

For more information, visit www.desatech.com

Adjustable Temperature Settings:

Low - 20,000 Btu

High - 24,000 Btu

⚠ WARNING: For Outdoor Use Only

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

FOR YOUR SAFETY

If you smell gas:

1. Shut off gas to the appliance.
2. Extinguish any open flame.
3. If odor continues, immediately call your gas supplier.

FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.



LISTED

Gas-Fired Infrared Patio Heater
28BN



Fill In For Your Records

Model No. _____
(Located on side panel)

Serial No. _____
(Located near piezo ignitor)

Date of Purchase _____

Save this manual for future reference.

TABLE OF CONTENTS

SAFETY INFORMATION	2	MAINTENANCE	7
UNPACKING	3	REPLACEMENT PARTS	7
TOOLS REQUIRED	4	TROUBLESHOOTING	8
ASSEMBLY	4	TECHNICAL SERVICE	8
OPERATION	6	ILLUSTRATED PARTS BREAKDOWN AND PARTS LIST	9
STORAGE	7	WARRANTY AND REPAIR SERVICE	Back Page

SAFETY INFORMATION

WARNINGS

⚠ WARNING: Fire, burn, inhalation, and explosion hazard. Keep solid combustibles, such as building materials, wood, vinyl siding, 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: Improper installation, adjustment, alteration, service or maintenance can cause injury, property damage, or death. Read the installation, operating, and maintenance instructions thoroughly before installing or servicing this equipment.

The heater is designed for use as an infrared patio heater in accordance with the applicable requirements CSA 5.90 U.S Infrared Patio Heaters and the requirements of UL's outline of investigation for gas-fired Infrared Patio Heaters operated at high pressures. 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 outdoor patio heaters is to provide heating of residential and nonresidential spaces. Properly used, the heater provides safe economical heating.

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.**

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!** Have heater serviced.

Propane/LP Gas: Propane/LP gas is odorless. An odor-making agent is added to propane/LP gas. The odor helps you detect a propane/LP gas leak. However, the odor added to propane/LP gas may fade. Propane/LP 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*. This instructs on the safe storage and handling of propane/LP gases.
- Use only propane/LP gas set up for vapor withdrawal in a 20 lb. cylinder. Cylinder must be constructed and marked in accordance with specifications for propane/LP cylinders of the U.S. Department of Transportation (DOT). The cylinder must be provided with a shutoff valve terminating in a propane/LP supply cylinder valve outlet. The valve must have external threads and marked "Use with Type 1" and a safety relief device having a direct communication with the vapor space of the cylinder. The cylinder used must include a collar to protect the cylinder valve.
- This heater produces carbon monoxide, which is listed by the State of California as a reproductive toxin under Proposition 65. Chemicals known to the state of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of propane/LP gas.
- For outdoor use only. Do not use heater indoors or in any unventilated or enclosed areas. This heater uses oxygen. Do not use in unventilated or enclosed areas where carbon monoxide poisoning may occur.
- Do not use heater in basement or below ground level. Propane/LP gas is heavier than air. If a leak occurs, propane/LP 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. Dust is combustible. Do not use heater in areas with high dust content.
- Minimum heater clearances from combustibles: Back: 18 inches; Top, Front and Sides: 42 inches (see Figure 1, page 3).
- Before each use, check heater for leaks. 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.
- Keep propane/LP cylinder below 100° F (38°C).
- Use only the hose and factory preset regulator provided with the heater. Do not adjust regulator as gas leaks may occur.

For more information, visit www.desatech.com

SAFETY INFORMATION

Continued

- Check hose before each use of heater. Disconnect hose with 9/16" wrench. Pull hose down to the base and check for tears and abrasions in hose and on regulator. If highly worn or cut, replace with hose specified by manufacturer before using heater.
- Do not alter heater. Keep heater in its original state.
- Do not use heater if altered.
- Locate heater on stable and level surface.
- Do not operate heater while sleeping or leave heater unattended.
- Keep children and animals away from heater.
- Never move, handle, or service a hot or operating heater. Severe burns may result. You must wait 20 minutes after turning heater off.
- To prevent injury, wear gloves when handling heater.
- Turn off heater valve and gas supply to 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.
- Always remove gas hose from propane/LP cylinder, after each use. Always store propane/LP cylinder outdoors. Never store propane/LP cylinder in an enclosed area. Never store cylinder near high heat, open flame, or where temperatures exceed 100°F (38°C).
- Certain materials or items, when stored under heater, will be subjected to radiant heat and could be seriously damaged.
- Shut heater off immediately if flash-back occurs (flame inside burner tube). Have heater serviced.
- Do not hang clothing or other flammable materials either on or near heater.
- Never attempt to use heater or any components that have been damaged or exposed to accidental fire.
- If tip switch activates, turn valve to OFF position and wait 5 minutes to cool before relighting.
- If you smell gas or suspect a leak, shut off propane/LP cylinder valve at once. Ventilate area. Do not strike a match or create any flame or electric spark. Find and correct leak before attempting to light any appliance.
- Do not block intake air openings, see Figure 12, page 6.
- Any guard or other protective device removed for servicing must be replaced prior to operating the heater.
- Surface temperatures become very hot when operating heater. Children and adults should stay away to avoid burns or clothing ignition.
- Young children should be carefully supervised when they are in the area of the heater.
- Installation and repair should be done by a qualified service person. The heater should be inspected before use and at least annually by a qualified service person. More frequent cleanings

