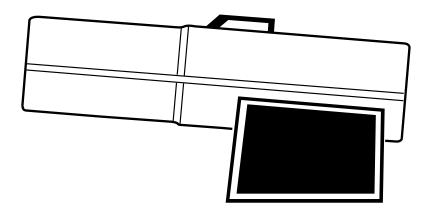
CANADIAN PROPANE CONSTRUCTION HEATER

OWNER'S MANUAL



MODEL: RCLP155B

IMPORTANT: Read and understand this manual before assembling, starting, or servicing heater. Improper use of heater can cause serious injury. Keep this manual for future reference.

A GENERAL HAZARD WARNING:

FAILURE TO COMPLY WITH THE PRECAUTIONS AND INSTRUC-TIONS PROVIDED WITH THIS HEATER, CAN RESULT IN DEATH, SERIOUS BODILY INJURY AND PROPERTY LOSS OR DAMAGE FROM HAZARDS OF FIRE, EXPLOSION, BURN, ASPHYXIATION, CARBON MONOXIDE POISONING, AND/OR ELECTRICAL SHOCK.

ONLY PERSONS WHO CAN UNDERSTAND AND FOLLOW THE INSTRUCTIONS SHOULD USE OR SERVICE THIS HEATER.

IF YOU NEED ASSISTANCE OR HEATER INFORMATION SUCH AS AN INSTRUCTIONS MANUAL, LABELS, ETC. CONTACT THE MANUFACTURER.



SAFETY INFORMATION

A WARNING: FIRE, BURN, IN-HALATION, AND EXPLOSION HAZARD. KEEP SOLID COMBUS-TIBLES, SUCH AS BUILDING MA-TERIALS, PAPER OR CARD-**BOARD, A SAFE DISTANCE** AWAY FROM THE HEATER AS **RECOMMENDED BY THE IN-**STRUCTIONS. NEVER USE THE HEATER IN SPACES WHICH DO **OR MAY CONTAIN VOLATILE OR** AIRBORNE COMBUSTIBLES, OR PRODUCTS SUCH AS GASO-LINE, SOLVENTS, PAINT THIN-NER, DUST PARTICLES OR UN-**KNOWN CHEMICALS.**

WARNING: NOT FOR HOME OR RECREATIONAL VEHICLE USE.

The heater is designed for use as a construction heater in accordance with ANSI Z83.7•CGA2.14. Other standards govern the use of fuel gases and heating products for specific uses. Your local authority can advise you about these. The primary purpose of construction heaters is to provide temporary heating of buildings under construction, alteration or repair. Properly used, the heater provides safe economical heating. Products of combustion are vented into the area being heated.

We cannot foresee every use which may be made of our heaters. Check with your local fire safety authority if you have questions about heater use.

Other standards govern the use of fuel gases and heat producing products for specific uses. Your local authorities can advise you about these.

Carbon Monoxide Poisoning: Some people are more affected by carbon monoxide than others. Early signs of carbon monoxide poisoning resemble the flu, with headaches, dizziness, and/or nausea. If you have these signs, the heater may not be working properly. **Get fresh air at once!** Check for proper ventilation and have heater serviced.

Propane Gas: Propane gas is odorless. An odor-making agent is added to propane gas. The odor helps you detect a propane gas leak. However, the odor added to propane gas may fade. Propane gas may be present even though no odor exists.

Make certain you read and understand all Warnings. Keep this manual for reference. It is your guide to safe and proper operation of this heater.

