VACUUM PUMP OPERATING MANUAL

ROBINAIR
VacuMaster®
HIGH PERFORMANCE VACUUM PUMP

Models 15300
15301
15500
15501



ROBINAIR®
AN SPX BRAND

SAFETY PRECAUTIONS

WARNING! To prevent personal injury,



Wear goggles when working with refrigerants. Contact with refrigerants may cause injury.



Incorrect use or connections may cause electrical shock hazards. Read and follow the instructions carefully, and take precautions to avoid electrical shock hazards. Confirm that all associated devices are grounded correctly before energizing circuits.



Normal operating temperature will cause certain external portions of the pump to be hot to the touch. Do not touch the pump housing or motor during operation.

For use on A/C-R systems using CFCs, HCFCs, and HFCs in conjunction with mineral oil, ester oil, alkylbenzene oil, and PAG oil as lubricants. Not for use with ammonia or lithium bromide systems. Not for use with flammable refrigerants.

VacuMaster® High Performance Vacuum Pumps

Congratulations on purchasing one of Robinair's top quality VacuMaster® vacuum pumps. Your pump has been engineered specifically for air conditioning and refrigeration service, and is built for fast, thorough evacuation.

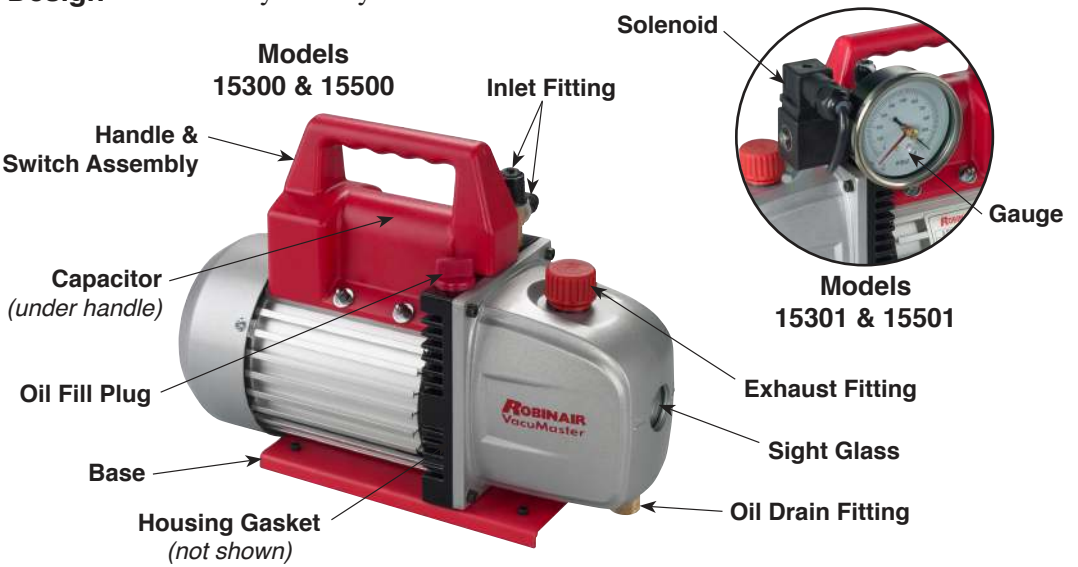
You'll appreciate these key features . . .

High Vacuum Rating — The two-stage rotary vane design provides powerful, quiet, high vacuum capability and ensures moisture removal, while the high pumping capacity reduces evacuation time.

Lifetime Filtration — The intake screen prevents foreign matter from entering the pumping chamber, and an internal exhaust filter separates oil vapor from the exhaust flow.

Sure-Grip Handle — The one-piece, molded handle makes it easy to carry the pump to and from job sites, and the handle stays cool to the touch during operation.

Compact Design — Aluminum housing and rotary vanes keep the pump weight low, making it easy to carry.



Inlet Fitting Adapter *(included but not shown)*.

Before using your vacuum pump . . .

Note about Motor Voltage Connections:
In all cases, motors are designed for operating voltages plus or minus 10% of the normal rating (see *Pump Specifications*). Single voltage motors are supplied fully connected and ready to operate.

