VACUUM PUMP

Operating Manual

CE

Please read the operating manual carefully before using and reserve it properly

As a specialized enterprise in making vacuum pumps. We are always devoting ourselves to satisfying users' need of high-qualifide products. We adopt the latest design and technique, to make sure that our products not only cost less energy, produce less noise and last well, but also are the best design for environment protecting and less pumped gas pollution. Excellent design and making will bring you more convenience.

1.Usable range

TW series of single-stage rotary vane vacuum pumps and two-stage rotary vane vacuum pumps are used to obtain vacuum by pumping gas from sealed containers, especially suitable for Refrigeration repair (use with R12, R22, and R134a air conditioning systems), medical appliances, printing machinery, vacuum packing, gas-analysis and hot-forming plastics.

2.Features

Oil Anti-flow back design
The gas inlet is specially designed to prevent the oil from flowing back, preventing the container and the hoses from being polluted.

Environmental design
The tank has separating devices at the exhaust port to prevent oil spraying and to reduce pollution.

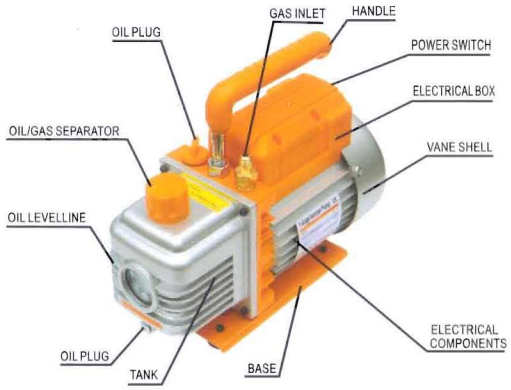
Alloy aluminum casing
Motor using Aluminum alloy casing, have good heat dissipation qualities, it will help to keep the pump running more efficiently for a longer period of time, and has a good appearance quality.

Overall design
The electric components and the pump are overall designed to make the product compact and lighter.

Easy to start, faster to pump
The starter design make the vacuum pump easy to start even in lower temperatures. This feature allows higher efficiency and faster pumping.

Low noise and vibration
An electrometric-coupling insert between the motor and module results in extremely quiet and smooth operation.

3.Product Illustration



4.Main technique parameters

• H SERIES SINGLE STAGE VACUUM PUMP

Model			TW-0.5H	TW-1H	TW-1.5H	TW-2H	TW-3H	TW-4H
Flow Rate (CFM)		220V/50Hz	1	2	3.2	4.2	6.4	8.4
		110V/60Hz	1.2	2.5	3.8	5	7.6	10
Ultimate Vacuum	partial pressure	(Pa) / (Microns)	2/15	2/15	2/15	2/15	2/15	2/15
	total pressure	(Pa) / (Microns)	20/150	20/150	20/150	20/150	20/150	20/150
Power (HP)			1/6	1/4	1/4	1/3	½	3/4
Rotating Speed (r/min)		220V/50Hz	1440	1440	1440	1440	1440	1440
		110V/60Hz	1720	1720	1720	1720	1720	1720
Oil Capacity (ml)			250	230	200	250	400	700
Dimensions (mm)			270x120x220	270x120x220	270x120x220	323x120x235	346x135x245	390x145x280
Weight (kg)			6	7.2	7.5	8.8	9.8	15.5

• H SERIES DOUBLE STAGE VACUUM PUMP

Model			2TW-0.5H	2TW-1H	2TW-1.5H	2TW-2H	2TW-3H	2TW-4H
Flow Rate (CFM)		220V/50Hz	1	2	3.2	4.2	6.4	8.4
		110V/60Hz	1.2	2.5	3.8	5	7.6	10
Ultimate Vacuum	partial pressure	(Pa) / (Microns)	$2x10^{-1}$/1.5	$2x10^{-1}$/1.5	$2x10^{-1}$/1.5	$2x10^{-1}$/1.5	$2x10^{-1}$/1.5	$2x10^{-1}$/1.5
	total pressure	(Pa) / (Microns)	2/15	2/15	2/15	2/15	2/15	2/15
Power (HP)			1/4	1/3	1/3	½	3/4	3/4
Rotating Speed (r/min)		220V/50Hz	1440	1440	1440	1440	1440	1440
		110V/60Hz	1720	1720	1720	1720	1720	1720
Oil Capacity (ml)			250	230	330	280	600	650
Dimensions (mm)			325x120x235	325x120x235	346x135x245	346x135x245	390x145x280	390x145x280
Weight (kg)			7	9	10	10	16	17

5.User's manual

- Examine the oil-level before using to make sure the oil-level is not lower than the oil-level line in the sight glass. Do not run pump with low oil levels. Add oil to bring it up to the oil level line.
- Connect the container to be pumped to the gas inlet. The hose should be short, sealed and free of dust, dirty and heavy condens -ation. Check for leaks before operating pump
- Take down the exhaust cap(if have),plug in the power supply and turn the switch on.
- Unplug the vacuum pump, remove the connecting hoses and cover the exhaust cap (if have), and cover the oil plug after using

6.Cautions

- Don't pump flammable, explosive or poisonous gases.
- Don't pump gas that can corrode metals and exert chemical charges.
- Don't pump gas containing any dust or moisture.
- The temperature of the pumped gas shouldn't be over 176℉(80℃), and the environment temperature should be around 23℉(-5℃) to 140℉(60℃).
- Don't use vacuum pump as a compression pump or conveyer pump.
- Pump can not be operated without oil.
- The operating voltage is between 192 to248V, 50HZ. You must use a grounded outlet.
- When unplugging the pump, pull the plug. Don't unplug unit by pulling on the wire.
- Keep electrical cord free from all shop equipment, and do not let pump hang by power cord.
- Don't use damaged plug or outlet.
- Don't plug or pull out the plug with wet hands.
- Don't plug unit in, unplug unit or use switch if there are any flamm- able or explosive gases present.
- Always unplug unit before disassembling.

