



# Chang An Motor Co., Ltd. Taiwan

Chang An aims for environmental protection  
works toward Sustainable development



power is generated by magnetic field,  
our motor never burn and can last at least 20 years

World's best motor promise, Since 1974



cover: Chang An factory

Chang An motor is recognized worldwide. Our design has certification D-04-31-1040001 and A-11-10-1080001

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# Chang An Synchronous Motor - 7 promises

Magnetic field generates electricity, a revolutionary design that improves safety, which last for 20 years.

**shipping**

Best motor in the world. Free samples can be provided to confirm the quality (shipping cost is excluded). L/C at sight.

**warranty**

10 years of warranty under normal industrial condition, proper use can last for 20 years. Indirect transmission to avoid damage.

**investment**






To ensure your investment, we provide discount if proving our motor is more expensive than the other motor with same quality.

**patent**

Invention patent 1433434, safety patent (Taiwan)193111, (China) 4330019.

**moral**

We trust our customers and maintain good relationship with them. Most of our customers are life-long partners.

motor code (differ by wire color)	<div><div>#6007</div><div><div></div><div></div><div></div></div></div>	<div><div>#5007</div><div><div></div><div></div><div></div></div></div>	<div><div>#4208</div><div><div></div><div></div><div></div></div></div>	<div><div>#3809</div><div><div></div><div></div><div></div></div></div>	<div><div>#1415</div><div><div></div><div></div><div></div></div></div>	<div><div>#9016</div><div><div></div><div></div><div></div></div></div>																																																	
	power wire: Black CW/CCW rotation wire: Green, Yellow	power wire: Black CW/CCW rotation wire: Orange, Blue	power wire: Black CW/CCW rotation wire: Brown, Purple	power wire: Black CW/CCW rotation wire: Grey, White	power wire: Red CW/CCW rotation wire: White, Green   White, Brown																																																		
6 types of motor serve different function	<div>#6007 / 3W 110V:38°C 1~3 RPM 220V:37°C</div> <div></div>	<div>#5007 / 3.5W 110V:48°C 3~10 RPM 220V:45°C</div> <div></div>	<div>#4208 / 4W 110V:52°C 6~60 RPM 220V:51°C</div> <div></div>	<div>#3809 / 4W 110V:56°C 6~200 RPM 220V:55°C</div> <div></div>	<div>#1415 / 9W 1~4 RPM 24V:40°C</div> <div></div>	<div>#9016 / 12W 10~200 RPM 24V:51°C</div>																																																	
low speed⇔high torque fast speed⇔low torque  our motor has high torque with low damage	test is conduct at 20 celsius degree																																																						
Allowable voltage	110V-15%=93.5V ~ 110V+15%=126.5V / 220V-15%=187V ~ 220V+10%=242V					24V-6%=22.56V ~ 24V+6%=25.44V																																																	
motor features, functions and associated industry	long-term continuous operating industries e.g. rotating monitor scanner.	house appliance, automation industries	high-torque low temp. humid environment industries e.g. gaming industry, electric valves, and voltage regulators.	higher-torque which is limited to intermittent operation industry	inflammable, oil pipes, etc.																																																		
strength of ChangAn motor: 1. strong power 2. multi-function 3. long lifespan	operate under low temperature, low current, and low pulse to extent service life.	function of #5007 is in between #4208 and #6007	twice the torque of #6007, generate high torque with high temp. & current.	thicker wire, best torque; temp. is 3°C higher than other motor types.	safter than DC motor. The function of #9016 is the same as #1415, differ in voltage.																																																		
	A. speed determined by rated frequency 60/50Hz (frequency controls speed ) B. voltage controls torque C. phase electronics control: forward/backward rotation, commutation rotation, or step rotation may all be programmed. D. magnetic induction electricity generation: phase electronics control, sharp switching of forward/backward rotation, high accuracy in reaching starting speed. E. award for reduction carbon emissions.																																																						
RPM	<table><tr><td></td><td colspan="13">RPM</td></tr><tr><td>HZ60</td><td>1.0</td><td>2.0</td><td>3.0</td><td>4.0</td><td>6.0</td><td>10.0</td><td>15.0</td><td>20.0</td><td>30.0</td><td>60.0</td><td>100.0</td><td>150.0</td><td>200.0</td></tr><tr><td>HZ50</td><td>0.83</td><td>1.66</td><td>2.5</td><td>3.33</td><td>5.0</td><td>8.33</td><td>12.5</td><td>16.6</td><td>25.0</td><td>50.0</td><td>83.3</td><td>125.0</td><td>166.0</td></tr></table>														RPM													HZ60	1.0	2.0	3.0	4.0	6.0	10.0	15.0	20.0	30.0	60.0	100.0	150.0	200.0	HZ50	0.83	1.66	2.5	3.33	5.0	8.33	12.5	16.6	25.0	50.0	83.3	125.0	166.0
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HZ50	0.83	1.66	2.5	3.33	5.0	8.33	12.5	16.6	25.0	50.0	83.3	125.0	166.0																																										
Materials	<ul style="list-style-type: none"><li>• <b>Gear:</b> uses stell step pulleys, precision maching for knurling inside of inner and outer holes all by gear rolling, gear damage test tolerance is up to 300kg</li><li>• <b>Magnet:</b> high-precision magnets from Japan with anti-aging and high-temperature resistance treatment to keep the magnet materials stable and magnetic force semi-permanent. (magnetic filed induction)</li><li>• <b>Coils:</b> world's best German Elekrisola enamel wire, of which finished products have voltage tolerance 2500V/sec by CE standards. 180°C temp. tolerance.</li></ul>																																																						

