



L&R Model 4000 Series Ultrasonic Cleaning System

Operator's Manual

L&R Manufacturing Company
577 Elm Street
Kearny, NJ 07032-3604
Phone: 201-991-5330 Fax: 201-991-5870

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WARNING: If the equipment is used in a manner not specified by the manufacturer the protection provided by the equipment may be impaired.

Specifications - Ultrasonic Cleaning System

MODEL NUMBER	OVERALL SIZE	TANK SIZE	WEIGHT	SONIC POWER	Heat Watts	Heater Line Frequency	Heater Volts	HEATER Fuse
401206 (HEATED)	19" x 15" x 14"	12" x 6" x 8"	32	4.1w/in ²	590 W	50/60Hz	117 230	T15.0A/117V T10.0A/230V
4005	14" x 12" x 14"	12" x 10" x 10"	46	5w/in ²	N/A		N/A	N/A
4105 (HEATED)	14" x 12" x 14"	12" x 10" x 10"	46	5w/in ²	450 W	50/60Hz	117 230	T15.0A/117V T10.0A/230V
4010	16" x 12" x 16"	16" x 12" x 12"	77	5w/in ²	N/A		N/A	N/A
4110 (HEATED)	16" x 12" x 16"	16" x 12" x 12"	77	5w/in ²	900 W	50/60Hz	117 230	T20.0A/117v T15.0A/230V
4022	22" x 18" x 20"	20" x 16" x 16"	101	3.8w/in ²	N/A		N/A	N/A
4122 (HEATED)	22" x 18" x 20"	20" x 16" x 16"	101	3.8w/in ²	2000 W	50/60Hz	117 230	T30.0A / 117v T20.0A/230V
4042	26" x 22" x 20"	24" x 20" x 20"	170	3.8w/in ²	N/A		N/A	N/A
4142 (HEATED)	26" x 22" x 20"	24" x 20" x 20"	170	3.8w/in ²	4000 W	50/60Hz	230 only	T30.0/230V
SS6530 19264	31" x 17" x 11"	30" x 12" x 6"	75	1.7w/in ²	1000 W	50/60Hz	117	T15.0A/117V

* Note Heated Tanks are 50/60 Hz

** Tank to be located in a dry location, 0-35°C, RH 96% Non-Condensing non-corrosive atmosphere below 2000 M altitude.

*** Do Not position equipment so that it is difficult to operate the disconnecting device.

**** Disconnect unit from mains by unplugging the line cord.

1.0 Introduction

1.1 Your Ultrasonic Cleaning System is easy to operate and install. Optimum cleaning results will result if certain guidelines are adhered to:

1.1.1 Keep solution level high.

1.1.2 Keep water/soap ratio adequate.

1.1.3 Rinse out tank when "sludge" covers tank bottom.

1.1.4 Read and observe Operation Warnings and Cautions (Section 5.0).

1.2 Please call for information, suggestions or if you have any concerns.

1.3 Please read the entire manual before using system.

2.0 Method of Operation

- 2.1** The ultrasonic cleaner is designed to clean various parts from truck radiators to rifle barrels using the appropriate cleaning solution.
- 2.2** The 4002 ultrasonic generator converts line voltage at 50/60 Hz to a suitable high voltage at 43 KHz that drives the stack transducers mounted on the tank bottom. The applied High Frequency High voltage causes the transducers to vibrate and in turn causes cavitation in the solution. As these cavities collapse the dislodge soils on the object to be cleaned.
- 2.3** Using the correct solution allows "wetting" of water molecules to dirt/part molecules for easier separation.

3.0 Installation Instructions

After carefully removing the ultrasonic cleaning system from its' carton and wood box, remove all packing material and plastic covers and proceed as follows:

- 3.1** Place the cleaner on a level surface, allowing for air flow at front and rear of generator.
- 3.2** Check drain pipe and plug making sure that they are reasonably tight. Use Teflon pipe thread sealer when replacing plug or cap.
- 3.3** Fill tank with recommended L&R solutions or equivalent to approximately two inches from the top edge of tank. Note that solution displacement, when submerging part to be cleaned, must be taken into consideration.
- 3.4** Make sure that the generator's "Power" switch is off.
- 3.5** See Section 6.0 for Interconnection Wiring Diagram. Connect tank ultrasonic power cable to its connector at rear of generator. Connect Protective Ground wires if supplied. Make all connections prior to plugging system into the power lines.