1. Confirm that the voltage and frequency at the outlet match the specifications on the pump motor decal.
2. Confirm the ON-OFF switch is in the OFF position before you plug the pump into an outlet.
3. Remove and discard the exhaust plug from the exhaust fitting.
4. The pump is shipped without oil in the reservoir. Before starting the pump, fill it with oil. Remove the OIL FILL cap (red plastic plug at the front of the handle), and add oil until oil appears in the bottom of the sight glass. For oil capacities, refer to *Pump Specifications* in this manual.
5. Replace the OIL FILL cap, and remove the cap from one of the inlet ports.
6. Turn the motor switch to ON.
7. When the pump runs smoothly, replace the cap on the inlet port. This may take from two to 30 seconds, depending on the ambient temperature.
8. After the pump has run for approximately one minute, check the sight glass for the correct oil level — oil should be even with the sight glass OIL LEVEL line. With the pump off, add oil if necessary.

   ***Note**: When the pump is running, the oil level should be even with the line on the sight glass. Underfilling the pump will result in poor vacuum performance; overfilling can result in oil blowing from the exhaust.*

   Your pump is now ready to evacuate air conditioning and refrigeration systems. Follow normal service procedures and the A/C-R manufacturer's instructions for connections to the system.

CAUTION: Before connecting your vacuum pump to an A/C-R system, remove refrigerant from the system in an accepted manner. Damage to the pump may occur if evacuation is started while the system is under high pressure. Robinair recommends the use of its Refrigerant Recovery and Recycling equipment.

To shut down the pump after use . . .

To help prolong pump life and promote easy starting, follow these procedures for shutdown:

1. Close the manifold valve between the pump and the system.
2. Remove the hose from the pump inlet.
3. Cap the inlet port to prevent any contamination or loose particles from entering the port.

To maintain your high vacuum pump . . .

Vacuum Pump Oil

For maximum performance, Robinair recommends changing vacuum pump oil after each use.

The condition and type of oil used in any high vacuum pump are extremely important in determining the ultimate attainable vacuum. Robinair recommends the use of its Premium High Vacuum Pump Oil. This oil has been specifically blended to maintain maximum viscosity at normal running temperatures and to improve cold weather starts.

Robinair Premium High Vacuum Pump Oil is available in handy quart containers or in convenient gallon containers. Order by part number:

13119 — Pint (shipped 12 pints per case)

13203 — Quart (shipped 12 quarts per case)

13204 — Gallon (shipped 4 gallons per case)

Oil Change Procedure

1. Run the pump for approximately one minute to warm the oil.
2. Remove the OIL DRAIN cap. Drain contaminated oil into a suitable container, and dispose of it according to local, state, and federal regulations. Oil can be forced from the pump 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.
3. When the flow of oil has stopped, tilt the pump forward to drain residual oil.

Oil Change Procedure contd.

4. Replace the OIL DRAIN cap.
5. Remove the OIL FILL cap, and fill the reservoir with new vacuum pump oil until the oil appears at the bottom of the sight glass. For oil capacities, refer to *Pump Specifications* in this manual.
6. Verify the inlet ports are capped; then turn ON the pump. Allow it to run for one minute, and check the oil level. If the oil is below the sight glass OIL LEVEL line, add oil slowly (with the pump running) until the oil reaches the OIL LEVEL line. Replace the OIL FILL cap, and confirm the inlet is capped and the drain cap is tight.
7. a) If the oil is badly contaminated with the sludge that forms when water is allowed to collect in the oil, you may need to remove the oil reservoir cover and wipe it out.

   b) Another method of dealing with heavily contaminated oil is to force the oil from the pump reservoir. To do this, allow the pump to run until it is warmed up. While the pump is still running, remove the oil drain cap. Slightly restrict the exhaust. This will back-pressure the oil reservoir and force the oil from it, carrying more contaminants. When the oil ceases to flow, turn off the pump.

   Repeat this procedure as required until the contamination is removed. Replace the OIL DRAIN cap, and refill the reservoir until the oil appears at the bottom of the sight glass with fresh pump oil. (See Step 4.)

Cleaning the Pump

Clean the pump with soap and water only. Do not use commercial cleaners that contain degreasing agents.