- Install and use heater with care. Follow all local ordinances and codes. In the absence of local ordinances and codes, refer to the *Standard for Storage and Handling of Liquefied Petroleum Gas, ANSI/NFPA 58* and the *Natural Gas Installation Code, CAN/CGA B149.2.* This instructs on the safe storage and handling of propane gases.
- Use only the electrical voltage and frequency specified on model plate.
- The electrical connections and grounding of the heater shall follow the 0
- Electrical grounding instructions This appliance is equipped with a threeprong (grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three-prong receptacle.
- Use only a three-prong, grounded extension cord.
- Use only the hose and factory preset regulator provided with the heater.
- Use only propane gas set up for vapor withdrawal.
- Provide adequate ventilation. Before using heater, provide at least a 0.28 m² (3 ft.²) opening of fresh, outside air for each 100,000 Btu/Hr of rating. This heater produces carbon monoxide, which is listed by the State of California as a reproductive toxin under Proposition 65.
- For indoor use only. Do not use heater outdoors.
- Do not use heater in occupied dwellings or in living or sleeping quarters.
- Do not use heater below ground level. Propane gas is heavier than air. If a leak occurs, propane gas will sink to the

lowest possible level.

- Keep appliance area clear and free from combustible materials, gasoline, paint thinner, and other flammable vapors and liquids. Do not use heater in areas with high dust content.
- Minimum heater clearances from combustibles: Outlet: 2.50 m (8 ft.)
 Sides: 60 cm (2 ft.) Top: 2 m (6 ft.)
 Rear: 60 cm (2 ft.)
- Keep heater at least 2 meters (6 feet) from propane tank(s). Do not point heater at propane tank(s) within 6 meters (20 feet).
- Keep propane tank(s) below 38° C (100° F).
- Check heater for damage before each use. Do not use a damaged heater.
- Check hose before each use of heater. If highly worn or cut, replace before using heater.
- Locate heater on stable and level surface if heater is hot or operating.
- Not intended for use on finished floors.
- Never block air inlet (rear) or air outlet (front) of heater.
- Keep heater away from strong drafts, water spray, rain, or dripping water.
- Do not leave heater unattended.
- Keep children and animals away from heater.
- Never move, handle, or service a hot, operating, or plugged-in heater. Severe burns may result. Wait 20 minutes after turning heater off.
- To prevent injury, wear gloves when handling heater.
- Never attach duct work to heater.
- Do not alter heater. Keep heater in its original state.
- Do not use heater if altered.
- Turn off propane supply and unplug heater when not in use.
- Use only original replacement parts. This heater must use design-specific parts. Do not substitute or use generic parts. Improper replacement parts could cause serious or fatal injuries.

PRODUCT **IDENTIFICATION** Upper Shell Hot Air Outlet Handle (Front) Fan Guard Lower Shell Power Cord On/Off Switch Inlet Connector Hose /Regulator Assembly Figure 1 - Model RCLP155B **Combustion Chamber THEORY OF** Clean

OWNER'S MANUAL

UNPACKING

- 1. Remove all packing items applied to heater for shipment. Keep plastic cover caps (attached to inlet connector and hose/regulator assembly) for storage.
- 2. Remove all items from carton.
- 3. Check all items for shipping damage. If heater is damaged, promptly inform dealer where you bought heater.

The Fuel System

OPERATION

The hose/regulator assembly attaches to the propane gas supply. The propane gas moves through the solenoid valve and out the nozzle.

The Air System

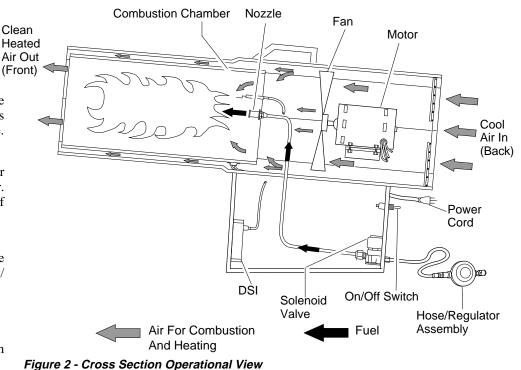
The motor turns the fan. The fan pushes air into and around the combustion chamber. This air is heated and provides a stream of clean, hot air.

The Ignition System

The direct spark ignitor (DSI) sends voltage to the spark plug/ignitor. The spark plug/ ignitor ignites the fuel and air mixture.

THE SAFETY CONTROL SYSTEM

This system causes the heater to shut down if the flame goes out.



PROPANE SUPPLY

Propane gas and propane tank(s) are to be furnished by the user.

