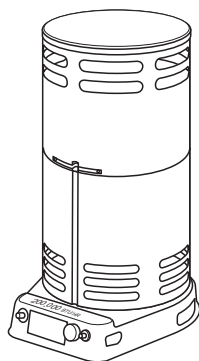


DESATM

HEATING PRODUCTS

PROPANE CONSTRUCTION CONVECTION HEATER OWNER'S MANUAL



**VARIABLE 30-80,000 BTU/HR
75-200,000 BTU/HR**

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.

⚠ GENERAL HAZARD WARNING:

Failure to comply with the precautions and instructions 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.


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Save this manual for future reference.

For more information, visit www.desatech.com

SAFETY INFORMATION

 **WARNING:** This product contains and/or generates chemicals known to the State of California to cause cancer or birth defects, or other reproductive harm.

 **WARNING:** Fire, burn inhalation, and explosion hazard. Keep solid combustibles, such as building materials, paper or cardboard, a safe distance away from the heater as recommended by the instructions. Never use the heater in spaces which do or may contain volatile or airborne combustibles, or products such as gasoline, solvents, paint thinner, dust particles or unknown 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/CGA 2.14. 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.

1. 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.
2. This product has been approved for use in the Commonwealth of Massachusetts.
3. Use only propane gas set up for vapor withdrawal.
4. Provide adequate ventilation. Before using heater, provide at least a 2.5 square foot (0.232 m²) (80,000 btu heaters) or 6.0 square foot (0.557 m²) (200,000 btu heaters) opening of fresh, outside air.
5. For indoor use only. Do not use heater outdoors.
6. Keep heater away from strong drafts, wind, water spray, rain, or dripping water.
7. Do not use heater in occupied dwellings or in living or sleeping quarters.
8. Do not use heater in a basement or below ground level. Propane gas is heavier than air. If a leak occurs, propane gas may sink to the lowest possible level.
9. Keep appliance area clear and free from combustible materials, gasoline, paint thinner, and other flammable vapors and liquids. Dust is combustible. Do not use heater in areas with high dust content.
10. Minimum heater clearances from combustibles:
80,000 Btu heaters
Sides: 3 feet (91 cm); Top: 6 feet (1,83 m)
100-200,000 Btu heaters
Sides: 3 feet (91 cm); Top: 7 feet (2,1 m)
11. Keep heater at least six feet (1,83 m) from propane tank(s).
12. Keep propane tank(s) below 100° F (37,8°C).
13. Use only the hose and factory preset regulator provided with the heater.
14. Check heater for damage before each use. Do not use a damaged heater.

SAFETY INFORMATION

Continued

15. Check hose before each use of heater. If highly worn or cut, replace with hose specified by manufacturer before using heater.
16. Do not alter heater. Keep heater in its original state.
17. Do not use heater if altered.
18. Locate heater on stable and level surface if heater is hot or operating.
19. Not intended for use on finished floors.
20. Never block air inlet (bottom of shell) or air outlet (around top of shell) of heater.
21. Do not leave heater unattended.
22. Keep children and animals away from heater.
23. Never move, handle, or service a hot or operating heater. Severe burns may result. You must wait 15 minutes after turning heater off.
24. To prevent injury, wear gloves when handling heater.
25. Never attach duct work to heater.
26. Turn off propane supply to heater when not in use.
27. 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.

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.

THEORY OF OPERATION

The Fuel System: The hose/regulator assembly attaches to the propane gas supply. This provides fuel to the heater.

The Ignition System: The piezo ignitor lights the pilot.

The Automatic Control System: This system causes the heater to shut down if the flame goes out.

PRODUCT IDENTIFICATION

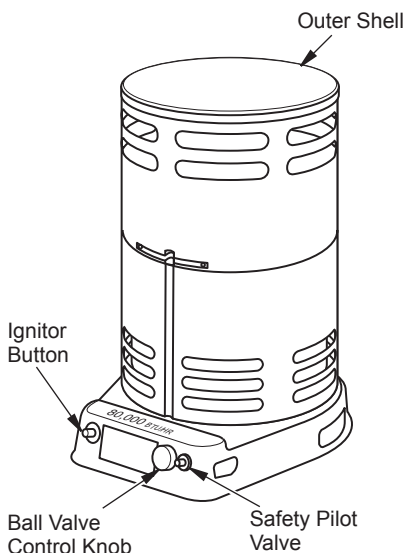


Figure 1 - 80,000 Btu Model Shown

VENTILATION

⚠ WARNING: Provide at least a 2.5 square foot (0.23 m²) opening of fresh, outside air while running heater. If proper fresh, outside air ventilation is not provided, carbon monoxide poisoning can occur. Provide proper fresh, outside air ventilation before running heater.

