



USER MANUAL/Installation Instructions

LRV-4



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CONGRATULATIONS

On the purchase of your Sierra LRV-4 Vacuum System. This State of the Art wet vacuum is a very powerful, high volume, efficient system. 115/230 volt motor provides plenty of vacuum on demand, while maintaining multiple operatories. The use of high-quality materials, such as stainless steel and ceramics, ensure utmost reliability and constant operating characteristics for years to come.



CUSTOMER SUPPORT

We will be happy to help you with any questions or concerns you may have about your LRV-4

CONTACT US 24 HOURS A DAY 7 DAYS A WEEK

Sierra Dental Products LLC
1953 W. Gulf to Lake Hwy
Lecanto, FL 34461

Call us	(352)527-1975 (800)240-5677	Tech Support/Office Tech Support/Office
Karen Bennett	(352)201-2537	Administrator
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www.dentalvacuums.com

<https://www.facebook.com/sierradentalpumps>



WARRANTY POLICY

Sierra Dental Products Limited Warranty

Warranty for the LRV-4 is limited to the original purchaser of the unit. Sierra Dental Products is only obligated under this warranty to the repair or replacement of defective parts or materials. The defect(s) must be reported to Sierra Dental Products, LLC. within the valid warranty period.

Sierra Dental Products will examine the product to determine if the parts are defective. Products that have been abused, neglected, or damaged by being improperly installed/maintained are not covered by this warranty. We are not responsible for work performed on the unit by any unauthorized service agents.

Warranty Period

Warranty is valid only with the return of the warranty card within 30 days of purchase for a period of 5 years.

Warranty Service and Return Policy

To obtain warranty service, product must be returned to Sierra Dental Products for examination at the purchaser's expense. All returns must be authorized and a Return Material Authorization (RMA#) number must be obtained from Sierra Dental Products. **Returned units must be properly packaged for shipping.** We are not responsible for shipping damages or shipping charges. Sierra Dental Products, LLC. will, at their discretion, repair or replace defective parts.

Note Returns are subject to a 25% re-stocking fee.

SAFETY

Use of the LRV-4, not in compliance with the instructions specified in this manual, may result in permanent failure of the unit.

WARNING:

To prevent fire or electrical shock, do not expose this unit to rain or moisture, excessive heat or improper ventilation.

ATTENTION USERS:



Alerts users of important operating and maintenance instructions. Read carefully to avoid any problems



Warns users of a potentially hot surface, and a danger of burns



Warns users that uninsulated voltage is present and can cause electric shock

SPECIFICATIONS



SITE REQUIREMENTS

Electrical	LRV-4
Max. Circuit Breaker Rating	20 Amp
Min. Wire Gauge	14 Gauge
Plumbing	LRV-4
Min. Intake vacuum lines	¾" Trunk lines
Min. drain line	1" Flex
Fresh Water Inlet (F.W.I)	¼" OD flex (Min)



PRODUCT SPECIFICATIONS

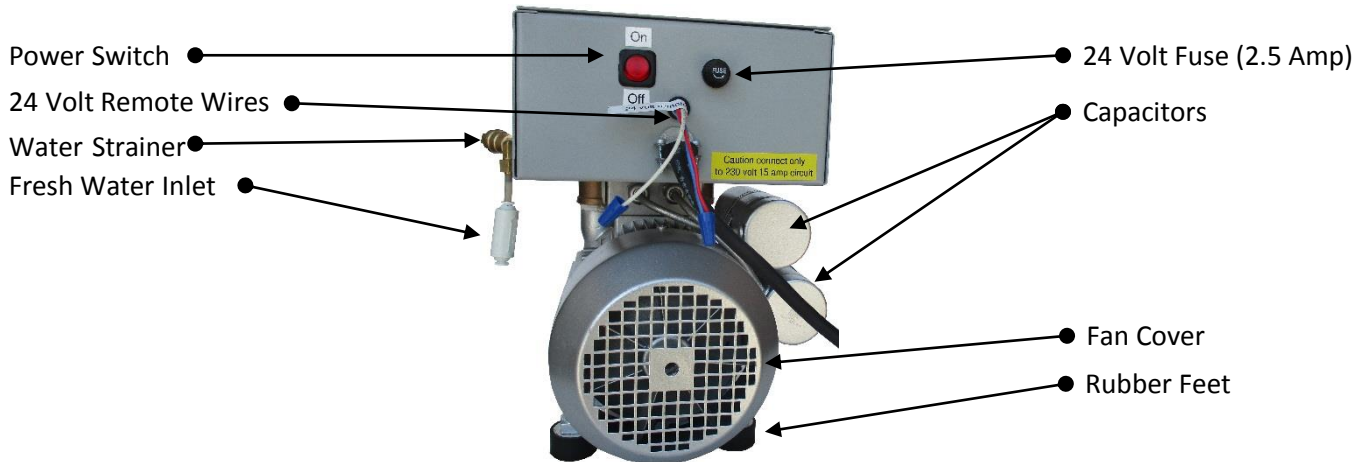
Electrical	LRV-4
Voltage	115/230 V-AC
Operating Load	10 Amps
Startup Load	15 Amps
Frequency	50-60 Hz
Phase	Single
Poles	2
Temperatures	LRV-4
Ambient Temp.	41°F - 104°F
Operating Liquid Temp.	41°F - 170°F
Vacuum & Pressure	LRV-4
Inlet Hg"	0-15Hg"
CFM	31.2 CFM
Max discharge pressure (operating)	16 psi
Max. permissible pressure in pump	116 psi