7.Installation

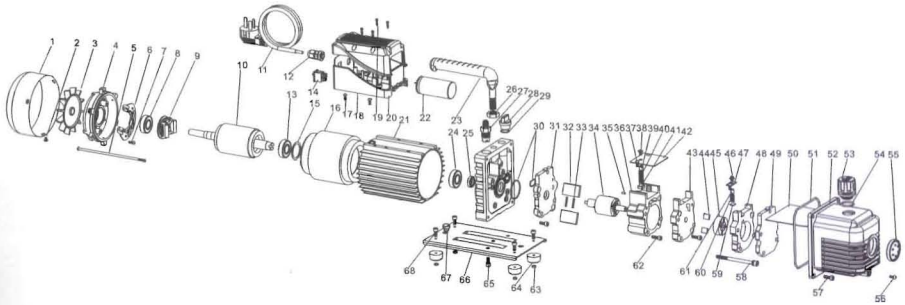
- When in use, the pump should be horizontal and should be positioned where it is dry, ventilated and free of dust and other contaminants.
- In order to ensure proper air flow, you must maintain a clearance around the pump of at least 10cm (4inches).
- To permanently mount the vacuum pump, remove the rubber pads from the bottom of the base, and use the existing threaded holes to mount unit. Mount with ST4.2 screws.
- When permanently mounting this pump, be sure to maintain proper clearances around the unit, especially at the air intake at the end of the vane shell.
- If a special electromagnetic valve is needed, it can be installed on the gas inlet.

8.Troubleshooting

Problem	Possible Cause	Correction
Low Degree Of Vacuum	1. Lack of oil 2. Oil is not clean 3. The oil intet is blocked 4. The hoser or gas inlet are clogged 5. The pump is not suitable for your application	1. Add oil to above the oil level line 2. Change the oil 3. Clean the oil inter or clean the filter 4. Check the connecting pipes 5. Get suitable pump for your application
Oil Leaks	1. The oil seal is damaged 2. The housing gasket is loose or worm out	1. Change oil seal 2. Change the housing gasket
Oil Spray	1. Too much oil 2. The pressure at the gas inlet is too high or it has pumped too much	1. Oil to the oil-level line 2. Change to a bigger pump
Starting Difficulty	1. The oil temperature is too low 2. Electrical malfunction 3. Foreign matter is in the pump	1. Start the pump several times to try to heat the oil 2. Check and have it fixed 3. Check and remove it

9.Maintenance

- Keep the pump clean and prevent foreign matter from entering.
- Keep the oil filled to the oil-level. Don't let pump run without oil.
- Keep the oil clean. If the oil becomes dirty, muddy, or water or other volatile substances gets in, it will affect the performance of the pump and the oil should be replaced. Before replacing the oil, start the pump and have it for about 30 minutes to make the oil thin. Stop the pump and drain the oil from the oil drain plug. Then open the gas inlet and running 1-2 minutes, during this time, add a small quantity of clean oil for the gas inlet, that's in order to replace the residual oil from the inside pump. After making sure the pump is clean, put the drain plug back in and then fill the clean pump oil from the gas inlet to the oil-level.
- To store the pump when not in use for long periods of time, cover the oil cap and exhaust cap(if have)and store it in a dry place.
- Repair of pump should only be done by a qualified service technician.



ORDERING PART	PART DESCRIPTION	ORDERING PART	PART DESCRIPTION	ORDERING PART	PART DESCRIPTION
01	fan cover	24	bearing	47	valve-core plate
02	screw	25	oil seal	48	back-pump rotor
03	fan	26	nut	49	back-pump plate
04	motor cover	27	inlet fitting	50	cap board
05	screw	28	oil fitting port	51	o-ring
06	centrifugal switch base	29	o-ring	52	oil tank
07	screw	30	o-ring	53	oil gas separator
08	bearing	31	front-pump plate	54	o-ring
09	centrifuga switch	32	front rotary-vane	55	oil level
10	rotor	33	spring	56	screw
11	power cable	34	front-pump rotor	57	screw
12	cable locker	35	flat key	58	bolt
13	bearing	36	front-pump body	59	back-pump valve core
14	switch	37	screw	60	spring
15	waveform gasket	38	screw	61	valve-core spring bracket
16	stator	39	valve-core spring bracket	62	screw
17	screw	40	spring	63	nut
18	capacitor-cover base	41	from-pump valve core	64	rubber feet
19	screw	42	valve-core plate	65	screw
20	capacitor cover	43	middle fense	66	baseboard
21	motor aluminum hull	44	back rotary-vane	67	bearing pad
22	capacitor	45	back-pump rotor	68	screw
23	handle	46	screw		