## Pros and Cons comparison of Chang An AC synchronous motors vs. DC motors

ChangAn motor can run 24 hrs even with 220voltage.

characteristics	ChangAn AC synchronous motor	DC motor
control scheme	Automatic forward/backward rotation, commutation rotation, one-way rotation, gradually forward/backward. Does not rotate backward due to resistance. Speed frequency control, running integer point, magnetic brake control.	one backward rotation for each forward rotation; unable to have automatic forward/backward rotation or step rotation. speed decreases as torque increases, and the decreasing speed causes the current to increase and more heat dissipation.
speed variation	Rated frequency determines speed and thus speed is not affected by voltage. Voltage determines torque.	speed determined by voltage and unstable; drifts easily like electric fans; fast at 1st gear and slow at 2nd gear.
rpm1~200 run the integer point	Low start speed (16P 450rpm) reduced by gears to 1rpm~200rpm. Run integers. High start torque (before gears) 1rpm: 85~150kg, 200rpm: 2.2kg.	high start speed about 3600rpm and requires multiple gears to reduce speed; poor efficiency, large noise, failures often. low start toque (before gears)
current consumption/ transformer / rectifier	Low current consumption and magnetic induction electricity generation; does not require adaptor or rectifier.	high current consumption and requires transformers and rectifiers.
brake	High accuracy in reaching starting speed; magnetic field controls stop/brake (no skidding and shifting)	speed increases from low to high like acceleration in automobiles and brakes skid easily.
structure	Steel gear rolling; precision maching for knurling inside of inner and outer holes; gear can stand 300kg with no cracks or skidding (knurling inside assembly)	carbon brushes wear easily and are not durable
safety	if power is on and motor does not work, it will not get burn neither affect circuit safety. Uses the world's best German Elekrisola enamel wires that have voltage tolerance 2500V/sec by CE standards.	damaged if stuck and rotation is stopped during power on.
lifespan	lifespan is 10 years under normal operation; permanent charging by induction motor.	short lifespan (1 year for normal operation due to worn carbon brushes)

# Sequential and reverse positioning, do not reverse due to resistance, speed frequency, brake magnetic field control

Equipped with semiconductors, it has a wider range of functions and is an intelligent control Synchronous motor.

