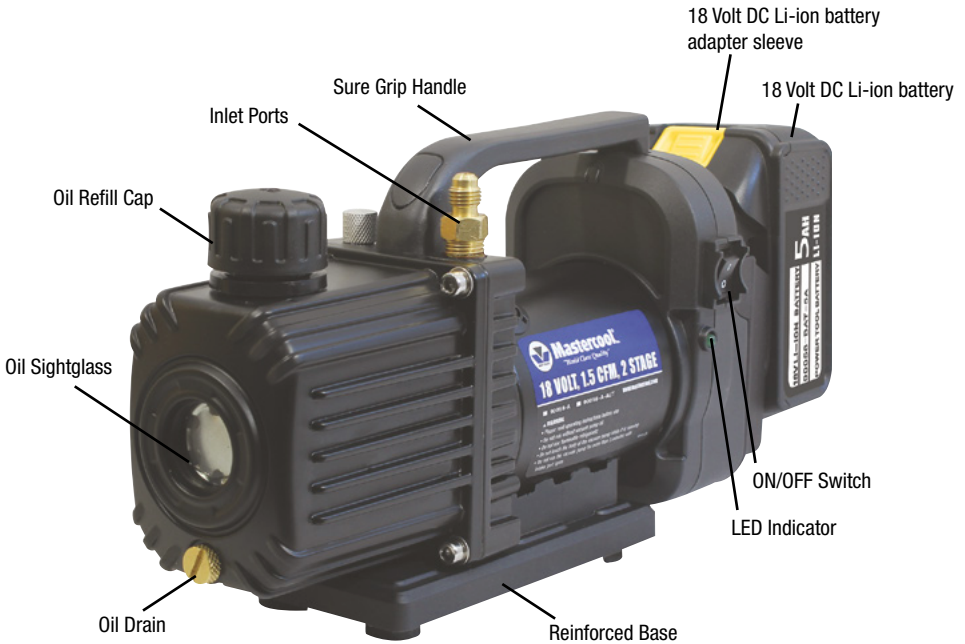


18 VOLT CORDLESS 1.5 CFM, 2 STAGE VACUUM PUMP OPERATING INSTRUCTIONS



FEATURES

- Equipped with our exclusive oil mist free exhaust port
- Sure-Grip handle, ergonomically designed for superior comfort and portability
- Reinforced base provides extreme shock resistance
- Air cooled motor design allows for operation under high temperature conditions
- Pump runs with extremely high ultimate vacuum and low noise
- Accessible oil drain port & sight glass make both oil maintenance and accuracy easy
- Built-in device eliminates oil mist and an oil-gas separator at the air exhaust outlet prevents oil contamination in the air exhaust

SPECIFICATIONS

- No. of Stages: 2
- Free Air Displacement: 1.5 CFM
- Motor: DC 18V, 90 W
- Ultimate Vacuum: 15 microns/3 Pa
- Oil Capacity: 3.5 oz.
- Dimensions without battery: 9.9 x 3.7 x 6.1"
- Net Weight: 7.9 lb

EACH VACUUM PUMP HAS BEEN FACTORY TESTED FOR CFM AND MICRON PERFORMANCE



Do not attempt to operate without using oil!

Use oil specifically refined for deep vacuum pumps

Use of oil not refined for deep vacuum pumps and or operating with contaminated oil will void warranty

GENERAL SAFETY INSTRUCTIONS



ONLY QUALIFIED SERVICE PERSONNEL SHOULD OPERATE THIS UNIT. SOME COUNTRIES MAY REQUIRE THE USER TO BE LICENSED. PLEASE CHECK WITH YOUR LOCAL GOVERNMENT AGENCY.

- **DANGER** - Avoid breathing refrigerant vapors and lubricant vapor or mist. Breathing high concentration levels may cause heart arrhythmia, loss of consciousness, or even cause suffocation.
- **CAUTION** - Review battery and battery charger information. Do not charge damaged batteries. Risk of overheating and fire
- **WARNING** - Do not operate the vacuum pump on systems under pressure. Damage to the pump may occur
- **CAUTION** - All hoses may contain liquid refrigerant under pressure. Contact with refrigerant may cause frostbite or other related injuries. Wear proper personal protective equipment such as safety goggles and gloves. When disconnecting any hose, please use extreme caution
- **CAUTION** - Avoid breathing refrigerant vapors and lubricant mist. Exposure may irritate eyes, nose, throat and skin. Please read the manufacturers Material Safety Data Sheet for further safety information on refrigerants and lubricants
- **CAUTION** - Do not use this equipment in the vicinity of spilled or open containers of gasoline or other flammable substances. Make certain that all safety devices are functioning properly before operating the equipment
- **CAUTION - THIS EQUIPMENT IS INTENDED FOR USE OF FINAL EVACUATION OF A REFRIGERANT SYSTEM WITH 0-3 PSI (0-0.2 BAR)**
- **CAUTION - DO NOT RUN THIS EQUIPMENT WITH LOW OR NO OIL. RUNNING THIS EQUIPMENT WITH NO LUBRICATION WILL CAUSE PREMATURE FAILURE**
- **WARNING** - Do not evacuate combustible, explosive or poisonous gases
- **WARNING** - Do not evacuate gases that corrode metal or react chemically with pump oil
- **CAUTION** - The temperature of evacuated gas shall not exceed 176°F (80°C) and ambient temperature shall be 41 - 140°F (5 - 60°C)
- **WARNING** - No not touch the vacuum pump's hot surface during operation
- **WARNING** - Do not block air outlet

INITIAL PREPARATION

- Fully charge the 18VDC Li-ion battery.