Grounding Instructions

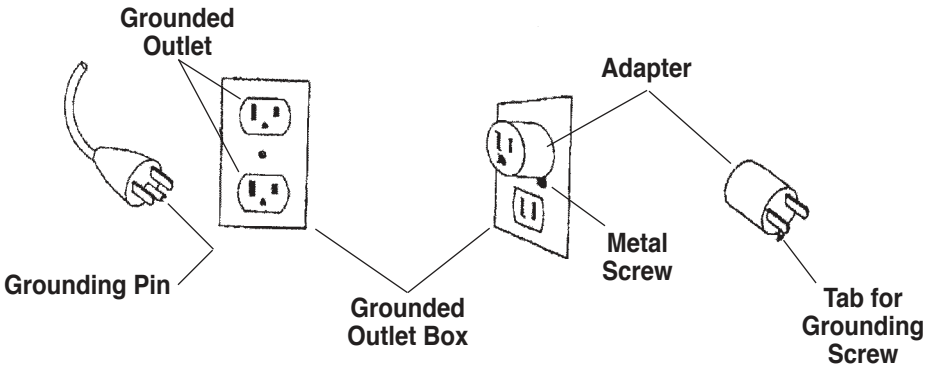
This product must be grounded. In the event of an electrical short, grounding reduces the risk of electrical shock by providing an escape wire for the electric current. This product is equipped with a power cord having a grounding wire with an appropriate grounding plug. The outlet used must be correctly installed and grounded according to local codes and ordinances.

⚠ WARNING : Incorrect installation of the grounding plug will result in electrical shock. When repair or replacement of the power cord or plug is required, do NOT connect the grounding wire to either flat blade terminal. The wire with green insulation (with or without yellow stripes) is the grounding wire.

Grounding Instructions contd.

Consult a qualified electrician when grounding instructions are not completely understood, or when in doubt regarding whether the product is correctly grounded. Do not modify the plug provided; if the plug does not fit the outlet, have an appropriate outlet installed by a qualified electrician.

Models 15300 and 15500 are for use on a nominal 120V circuit. A temporary adapter may be used to connect this plug to a 2-pole receptacle when a correctly grounded outlet is not available. The temporary adapter shall be used only until a correctly grounded outlet is installed. The green colored rigid ear, lug, or similar part extending from the adapter must be connected to a permanent ground, such as a correctly grounded outlet box cover. Whenever the adapter is used, it must be held in place by a metal screw.



Extension Cords

Use only a 3-wire extension cord that has a 3-blade grounding plug, and a 3-slot receptacle that accepts the plug on the product. Verify the extension cord is not damaged. When using an extension cord, use one that is heavy enough to carry the current the product draws. For lengths less than 25 ft., use 18 AWG extension cords. An undersized cord results in a drop in line voltage, loss of power, and overheating.

Service Parts



Part No.	Description
556672	Handle and Switch Assembly (Models 15300 & 15500)
556673	Handle and Switch Assembly (Models 15301 &15501)
556674	Oil Drain Fitting
523194	Capacitor (all models)
523195	Oil Fill Plug
523197	Base (all models)
556675	Housing Gasket (all models)
556676	Exhaust Fitting (all models)
523208	Inlet Fitting Adapter, 3/8" External Flare x 1/2" Internal ACME
525402	Inlet Fitting, 1/4" and 3/8" External Flare
525488	Inlet Fitting Adapter, 3/8" Internal Flare x 1/2" External ACME
557048	Inlet Fitting Adapter, 1/4" Internal Flare x 3/8" External Flare
556677	Power Cord (Models 15300 & 15500)
556678	Power Cord (Models 15301 & 15501)

Troubleshooting Guide

Your VacuMaster® pump has been designed for dependable use and long life. If something should go wrong, however, the following guide will help you get the pump back into service as quickly as possible.

If disassembly of the pump is required, check your warranty. The warranty may be voided by misuse or customer tampering that results in the pump being inoperable.

Failure To Start

1. Check line voltage. Robinair VacuMaster® pumps are designed to start at ±10% line voltage (loaded) at 41° F (5° C). At extremes, however, switching between the start and run windings may occur.

Oil Leakage

1. Verify the oil is not a residual accumulation from spillage, etc.
2. If leakage exists, the module cover gasket or the shaft seal may need to be replaced. If leakage exists in the area of the oil drain plug, you may need to reseal the plug using a commercial pipe thread sealer.