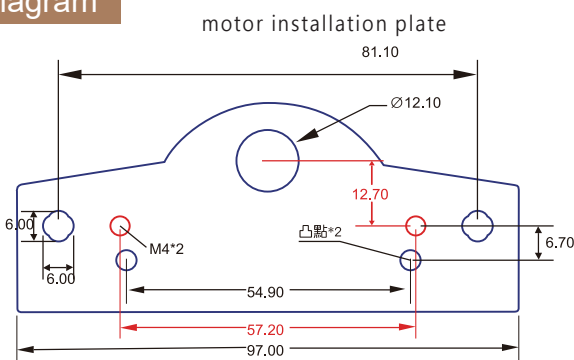
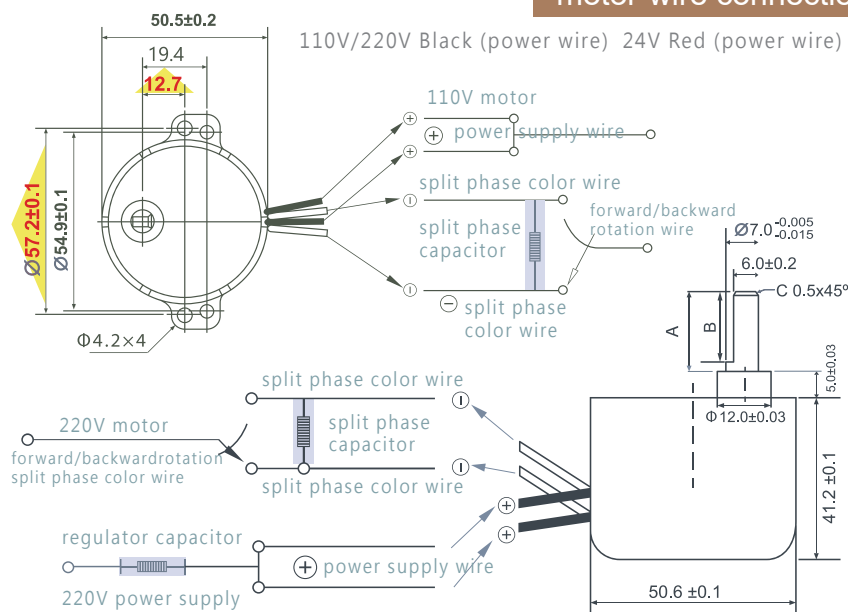
motor and capacitor configuration Patent no. 193111; share 110V & 220V for saving cost and safety

- 110V & 24V only differs by a split phase capacitor, with same wiring and different capacitance.
- 110V and 220V may share motors, where 110V only uses 1 split phase capacitor (220V uses 2)
- 220V and 110V uses same split phase capacitor with an additional regulator capacitor connected in series with the 220V power supply (2 capacitors)

## Motor wiring color & capacitor configuration

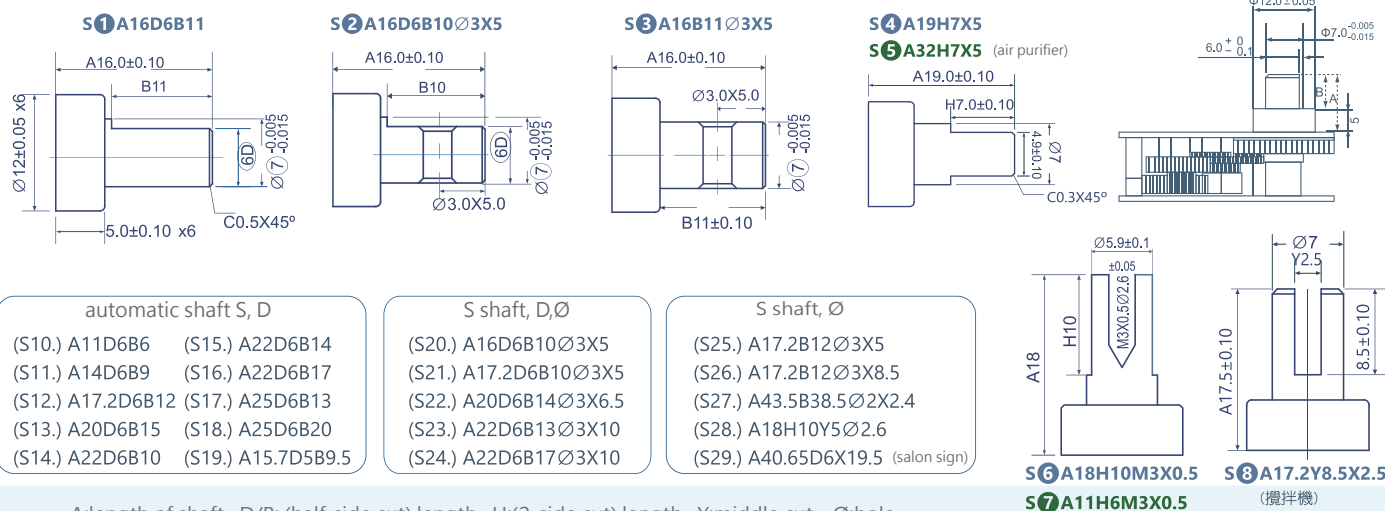
● 110V/220V black (power cable)	#6007 Green, Yellow	(split phase color wire) capacitor 450V (0.22~0.27μ)
	#5007 Orange, Blue	(split phase color wire) capacitor 450V (0.43~0.47μ)
	#4208 Brown, Purple	(split phase color wire) capacitor 450V (0.59~0.62μ)
	#3809 Gray, White	(split phase color wire) capacitor 450V (0.68μ)
● 24V red/white (power cable)	#1415 White, Green	(split phase color wire) capacitor 100V (9μ)
	#9016 White, Gray	(split phase color wire) capacitor 100V (12μ)

