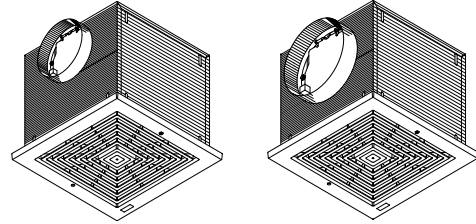




CEILING / WALL MOUNT VENTILATORS

EF-1 THROUGH EF-3 IOM



READ AND SAVE THESE INSTRUCTIONS

WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed in the warranty.
2. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
4. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
6. Ducted fans must always be vented to the outdoors.
7. To reduce the risk of fire, use only metal ductwork.
8. If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a GFCI (Ground Fault Interrupter) - protected branch circuit.
9. Never place a switch where it can be reached from a tub or shower.
10. This unit must be grounded.

CAUTION

1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc. off power unit.
3. Please read specification label on product for further information and requirements.

TABLE OF CONTENTS

This manual is divided into sections as follows:

“TYPICAL INSTALLATION”

This section shows a common installation in new and existing, frame construction.

- Mounting (new construction)
- Mounting (existing construction)
- Wiring
- Ducting (horizontal blower discharge)

“MOUNTING OPTIONS”

“WIRING OPTIONS”

- Wiring Plate Position

“DUCTING OPTIONS”

- Blower Discharge Positions
- Ducting (vertical blower discharge)

“USE AND CARE”

“SERVICE PARTS”

“WARRANTY”

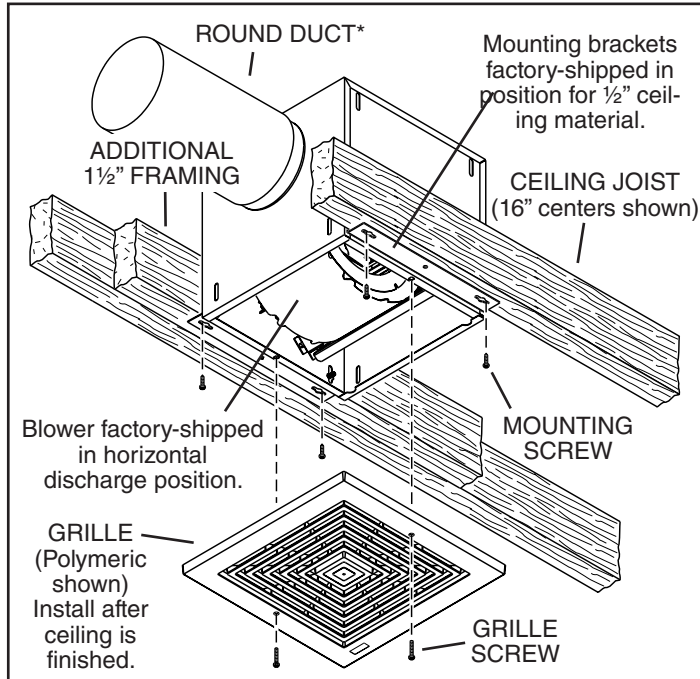
Installer: Leave this manual with the homeowner.

Homeowner: Use and Care information on page 3.



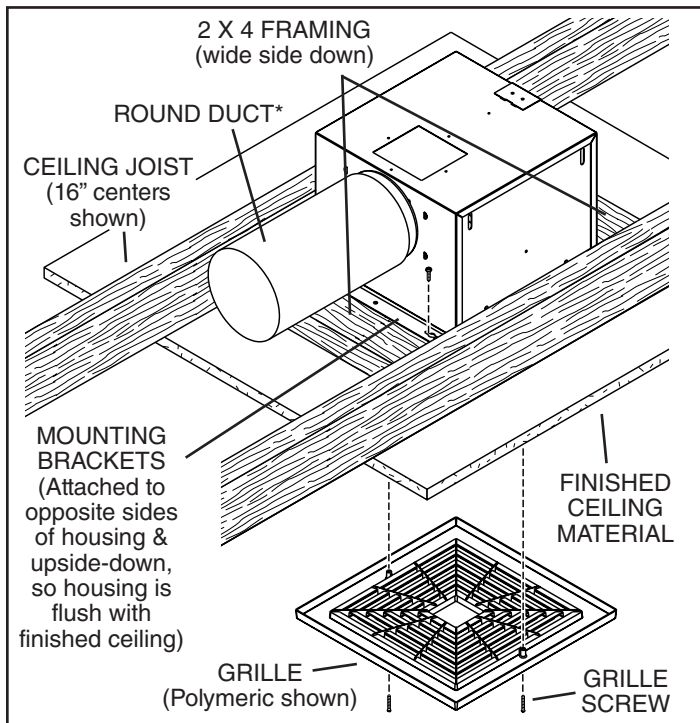
TYPICAL INSTALLATION

MOUNTING (*New Frame Construction*)



Factory-shipped unit installed in new construction.