Use this heater only with a propane vapor withdrawal supply system. See Chapter 5 of the *Standard for Storage and Handling of Liquefied Petroleum Gas, ANSI/NFPA 58* and/or *CAN/CGA B149.2.* Your local library or fire department will have this booklet.

The amount of propane gas ready for use from propane tanks varies. Two factors decide this amount:

- 1. The amount of propane gas in tank(s)
- 2. The temperature of tank(s)

The chart below shows the number of 45 kg (100 lb) tanks needed to run this heater.

Do not operate this product with any tank smaller than 45 kg (100 lb).

Temperature °C (°F) At Tank Location	Number of tanks
0 (32)	2
6.7 (20)	2
-12 (10)	3
-18 (0)	3
-23 (-10)	(Use larger
-29 (-20)	tank)

Less gas is vaporized at lower temperatures. You may need two or more 45 kg (100 lb) tanks or one larger tank in colder weather. Your local propane gas dealer will help you select the proper supply system. The minimum surrounding-air temperature rating for each heater is $-29 \,^{\circ}C$ (-20 $^{\circ}F$).

INSTALLATION

WARNING: Review and understand the warnings in the *Safety Information* section, page 2. They are needed to safely operate this heater. Follow all local codes when using this heater.

AWARNING: Test all gas piping and connections for leaks after installing or servicing. Never use an open flame to check for a leak. Apply a mixture of liquid soap and water to all joints. Bubbles forming show a leak. Correct all leaks at once.

- 1. Provide propane supply system (see *Propane Supply*, column 1).
- Connect POL fitting on hose/regulator assembly to propane tank(s). Turn POL fitting counterclockwise into threads on tank. Tighten firmly using wrench. Tighten regulator with vent pointing over the hose (see Figure 3).
- 3. Connect hose to inlet connector. Tighten firmly using a wrench (see Figure 4).

IMPORTANT: Extra hose or piping may be used if needed. Install extra hose or piping between hose/regulator assembly and propane tank. You must use the regulator supplied with heater.

- 4. Open propane supply valve on propane tank(s) slowly. *Note:* If not opened slowly, excess-flow check valve on propane tank may stop gas flow. If this happens, close propane supply valve and open again slowly.
- 5. Check all connections for leaks.

WARNING: Never use an open flame to check for a leak. Apply a mixture of liquid soap and water to all joints. Bubbles forming show a leak. Correct all leaks at once.

6. Close propane supply valve.

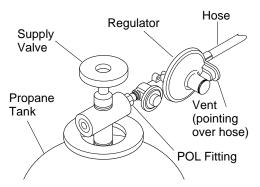


Figure 3 - Regulator With Vent Pointing Over Hose

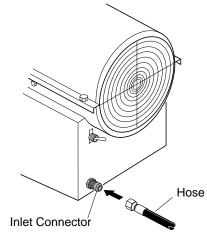


Figure 4 - Hose and Inlet Connector

VENTILATION

WARNING: Follow the minimum fresh, outside air ventilation requirements. If proper fresh, outside air ventilation is not provided, carbon monoxide poisoning can occur. Provide proper fresh, outside air ventilation before running heater.

Provide a fresh air opening of at least 0.28 m^2 (3 ft²) for each 100,000 Btu/Hr rating. Provide extra fresh air if more heaters are being used.

OPERATION

WARNING: Review and understand the warnings in the *Safety Information* section, page 2. They are needed to safely operate this heater. Follow all local codes when using this heater.

TO START HEATER

- 1. Follow all installation, ventilation and safety information.
- 2. Locate heater on stable and level surface. Make sure strong drafts do not blow into front or rear of heater.
- 3. Plug power cord of heater into a threeprong, grounded extension cord. Extension cord must be at least 2 m (6 ft) long. Extension cord must be UL/CGA listed.

Extension Cord Size Requirement

Up to 15 m (50 ft) long, use 18 AWG rated cord.

16 to 30 m (51 to 100 ft) long, use 16 AWG rated cord.

