The Technical Manual Of Golden Bridge Vacuum Pump

To ensure the normal working life of vacuum pump as certify your machine's work safety and make the production line run continuously. Please provide this attention information to your technical expert or the end user.

● First, about the pressure and the max pressure

Pressure is the basic parameter. Our vacuum pump is famous of its adv.comparatively high pressure.At present,the pressure of a vacuum pump we can provide is from 7KPA to 73KPA.

When completely closed the air inlet or air outlet, you can get the max vacuum or max pressure. Usually,we don't agree to use unit like this. If it is really necessary,please use pressure relief valve and install correctly to make sure the service life of the pump. Using information of pressure relief valve please kindly refer to the correlative section.

● Second, about the air flow and the max air flow

Air flow is also one of the basic parameters of unit. In this aspect, we have a variety of types. Under the same power, our blower can provide different air flow. Till now, the range of blower air flower is from 47 to 2330m3/h. When completely opened the inlet & outlet, you can get the max air flow.On other occasions besides aeration, you can not get this parameter.

● Third, the relationship between pressure, air flow and using power

Pressure and air flow are complementary, they owes contradictory relations. Concretely speaking, the air flow will be fall as the arise of pressure arise.But the power increases with the increase in pressure.

During choosing the model, firstly choose using pressure along the AIR FLOW-PRESSURE curves,secondly choose out the air flow on the other side,then you will get one intersection point of the two straight lines of using pressure and using air flow. We take this point as the working point, select the vacuum pump corresponding to the curve above the operating point.Choosing pumps by this way can satisfy your working needs.

Usually, all the data marked in the nameplate are the max pressure and air flow that the unit can provide.

However, we always choose unit model through its working pressure and air flow. So please pay attention to the difference. Meanwhile, as the difference of vacuum and pressure for the same model sometimes, you should pay more attention to the relative curves.

The performance curves of pump is tested through below ways.

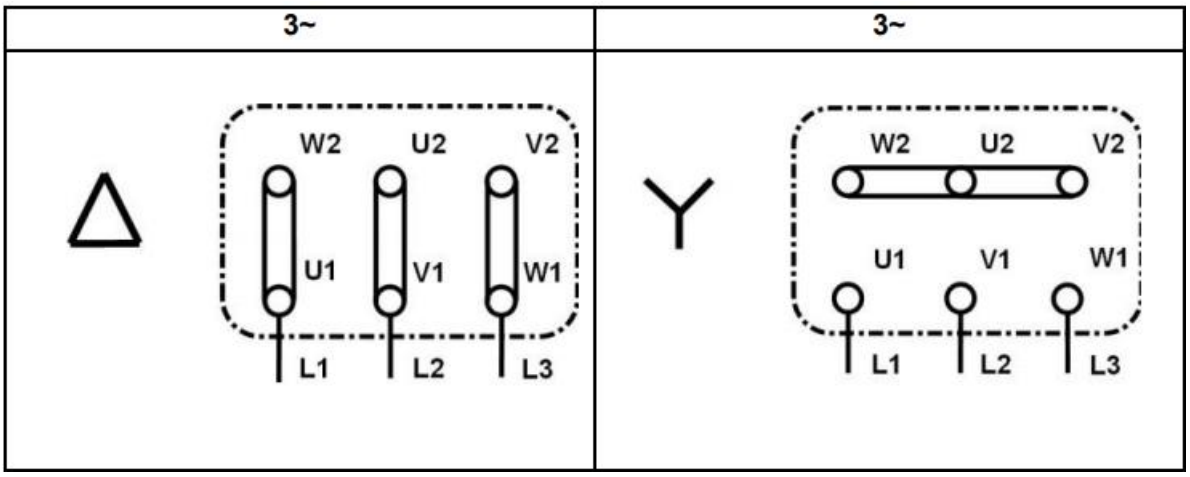
The performance curve of the vacuum pump is measured under the working condition of pumping 15℃ air and standard atmospheric pressure of 1013mbar, allowing 10% difference,and when the sucked air and surroundings temperature are not higher than 25℃, you still can get total pressure difference as the curves shows.