may be required as necessary. It is imperative that control compartments, burners, and circulating air passageways of the heater be kept clean.

- Clean inside of control box regularly. Remove screws from control box to open. Clean area with hands or wet rag. Reinstall control box.

⚠ CAUTION: The gas pressure regulator provided with this appliance must be used. This regulator is set for an out-put pressure of 48.6" W.C. (1.8 P.S.I.).

- Specifications:
Minimum inlet gas pressure: 11" W.C.
Maximum inlet gas pressure: 54" W.C.
Required manifold pressure: 48.6" W.C.
- Propane/LP gas cylinder is not provided. Use a 20 lb. propane/LP gas cylinder marked propane. The cylinder supply system must be arranged for vapor withdrawal. The cylinder used must include a collar to protect the cylinder valve. The cylinder must be provided with a shutoff valve terminating in a propane/LP gas supply cylinder valve outlet specified, as applicable, for connection no. 510 in the *Standard for Compressed Gas Cylinders Valve Outlet and Inlet Connections*, ANSI/CGA-V-1, or connection no. 600 in the Compressed Gas Association's *Limited Standard Cylinder Valve Outlet Connection for Propane Small Valve Series* or combination propane/LP gas cylinder valve and quick-disconnect assembly complying with 1.16.5-c and a safety relief device having a direct communication with the vapor space of the cylinder.

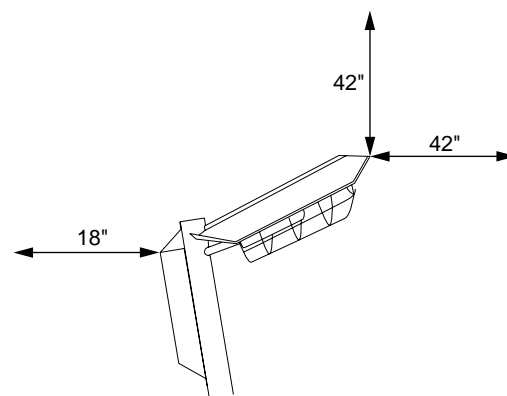


Figure 1 - Clearances from Combustibles

UNPACKING

1. Remove all packing items applied to heater for shipment.
2. Remove all items from carton.
3. Check all items for shipping damage. If heater is damaged, promptly inform dealer where you bought heater.

TOOLS REQUIRED

- #2 Phillips screwdriver
- 9/16" Open end wrench

ASSEMBLY

Assemble the heater in the approximate location it will be used to minimize moving heater once assembled.

1. Position base on floor with open side down.
2. Locate right wrapper and left wrapper. Place one side to base and secure using 5 screws provided. Repeat for other side (see Figure 2).
3. Locate center wrapper. The center wrapper is angled at the bottom and has a hole on either side of the front at the top. Slide J-clips over holes on open side of center wrapper with short side to the outside of center wrapper (see Figure 3).

