

VACUUM PUMP

Operating Manual

Please read the operating manual carefully before using



AUTOMOTIVE AC PARTS

TOOLS

TRAINING

! Safety warning

1. The inlet port is not allowed to operate for more than 3 minutes when connecting to the atmosphere directly.
2. Operating temperature : 0℃-40℃ .
3. Please ensure the voltage marked on the nameplate is consistent with the local voltage before use, Power plug has to be connected to a grounded receptacle.
4. Before the vacuum pump is connected to the refrigeration system, please ensure the refrigerants were recovered from the system, otherwise, it will damage the pump body.
5. Wear goggles during operating.
6. Do not touch refrigerants directly to prevent personal injury .
7. Do not touch the oil tank or motor housing during operation, due to generated heat during working.
8. Ensure that the POWER switch is in OFF position before power connection.

Pump Components



Technical specification

Model		AVP-2B	AVP-5B
Flow Rate		2.0CFM	5.0CFM
		57L/min	142L/min
Ultimate Vacuum	Partial Pressure	$3 \times 10^{-1} \text{Pa}$	$2 \times 10^{-1} \text{Pa}$
	Total Pressure	23Microns	15Microns
Battery Voltage		18V	18V
Motor Power		1/4 HP	3/4 HP
Working Time After Fully Charged		1 Hour	50 Minutes
Inlet Port		1/4" SAE	1/4" SAE & 3/8"SAE
Oil Capacity		150ml	350ml
Dimensions(mm)		205x96x175	280x120x225
Weight		2.8kgs	8.5kgs

Operating instructions

1. Oil filling: fill oil to near the top of sight glass, insufficient oil will affect the vacuum degree and service life, excessive oil will produce more oil mist (see Fig. 1).
2. Connect vacuum pump with vacuum system with suitable hose, shorter hose is better.
3. Rotate the check valve to ON position, press the power button to start the machine, then evacuation begins.
4. After finish, rotate the inlet port switch to OFF position, and long press the power button to power off.
5. POWER Key: Short press for adjusting the motor speed from 2800RPM (Default Data), 3600RPM to 1500RPM in turn, Long press for power on/off.
6. Optional Device: Wireless connection with mobile phone through bluetooth to control and operate vacuum pump on Android&IOS App directly.

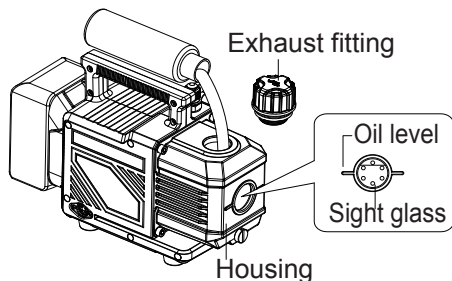


Fig 1

Indicator instructions during battery charging

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■
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 Lighted Off

	Battery-powered, four indicator lamps always light: 100% remaining capacity
	Battery-powered, three indicator lamps always light: 75% remaining capacity
	Battery-powered, two indicator lamps always light: 50% remaining capacity
	Battery-powered, after start the vacuum pump, Red indicator lamp always lights: 25% remaining capacity; Power off the vacuum pump, red indicator lamp always lights, which means it's under recharging by external power supply.
	Yellow lamp is blinking, Red lamp always lights, which means vacuum pump is running and battery is recharged with external power supply.
	Yellow lamp is blinking, Green lamp always lights, which means vacuum pump is running and battery is fully recharged with external power supply.
	Green lamp always light, which means vacuum pump is power off and battery is fully recharged with external power supply.

Installing or removing battery

1. Be sure to turn off the pump before installing or removing the battery.
2. To remove the battery, Please press the white button while slide it out from the pump (see Fig. 2).
3. To install the battery, align the the battery with the groove on the housing, Insert it into bottom until you hear a slight click.

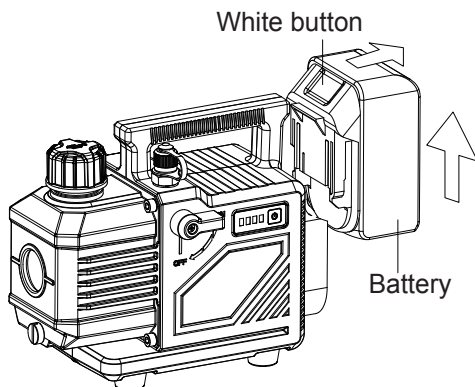


Fig.2

⚠ Safety instructions for battery cartridge

1. Before using battery cartridge,read all instructions and cautionary markings on battery and manual.
2. Do not disassemble battery cartridge.
3. If operating time has become excessively shorter,stop operating immediately. It may result in a risk of overheating,possible burns and even an explosion.
4. If electrolyte gets into your eyes,rinse them out with clear water and seek medical attention right away.It may result in loss of your eyesight.
5. Do not short the battery cartridge,A battery short can cause a large current flow,overheating,possible burns and even a breakdown.