31 to 60 (101 to 200 ft) long, use 14 AWG rated cord.

- 4. Plug extension cord into a 120 volt/60 hertz, three-hole, grounded outlet.
- 5. Open propane supply valve on propane tank(s) slowly. *Note:* If not opened slowly, excess-flow check valve on propane tank may stop gas flow. If this happens, close propane supply valve and open again slowly.

6. Turn on/off switch to the ON position. Heater will start within twenty seconds. *Note:* If heater does not start, turn on/ off switch to the OFF position. Wait ten seconds for safety control to reset, then try again.

TO STOP HEATER

- 1. Tightly close propane supply valve on propane tank(s). Allow heater to burn remaining fuel in hose.
- 2. Wait a few seconds. Heater will burn gas left in supply hoses.
- 3. Turn on/off switch to the OFF position.
- 4. Unplug heater.

STORAGE

A CAUTION: Disconnect heater from propane supply tank(s).

- 1. Store propane tank(s) in safe manner. See Chapter 5 of *Standard for Storage* and Handling of Liquefied Petroleum Gases, ANSI/NFPA 58 and/or CAN/ CGA B149.2. Follow all local codes.
- Place plastic cover caps over brass fittings on inlet connector and hose/regulator assembly.
- 3. Store in dry, clean, and safe place. Do not store hose/regulator assembly inside heater combustion chamber.
- 4. When taking heater out of storage, always check inside of heater. Insects and small animals may place foreign objects in heater. Keep inside of heater free from combustible and foreign objects.

MAINTENANCE

WARNING: Never service heater while it is plugged in, connected to propane supply, operating, or hot. Severe burns and electrical shock can occur.

- 1. Keep heater clean. Clean heater annually or as needed to remove dust and debris. If heater is dirty or dusty, clean heater with a damp cloth.
- 2. Inspect heater before each use. Check connections for leaks. Apply mixture of liquid soap and water to connections. Bubbles forming show a leak. Correct all leaks at once.
- 3. Inspect hose/regulator assembly before each use. If hose is highly worn or cut, replace.
- 4. Have heater inspected yearly by a qualified service agency.
- 5. Keep inside of heater free from combustible and foreign objects.

PREVENTATIVE MAINTENANCE SCHEDULE

WARNING: Never service heater while it is plugged in, connected to propane supply, operating, or hot. Severe burns and electrical shock can occur.

ltem	How Often	How To
Fan	Clean every 500 hours of operation	See <i>Fan</i> , page 6
	or as needed	

CANADIAN RCLP155B

PROPANE CONSTRUCTION HEATER

SERVICE PROCEDURES

WARNING: Never service heater while it is plugged in, connected to propane supply, operating, or hot. Severe burns and electrical shock can occur.

UPPER SHELL REMOVAL

- 1. Remove screws along each side of heater using 5/16" nut-driver. These screws attach upper and lower shells together.
- 2. Lift or slide upper shell off.
- 3. Remove fan guard.

FAN

IMPORTANT: Remove fan from motor shaft before removing motor from heater. The weight of the motor resting on the fan could damage the fan pitch.

- 1. Remove upper shell (see above).
- 2. Use 1/8" hex wrench to loosen setscrew which holds fan to motor shaft.
- 3. Slip fan off motor shaft.
- 4. Clean fan using soft cloth moistened with kerosene or solvent.
- 5. Dry fan thoroughly.
- 6. Replace fan on motor shaft. Make sure setscrew is touching back of flat surface on motor shaft (see Figure 8).
- Place setscrew on flat of shaft. Tighten setscrew firmly 4.5 to 5.6 N-lb (40-50 in-lb).
- 8. Replace fan guard andupper shell.

IGNITOR

1. Make sure gap between ignitor electrode and burner nozzle is 3.3/3.8 mm (.13/ .15 in). Access ignitor electrode from inside combustion chamber. No other maintenance is needed for ignitor.