OIL FILL

- **CAUTION: DO NOT RUN THIS EQUIPMENT WITH LOW OR NO OIL. RUNNING THIS EQUIPMENT WITH NO LUBRICATION WILL CAUSE PREMATURE FAILURE.**
- This vacuum pump has been tested at the factory and shipped with only trace amounts of oil. OIL MUST BE ADDED BEFORE OPERATING! Failure to add oil will damage cartridge and void warranty!
 - a. Make sure the oil drain valve located below the front casing is closed before attempting to add oil.
 - b. Remove the oil fill plug from the top of pump and insert the oil bottle into the fill port.
 - c. Slowly add oil until oil level rises to the top of the oil level line. Do not overfill with oil!
 - d. Replace oil fill port.

CHECKING OIL LEVEL

- a. Open the gas ballast valve (small fitting located next to the handle) one turn.
- b. Start pump and run with intake port capped for about two minutes. Observe the oil level with the pump running. The oil level in the sight glass should be even with the level line.
- c. If the level is low, open the intake port and run pump for 15 seconds, stop pump and observe oil level again. Add a small amount of oil as needed.

NOTE: To achieve good final vacuum levels, the oil level should be visually seen through the sight glass.

GAS BALLAST VALVE

The gas ballast valve must be opened 1/4 turn for the first part of the evacuation procedure. This will help to eliminate moisture and extend the life of the vacuum pump. After about two minutes close the valve and continue the evacuation procedure to reach ultimate vacuum. Failure to close the valve completely during the final evacuation will result in high

vacuum reading.

During the first stages of evacuation, vapors are highly concentrated. Unfortunately, some vapors will condense into a liquid and mix with the oil, thus reducing the oil's ability to produce a deep vacuum. The GAS BALLAST VALVE emits a controlled amount of dry air into the pump during compression to minimize this effect and keep oil relatively clean during the first part of the evacuation.

Periodically remove the gas ballast valve needle and clean or replace the o-ring. Clean mating surfaces and lightly coat with vacuum pump oil before securely re-tightening.

VACUUM PUMP OPERATION

WARNING: Do not operate on systems under pressure. Damage to the pump may occur.

1. Install fully charged 18VDC battery onto the vacuum pump.
NOTE: The battery has enough energy to run for about 45-60 minutes.
2. Check oil level in vacuum pump
3. Connect vacuum pump.
4. Open manifold valves.
5. Turn vacuum pump power switch "ON".
6. Run vacuum pump until final vacuum level is met.
NOTE: Do not run vacuum pump continuously for more than 2 hours.
7. Once the final vacuum level is reached, close manifold valves, turn power switch "OFF".

ROUTINE MAINTENANCE

It is recommended to change the vacuum pump oil after 25 hours of usage. The purity of the oil will determine the final vacuum level achieved. Always use the recommended vacuum pump oil (VPOQ / VPOP / VPOG). The oil provided with the pump has been specially blended to maintain maximum viscosity at normal running temperatures as well as cold weather starts.

In order to reach the deep vacuum required, your vacuum pump needs clean, moisture-free oil during evacuation. Dirty oil becomes a mixture of corrosive acids and water that effects the pump's ability to pull a deep vacuum. Left sitting in the pump, this sludge will rust and erode internal surfaces shortening the pump's life.

NOTE: After every evacuation, while the pump is warm and oil is thin, take a small sample of oil from the drain port. If the oil is contaminated, drain and replace.

NOTE: If the pump has been sitting for more than one month, the oil is considered contaminated regardless of appearance and should be changed as outlined below.

Care should be taken to avoid contact of oil with skin or eyes. OIL MAY BE HOT! Used oil should be properly disposed of in a leak-proof corrosive-resistant container according to local regulations.

OIL CHANGE PROCEDURES:

1. Be sure the pump oil is warmed up. If not warm, turn vacuum pump "ON" for 5 minutes.
2. Remove battery from vacuum pump.
3. Remove the oil drain cap and drain the contaminated oil into a suitable container. Tilt the vacuum pump toward the oil drain port.
4. Once all the oil has been drained, re-secure the oil drain cap back onto the oil drain port.
5. Remove the exhaust / oil fill cap and add oil until it is seen in the middle of the oil sight glass. Re-secure exhaust / oil fill cap.

TROUBLESHOOTING CHART

Condition	Possible Problem	Solution
Pump does not start	1. No power to motor 2. Power Switch to ON	1. Check battery
Poor vacuum	1. System leaks 2. Low oil level 3. Dirty oil 4. Air leaks at connection 5. Air leak through seal	1. Fix leaks 2. Add or replace oil 3. Flush and replace oil 4. Fix leaks 5. Replace shaft seal

Oil leaks	<ol style="list-style-type: none"> 1. Oil leaks through exhaust 2. Oil leaks through shaft seal 3. Oil leaks through reservoir 4. System vented pressure 5. Pump tipped over 	<ol style="list-style-type: none"> 1. Oil level too high 2. Replace shaft seal 3. Tighten bolts or replace gasket 4. Check oil level 5. Check oil level
Unusually noisy	<ol style="list-style-type: none"> 1. Bad bearings 2. Loose motor bolts 3. Dirty, low, or improper oil 4. Air leaks in connections 	<ol style="list-style-type: none"> 1. Replace motor 2. Tighten bolts 3. Replace oil 4. Fix leaks
High temperature	<ol style="list-style-type: none"> 1. Worn bearings 2. Low oil level 	<ol style="list-style-type: none"> 1. Replace motor 2. Add or replace oil

 **WARNING:** This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm.

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