## motor-wire connection diagram



- the tolerance of 57.2 and 12.7 must be within 0.10
  - heavy pull, noise, abrasion, and shorten lifespan will occur if not accurate installed
  - shifting will occur if severely (please note abrasion not guarantee)
- small noise is normal
  - cannot load directly on the shaft, shake and abrasion occur if deviation
  - thin iron plate of the machine will cause resonance. noise can be reduced if guide plate is installed.
  - installation plate can be provided with extra charge

## Shaft specification medium-carbon steel after heat treatment with hardness (HRC55±2) grinding tolerance 0.01



A: length of shaft D/B: (half-side cut) length H: (2-side cut) length Y: middle cut Ø: hole

## applied industries

invention patent I433434, frequency control, running integer point, automated industrial welfare (nearly identical with the servo motor)

- A. CCTV
- B. voltage regulator/Stabilizer
- C. game machine/crane machine
- D. Electric valve
- E. laminate machine
- F. Stage lights
- G. Oil-water separator
- H. Electric oil injection machine
- I. food machine
- J. mixer
- K. Air pressure drainage

- L. Feeder
- M. electric display
- N. Oscillating constant temperature water tank
- O. Air bed
- P. barcode printer
- Q. Oxygen concentrator
- R. Coffee machine
- S. Burner
- T. prayer wheel
- U. Hairdressing rotating light
- V. Antenna

- EMAIL
- samples and delivery confirmation
- catalogue
- outputshaft standard chart
- motor torque and temp. chart
- motor & capacitor configuration
- installation notice
- synchronous motor AC vs DC motor
- motor structure
- motor damage test
- safety regulation, patent

- ChangAn factory (1st)
- ChangAn factory (2nd)
- ChangAn garden





## About ChangAn Synchronous motor

inspiration of success; quality worldwide harmless enterprising

perfect automatic-assembly production



長安馬達董事長 張幸進 先生

The four colored wires of the motor rotate from the motor bearings to conduct electricity from the motor's central magnetic field to the colored wires.

The tires are carried by steel plates. When the tires beat while driving, the magnets, electromagnets and pole plates can produce "induction electricity". The principle is the same as our motor. This is the technology of the future, inventing and reforming the welfare of mankind (not a fantasy, the fact is (Hands) Automobiles also innovate magnetic field fuel energy. Non-oil and electricity "Today's oil-producing countries use weapons as weapons to infringe on world peace."

Chang An motor has 20 years lifespan, 3 patents, 2 guarantees, magnetic induction to generate power and not easily get burn. Promise the best motor and ensure customer's investment. Return the world with best quality.

This is a motor of world-class quality that will last for 20 years. The principle of **magnetic field power generation** reform will never burn the motor. High technology is the lifeblood of Taiwan. It revolutionizes the world and innovates technological motors. I am the inventor of this motor. "With the structure of the power industry, there are many defects in rotating products." "It takes several years to achieve innovative quality." Repairs are harmful to customers. It is not a guarantee, so we start with the design to solve the problem: large torque, multiple functions, sturdy and durable materials, more than 20 years old, millions of people running around the world, three patents, Two letters of commitment guarantee that "the safety of the motor lies in the insulation and withstand voltage" and "the longevity lies in the three patented design structures". **With semiconductors, it has wider functions and is an intelligent control motor.**