- (a) Do not touch the terminals with any conductive material.
 - (b) Avoid storing battery cartridge in a container with other metal objects such as nails, coins, etc.
 - (c) Do not expose battery cartridge to water or rain.
6. Do not store the tool and battery cartridge in locations where the temperature may reach or exceed 50°C (122°F) .
 7. Do not incinerate the battery cartridge even if it is severely damaged or is completely worn out. The battery cartridge can explode in a fire.
 8. Be careful not to drop or strike battery.
 9. Do not use a damaged battery.
 10. Follow your local regulations relating to disposal of battery.

Tips for maintaining maximum battery life

1. Charge the battery cartridge before completely discharged. Always stop tool operation and charge the battery cartridge when you notice less tool power.
2. Never recharge a fully charged battery cartridge. Overcharging shortens the battery service life.
3. Charge the battery cartridge with room temperature at 10°C - 40°C (50°F - 104°F) . Let a hot battery cartridge cool down before charging it.
4. Charge the battery cartridge if you do not use it for a long period - (more than four months) .

Adaptor instructions

1. Adaptor installation:

The plug is shown in Fig. 3, with the arrow side facing upward, insert the plug into the socket shown in Fig. 4, a click sound made by buckle clamping indicates that the adaptor connects with pump well.

2. Adaptor removal:

Press the plug with your index finger and thumb, push the sliding closure to the right, then pull out the plug to remove the adaptor.

Note: A great force may destroy the plug or socket.

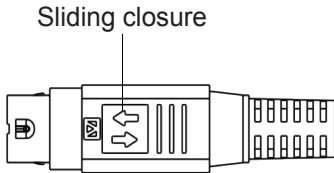


Fig.3



Fig.4

Note: If without battery, AVP-2B could work as below fig. 5.



Fig.5

Maintenance

1. Vacuum pump oil

In order to maintain the best performance of the pump, it is recommended to use the vacuum pump oil provided by our company, which is specially blended to maintain maximum viscosity at normal running temperatures and to improve cold weather start up.

Note: when the pump oil is emulsified and contaminated, please replace it in time.

2. Oil change procedure

(a) Ensure the pump is warmed up.

(b) Remove the Oil Drain cap. Drain off contaminated oil into a container and dispose it properly. Oil can be removed from the pump body by opening the inlet and partially blocking the exhaust with a cloth while the pump is running. Do not operate the pump for more than 20 seconds using this method.

(c) When the drainage of oil completed, tilt the pump forward to remove the residual oil.

(d) Replace the Oil Drain cap. Remove the Oil Fill cap and fill the oil reservoir with new vacuum pump oil until the oil level is seen at the oil level line of the sight glass.

(e) Ensure that the inlet ports are covered before turn on the pump. Allow it to run for one minute to check the oil level. If the oil level is below the sight glass Oil Level line, fill oil slowly (with the pump running) until the oil reaches the Oil Level line. Place back the Oil Fill cap, ensure the inlet is covered and the oil drain cap is closed tightly.

(f) i) If the oil is badly contaminated with sludge that forms during operation, you may need to remove the oil reservoir cover and wipe it.

ii) The alternative method to deal with heavily contaminated oil is to force the oil from the pump reservoir. Leave the pump to run until it is warmed up. While the pump is still running, remove the oil drain cap and restrict the exhaust slightly. This will back-pressure the oil reservoir and purge the oil with contaminants. Turn off the pump when oil stop flowing.