	Weight	Width	Depth	Height
LRV-4	65 lbs.	12"	17 ½"	14"

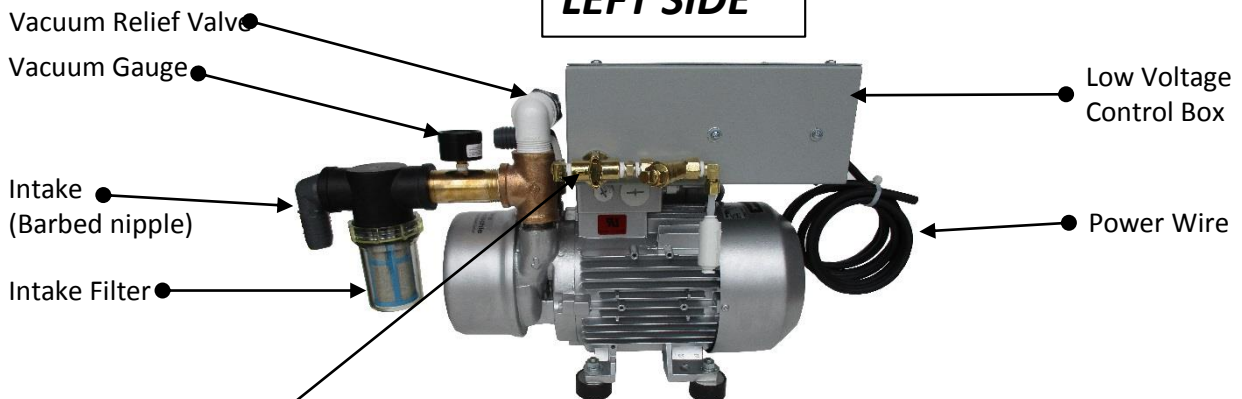
SYSTEM LAYOUT LRV-4



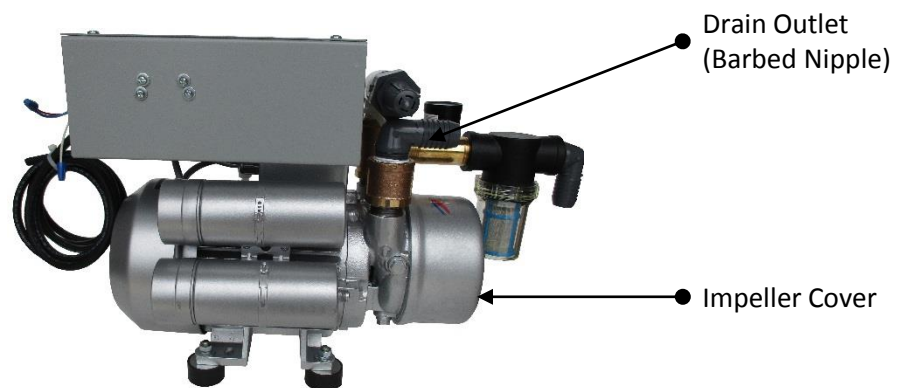
FRONT



LEFT SIDE



RIGHT SIDE



INSTALLATION

* Installation instructions may vary depending on voltage (115 or 230)



LRV-4

1. Find a location that fits the required site specifications (A licensed plumber is recommended for Steps 3, 4 & 5)

2. Place **LRV-4** in its pre-determined configuration

3. Drain instructions

Using a section of the 1" Flex Hose provided, route a drain line from the barbed nipple on the **LRV-4** to a proper drain. (Refer to Page 8 for drain location) This drain, is an exhaust. Ensure drain line is sealed tightly and secured with a hose clamp to prevent gas or fluid leaks.