### Resistance to insulation

Motor safety is stated on the back of the "insulation withstand voltage" quality commitment letter. The test motor is 110V and 220V voltage tested for 100 hours and 5 days. It can be enlarged on the computer. Watch the animation at 139 degrees, dissipate heat up and down the axis to reduce wear and trim the true circle to achieve heat dissipation and prevent noise (principle of washing machine: true circle is silent) to reduce wear. Prolong life, (international safety regulations burn immediately in 1-3 minutes) Chang'an's seven philosophies in business "Doing the right thing will bring peace, morality is eternal" dedicated to the world

### anti-wearing

"Patented design three structures" can resist high temperature and wear, which is the basic life of the motor. It is made of medium carbon steel and has been heat treated, with a hardness (HRC55±2) and a grinding tolerance of 0.01. The motor reduction gear has been running with torque for 20 years. The motor reduction gearbox is almost the same as that of a car. The same is the gear reduction. The torque is large at slow speed and the force is reduced quickly.

1RPM is nearly 500 kilograms. In order to prevent tooth chipping, "slow speed, high torque and rapid force reduction", six types of motors with different wire sizes have been developed and differentiated, ranging from 1 to 200RPM. Industry, creating motors with low wear, high torque and durability (successful research and development has changed the safety of motors and has a longevity of more than 20 years)

### car vs motor

The same is true for gear reduction and engine oil changes after the car has been driven for many kilometers. This will cause noise and loss of power after 3 to 5 years. However, the motor has been running quietly for 10 years and its torque remains as good as new. Credit goes to the successful development of stone grinding oil, which is wear-resistant, pressure-resistant and high-temperature resistant and is absorbed by wool felt. Lubrication "drying and finally turning into stone grinding powder lubrication" does not require wet oil, it is a world-class masterpiece "Chang'an successfully developed it, thanks to the principle of mechanical watches" World-class quality drives the national economy and saves the lifeline of Taiwan's economy. "Bless the world, love Taiwan products."

After experiencing the evolution of life, in 1967, the "invention of the manuscript reading machine" won the second place in the second Design Invention Award. The next year, the "Japanese Patent" was awarded. In 1970, the "Invention of Young's Speed Reading Machine" was also patented. The origin of the business in Chang'an was in 1974 when Chang'an Motor was established. This product is an intelligent automated control industrial motor in 1974. Zhang Xingjin applied for multiple patents from design to invention, from factory design, computer-controlled machines, production molds, processing fool-proof jigs to production levels to the entire factory equipment, motor engineering and business development from catalog design to world exhibitions, all by one person Planning and guidance, he is an extraordinary entrepreneur with "immortal principles". Create a world of happiness and wisdom by creating seven philosophies, cultivating and doing business, "pay for the best motor in the world, get a prize if it wears out, and return the expensive money after completing the purchase." Inventing the founding of the country, this wisdom was awarded Taiwan's invention patent I433434.

In Taiwan, there are more than a thousand video game industries capable of mass production, and most of them use motor supply from Chang An. This is a fact. You will know it as soon as you ask on the phone. (It is even more popular in the industry to dismantle and sell second-hand products if all the machines are broken except the motor.) He also praised quality, environmental protection and saving the earth. At Taiwan's superstar Guangyi Technology Co., Ltd., each order of 10,000 motors has achieved zero defective quality in this 30 years, setting a world record.

Changan Motor has driven the national video game industry. It has been successfully mass-produced and sold domestically for nearly 30 years, which has benefited the country. It has contributed to the country's social economy for 40 years. Changan Motor is known as "Circus Motor" is all-powerful, "Quality World Harmless Business", no customer will not pay and no returns will be made. Reason: Satisfactory quality, customer success is your own success, then Legal issues won't arise either. There is a saying, "Only by doing the right thing can you have peace, and morality is eternal." This is the belief of Chairman Changan.

Inventor 張幸進 先生

for the accuracy of the content, please refer to Chinese version (Mr. Chang)







patent  
I433434

Hosted by Taiwan Foreign Trade, best motor in the world  
Changan participates in the 33rd quality selection, discount apply if proven motor is not the best

There is only one Earth, flaw product shall not produce

Date: 2024.06.21

Zhang Xingjin, representative of Changan Company. Participated in the 33rd Premium Selection "Information with official website photo"

### (1) Research and Development : (selection questions)

Answer: Zhang Xingjin, the inventor of Changan Motor Company, "proposed two inventions to participate in the selection", representing Changan Motor Company's "invention", which is the first product from scratch.