4.0 Operation Instructions

- 4.1** After filling tank with solution to an appropriate level, place item to be cleaned in rack or on support and lower into tank. Pieces should be tilted as needed to allow air bubbles to escape.
- 4.2** Turn machine on and run for an appropriate time. Usually this will be 5 to 15 minutes. Because cleaning jobs vary, testing will need to be performed for the particular cleaning task (consult attached sheets for suggestions).
- 4.3** After item(s) is/are cleaned; remove, rinse off and dry as needed.
- 4.4** Turn generator off.

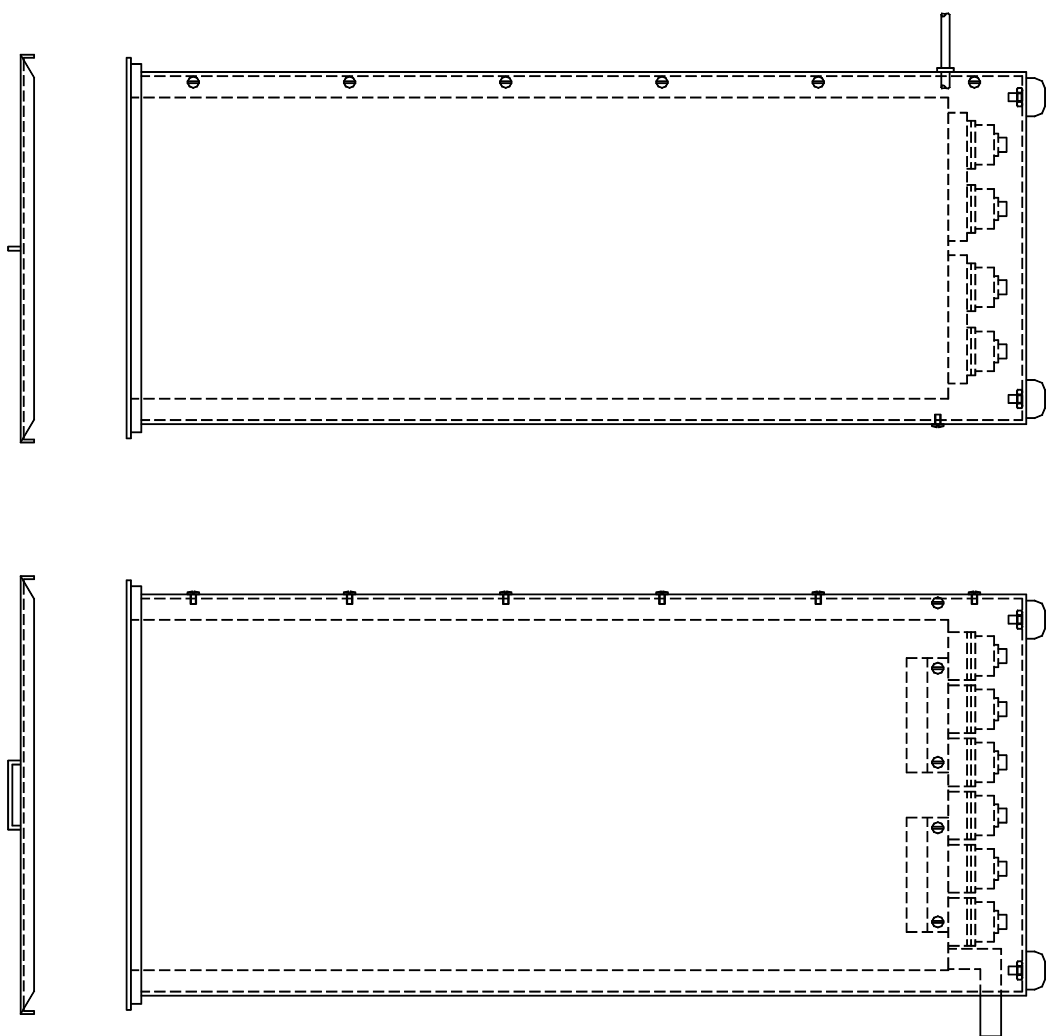
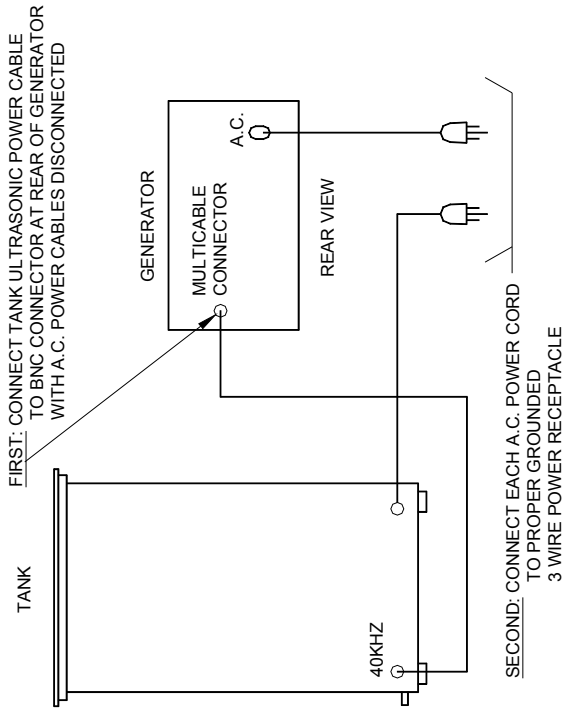