PROPANE SUPPLY

You must provide propane gas and propane tank(s).

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.

This heater will operate with a 20-pound (9,07 kg) propane tank. However, you can only operate it in the LOW position during mildly cool weather. At higher heat settings or during colder weather, you must use larger tanks.

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 minimum number of 100-pound (45 kg) tanks needed to run the heater.

Connect tanks together with a manifold.

Average Temperature °F(°C) At Tank Location	Number Of Tanks
(80,000 Btu models)	
20° (-6.7°) to 60° (15.6°)	1
0° (-17.8°) to 20° (-6.7°)	2
(200,000 Btu models)	
20° (-6.7°) to 60° (15.6°)	2
0° (-17.8°) to 20° (-6.7°)	3

Less gas is vaporized at lower temperatures. Your local propane gas dealer will help you select the proper supply system.

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.

⚠ CAUTION: Never ignite and/or run this heater unless the shells are fully extended and locked into position.

OUTER SHELL

IMPORTANT: When the heater is first removed from carton, the outer shell is in the down position. Protect hands before lifting outer shell. Never grasp bare metal without hand protection.

1. Care must be taken to protect hands during this step. Lift outer shell straight up as shown in Figure 2, until all three clips engage slots in lower shell. Screw holes will line up at this point.
2. Lock clips into place with 3 screws as shown in Figure 2. The heater must not be operated unless the outer shell is properly extended and fully locked into place.

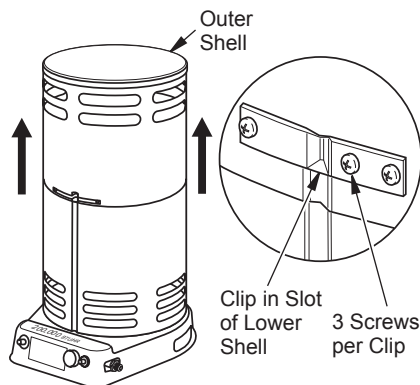


Figure 2 - Lifting Outer Shell

CONNECTING TO GAS SUPPLY

⚠ WARNING: Test all gas piping and connections for leaks after installation 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*, page 4).
2. Connect fuel gas fitting on hose/regulator assembly to propane tank(s). Turn fuel gas fitting counterclockwise into threads on tank. Tighten firmly using a wrench. **IMPORTANT:** Tighten regulator with vent pointing down. Pointing vent down protects regulator from weather damage.
3. Connect hose to the valve inlet. Tighten firmly using a wrench. You must use the regulator supplied with heater even if propane tank has one.

INSTALLATION

Continued

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, you may hear a click inside the regulator assembly, this is the check valve closing. To reset the excess flow check valve, close propane supply valve and open again slowly.
5. Check all connections for leaks. Apply mixture of liquid soap and water to gas joints. Bubbles forming show a leak that must be corrected.

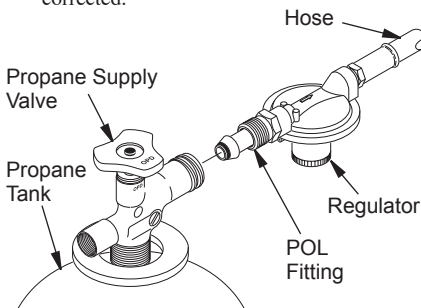


Figure 3 - Regulator Position

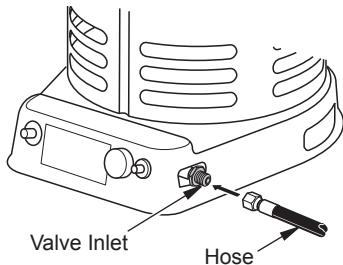


Figure 4 - Hose and Valve Inlet

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. Before lighting pilot fully close the ball valve (turn knob fully clockwise).
2. Fully open the valve on the propane cylinder and wait 15 seconds before proceeding to step 3.
3. Depress red button on safety pilot valve admitting gas to the heater. Then push and release the ignitor button until the pilot lights.
4. When the pilot lights, continue to hold the button depressed for 30 seconds, then release.
5. If pilot goes out, wait 5 minutes and repeat the lighting procedure.
6. When the pilot remains lit, open the ball valve (turn knob counterclockwise) to light main burner. Partially close valve to regulate heat output.