"Phase Motor" - the inventor is Zhang Xingjin. The second of the 7 ideology to learn "purchasing safety" is beyond human ability. It is the only thing in the world given by God.

The automatic control motor is referred to as "phase motor" and has a wider range of functions with semiconductors (announced on the official website of Changan Motor Commitment).

◎The first product to register for the selection: "Phase Motor"

◎Second participation registration: "7 Philosophies, Taoism and Business" to complete the dedication to the world and "Purchase and Seek Safety".

(1) From invention to design, factory setting, and production equipment manufacturing, from molds and fixtures to the use of computer machines to control the production process, "motor is the mother of industry."

(2) Raw materials: Iron plates, steel bars, sintering, copper wire materials, and magnets are all manufactured in Taiwan. Other indirect consumable raw materials are more advanced than the proposed selection items.

(3) Propose the manufacturing of [Five Parts and Components Projects], provide photos of answers in Chinese and English on the website, for non-talented personnel, two photos of manufacturing motors, and three official website announcements (explanation in the attachment).

### (2) Design : (selection questions)

Answer: Zhang Xingjin is an inventor and manufacturer who has completed automated industrial control phase motors (non-power motors). Smart innovative inventions are the progress of mankind. "From the ocean to space, there is no way back home." Explanation: In addition to the original functions, it is also equipped with semiconductors. Extensive, where the "time limit" setting operates.

Principle: (1) Run freely, set forward and reverse, one-way, positioning, or gradual and reverse settings, to shift "wait for time calibration" and cross "wait for setting" functions.

(2) Equipped with semiconductors, the functions are more extensive. Frequency and set frequency, most motors and different rotation speeds are controlled by semiconductors.

### (3) Marketing: (selection questions)

Answer: Changan Motor drives the national video game industry. It is a successful mass production company that has worked overtime for nearly 30 years to benefit the country. It has improved the country's social economy for 40 years and created the world that China is today.

(Smart counterfeiting of the motherland), Chang'an's Seven Philosophy System makes counterfeiting impossible "with nothing to do".

(1) Taiwan is the world's largest manufacturer of video games and has the capacity to mass-produce more than a thousand. Whenever a customer asks which manufacturers use Changan motors, the salesperson can definitely answer, "In Taiwan, you can tell that Changan has delivered goods to all the video game manufacturers." "This is a fact. You will know it as soon as you ask on the phone.

(2) Taiwanese video game superstar Guangyi Technology places orders for 10,000 motors at a time. In 30 years, it ranked first in export sales with 3 million units, achieving "world-class quality" and not a single one of them has to be repaired.

### (4) Selection and registration: Complete the "Seven Philosophies, Cultivation and Business" to contribute to the world and "Purchase safety"

Answer: Chang'an Motor has completed the world's first "Five Philosophies of Doing Business" made in Taiwan. It has completed "Purchasing and Seeking Safety" and has contributed to the world for nearly half a century.

(1) "Confirm the best motor in the world 30 days after shipment" before payment (Sincerely, there is only one in the world for smartly completing "Purchase Enron").

(2) "Rewards for use" are guaranteed for 10 years (normal life span is 20 to 30 years. Human intervention is not allowed. Wear and tear are not covered by the guarantee)

(3) "You can get your money back if you buy it". Compared with the same industry, the price of the same material and quality is 5% higher, and you can return it (the cost of counterfeiting will be waived).

(4) Safety patent: Invention patent No. I433434. 110V uses 220V voltage for 24Hrs to burn to get bonus (international safety regulations will burn in 1-3 minutes).

(5) Product ethics: The only way to save the earth is from love to the world. The 7 guarantees of philosophy in business are "Doing the right thing will bring peace. Morality is eternal."

### (5) Environmental protection issues. Non-existing reforms. Changan is an innovative invention with environmental protection functions.

(1) Changan motor magnetic field power generation will never burn (never waste).

(2) There will be a reward for use. 10-year guarantee. Normally 20 to 30 years. Seven philosophies, there is only one to save the earth, garbage products cannot be produced, and environmental protection is the responsibility of entrepreneurs.

