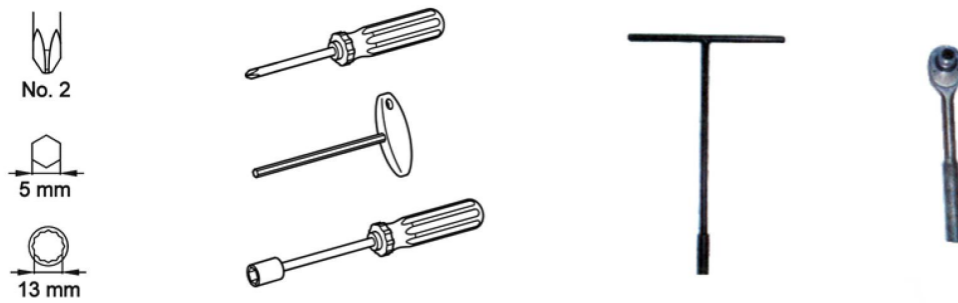


INSTRUCTION MANUAL

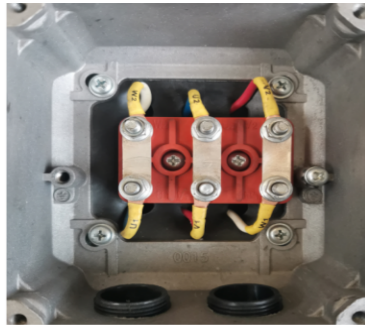


Maintenance direction		
Fault symptom	Probable reasons	elimination methods
Machine not run	Without power or open Phase	Check out
	Under voltage	Check out
	Wire wrong connection	Check out and correct
	Motor fault	Repair motor
	back pressure in the pipeline	Connecting the atmosphere
	Bearing fault	Change bearing
	Carbon vane fault	Change carbon vane
Vacuum pressure not enough	Block	Clean or change filter(all filter)
	Inlet port loose	Fix inlet port
	Relief valve misplace	Adjust suitable position
	Wrong motor running direction	Adjust the wire connection
	exhaust valve jammed	Lubricate the Jammed parts
	carbon plate badly worn	Change carbon vane
Heavy noise	Screw loose	Fix screw
	Dirty into pump	Clean dirty
	carbon vane badly worn	Change carbon vane
	Bearing badly worn	Change bearing
hard shutdown (power off immediately)	Poor contact of the switch contacts	It will burn the motor,change the switch immediately
	Motor burnt	Repair motor
	Bearing stuck	Add grease or change bearing
	Carbon vane stuck	Change carbon vane
	Dirty stuck	Clean dirty

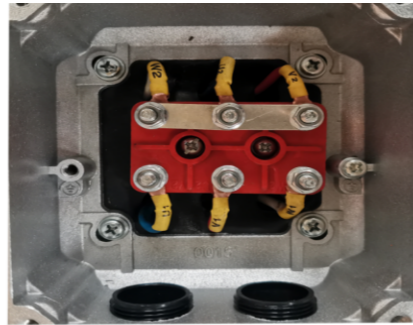
1.Tools



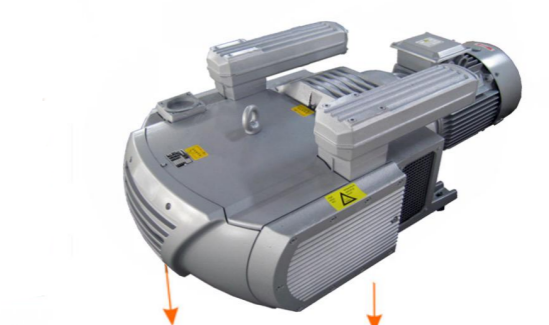
2.Installation&motor connection



Power connection: 3Φ220V



Power connection: 3Φ380V



Ambient temperatures must not exceed 45°C

3.Safety Code

Please refer to accident prevention rule VBG16,compressor,special condition IIIc" installation" and IV"operation",and VBG4"electric equipment and tool".Only modify or change the pump with manufacturer's permission.

Air pressure will produce high temperature heat

-Install pump/compressor in appropriate location,do not make contact with the pumps' hot surface

-Set up safety fence around the pump

-Use safety sign.

4.Application

a) The pump can be used to generate vacuum

b) Inlet air must be standard dry atmospheric air.The pumps are dry-running.

Avoid intake of oil mist.

The specification is valid up to a height of 800m above sea level

c) If the inlet air is mixed with dust,overheating can occur and cause pump malfunction.