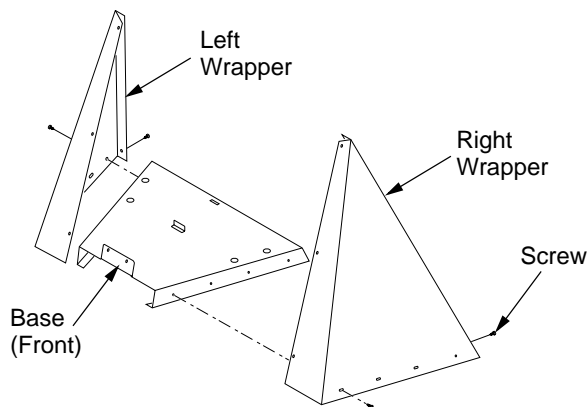


Figure 2 - Attaching Left and Right Wrappers to Base

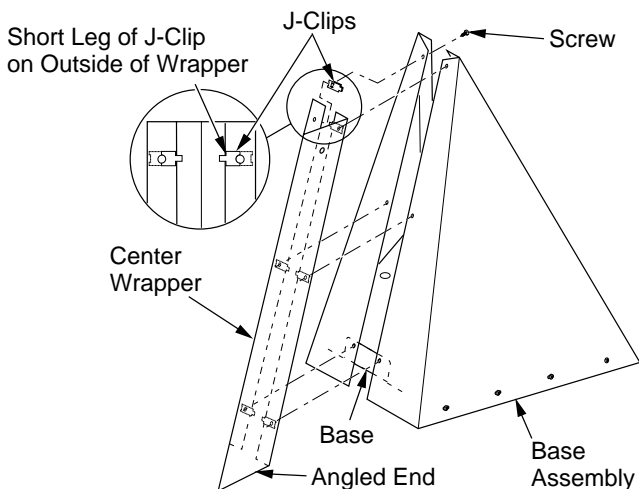


Figure 3 - Attaching Center Wrapper to Base Assembly

4. Align holes on center wrapper with holes on left and right wrappers. Using screws provided, attach center wrapper to left and right wrappers and base from inside the assembly (see Figure 4).
5. Insert back plate up through the base and wrapper assembly and attach to left and right wrappers with 4 screws provided (see Figure 5). The back plate will be under the wrapper flanges as shown in Figure 5.

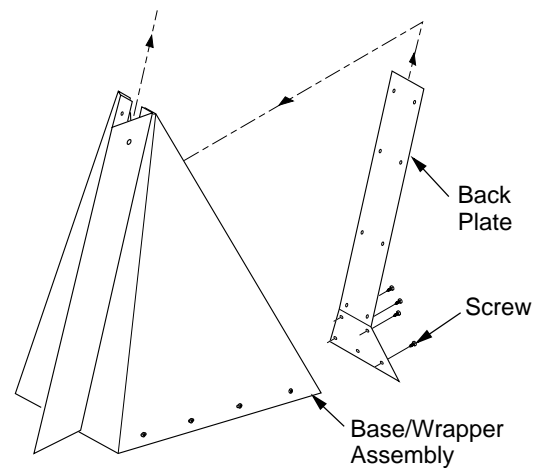


Figure 4 - Attaching Back Plate

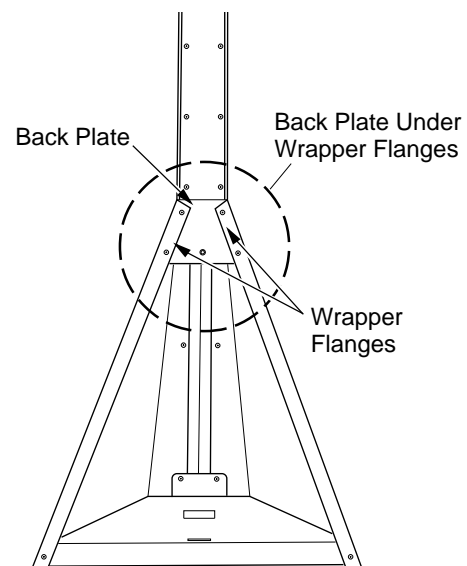


Figure 5 - Back Plate Location

ASSEMBLY

Continued

6. Place lower mast inside base assembly (see Figure 6). Bottom of lower mast has cut out section that slips into base assembly. Using 10 screws provided, attach to base assembly and back plate.
7. Remove 4 screws from control cover on back of upper mast assembly (see Figure 7). Carefully pull control cover from assembly and unplug electrode wire from piezo ignitor. The ignitor will stay assembled to the control cover.
8. Slide upper mast assembly over lower mast and install using 4 screws provided (see Figure 8).
9. Using hose and regulator assembly provided, route hose up through mast from inside base assembly. Screw hose fitting onto inlet of valve and tighten with 9/16" open end wrench (see Figure 9).
10. Using only a 20 lb. propane/LP cylinder, not included (see safety information for proper cylinder selection), connect the hose/regulator assembly to the cylinder valve (see Figure 10). When connecting regulator assembly to cylinder valve, hand tighten nut clockwise to a positive stop. **DO NOT** use a wrench to tighten. Use of a wrench may damage quick closing coupling nuts and result in a hazardous condition.