Please pay attention, the air flow and pressure marked on the nameplate is the max pressure and the max air

flow the pump can achieve.

● Four, about the electrical source connection

When you received our vacuum pump, please do the connection as below. The operator should be professional electric technologist who owns related certificate.

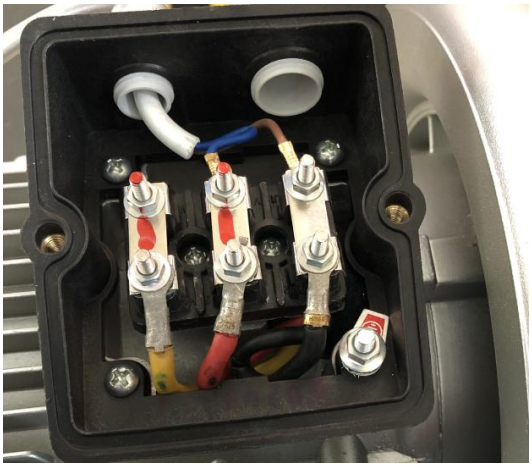


For 3phase vacuum pump:

If it is 380v Y connection when leaving factory, then it can be connected to 220v when converted to Δ connection.
If it is 380v Δ connection when leaving factory,please just use it in 380v.
For other voltage,please consult us to customize.
For 3phase motor,It is recommended to install a motor protector or lack of phase protector to avoid burning due to power supply problems or poor switch contact.

For 1phase vacuum pump:

We drew red marks on the terminal for 1phase vacuum pump when leaving factory, something like follow photo, you can follow the mark to connect:



We strongly suggested that please run the unit according the arrows direction, if not, this may bring some unpredictable trouble.
If reverse is necessary, and the time will not too long, to the 3 phase blower, you can exchange any two electrical source lines' sequence directly.

Before electrical wiring of the vacuum pump, please make sure that the power supply voltage is consistent with the operating voltage of the motor, and the motor terminal connection method is correct. Confirm that the wiring terminal is firmly fixed, confirm that there is no short-circuit phenomenon.Set up an earth wire to prevent an electric leak.(6 screws on socket are isolated needed copper laminations to have a connection.)

The load current of the motor will change with the change of the air pressure used by the vacuum pump. When wiring, an overload protection switch suitable for this model should be installed and used under the rated full load current to prevent the motor from burning.

● Five, about temperature

Usually, the allowed inlet air of our blower can be below 40°C.Under the special situation, the max inlet temperature it can bear is 70℃, but if you do in this situation, the unit should be customized.

If you use our unit under the following occasions, vacuum adsorption/vacuum lifting/vacuum conveying/vacuum cleaner/pneumatic transportation/waste collect/air knife/waste water treatment/electroplating mix/feeding etc. or some similar loading occasions, the unit temperature will be higher, especially for pump head.It can reach 90-120℃, Please don't worry about it,it is the normal situation.

When working in the above situations, the temperature will rise to 90~120℃ after running 15-40 minutes.According to the different using pressure, the rising temperature time will be different as well. Running for 10minutes totally with the status of obturation, then you can’t touch the surface of the pump head with your hands, because the temperature is above 80 degrees.

For the above conditions, you are required to check whether the motor exterior is below 70℃ or not, whether the operating current of the motor within the current range indicated on the nameplate.As long as these two points meet the requirements, it is normal. Please rest assured to use it. And you can keep the vacuum pump running for 24 hours without stopping.

As the unit running produces a high temperature,do not touch the shell to avoid burns.

If the working situation will probably make the unit cause high temperature, then you should avoid using the unit in a parochial,close, unventilated room. At the same time ,please strengthen cooling measure.

● Six, about the circumstance

The unit is adapted to the normal industrial surroundings within -10 to +40°C extension. If you need to use it in the other situation, please do some corresponding measures to protect the unit.