(3) "Only one can save the earth" video game superstar - Guangyi Technology ranks first in exports. Each shipment is 10,000. (None of the 3 million motors have been repaired). Among the same industry

All the machines in Li Shengxing are broken down. Only the Changan motor is still in use. They are dismantling and selling second-hand goods. They have completed "Only One to Save the Earth".

P.S. Please refer to Chinese version for correction.

Chang An Motor inventor: ZhangXinJin



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# Chang An's promise 3 patent and 2 promises

**ChangAn aims to provide our customer the perfect motor**

Insulation and how much voltage the motor can endure affect the safety of the motor

Our Synchronous motor can run with 220V for 100hrs (5 days) and does not get burn (standard voltage is 110V).(international test run is 1~3 min)



our gear structure has invention patent I433434

discount apply if same motor quality cheaper than us

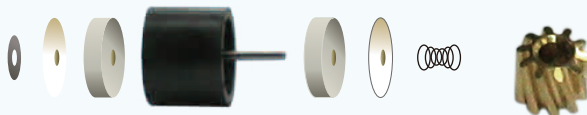


20 yrs lifespan

damage test

**Destructive testing on our "Phase Synchronous Motor"**

test at temp. 139°C and still operates, Heat dissipation to prevent wear and electrical insulation and voltage resistance for safety



**Gear**

elastic material imported from Japan, not regular copper.

**Magnet**

high-precision magnets from Japan with anti-aging and high-temp. resistance treatment to keep the magnet materials stable at least 10 yrs and magnetic force semi-permanent

**Graphite oil**

wearable, pressure resistant, high-temp. resistant.dried, becomes graphite powder lubricant and does not require oil moisture.

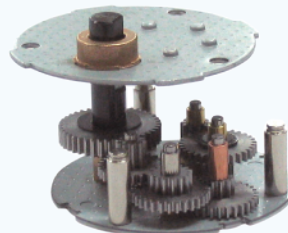
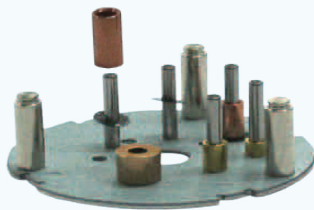
damage test clips

withstand a resistance of 500kg without chipping

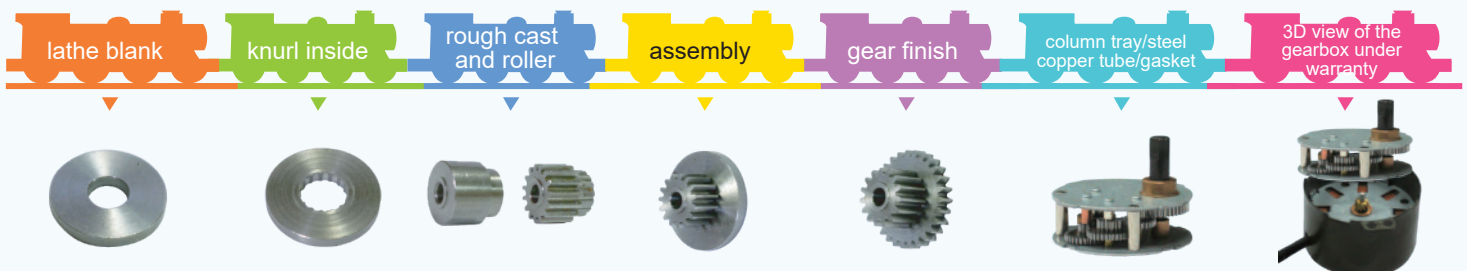


column tray/steel /copper tube/gasket

column tray/steel /copper tube/gasket



gear precision machining schematics; motor uses gear hobbing process; precision machining for knurling inside of inner and outer holes



car vs motor

The safety of the motor lies in the "insulation withstand voltage", and the longevity lies in the three-patented structure, innovative magnetic field power generation, the motor will not break down after 20 years of use, and millions of them are running around the world. compare with car, car needs to change oil after 3 to 5 yrs. However our motor can operate 20 years and still quiet, torque is still strong. wearable, pressure resistant, high-temp. resistant.dried, becomes graphite powder lubricant and does not require oil moisture.