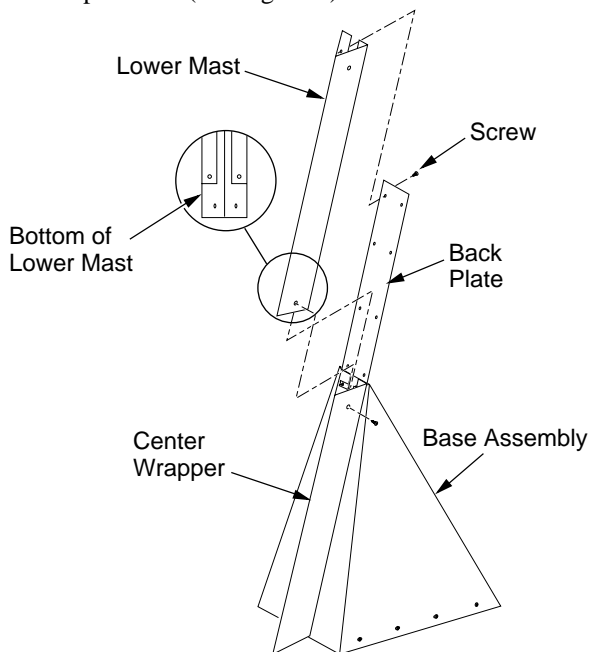


Figure 6 - Attaching Lower Mast

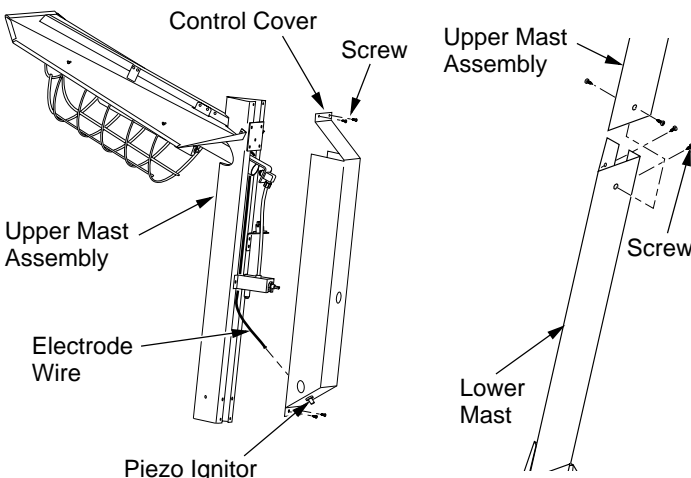


Figure 7 - Removing Control Cover

Figure 8 - Attaching Upper Mast Assembly

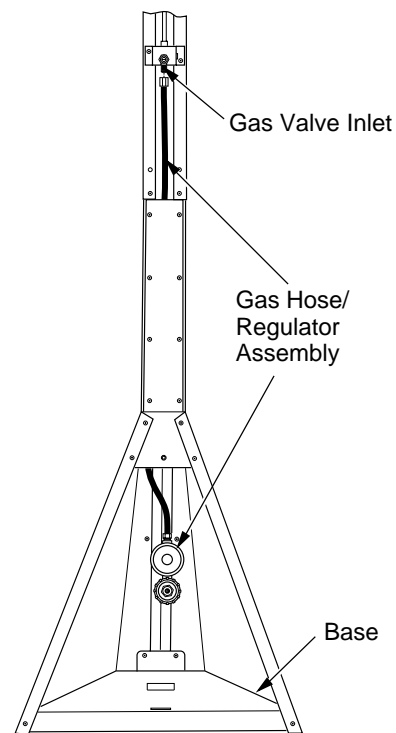


Figure 9 - Installing Hose and Regulator Assembly

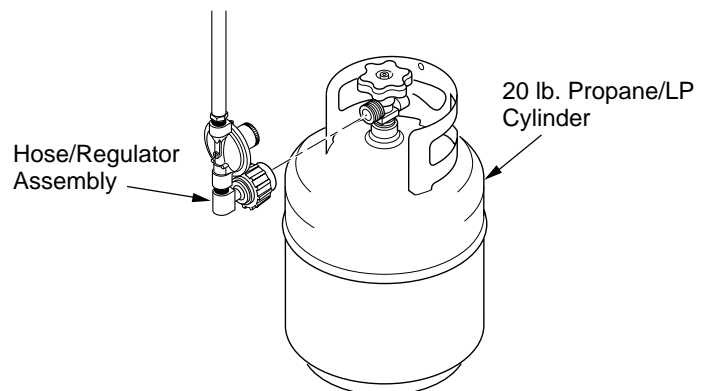


Figure 10 - Connecting Hose/Regulator Assembly to Propane/LP Cylinder

For more information, visit www.desatech.com



ASSEMBLY

Continued

11. Place the cylinder inside the base with the regulator to the front of base assembly. Make sure the bottom collar of the cylinder is in front of the tab in the base (see Figure 11).
12. Verify valve on heater is in OFF position.
13. Turn cylinder supply valve fully counterclockwise to the OPEN position.
14. Use a soapy water solution to check all connections for leaks before attempting to light heater. If leak is found, turn cylinder valve to CLOSE and do not use until all leaks are corrected.
15. Turn cylinder supply valve fully clockwise to CLOSE position.
16. Plug ignitor wire back into piezo ignitor and replace control cover (see Figure 7, page 5).