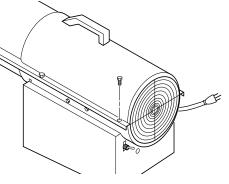


Figure 5 - Upper Shell Removal

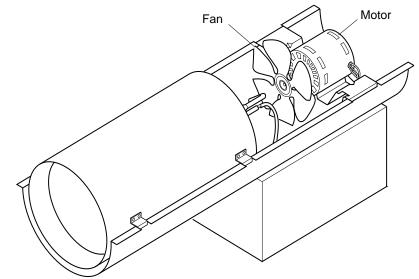


Figure 6 - Fan Removal

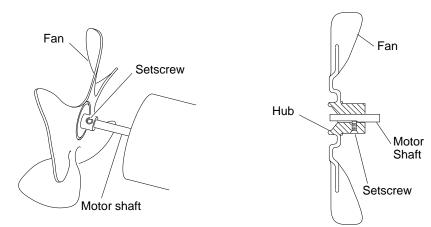


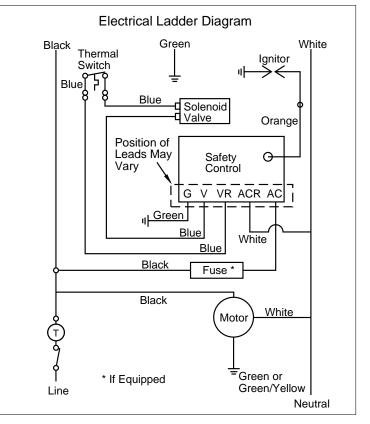
Figure 7 - Fan, Motor Shaft, and Setscrew Location