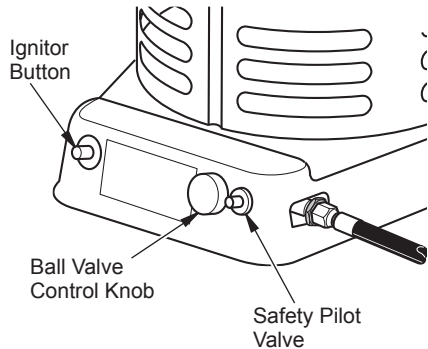


Figure 5 - Starting Heater

TO STOP HEATER


1. Securely close valve on the propane cylinder.
2. Continue to operate heater until all fuel in the hose has burned.
3. Fully close the ball valve.

TO RESTART HEATER

1. Securely close valve at propane cylinder.
2. Wait 5 minutes.
3. Restart following *To Start Heater* procedure on page 5.


STORAGE

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

 **CAUTION: Be careful not to locate fingers in grooves on side of heater, in vent holes or on bottom of shell when collapsing shell to the down position. Severe cuts may occur. Always wear hand protection when grasping bare metal.**

1. The heater should be inspected before each use, and at least annually by a qualified person.
2. Before each use, check the soft "O" ring seat at the bullnose of the POL fitting. If the "O" ring is cut, scuffed, or otherwise damaged, replace the POL fitting with part number LPA4020.
3. Turn off the gas at the propane/LP gas supply cylinder(s) when the heater is not in use.
4. Heater is to be stored indoors. The connection between propane/LP gas supply cylinder(s) and heater must be disconnected, cylinder(s) removed from the heater and stored outdoors in accordance with Chapter 5 of the *Standard for Storage and Handling of Liquefied Petroleum Gases ANSI/NFPA 58 and CSA B149.1, Natural Gas and Propane Installation Code*.
5. Store in a dry, clean and safe place.

MAINTENANCE

 **WARNING: Never attempt to service heater while it is connected to propane supply, operating, or hot. Severe burns can occur.**


1. Keep heater clean.
2. Inspect heater before each use. Check connections for leaks. Apply mixture of liquid soap and water to connections. Bubbles forming show a leak that must be corrected. 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 person.

TECHNICAL SERVICES

You may have further questions about this heater. If so, contact DESA Heating Products' Technical Service Department at 1-866-672-6040. When calling, please have your model and serial numbers of your heater ready.

You can also visit DESA Heating Products' 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 can't supply original replacement part(s), either contact your nearest Parts Central or call DESA Heating Products' Technical Service Department at 1-866-672-6040.

When calling DESA Heating Products, have ready

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

PARTS NOT UNDER WARRANTY

Contact authorized dealers of this product. If they can't supply original replacement part(s), either contact your nearest Parts Central (listed in Authorized Service Center booklet) or call DESA Heating Products at 1-866-672-6040 for referral information.

When calling DESA Heating Products, have ready

- model number of your heater
- the replacement part number

ACCESSORIES

Purchase heater accessories and parts from your nearest dealer or service center. If they can not supply an accessory or part, either contact your nearest Parts Central (listed in the separate Authorized Service Center booklet) or call DESA Heating Products' at 1-866-672-6040. You can also write to the address listed on the back page of this manual.

SPECIFICATIONS

	80,000 Btu	200,000 Btu
Type of Gas	Propane/LP Only	Propane/LP Only
Gas Supply Pressure to regulator		
Maximum	Bottle Pressure	Bottle Pressure
Minimum	5 psig (34.5 kPa)	15 psig (103 kPa)
Gas Supply Pressure regulator out	11" W.C. (2.74 kPa)	10 psig (68.9 kPa)
Ignition	Piezo Ignitor	Piezo Ignitor
Minimum Ambient Temp. Rating	0°F (-17.8°C)	0°F (-17.8°C)
Rating	30,000 - 80,000 Btu/hr (8.79 - 23.4 kW)	75,000 - 200,000 Btu/hr (22.0 - 58.6 kW)
Fuel Consumption	1.4 to 3.7 lb/hr (.74 - 1.80 kg/hr)	3.5 - 0.3 lb/hr (1.44 - 4.32 kg/hr)
Fuel Orifice Port No.	6	6
Fuel Orifice Port Size	0.0472" (1.20mm)	0.0320" (.813mm)