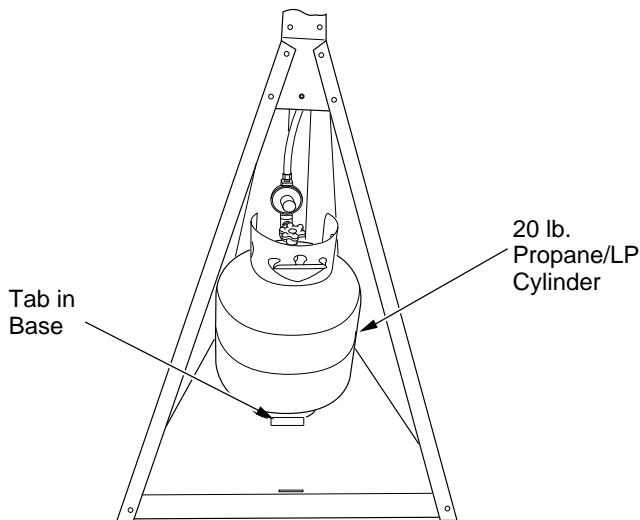


Figure 11 - Installing Propane/LP Cylinder

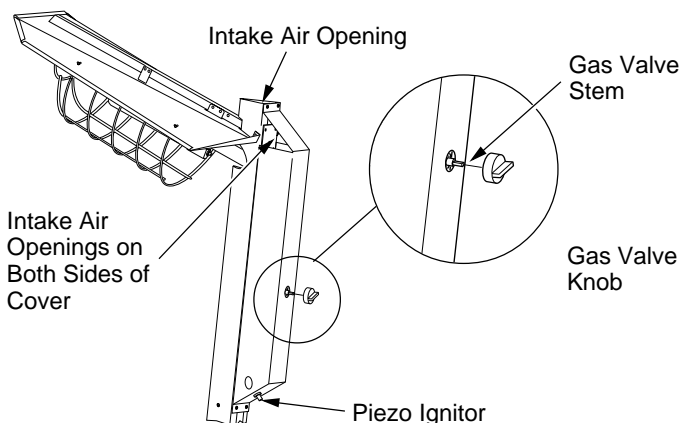


Figure 12 - Installing Gas Valve Knob

17. Install knob onto gas valve stem aligning "d-flat" (see Figure 13).
18. Install shoulder screw, provided, into center hole at bottom of back plate (see Figure 13).
19. Place cylinder cover over this screw while inserting tab in base (see Figure 13).

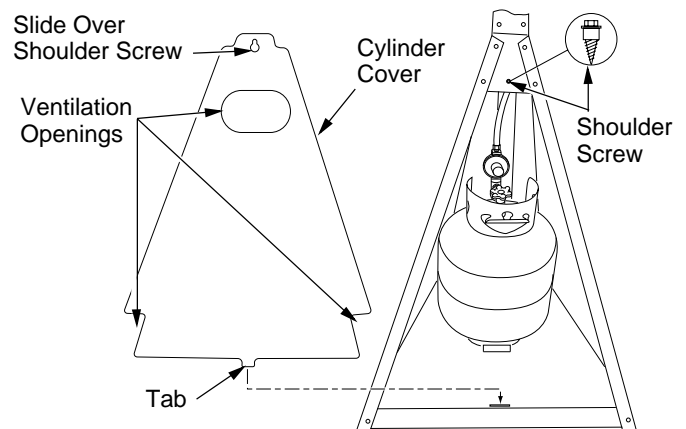


Figure 13 - Installing Cylinder Cover

OPERATION

LIGHTING INSTRUCTIONS

1. Remove cylinder cover by lifting up and out.
2. Using only a 20 lb. propane/LP cylinder, not included (see safety information for proper cylinder selection), connect the hose/regulator assembly to the cylinder (see Figure 10, page 5). The hose should already be connected to the heater. When connecting regulator assembly to cylinder valve, hand tighten nut clockwise to a positive stop. DO NOT use a wrench to tighten. Use of a wrench may damage quick closing coupling nuts and result in a hazardous condition.
3. Place the cylinder inside the base with the regulator to front of base assembly. Make sure the bottom collar of the cylinder is in front of the tab in the base (see Figure 11).
4. Turn heater valve to OFF position.
5. Turn cylinder supply valve fully counter clockwise to OPEN position.
6. Use a soapy water solution to check the connection. For leaks before attempting to light heater. If leak is found, turn cylinder valve to CLOSE and do not use until all leaks are corrected.
7. Replace cylinder cover by sliding cover over shoulder screw while inserting tab in base (see Figure 13).
8. Push knob in and turn counter clockwise to the PILOT position.

For more information, visit www.desatech.com

OPERATION

Continued

9. Push knob in and quickly press IGNITOR button (see Figure 14). Repeat until heater is lit. This can be easily done by placing index finger in access hole on left of control cover and pushing ignitor with thumb (see Figure 14).
10. Continue holding knob in for approximately 30 seconds. Heater should remain lit in the LOW heat setting.
11. For more heat, press knob and rotate counterclockwise to HIGH setting.
12. If RELIGHTING, wait 5 minutes for heater to cool and gas to clear, then follow steps 4 through 11.