Failure To Pull A Good Vacuum

1. Confirm the vacuum gauge and all connections are in good condition and leak-free. You can confirm leakage by monitoring the vacuum with a thermistor gauge while applying vacuum pump oil at connections or suspected leak points. The vacuum will improve briefly while the oil is sealing the leak.
2. Verify the pump oil is clean. A badly contaminated pump may require several oil flushes. See *OIL CHANGE PROCEDURE*.

   Note: *Use only high vacuum pump oil such as Robinair's Premium High Vacuum Pump Oil. Other oils will prevent pull-down to a deep vacuum.*
3. Verify the oil is at the correct level. For maximum pump operation, the oil must be even with the OIL LEVEL line on the sight glass when the pump is running. See *OIL CHANGE PROCEDURE*. Do not overfill — operating temperatures will cause the oil to expand, so it will appear at a higher level than when the pump is not running. To check the oil level, start the pump with the inlet capped. Check the oil level in the sight glass. Add oil if necessary.

When You Need Help

If these procedures do not correct the problem, contact your nearest Robinair distributor, or call Robinair's toll-free service line for further information: 1-800-822-5561 (USA only).

Robinair Limited Warranty Statement

Rev. November 1, 2005

This product is warranted to be free from defects in workmanship, materials, and components for a period of one year from date of purchase. All parts and labor required to repair defective products covered under the warranty will be at no charge. The following restrictions apply:

1. The limited warranty applies to the original purchaser only.
2. The warranty applies to the product in normal usage situations only, as described in the Operating Manual. The product must be serviced and maintained as specified.
3. If the product fails, it will be repaired or replaced at the option of the manufacturer.
4. Transportation charges for warranty service will be reimbursed by the factory upon verification of the warranty claim and submission of a freight bill for normal ground service.
5. Warranty service claims are subject to authorized inspection for product defect(s).
6. The manufacturer shall not be responsible for any additional costs associated with a product failure including, but not limited to, loss of work time, loss of refrigerant, and unauthorized shipping and/or labor charges.
7. All warranty service claims must be made within the specified warranty period. Proof-of-purchase date must be supplied to the manufacturer.

Out of Warranty

This Limited Warranty does NOT apply if:

- The product, or product part, is broken by accident.
- The product is misused, tampered with, or modified.

VacuMaster® 2-Stage Pump Specifications

	15300	15500
Voltage	115V / 60 Hz	115V / 60 Hz
Free Air Displacement	3 CFM	5 CFM
Ultimate Vacuum	35 microns	35 microns
Stages	2	2
Motor	1/3 HP	1/3 HP
Intake Ports	1/4" & 3/8" Flare, 1/2" ACME	1/4" & 3/8" Flare, 1/2" ACME
Oil Capacity	9.5 oz.	9.5 oz.
Power Cord Length	6 ft.	6 ft.
Dimensions (in.)	13.25 x 5.5 x 9.5	13.25 x 5.5 x 9.5
Net Weight	22 lbs.	24 lbs.
	15301	**15501**
Voltage	220V / 50 Hz	220V / 50 Hz
Free Air Displacement	71 lpm / 3 CFM	118 lpm / 5 CFM
Ultimate Vacuum	35 microns	35 microns
Stages	2	2
Motor	1/3 HP	1/3 HP
Intake Ports	1/4" & 3/8" Flare	1/4" & 3/8" Flare
Oil Capacity	280 ml	280 ml
Power Cord Length	1.82 m	1.82 m
Dimensions (mm)	337 x 138 x 245	337 x 138 x 245
Net Weight	10 kg	11 kg

Please register your product at www.robinair.com
Por favor registre su producto en www.robinair.com
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Registrieren Sie bitte Ihr Produkt bei www.robinair.com

Due to ongoing product improvements, we reserve the right to change design, specifications, and materials without notice.

Debido a las constantes mejoras del producto, nos reservamos el derecho de cambiar el diseño, las especificaciones y los materiales sin aviso.

En raison des améliorations constantes apportées à nos produits, nous nous réservons le droit de changer de concept, de spécifications et de matériaux sans préavis.

Aufgrund laufender Produktverbesserungen behalten wir uns das Recht vor, Änderungen an Design, Spezifikationen und Materialien ohne Vorankündigung vorzunehmen.

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