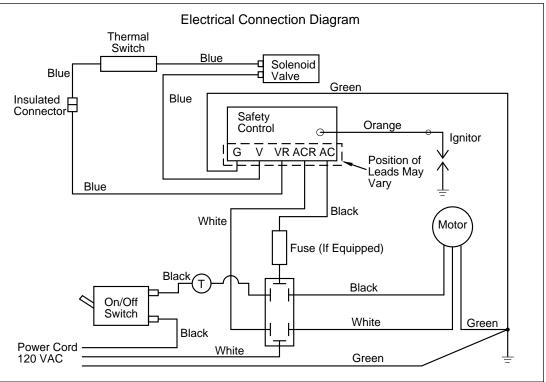
Figure 8 - Fan Cross Section

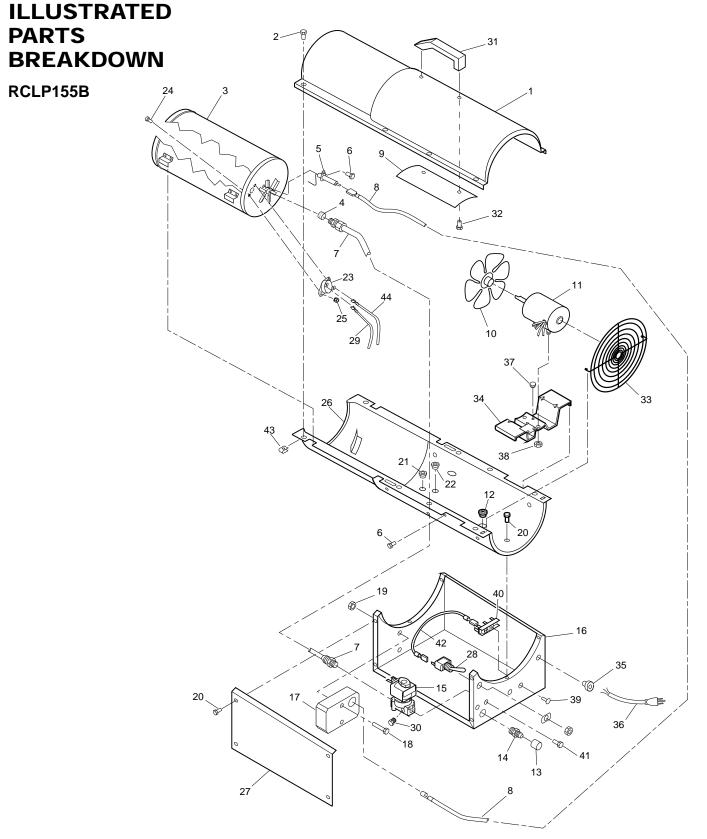
SPECIFICATIONS

Input Rating (Btu/Hr) Fuel	150,000 Propage Vaner Only				
Fuel Consumption	Propane Vapor Only				
Liters (Gallons)/Hour	6 (1 6)				
Kg (Pounds)/Hour					
Supply Pressure To Regul					
Minimum (for purposes					
of input adjustment)					
Maximum	Tank Pressure				
Regulator Outlet Pressure					
(Factory Preset)	31.8 cm (12.5 in) WC				
Manifold Pressure	24.9 cm (9.8 in) WC				
Hot Air Output					
(CFM Approx)	15.6 (550)				
Motor	3,430 RPM, 1/8 HP				
Electric Input	120 V/60 Hz				
Amperage	2.2				
Ignition	Direct Spark, Interrupted Type				
Ignitor Gap	3.3/3.8 mm (.13/.15 in)				
Weight					
Heater	11 kg (24 lb)				
Shipping	16 kg (35 lb)				
Size - L x W x H cm (in)	92.7 x 36.8 x 50.8 (36 ¹ / ₄ x 14 ¹ / ₂ x 20)				

WIRING DIAGRAMS







Note: Screws are standard hardware items

PARTS LIST

This list contains replaceable parts used in your heater. When ordering parts, follow the instructions listed under *Replacement Parts* on page 10 of this manual.

RCLP155B

KEY	PART			KEY	PART		
NO.	NO.	DESCRIPTION	QTY.	NO.	NO.	DESCRIPTION	QTY.
1	098511-116	Upper Shell, Model RCLP155B	1	29	101480-03	High Temperature Wire Assembly	1
2	100647-01	Screw, #10-16 x 1/2"	8	30	098276-01	Plug 1/8 NPTF Hex	1
3	098512-35	Combustion Chamber Kit	1	31	M51104-01	Handle	1
4	099138-01	Nozzle	1	32	M11084-29	Screw, #10-16 x 3/4"	2
5	099133-01	Ignitor	1	33	101206-01	Fan Guard	1
6	M11084-38	Screw, #8-18 x 3/8"	2	34	098138-02	Motor & Relay Support Bracket Assy.	1
7	099334-01	Fuel Tube Kit	1	35	M11143-1	Strain Relief Bushing	1
8	097806-02	Ignitor Cable	1	36	098219-17	Power Cord	1
9	M51108-01	Heat Shield	1	37	M50631	Rubber Bumper	2
10	M51153-01	Fan	1	38	NTC-4C	Lock Nut	2
11	103404-01	Motor	1	39	099157-01	Break Mandrell Rivet, 3/16"	1
12	097776-01	Universal Bushing	1	40	099125-01	Terminal Board	1
13	078978-01	Sleeve Cap	1	41	M12461-25	Screw, #10-32 x 1/4"	2
14	M51572-02	Male Connector	1	42	M9900-170	Wire Assembly	1
15	099132-01	Solenoid Valve	1	43	M11271-8	Clip Nut	8
16	097966-04AA	Base	1	44 101480-02 High Temperature Wire Assembly		1	
17	M51605-02	DSI Control	1	PARTS AVAILABLE-NOT SHOWN			
18	M12461-7	Screw, #6-32 x 1"	2		097941-23	Tradename Decal, Model RCLP155B	2
19	099432-01	Hex Nut, #6-32	2		079663-01	LP Warning Decal (English)	1
20	M11084-27	Screw, #10-16 x 1/2"	10		079663-02	LP Warning Decal (French)	1
21	M50104-05	Shorty Bushing	1		099164-04	Wiring Decal	1
22	M50104-01	Shorty Bushing	1		100176-02	Warning Decal	1
23	101732-01	Thermal Limit Switch	1		100865-03	Operation Decal	1
24	097968-05	Screw, #4-40 x 1/2"	2		LPA3070	Regulator & Hose Assembly	1
25	097384-04	Hex Nut, #4-40 Captive Washer	2		LPA1010	10' Hose Assembly	1
26	098511-131	Lower Shell, Model RCLP155B	1		LPA2100	Regulator	1
27	097965-02AA	Side Cover	1		LPA4020	Fuel Gas Connector	1
28	098226-01	On/Off Switch	1		HA1210	Thermostat	