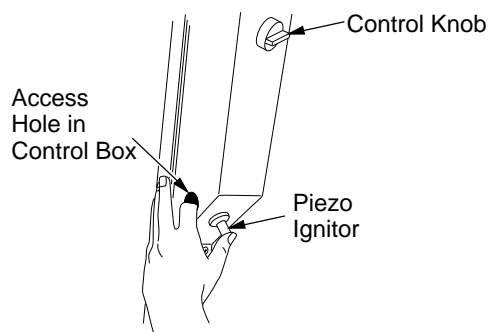


Figure 14 - Piezo and Control Knob Locations

SHUTDOWN INSTRUCTIONS

1. Press control knob and rotate clockwise to OFF position.
2. Close propane/LP cylinder valve (rotate knob clockwise).

STORAGE

CAUTION: Disconnect heater from propane/LP supply cylinder.

1. Do not store heater while attached to propane/LP cylinder. Close cylinder valve. Remove the hose/regulator assembly from the propane/LP cylinder by turning the fuel gas connector nut clockwise.
2. Store propane/LP cylinder in safe manner. Refer to Chapter 5 of *Standard for Storage and Handling of Liquefied Petroleum Gases, ANSI/NFPA 58*. Follow all local codes. Always store propane/LP cylinders outdoors. Never store propane/LP cylinder in an enclosed area.
3. Store in a dry, clean, and safe place.

MAINTENANCE

WARNING: Never attempt to service heater while it is connected to propane/LP supply, operating, or hot. Severe burns can occur. Any guard or other protective device removed for servicing must be replaced prior to operating the heater.

1. Keep heater clean. Remove any debris from ventilation openings (see Figures 12 and 13, page 6).
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 it immediately. At least annually, remove hose/regulator assembly from heater to inspect entire length of hose.
4. Spiders and insects can create a dangerous condition that may damage heater or make it unsafe. Keep burner area clean of all spiders, webs, or insects.
5. Have heater inspected yearly by a qualified service person.

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 International's Technical Service Department at 1-866-672-6040.

When calling DESA International, have ready

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

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

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 the Authorized Service Center booklet supplied with heater or call DESA International at 1-866-672-6040 for referral information.

When calling DESA International, have ready

- model number of your heater
- the replacement part number

TROUBLESHOOTING

You may have further questions about this heater. If so, contact DESA International's Technical Service Department at 1-866-672-6040 or visit our web site at www.desatech.com.

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

SYMPTOM	POSSIBLE CAUSE	REMEDY
Burner fails to light	<ol style="list-style-type: none"> 1. Propane/LP supply valve closed on propane/LP cylinder 2. Blockage in burner/orifice elbow/hose and regulator assembly 3. Piezo ignition system not sparking 	<ol style="list-style-type: none"> 1. Open propane/LP supply valve slowly 2. Clean burner/replace orifice elbow/hose and regulator assembly 3. Verify ignitor electrode gap is .20". Check wire lead for damage. Replace piezo ignitor and/or ignitor electrode as necessary
Burner 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 30 seconds 2. Check propane/LP cylinder for proper gas supply 3. Tighten connection or replace thermocouple 4. Replace automatic control valve assembly
Maximum burn rate is low	<ol style="list-style-type: none"> 1. Low gas pressure 2. Low fuel supply 3. Restriction in burner/orifice elbow/hose and regulator assembly 	<ol style="list-style-type: none"> 1. Check gas supply; check regulator output 2. Consult propane/LP gas supplier 3. Clean burner/replace orifice elbow/hose and regulator assembly