TROUBLESHOOTING

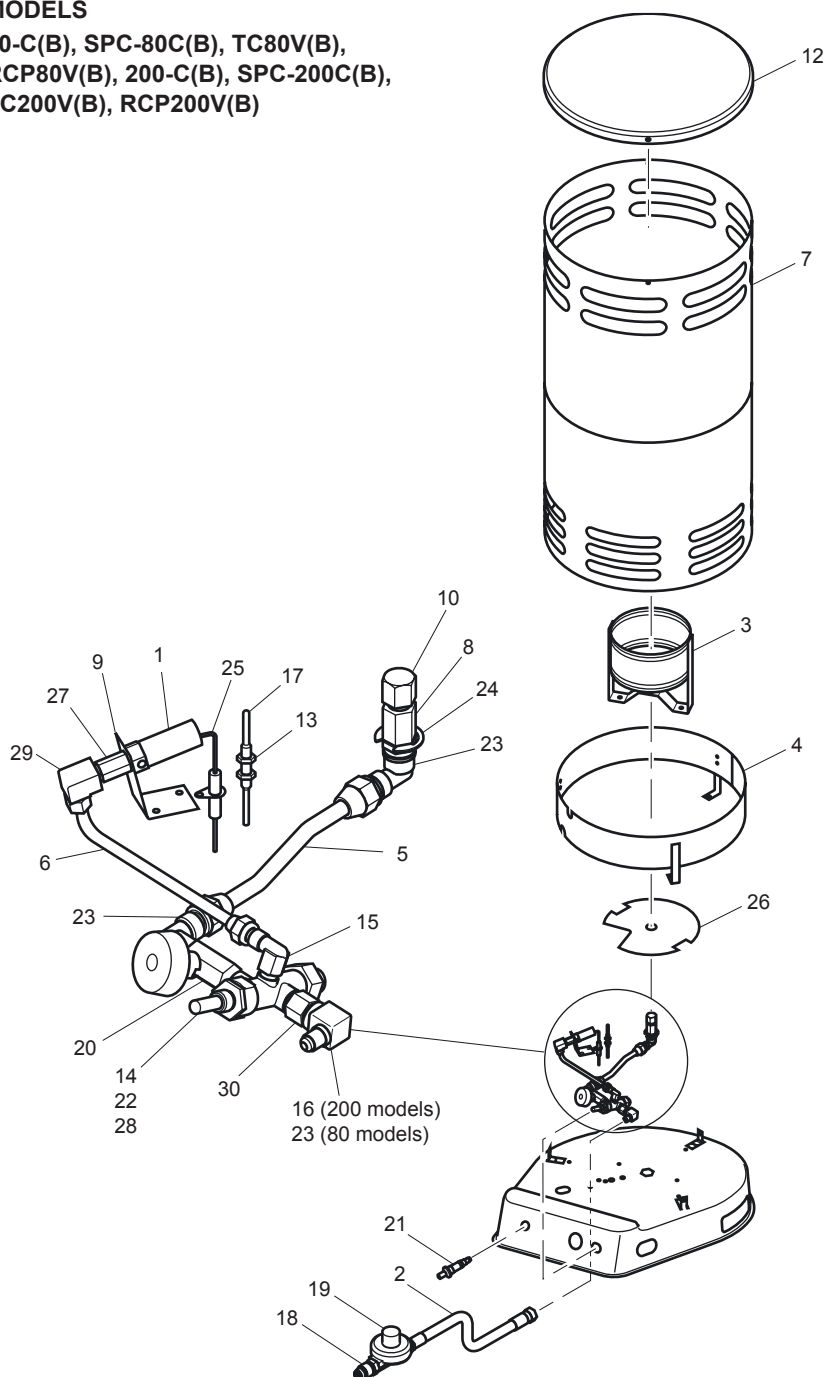
⚠ WARNING: Never service heater while it is plugged in, connected to propane supply, operating, or hot. Severe burns and electrical shock can occur.

OBSERVED FAULT	POSSIBLE CAUSE	REMEDY
Burner fails to light	<ol style="list-style-type: none"> 1. Propane supply valve closed on propane tank(s) 2. Excess flow check valve closed 3. Blockage in burner orifice 4. Piezo ignition system not sparking 5. Pilot orifice clogged 	<ol style="list-style-type: none"> 1. Open propane supply valve slowly 2. Close propane supply valve on propane tank and reopen slowly 3. Replace burner orifice 4. Check to assure ignitor electrode gap is .195" Check wire lead for damage. Replace piezo ignitor and/or ignitor electrode as necessary 5. Clean or replace pilot assembly
Pilot lights but goes out when automatic control valve button is released	<ol style="list-style-type: none"> 1. Not enough warm up time 2. Low gas pressure 3. Thermocouple loose or needs to be replaced 4. Automatic control valve needs to be replaced 	<ol style="list-style-type: none"> 1. Relight, hold automatic control valve button in 45 seconds 2. Check propane tank(s) for proper gas supply 3. Tighten connection or replace thermocouple 4. Replace automatic control valve
Burn rate is low	<ol style="list-style-type: none"> 1. Control valve is on LOW 2. Plugged gas orifice 3. Low gas pressure 4. Low fuel supply 	<ol style="list-style-type: none"> 1. Turn valve counter clockwise to HIGH 2. Replace gas orifice 3. Check gas supply; check regulator output 4. Consult propane gas supplier