Operation Warnings and Cautions!

5.0 Operation Warnings and Cautions

- 5.1 Ground unit properly. Use only approved grounded power supply.
- 5.2 Do not operate system without cleaning solution in tank.
- 5.3 Do not allow solution level to drop below four inches from tank top.
- 5.4 Do not overfill tank.
- 5.5 Use recommended L&R solutions or equivalent for best results.
- 5.6 Allow clearance at sides and rear of generator for air flow.
- 5.7 Avoid use of flammable solutions such as gasoline, benzene, benzol, etc.
- 5.8 Connect generator to proper 50/60 Hz socket with third wire ground.
- 5.9 Always turn unit "off" when not in use.
- 5.10 Keep tank covered with supplied tank cover.
- 5.11 Avoid placing hands in the machine.
- 5.12 Service must be done by competent personnel only.
- 5.13 Be sure to unplug the machine before moving it.
- 5.14 Do not subject your machine to shock impact.
- 5.15 Do not immerse machine in water or any other liquid.
- 5.16 Do not use acid or bleach in your stainless steel tank as pinholes will be created.
- 5.17 Do not use water alone as the carrier bath. A wetting agent, such as L&R General Purpose Cleaner Concentrate, is required for proper transference of ultrasonic energy.

INTERCONNECTION WIRING DIAGRAM



TANK & WRAPPER ASSEMBLY

Please Record:

Serial # _____

Order Date _____



One Year Limited Warranty

L&R Manufacturing Company warrants this product for a period of one year from the date of purchase to be free of defects in material and workmanship. Machine will be repaired free of charge to the customer during the warranty period.

This warranty does not include damage or product failure resulting from misuse, abuse or transportation damage. Operating the machine dry is the most common misuse which results in failure.



REVISION HISTORY

C/N 85001

<u>REVISION</u>	<u>ECN#</u>	<u>DESCRIPTION</u>	<u>APPROVED</u>	<u>DATE</u>
C	8294	SEE ECN	J.P.M.	01/22/2007
D	8316	REVISED SHEET 3, SEE ECN 8316.	J.P.M.	01/24/2007
E	8725	REVISED SHEET 3 2000 M WAS 2000 Ft	J.P.M.	11/17/2010