4. Operatory Intake

Use 1" Adapter provided to convert the pre-existing line coming from the operatories for use with 1" ID flex hose. Route this flex hose to the nipple on the LRV-4. (Refer to Pg.8 for intake location. Be sure to use a hose clamp to ensure a sealed connection.

5. Fresh Water Supply

Use adapters to convert the pre-existing water line for use with ¼" OD P.E.X type flex hose. Refer to Pg. 8 for fresh water intake location. This is a push type fitting, so ensure that your water line is secured and completely inserted tightly.. Sierra Dental Products LLC highly recommends adding a manual valve on this incoming water supply. This can be useful for troubleshooting, as well as, flow rate adjustment.

6. A dedicated 20 amp circuit breaker and electrical outlet, located near your LRV-4 is suggested. A licensed electrician is highly recommended.

7. Power Cord Configuration

Power cord has 3 wires. The White wire is L1, the Black wire is L2 & the Green wire is Ground.

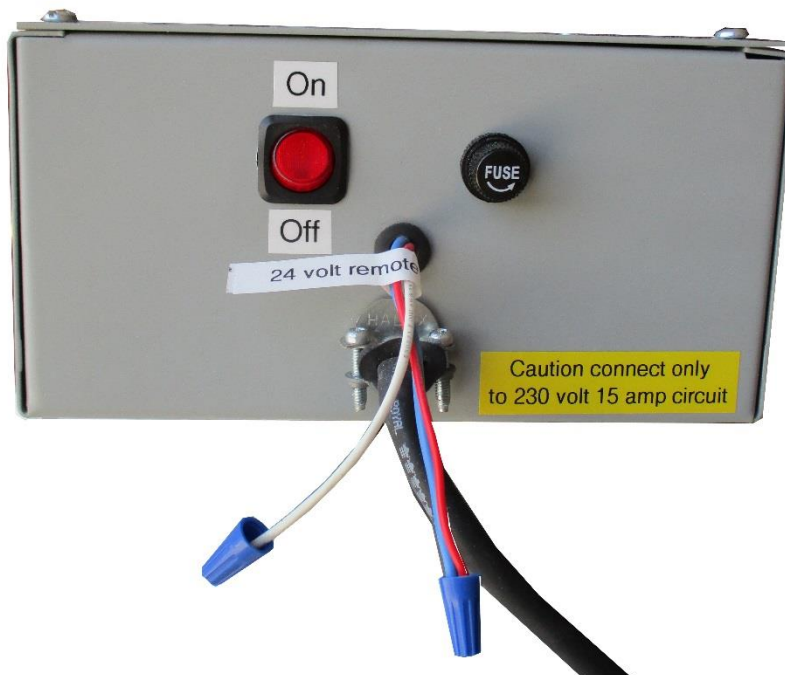
INSTALLATION Continued



8. If you have an outlet, provided by an electrician, you will need to have the power cord equipped with the corresponding plug end.
9. Plug the unit in, ensure that the power switch is not illuminated.
10. Turn the fresh water supply ON check for any leaks in the connections.

NOW YOU ARE READY TO POWER UP THE LRV-4

-Turn the power switch to the up "**On**" position, it will illuminate with red light. The motor will start.



Operation LRV-4



Non- Remote Operation is simple!

Just turn the unit on & off using the power switch.

. If you are not going to control the system remotely leave these wires alone. When not connected to remote control, the Blue & Red wires must be shorted together.