ACCESSORIES

Purchase accessories and parts from your nearest dealer or service center. If your dealer or service center can not supply an accessory or part, call DESA Industries' Parts Department at 1-905-826-8010. You can also write to the address listed on the back page of this manual.

REGULATOR - LPA2100

HOSE AND REGULATOR ASSEMBLY - LPA3070

FUEL GAS CONNECTOR LPA4020

A POL adapter with excess-flow check valve.

THERMOSTAT - HA1210

- Helps economize on fuel
- No installation required
- Plugs into standard 120V outlet

TECHNICAL SERVICE

You may have further questions about this heater. If so, contact DESA International's Technical Service Department at 1-800-323-5190.

You can also visit DESA International's Technical Service web site at **www.desatech.com.**

REPLACEMENT PARTS

WARNING: Use only original replacement parts. This heater must use design-specific parts. Do not substitute or use generic parts. Improper replacement parts could cause serious or fatal injuries. This will also protect your warranty coverage for parts replaced under warranty.

PARTS UNDER WARRANTY

Contact authorized dealers of this product. If they cannot supply original replacement part(s), call DESA Industries at 1-905-826-8010. When calling DESA Industries, have ready:

- your name
- your address
- model number and serial number of your heater
- how heater was malfunctioning
- purchase date

In most cases, we will ask you to return the defective part to the factory.

PARTS NOT UNDER WARRANTY

Contact authorized dealers of this product. If they cannot supply original replacement part(s), call DESA Industries' Parts Department at 1-905-826-8010. When calling DESA Industries, have ready:

- model number of your heater
- the replacement part number

NOTES		

WARRANTY AND REPAIR SERVICE

KEEP THIS WARRANTY

LIMITED WARRANTY

DESA Industries warrants this product and any parts thereof, to be free from defects in materials and workmanship for one (1) year from the date of first purchase when operated and maintained in accordance with instructions. This warranty is extended only to the original retail purchaser, when proof of purchase is provided.

This warranty covers only the cost of parts and labor required to restore the product to proper operating condition. Transportation and incidental costs associated with warranty repairs are not reimbursable under this warranty.

Warranty service is available only through authorized dealers and service centers.

This warranty does not cover defects resulting from misuse, abuse, negligence, accidents, lack of proper maintenance, normal wear, alteration, modification, tampering, contaminated fuels, repair using improper parts, or repair by anyone other than an authorized dealer or service center. Routine maintenance is the responsibility of the owner.

THIS EXPRESS WARRANTY IS GIVEN IN LIEU OF ANY OTHER WARRANTY EITHER EXPRESSED OR IMPLIED, INCLUD-ING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

DESA Industries assumes no responsibility for indirect, incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations or exclusions may not apply to you. This Limited Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

We reserve the right to amend these specifications at any time without notice. The only warranty applicable is our standard written warranty. We make no other warranty, expressed or implied.

WARRANTY SERVICE

Should your heater require service, return it to your nearest authorized service center. Proof of purchase must be presented with the heater. The heater will be inspected. A defect may be caused by faulty materials or workmanship. If so, DESA Industries will repair or replace the heater without charge.

REPAIR SERVICE

Return your heater to your nearest authorized service center. Repairs not covered by the warranty will be billed at standard prices. Each Service Center is independently owned and operated. We reserve the right to amend these specifications at any time without notice.

Model	
Serial No	
Date of Purchase	

DESA Industries of Canada, Inc.

2220 Argentia Road, Unit #4 Mississauga, Ontario L5N2K7 905-826-8010 Fax: 905-826-8236 www.desatech.com