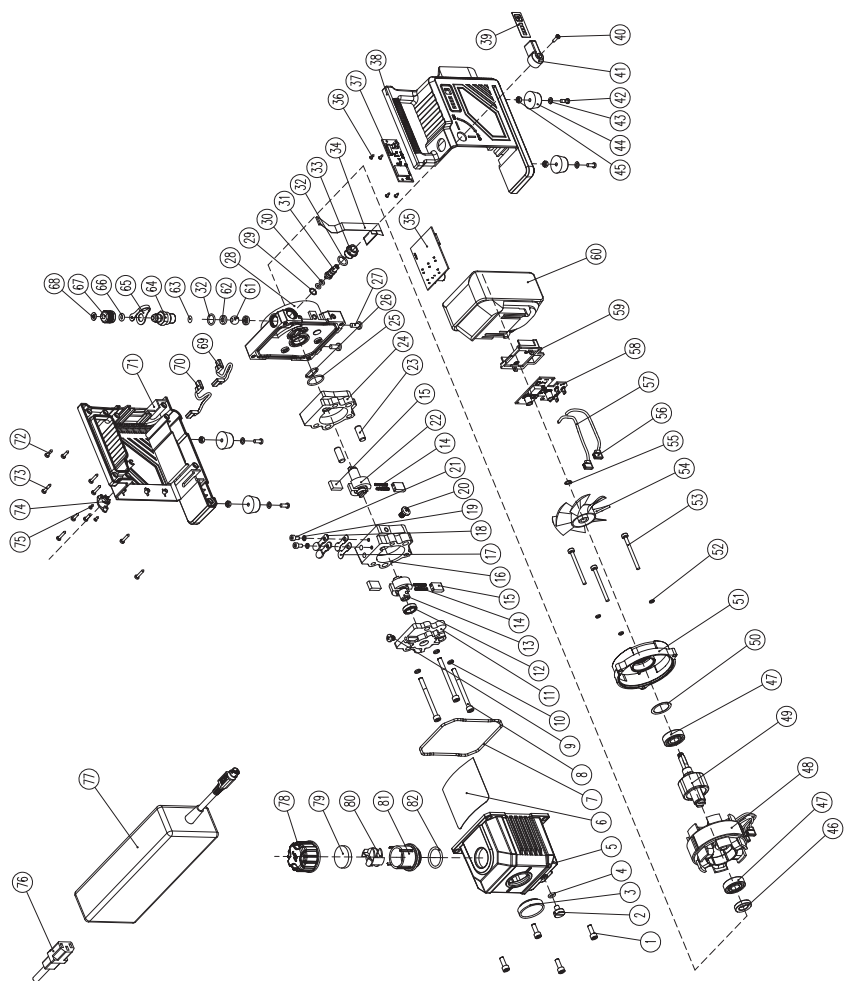
iii) Repeat this procedure as required until the contaminants is removed completely.

iv) Replace the Oil Drain cap and refill the oil reservoir to the proper oil level with clean vacuum pump oil.

Common troubleshooting guide

Phenomenon	Reason	Solution
Difficult To Start	1.The oil temperature is too low	Open inlet fitting, then repeatedly start the motor to warm up the vacuum pump oil
	2.Motor, power supply or circuit board trouble	Check and maintain
	3.Foreign matter fell into the pump	Check and clear
	4.The power supply voltage is too low	Check power supply voltage
Oil Leakage Around Trestle	1.Trestle or tank,O-ring were damaged	Replace the damaged parts
	2.Loose between trestle and oil tank	Tighten the screw
Oil Injection	1.Excessive oil	Drain off oil to suitable level as manual instruction
	2.Excessive intake pressure	Increase evacuation speed,select appropriate pump
Low Vacuum	1.The dust cap is loose	Tighten the dust cap
	2.The O-ring in dust cap is damaged	Replace O-ring
	3.Insufficient oil	Fill oil as manual instruction
	4.The oil was emulsified or contaminated.	Replace new oil

Note: if the above methods cannot solve your problem, please contact your nearest dealer.



1	Screw	42	Screw
2	Oil Drain Valve	43	Gasket
3	Sight Glass	44	Rubber Foot
4	O-ring	45	Hexagon Nut
5	Housing	46	Seal
6	Anti-fog Cover	47	Bearing
7	O-ring	48	Motor Stator Subassembly
8	Screw	49	Motor Rotor Subassembly
9	Screw	50	Washer
10	Washer	51	Motor Back Cover
11	Pump Back Cover	52	Washer
12	Seal	53	Screw
13	Pumpback Rotor	54	Axial-flow Fan
14	Spring	55	Retainer Ring
15	Rotary Vane	56	Power Cord
16	Pump Back Staror	57	Power Cord
17	Valve Plate	58	Charging Control Board
18	Restraint Plate	59	Battery Pinboard
19	Washer	60	Battery
20	Screw	61	Steel Ball
21	Screw	62	Washer
22	Pump Front Rotor	63	Filter Screen
23	Round Pin	64	Intake Fitting
24	Pump Front Stator	65	Dust Cap Strap
25	O-ring	66	O-ring
26	O-ring	67	Dust Cap
27	Screw	68	Washer
28	Trestle	69	Power Cord
29	Washer	70	Power Cord
30	O-ring	71	Right Shell
31	Knob Shaft	72	Screw
32	O-ring	73	Screw
33	Shaft Seal	74	Socket
34	Cable	75	Screw
35	Motor Control Board	76	Adaptor Plug
36	Screw	77	Power Adaptor
37	Bluetooth Keypad	78	Exhaust Fitting Cover
38	Left Shell	79	Exhaust Fitting Filter Screen
39	Button Sticker	80	Filter Holder
40	Screw	81	Exhaust Fitting Holder
41	Knob	82	O-ring