5.Transportation and storage

Store pump in dry area,prevent condensed moist,use top hook when lifting and transporting.

6.Installation

It is recommended to install the pump with easy access for maintenance.

Clearance between vacuum pumps and adjacent walls should be no less than 10cm of free space in order to ensure sufficient air flow for cooling.Contact the seller prior to installation under noise insulation canopies.Ambient temperature must not exceed 45°C

7.Connection

a) Ensure correct dimensions (see table) and clean pipelines.Keep connection free from oil/grease/water and any other contamination.With pipeline exceeding 2m in length we recommend the installation of non-return valves.

b)Air can be discharged from AS to the external.

c)The standard length for pressured/air inlet pipeline is 3meter, For pipeline length up to 10m.Larger radius pipeline size is recommended.For pipeline length more than 10m, please remove end caps at SA.Do not connect to pipeline yet,and consult our technician.

8.Motor Connection

a) Connect the Vacuum pump to the electricity supply observing all applicable safety regulation.Comply with En60204 T1

b) Connect motor based on connecting diagram(in terminal box) or ready-made plugs. This work should be carried out by an experienced electrician only.

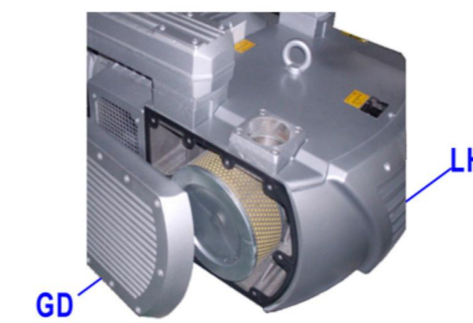
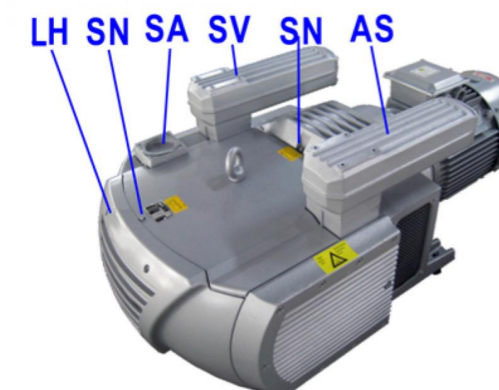
c) Check for connecting voltage and frequency

d) The switch for the motor protection and the main switch have to be installed.Adjust the motor protection switch to the nominal output of the motor(the data can be found on the motor type plate).

e)Avoid more than 6 switches per hour

f)Briefly start motor and check rotation(arrow on case  Exchange phases if rotation is incorrect.

9.Part name



LH:Air Guide Cover
SN:Grease Oil Sprue
SA:Vacuum Connection
AS:Silencer

SV: Vacuum relief valve
GD:Filter Cover

10. Test operation-vacuum pump

Connect inlet pipeline to SA, ensure silencer AS is clear and exhaust air, open vacuum valve SV for air intake.

11. Maintenance

Maintain pump regularly to achieve the best operating results. Maintenance intervals will depend on the pump's use and ambient conditions.



Before commencing maintenance, remove main plug from socket to avoid unintentional restarting.



Air pressure will generate high temperature at the compressors, allow the pump parts to cool before disassembly

a) Filter:



Install filter behind the cover GD, cleaning interval depends on the amount of dust accumulated. When cleaning blow the dust on filter from inside outside with use pressurized air. Depending on surrounding environment and additional operation (eg. Multi-alternate operation); with high dust accumulation we recommend weekly inspection (initially check twice per week)



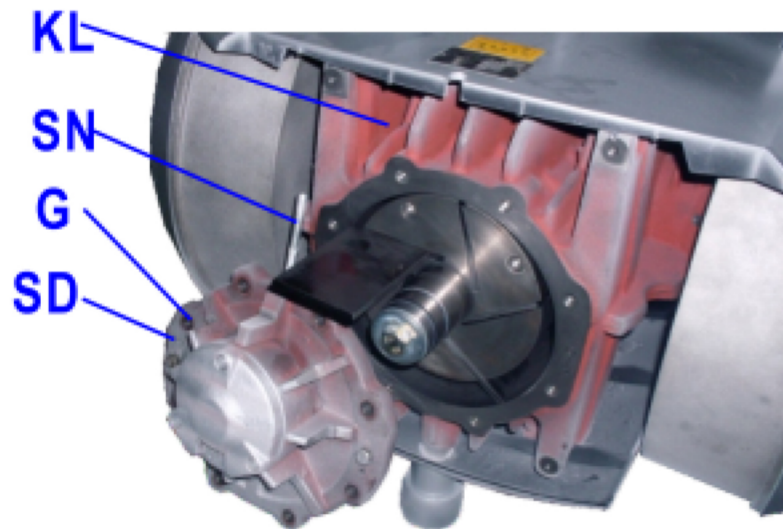
Blocked, oil soaked or greased filter must be replaced. Additional filter will help in highly dusted environment