● Seven, about air filter

As long as there is dust in the using surroundings, and the dust will be probably sucked in the unit, you should install an air filter. In principle,we suggest you use the air filter for every working occasion.

We provide different filtrate precision filters for different occasions to satisfy customers' needs. Our MF series filtrate precision is 100um.It is used in general situations. And FLS series filtrate precision is 1000um,it is used in the industrial situation of heavy dirt or higher requirement about the air.

If it is used in industrial cleaner situations or powder transportation locations, you cannot use our filter directly! For industrial cleaners or similar machines, please install a dust removal device before our filter or make other filter systems.

Please pay more attention to solids, dust, granule, cellulose and water bead .You should adopt a dust collection bag to remove those dust before the air enter into the pump. Better adopt a large filter to avoid loss of pressure when installing a filter in the middle of pipe (especially for this type) and clean the system regularly.

For the filter service life, our filters, can only use compressed air or feather brush to clean and update the filter core regularly.Usually you should change the filter every 3 months,the longest using time is 6 months. If there is much dust in the working place, then you should change the filter more frequently.

● Eight,about pressure relief valve

Pressure relief valve is an unloading valve. When the pressure of the vacuum pump exceeds set pressure by valve, the valve will open to release spare pressure to protect the unit automatically.Please note that we donot suggest to use max pressure.

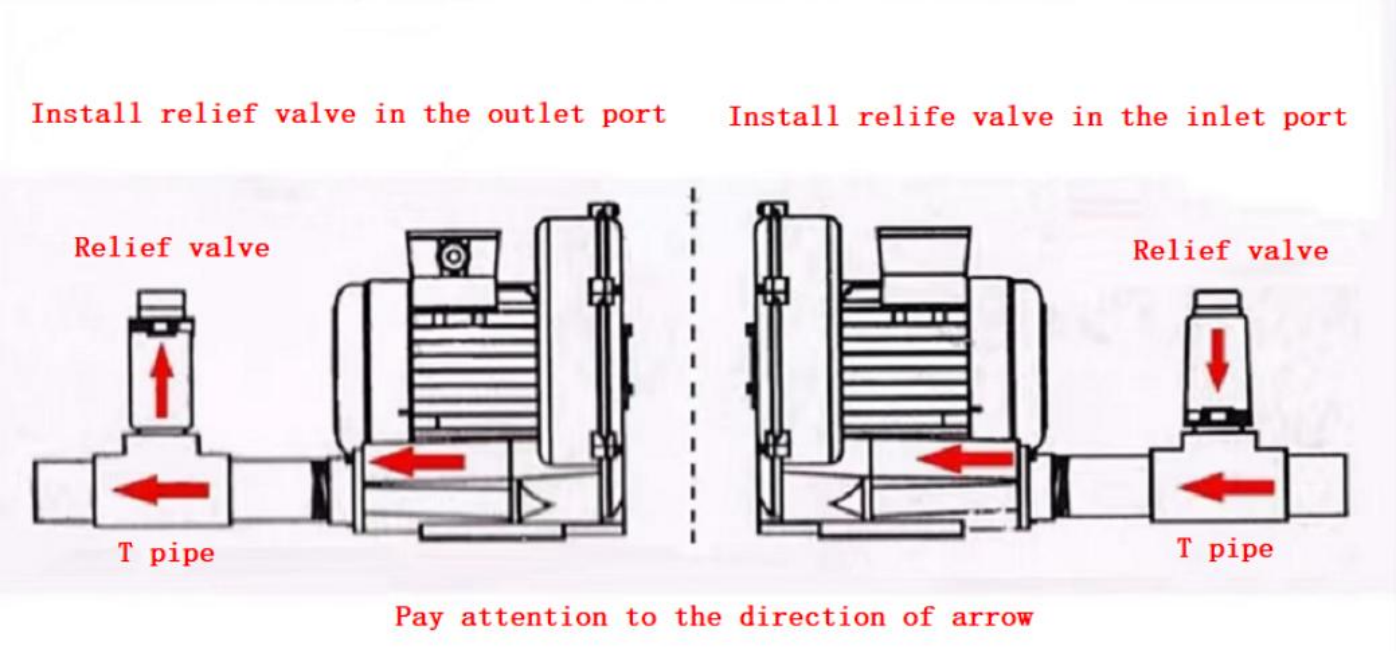
There are two methods to use the valve.It is a vacuum and compress usage.
Normally, the pressure relief valve equipped by our company is special for vacuum only.