Remote Operation

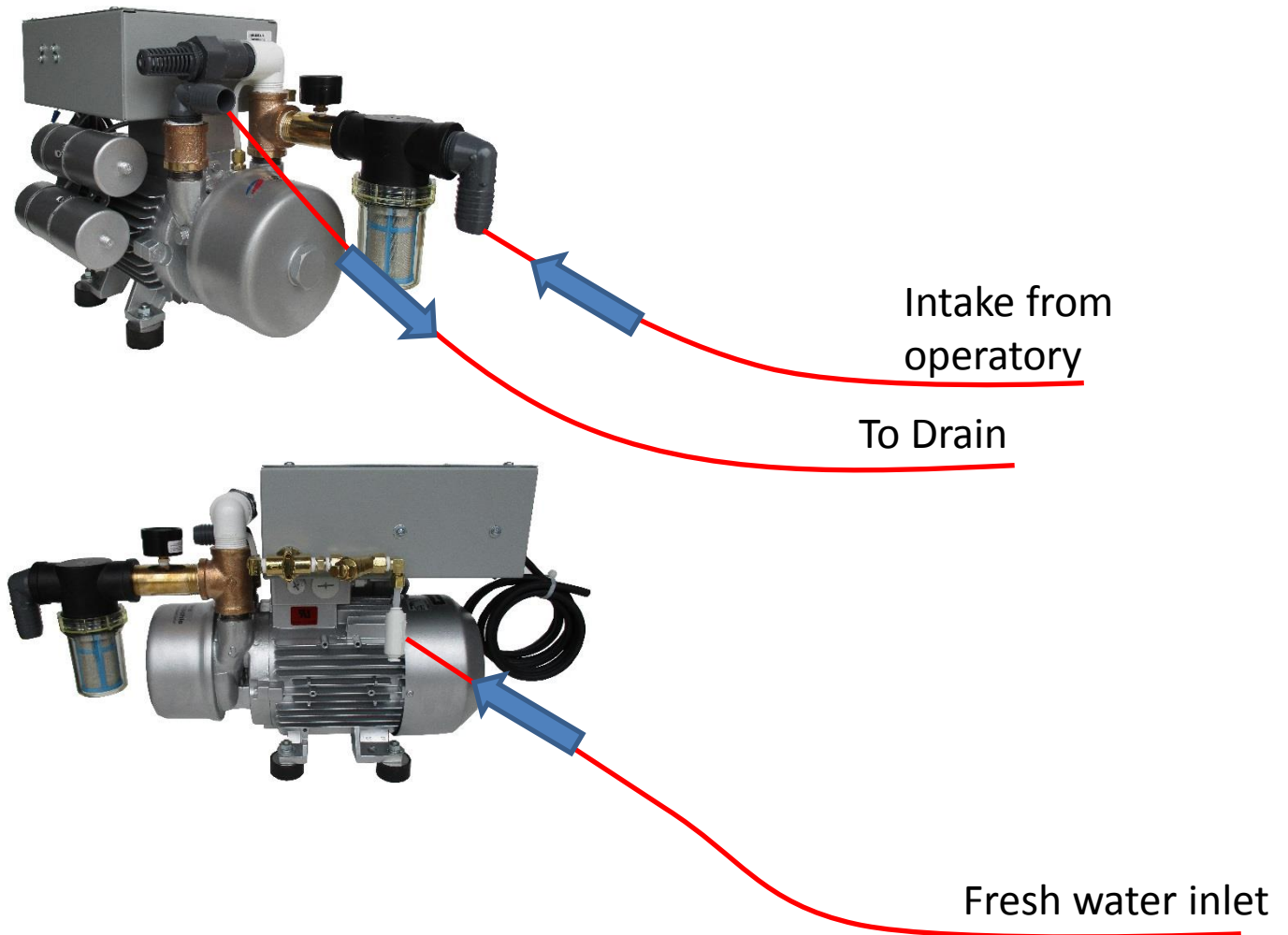


*The Remote wires can be located at the front of the unit. They are red, white & blue.

1. The red and blue wires are to be connected to a switch, the white wire is used for 24 VAC illumination.
2. Always leave the power switch in the "On" position when using remote control.

Wire Color	Description
Red	24 Volt Power
Blue	Return
White	Illumination (Lamp)

PLUMBING FLOW DIAGRAM



MAINTENANCE

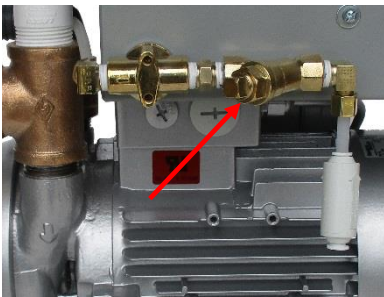
Vacuum Filter



*A dirty filter can cause a loss in vacuum

***ALWAYS** make sure your filter is CLEAN. A weekly check is highly recommended. These micron filters are cleanable. Warm water and soap can be used to break down any debris clogging the screen. Filters need to be replaced every 3-6 months. **New filters can be purchased thru Sierra Dental Products (Contact us via phone, email, or visit us on the web)**

Inline Strainer



The inline strainer prevents debris from entering the solenoid and motor. If this strainer gets clogged, it could prevent water from entering the motor and potentially cause harm to the liquid ring vacuum. **Inspect and clean this strainer quarterly.** It can be cleaned by removing the internal screen with a 10mm open-end wrench. Rinse the strainer with tap water to remove any debris. Re-thread the strainer back into the hole it was removed from.