b) Carbon vanes

The friction on the wall in pump chamber will cause carbon vane to wear. Carbon vanes are consumed, they must be inspected and replaced regularly.



Every 3000 hours of operation or every year, the carbon vane width should be checked (see minimum width in chart)



KL: Cylinder Cooling Way

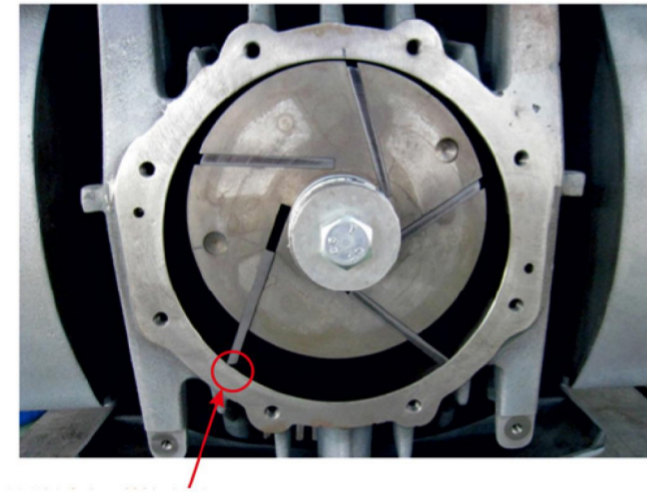
SN: Grease oil sprue

G: Screw Holes

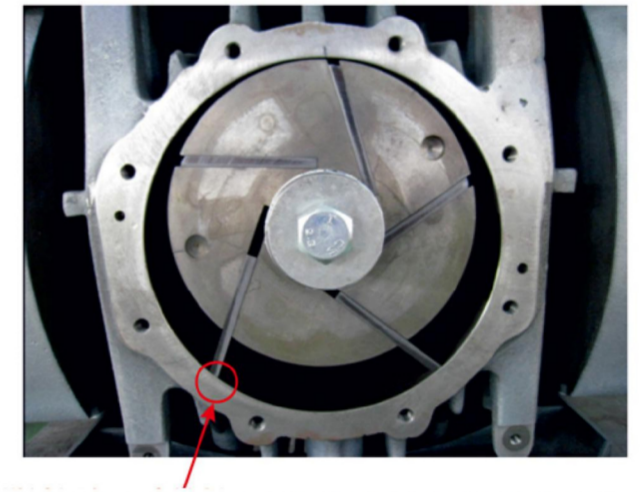
SD: Side cover



Note !!!



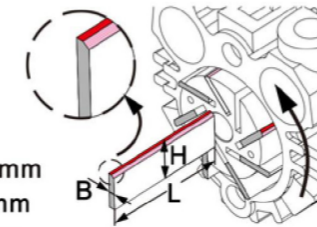
The carbon vanes are installed by incorrect direction



