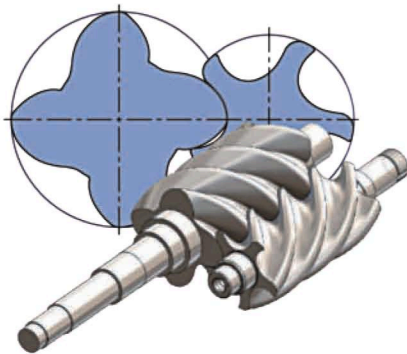
Model	Power Kw	Exhaust Volume m³/min	Pressure Mpa	Dimension(L*W*H)	Weight (kg)	Speed	Noise Level	Air Outlet Pipe Diameter
MAPM-10A	7.5	1.2	0.7	1000 × 700 × 830	210	1470	65 ± 2	G 1½"
		1.1	0.8					
MAPM-15A	11	1.8	0.7	1050 × 750 × 1000	380	2920	67 ± 2	G ¾"
		1.7	0.8					
MAPM-20A	15	2.4	0.7	1050 × 750 × 1000	400	2920	67 ± 2	G ¾"
		2.3	0.8					
		1.8	1.0					
		1.7	1.2					
MAPM-25A	18.5	3.2	0.7	1380 × 850 × 1160	510	2940	69 ± 2	G 1"
		3.0	0.8					
		2.6	1.0					
		2.5	1.2					
MAPM-30A	22	3.8	0.7	1380 × 850 × 1160	520	2940	70 ± 2	G 1"
		3.6	0.8					
		3.1	1.0					
		2.9	1.2					
MAPM-40A	30	5.2	0.7	1380 × 850 × 1160	610	2950	72 ± 2	G 1"
		5.0	0.8					
		4.2	1.0					
		4.0	1.2					
MAPM-50A	37	6.7	0.7	1500 × 1000 × 1320	750	2950	72 ± 2	G 1½"
		6.2	0.8					
		5.2	1.0					
		5.0	1.2					
MAPM-60A	45	7.4	0.7	1500 × 1000 × 1320	760	2950	74 ± 2	G 1½"
		7.0	0.8					
		6.3	1.0					
		6.0	1.2					
MAPM-75A	55	10.0	0.7	1800 × 1250 × 1670	1200	2970	76 ± 2	G 2"
		9.6	0.8					
		8.0	1.0					
		7.6	1.2					
MAPM-100A	75	13.0	0.7	1800 × 1250 × 1670	1350	2970	76 ± 2	G 2"
		12.6	0.8					
		11.0	1.0					
		10.5	1.2					

Principle of vector frequency conversion control technology

TU variable frequency air compressors have applied the vector control technology to run smoothly under appropriate torque in an extremely wide range of speed to ensure that the motor temperature in the minimum conditions.

The technology of vector control separates the stator current containing excitation and torque, and controls them respectively. And then it combines the vectors and converts to control signal parameter for effective control of electromagnetic torque.

Motor temperature can be controlled even low speed revolution caused current control. This high-efficiency conversion technology minimizes the noise and harmful harmonics that are inevitable in conventional inverters. Using a new generation of authoritative vector inverter control to convert DC to AC, improve high temperature resistance, have higher conversion efficiency, save energy, and improve reliability.



The first energy saving of inverter compressor

Variable flow, avoid the waste of loading and unloading control

Variable frequency compressor with its speed changing control technology which perfectly meet customer requirement. Not only reduces the high-loaded running current, but also avoids the waste of energy by 45% in unloading.

The second energy saving of inverter compressor

Maintain the pressure and supply the air, avoiding the waste of pressure gap by 2 bar

Variable frequency compressor maintains the pressure at 6 bar and supply the air constantly, not only ensure the stable air supply pressure but also avoids the high-load current waste caused by 2 bar pressure gap.

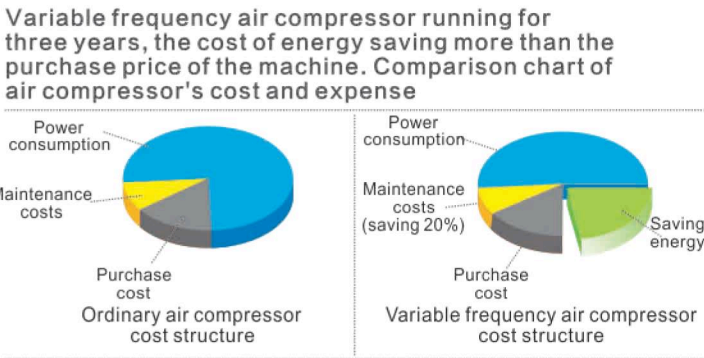
An example of power saving calculation

For example, a common 37KW screw air compressor, average gas production accounted for 70% of the rated exhaust gas. It runs 8000 hours, 0. 7 RMB/kw • h, it consumes more power than the variable frequency air compressor:

A. No-load power consumption:30% idle time*no load current loss caused by unloading(45%*37kw/hour)*8000 hours/year*0. 7 RMB/kw • h=28000 RMB/year.

B.Differential pressure power consumption:70% loading time*the loss caused by the pressure difference of 2 bat(14%*37kw/hour)*8000 hours/year*0. 7 RMB/kw • h=20300 RMB/year.

A No-load power consumption +B Differential pressure power consumption = 48300 RMB/year.



The average load of running 8000 hours a year is 70%. The direct results of power saving is:

Power	15KW	22KW	37KW	55KW	75KW	90KW	110KW	250KW
Saving energy (RMB/year)	19600	28600	48300	71700	97800	11700	143500	326000

So if you choose to use variable frequency air compressor, it running for three years, the cost of energy saving more than the purchase price of the machine.