*Your LRV-4 should be mounted in a clean environment. Dust and debris can potentially harm your unit and cause malfunction not covered under warranty.

***DO NOT ATTEMPT TO ADJUST THE VACUUM RELIEF VALVE**

The vacuum relief valve is preset by Sierra Dental Products LLC.

Adjusting the vacuum relief valve, **will void your warranty.**

TROUBLESHOOTING

Problem	Possible Cause	Possible Solutions
No Suction (NONE)	<ul style="list-style-type: none"> a. Pump not turned on b. Pump not running c. Clogged Intake d. Kinked or collapsed suction hose e. Water supply is off f. Clogged inline strainer g. Kinked water supply line h. Clogged vacuum filter i. Leaking pump head j. Faulty motor/pump k. Clogged Check Valve (intake) l. Clogged Check Valve (water supply) 	<ul style="list-style-type: none"> a. Turn pump on b. Check fuse, breaker, cables & terminals for open circuit. If none of the above, contact Sierra Dental Products c. Contact Sierra Dental Products d. Contact certified plumber to access/repair e. Turn water on f. Remove filter element, clean, re-install g. Contact certified plumber to access/repair h. Remove filter element, clean/replace, re-install i. Contact Sierra Dental Products j. Repair or replace motor/pump. Contact Sierra Dental Products k. Contact certified tech. Contact Sierra Dental Products l. Contact certified tech. Contact Sierra Dental Products
Low Suction	<ul style="list-style-type: none"> a. Clogged vacuum filter b. Relief valve c. Low water pressure d. Clogged inline strainer e. Clogged intake f. Kinked or collapsed suction hose g. Faulty seals/lids on chairside traps h. Vacuum leaks in plumbing/HVE lines/Saliva lines etc. i. Under-rated vacuum system j. Clogged chairside traps k. Kinked water supply line 	<ul style="list-style-type: none"> a. Remove filter element, clean/replace, re-install b. Contact Sierra Dental Products c. Contact certified plumber to access/repair d. Remove filter element, clean, re-install e. Contact Sierra Dental Products f. Contact certified plumber to access/repair g. Replace lids/seals/traps accordingly h. Repair/replace lines, tips, etc i. Contact Sierra Dental Products for upgrade or replacement j. Clean traps k. Contact certified plumber to access/repair

TROUBLESHOOTING

Problem	Possible Cause	Possible Solutions
Motor Won't Turn On. (NO NOISE)	<ul style="list-style-type: none"> a. No power b. Faulty Capacitor 	<ul style="list-style-type: none"> a. Check power source, ensure it is plugged into a power source b. Call tech support 800-240-5677
Motor Won't Turn On (Humming Noise)	<ul style="list-style-type: none"> a. Partial power supply lead interrupted b. Impeller is jammed c. Impeller is defective d. Motor bearings defective 	<ul style="list-style-type: none"> a. Check fuse, cables, & terminals for open circuit, connect open circuit, contact Sierra Dental Products b. Contact Certified service tech. Contact Sierra Dental Products for servicing c. Replace pump/motor d. Replace Bearings. Contact Sierra Dental Products for servicing

ACCESSORIES



BIO PURE - Complete evacuation system cleaner. 100% Guaranteed to maintain suction & eliminate trap hand cleaning. This is an all natural proprietary microbial formula designed to eliminate odors & digest organic waste. **HIGHLY RECOMMENDED**



CHAIRSIDE AMALGAM SEPARATOR

-These filters are designed to collect amalgam before it makes it to the drain. These filters are to be mounted chair side in the operatory on the main line that feeds your HVE lines and saliva lines. Multiple fittings included with the product ensures an easy installation process. These filters are a key in preventing contamination of bio hazardous waste in our water systems. These filters can be easily removed, recycled and replaced. **Go Green!!**



REPLACEMENT FILTERS – available in packs of 3. A dirty filter can cause loss of vacuum and motor damage. **Inspecting and replacing these filters** ensures proper maintenance procedures and avoids down time or costly repairs.

Simply Call 352-527-1975