The carbon vanes are installed by correct direction

Change the carbon vane when $H < 41 \text{ mm}$

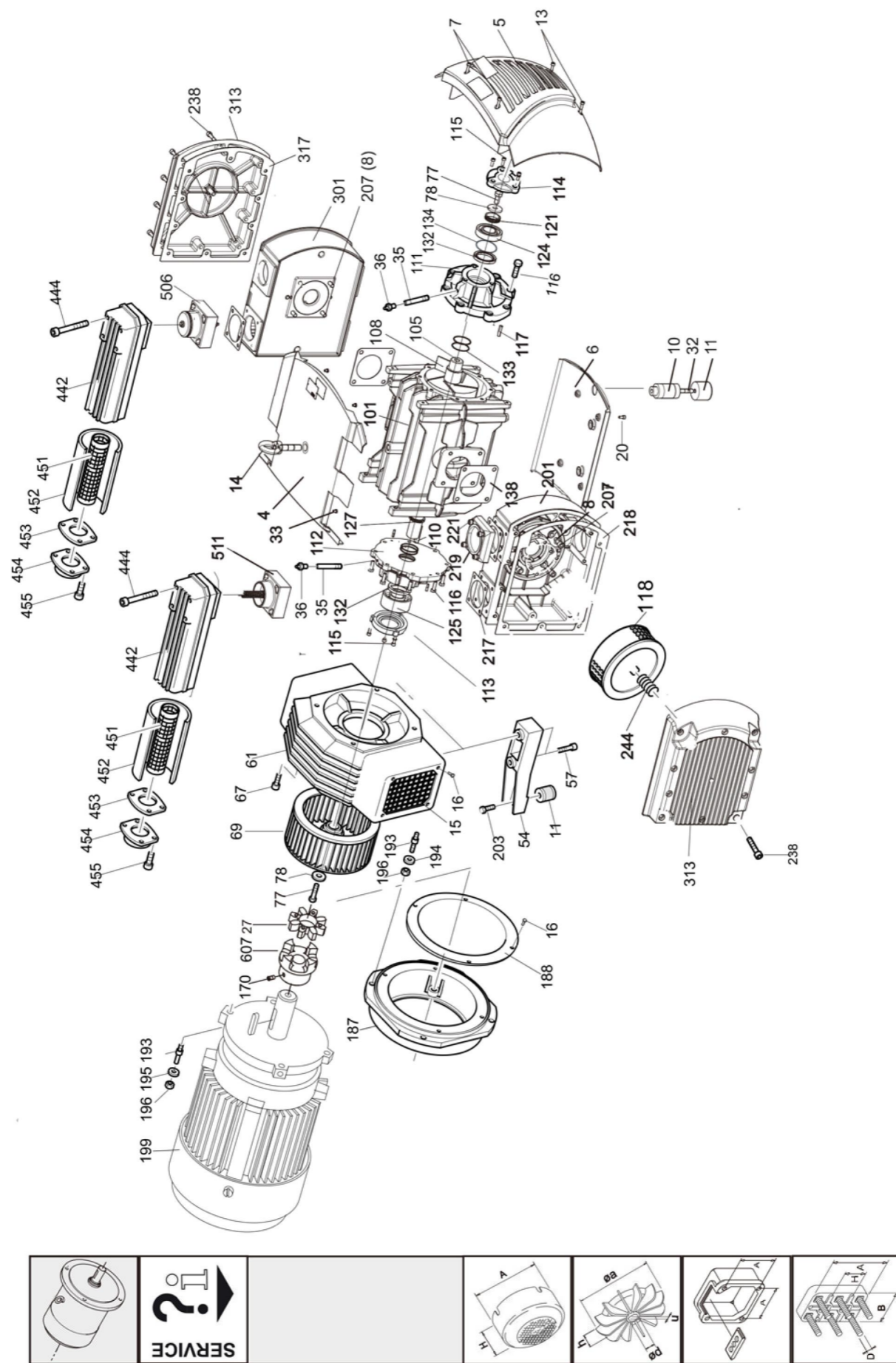
L = 355 mm
H = 65 mm
B = 5 mm



- When maintaining the pump, open pump cover LH and lid SD (8 hex head screws)
- Use 2 hex head screws on G, steadily disassemble and remove vanes from the rotor
- Insert the blade into the rotor slot with both hands in the correct direction, do not use foreign objects to knock, and check whether the blade can move flexibly in the slot.
- Ensure clear site for pump assembly and operation
- Ensure clear ventilation in operation site
- Ensure carbon vanes are inserted properly without edging out (vanes should not be higher than the rotor plane)
- Check for sealing ring and ball bearing
- Clean the grease on rotor shaft, carefully remove rotor lid
- Slightly lift the pump body to ensure the cover is firmly attached on the center of straight pin, steadily screw the 8 hex head screws to ensure straight pin is upright
- Check if the rotor rotates properly.

C) Bearing

Every 300-500 hours operation, when the pump is running, apply grease 10g of Amblygon GY193 on grease nipples SN • total two places.