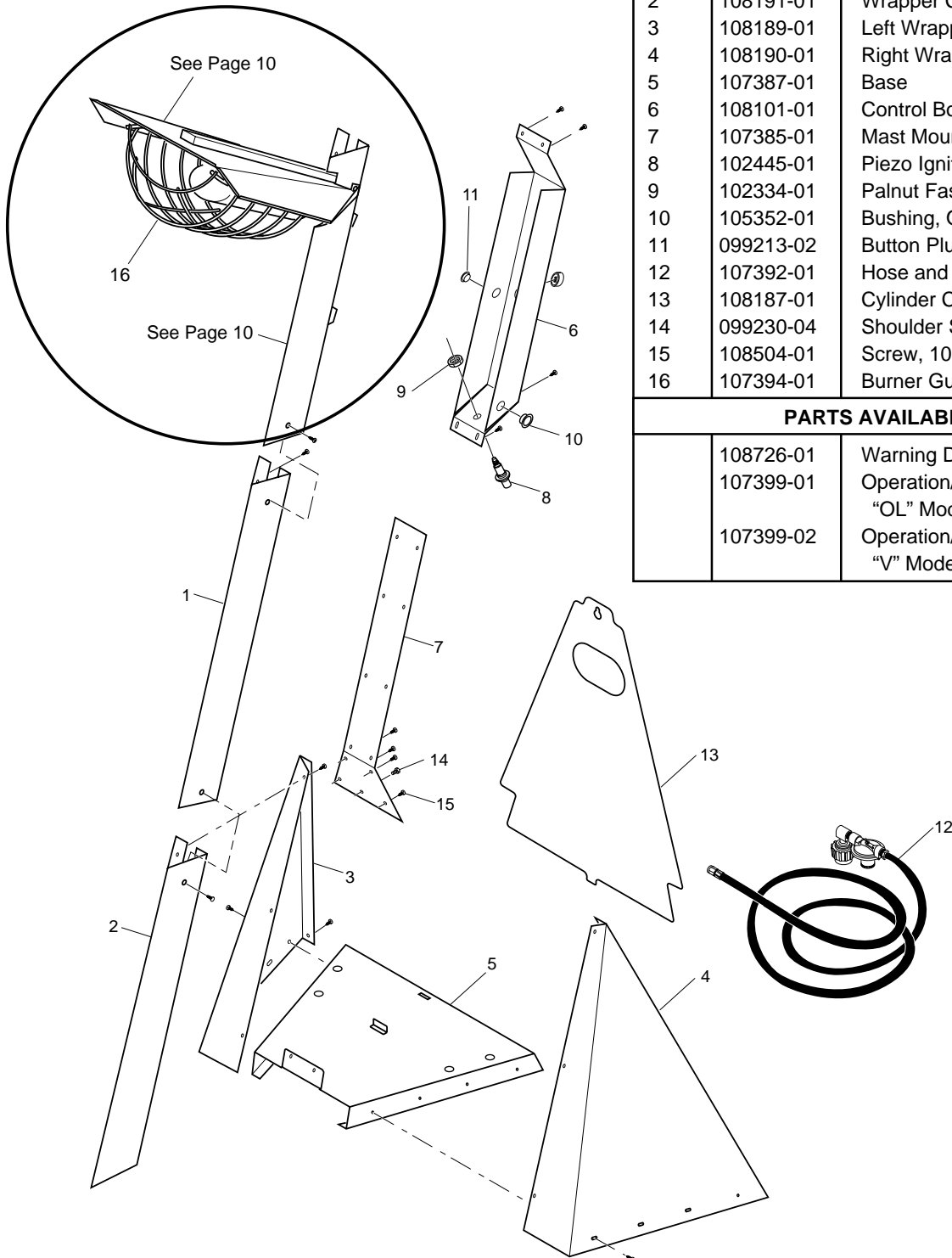
TECHNICAL SERVICE

You may have further questions about installation, operation, or troubleshooting. If so, contact DESA International's Technical Service Department at 1-866-672-6040.

You can also visit DESA International's technical service web site at www.desatech.com.