ILLUSTRATED PARTS BREAKDOWN

MODELS

80-C(B), SPC-80C(B), TC80V(B),
RCP80V(B), 200-C(B), SPC-200C(B),
TC200V(B), RCP200V(B)



PARTS LIST

**MODELS 80-C(B), SPC-80C(B), TC80V(B), RCP80V(B)
200-C(B), SPC-200C(B), TC200V(B) AND RCP200V(B)**

KEY NO.	PART NUMBER		DESCRIPTION	QTY.
	80,000 Btu	200,000 Btu		
1	113775-01	113814-01	Pilot Assembly	1
2	113776-01	113815-01	Hose Assembly, 10 foot	1
3	113777-01	113777-01	Burner Ring Assembly	1
4	113778-01	113778-01	Ring Shield	1
5	113779-01	113779-01	Fuel Tube Assembly	1
6	113780-01	113780-01	Pilot Tube Assembly	1
7	113781-01	113781-01	Upper Shell	1
8	113782-01	113782-01	Orifice Adapter	1
9	113783-01	113783-01	Bracket, Pilot Mounting	1
10	113784-01	113784-01	Orifice, LP	1
11	113346-01	113346-01	Base	1
12	113785-01	113875-01	Cap	1
13	113786-01	113786-01	Thermocouple Clip	1
14	113787-01	113787-01	Control Valve	1
15	113788-01	113788-01	Female Elbow Fitting, 1/4 FLR x 1/8 FPT	1
16	113789-01	113789-01	Female Elbow Fitting, 1/4 FLR x 1/4 FPT	1
17	113790-01	113790-01	Thermocouple	1
18	113791-01	113818-01	POL, Excess Flow	1
19	113792-01	113819-01	Regulator	1
20	113793-01	113793-01	Ball Valve	1
21	102445-01	102445-01	Piezo Ignitor	1
22	113794-01	113794-01	Valve Nut, 1/2-28	1
23	113795-01	113795-01	Female Elbow Fitting, 3/8 FLR x 1/4 FPT	3
24	113796-01	113796-01	Retaining Ring	1
25	113797-01	113797-01	Ignitor Electrode	1
26	113798-01	113798-01	Heat Shield	1
27	113799-01	113799-01	Pilot Orifice	1
28	113800-01	113800-01	Washer, Flat	1
29	113801-01	113801-01	Elbow Fitting, 1/8 FPT x 1/4 CPSN	1
30	113825-01	113821-01	Lower Shell	1
PARTS AVAILABLE - NOT SHOWN				
	113809-01	113809-01	Ball Valve Knob	1
	113810-01	113810-01	Ball Valve Knob Insert	1
	113822-01	113822-03	Tradename Decal, Reddy	1
	113822-02	113822-04	Tradename Decal, Master	1
	113822-05	113822-07	Tradename Decal, All-Pro	1
	113822-06	113822-08	Tradename Decal, Universal	1
	113808-04	113808-01	Hang Tag (English)	1
	113808-05	113808-02	Hang Tag (Spanish)	1
	113808-06	113808-03	Hang Tag (French)	1
	113805-01	113805-01	Installation Decal (English)	1
	113805-02	113805-02	Installation Decal (Spanish)	1
	113805-03	113805-03	Installation Decal (French)	1
	113802-01	113802-02	Model Decal (80-C, SPC-80C, 200C, SPC-200C)	1
	113802-09	113802-10	Model Decal (RCP80V, TC80V, RCP200V, TC200V)	1
	113802-13	113802-14	Model Decal (80-CB, SPC-80CB, 200CB, SPC-200CB)	1
	113802-15	113802-16	Model Decal (RCP80VB, TC80VB, RCP200VB, TC200VB)	1

WARRANTY AND REPAIR SERVICE

KEEP THIS WARRANTY

Model _____

Serial No. _____

Date of Purchase _____

LIMITED WARRANTY

DESA Heating Products 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, INCLUDING WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

DESA Heating Products 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.

This warranty does not cover discoloration due to operation of heater. 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 Heating Products 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.

For more information write:



2701 Industrial Drive

P.O. Box 90004

Bowling Green, KY 42102-9004

ATTN: Customer Service Department