If you want to use the pressure relief valve for compress/blowing air, it needs to use the pressure relief valve with thread at both ends.Please note that in blowing and sucking air, the direction of use of the pressure relief valve is opposite. Especially when blowing, please install the relief valve according to the correct instructions to prevent the relief valve from being blown open by the blowing air of the vacuum pump and hurt the user.
When you using its vacuum, please set the valve in the inlet pipe through T pipe.At the same time, please install the air filter in the valve inlet according to the occasion dust situation.
When you use its pressure, just set the valve in the outlet pipe through T pipe.

There is a pressure adjustable screw in the valve.You should adjust using pressure before use. The protected pressure increases when rotating clockwise, and protected pressure decreases when rotating counterclockwise.

After installing the valve correctly, you also need to check whether it is a normal operation or not more frequently. If you found that the pressure is not enough although installing correctly, that may mean you have chosen the smaller power pump.Then please exchange a higher-power one ,and reinstall the relief valve.

Please refer the follows instruction to install the relief valve.
When outlet temperature is high,we suggest to use relief valve made in aluminium alloy or stainless steel.



Nine, about silencer

There is an inside silencer in our vacuum pump, and it has debased the noise to a low-lying level.

If you have a higher requirement to noise, please use our external silencer, usually, it can decrease about 5dB.Different size of silencer make different performance.

An external silencer will be installed at the end of outlet pipe.

If you are still not satisfied with the noise after using our external silencer, then we suggest you make a sound insulation box according to the equipment.Specifically speaking, you can take a box to cover the blower, and then put silencer cotton in side of the six faces of the box.(usually , the light cotton should own 20mm thickness and wave crest is 15mm). At this moment, please pay attention to the ventilation and heat dissipation of the unit, the minimum distance in each direction and the inlet air temperature to avoid burning.

Ten ,about the pipe arrangement and running notice

As the vacuum pump running produces a high temperature , when a choosing pipe , it is required to adopt high quality , lasting material for sustaining the unit's high temperature and pressure . Ensure no obstacle in the pipe & no leak itself.

Do not make the unit work during closing the inlet completely. When decreasing the pipes inlet proportion, and be sure that the max reduced proportion should not exceed 2/3 of primary pipe and relief valve is necessary.A relief valve is always necessary when an operation is closed to full loading .

As the vacuum pump temperature will rise rapidly when totally closed output operating , the unit should be avoided to operate constantly.If the air is in intermittent operation or the positive and negative pressure of the pipeline needs to be continuously switched, the air valve switching method should be used.

If you install the pump outside the door, you should have a shelter above the unit from an invasion of rain. Prevent anything being sucked into the cooling fan or dust blocking the vent.

Do not place the vacuum pump in a place subject to vibration. If you really need to install it into a quiver place ,please add some quake proof measures.

Attention please, to avoid unit damage, you should use soft pipe and rubber flange to connect pipeline.

Clean up the inner and outer at a fixed time (specially the port of the cooling fan)in order to remove dust on the surface.If a large amount of dust accumulates happened, the heat dissipation effect will deteriorate, and then the temperature will increase, the air volume will decrease, and the vibration will increase and cause malfunctions.
Bearings, seals & silencers are consumption parts,should have changed for every period of time regularly .Meanwhile , so as to impeller,shell, metal net, etc,combined with a working environment to have changed regularly.
Turn off the power supply and check up when there is unexpected noise or rough running happened.

Please notify our service person when you need to disassemble the machine for maintenance during the warranty period.