ILLUSTRATED PARTS BREAKDOWN

Models VPHBKP and OLPHBKP



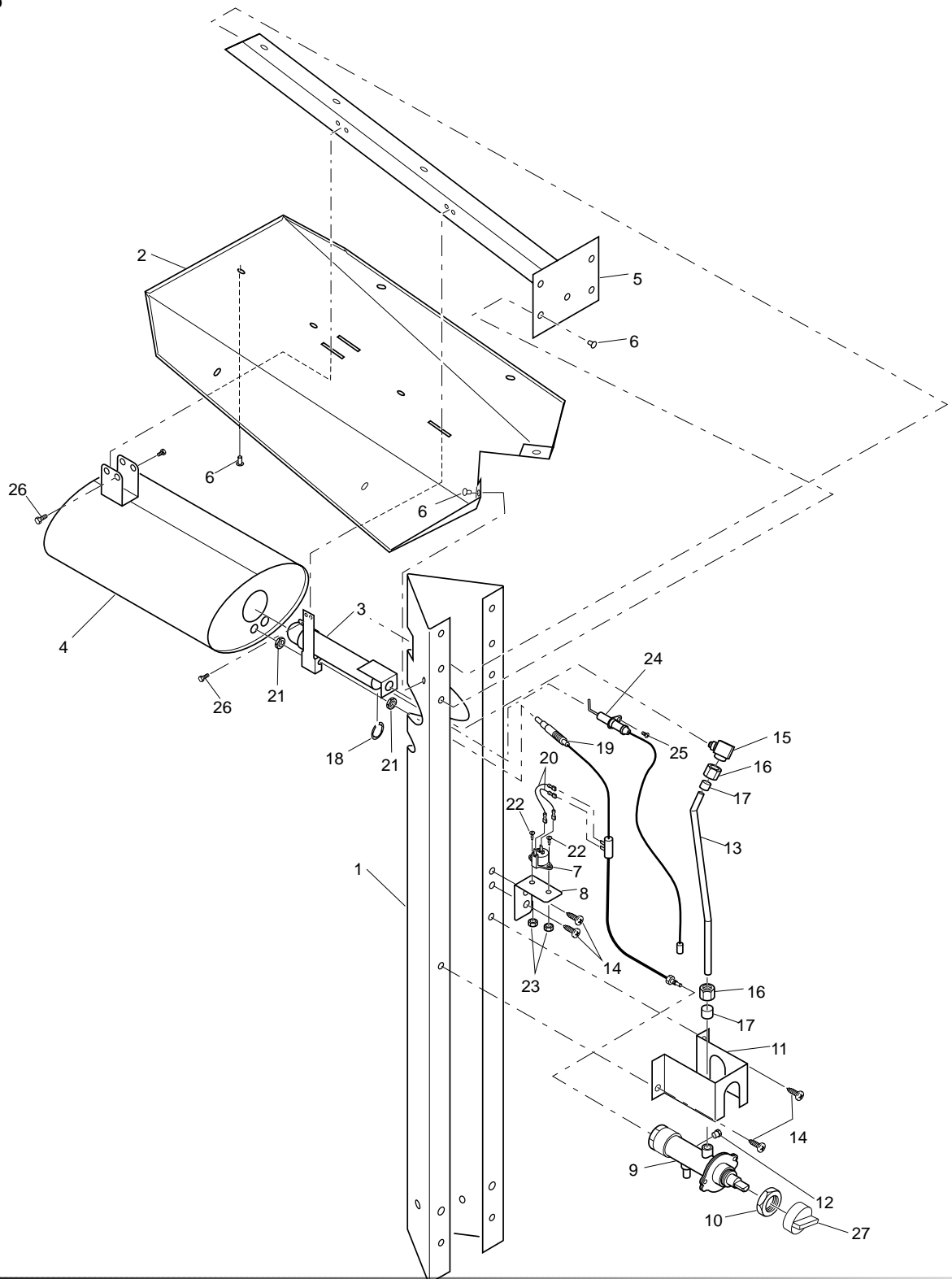
KEY NO.	PART NUMBERS	DESCRIPTION	QTY.
1	107384-01	Lower Mast	1
2	108191-01	Wrapper Center	1
3	108189-01	Left Wrapper	1
4	108190-01	Right Wrapper	1
5	107387-01	Base	1
6	108101-01	Control Box	1
7	107385-01	Mast Mounting Plate	1
8	102445-01	Piezo Ignitor	1
9	102334-01	Palnut Fastener	1
10	105352-01	Bushing, Open/Closed	1
11	099213-02	Button Plug	1
12	107392-01	Hose and Regulator Assembly	1
13	108187-01	Cylinder Cover	1
14	099230-04	Shoulder Screw	1
15	108504-01	Screw, 10-16x.50	38
16	107394-01	Burner Guard	1
PARTS AVAILABLE NOT SHOWN			
	108726-01	Warning Decal (All Models)	1
	107399-01	Operation/Tradename Decal "OL" Models	1
	107399-02	Operation/Tradename Decal "V" Models	1

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DESA

ILLUSTRATED PARTS BREAKDOWN

Models VPHBKP
and OLPHBKP



For more information, visit www.desatech.com

PARTS LIST

Models VPHBKP and OLPHBKP

KEY NO.	PART NUMBERS	DESCRIPTION	QTY.
1	107386-01	Upper Mast	1
2	107393-01	Reflector	1
3	107390-01	Burner	1
4	108529-01	Emitter	1
5	107389-01	Burner Bracket	1
6	101448-01	Pop Riviet	9
7	108498-01	Tip Switch	1
8	108501-01	Tip Switch Bracket	1
9	108497-01	Control Valve	1
10	098508-01	Valve Retainer Nut	1
11	108100-01	Valve Bracket	1
12	098276-01	Plug, 1/8" NPTF Hex-Head	1
13	103397-02	Fuel Tube	1
14	108504-01	Screw, PTH 10-3/8 AB BK P	4
15	108500-01	Orifice Elbow	1
16	M5787	Brass Nut	2
17	M5788	Sleeve	2
18	108495-01	Burner Clip	1
19	104146-03	Thermocouple	1
20	M9900-183	Wire Assembly	2
21	100898-01	Thin Hex Nut	2
22	097968-06	Screw	2
23	NPC-00BP	Nut	2
24	108513-01	Ignitor Electrode	1
25	M11084-49	Screw, #8-18 AB x .25" SS	1
26	M11084-48	Screw, #10-16 x .50" SS	5
27	099393-03	Control Knob	1

WARRANTY AND REPAIR SERVICE

LIMITED WARRANTY

DESA International 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 OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

DESA International 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 International will repair or replace the heater without charge.

REPAIR SERVICE

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

For information about this warranty write:



2701 Industrial Drive
P.O. Box 90004
Bowling Green, Kentucky 42102-9004
www.desatech.com



107396 01

NOT A UPC

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