INDEX	Pos.	DESCRIPTION	Pos.	DESCRIPTION
	4	COVERING HOOD	134	SEALING
	5	AIR GUIDE COVER	138	GASKET
	6	COVERING HOOD	170	MACHINE SCREW
	7	SOCKET HEAD SCREW	175	RUBBER FOOT
	8	WASHER	179	DOUBLE HEAD SCREW
	10	DISTANCE-DISC	187	MOTOR FLANGE
	12	WASHER	188	MOTOR FLANGE PLATE
	13	SOCKET HEAD SCREW	193	DOUBLE HEAD SCREW
	14	RING UNIT	194	WASHER
	15	VENTILATOR HOOD	195	WASHER
	16	SOCKET HEAD SCREW	196	HEX.NLT
	20	SOCKET HEAD SCREW	199	MOTOR
	27	COUPLING RING	201	FILTER HOUSING
	32	DOUBLE HEAD SCREW	203	SOCKET HEAD SCREW
	33	RUBBER ELEMENT	207	SOCKET HEAD SCREW
	35	GREASE LINE	217	GASKET
	36	GREASE NIPPLE	218	GASKET
	54	FLANGE FOOT	219	INLET AIR LID
	57	SOCKET HEAD SCREW	221	SOCKET HEAD SCREW
	61	CONNECTION FLANGE	238	SOCKET HEAD SCREW
	67	SOCKET HEAD SCREW	244	SPRING
	69	FAN-ASSEMBLE	301	GASKET
	77	HEXAGONAL SCREW	301	FILTER HOUSING
	78	LOCK WASHER	313	FILTER COVER
	101	CYLINDER	317	GASKET
	105	ROTOR	442	SILENCER
	108	ROTER VANES	444	SOCKET HEAD SCREW
	110	KEY	451	ALUNINUM MESH
	111	PUMP SIDER LID	452	SILENCER COTTON
	112	MOTOR SIDE LID	453	GASKET
	113	BEARING COVER	454	SILENCER COVER
	114	BEARING COVER	455	SOCKET HEAD SCREW
	115	SOCKET HEAD SCREW	502	SOCKET HEAD SCREW
	116	HEX-HEAD SCREW	506	BLOW-OFF VALVE
	117	STRAIGHT PIN	507	CONNECTOR
	118	FILTER CARTRIDGE	509	GASKET
	121	GREASE DISTRIBUTION WASHER	510	SOCKET HEAD SCREW
	124	BALL BEARING	511	VACUUM RELIEF VALVE
	125	BALL BEARING	513	COOLER
	127	SPACER SET	520	DUST SEPARATER
	132	SHAFT-SEALING RING	522	GASKET
	133	O-RING	607	CONNECTION

Letter of guarantee

Jinan Golden Bridge Precision Machinery Co.,Ltd guarantees that all products provided by Jinan Golden Bridge will be free from defects in materials and workmanship within twelve months from the date of shipment or within one year from the date of installation. During this period, a statement must be made that the statement is a limited replacement or repair statement for defective parts.

In order to prevent the manufacturer's warranty of components (such as: starters, controllers, mechanical seals, motors, etc.) purchased by the post company from extending to their purchasers, our warranty will replace all manufacturers' warranties. The replacement of maintenance items, including but not limited to packaging, oil seals, bearings ,coil rings, etc.It is not covered by this letter of guarantee regarding normal maintenance services.

This limited warranty is only valid when the product is correctly installed and used and maintained in accordance with the operation manual. The guarantee letter does not cover the quality problems caused by incorrect use, negligence, modification or maintenance of the product during the guarantee period without the authorization of the factory.

If the working conditions do not meet the requirements of our company, such as incorrect voltage or water pressure, excessively high ambient temperature or other environmental conditions that will affect the function and life of the product, the guarantee letter will be invalid.

This letter of guarantee only applies to the above statement and the previously agreed period. In any case, the maximum liability of the Jinan Golden Bridge company will not exceed the contract price of the product, component or component that is declared defective.The Jinan Golden Bridge company is not responsible for any special, indirect or consequential damage caused by any defective equipment responsible. Except for the terms contained in this limited warranty, there are no extended implied or special warranties.

Special statement:

- ①The customer must fill the vacuum pump with grease regularly (once every 30 days) according to the grease brand and model designated by our company (German KLUBER GY193) to lubricate the bearing to ensure the service life of the bearing and the vacuum pump;
- ②The air filter element in the vacuum pump shall be cleaned with high pressure air may not exceed 30 days depending on the situation to ensure smooth suction and exhaust of the vacuum pump;
- ③If the customer fails to maintain or add grease as required, from that moment on, the warranty period of our vacuum pump ends here;
- ④Quality warranty period: one year (8hours work system per day, that is based on 3000 hours).