MOUNTING (*Existing Frame Construction*)

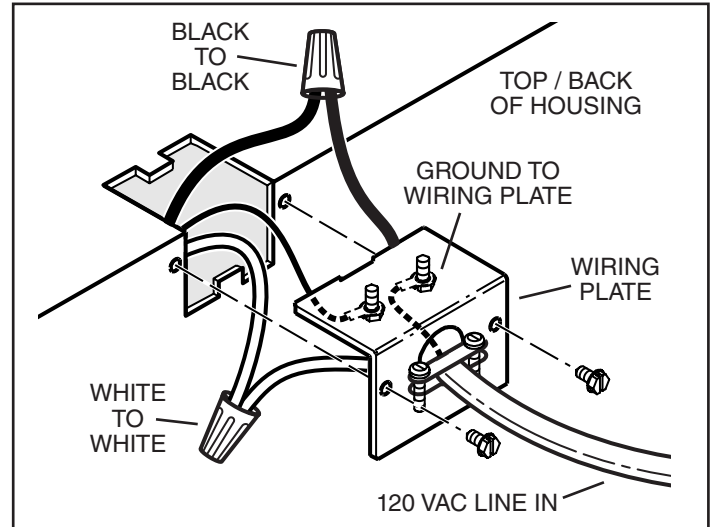


Factory-shipped unit installed in existing construction.

* VQ100 & VQ150 use 6" round duct.
VQ200, VQ250 & VQ300 use 8" round duct.

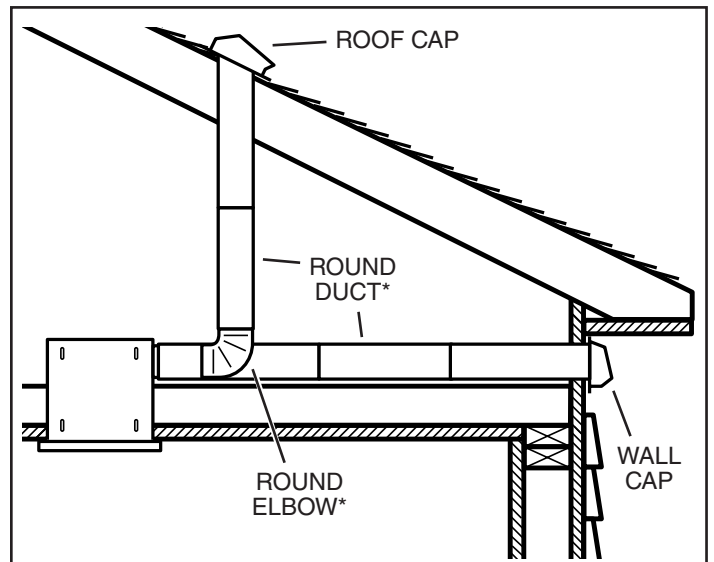
TYPICAL INSTALLATION

WIRING



Ventilator can be wired from outside of housing.
Use UL approved connectors to wire per local codes.

DUCTING (*Horizontal blower discharge*)



Two ways to connect ductwork to a factory-shipped unit.

* VQ100 & VQ150 use 6" round duct.
VQ200, VQ250 & VQ300 use 8" round duct.

IMPORTANT:

Remove shipping tape from damper

Remove the shipping tape from the damper flap and make sure that damper flap opens and closes freely inside the ductwork. Use duct tape to make ductwork connections secure and air-tight.

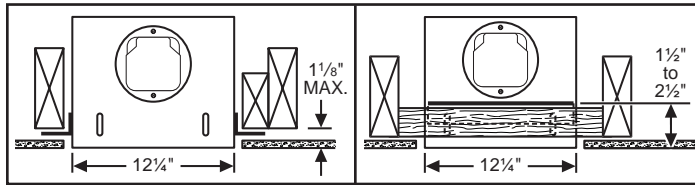
Remove shipping ring from blower inlet

Remove the shipping ring from the blower inlet before operating the ventilator.



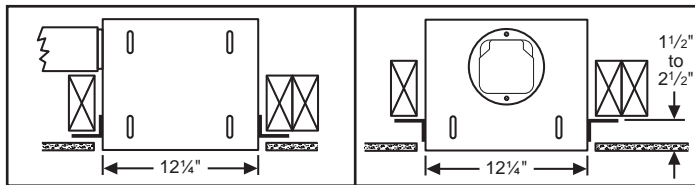
MOUNTING OPTIONS

¼-20 hex nuts secure mounting brackets to housing. Loosen and re-tighten or remove and replace nuts as necessary for desired mounting bracket position.



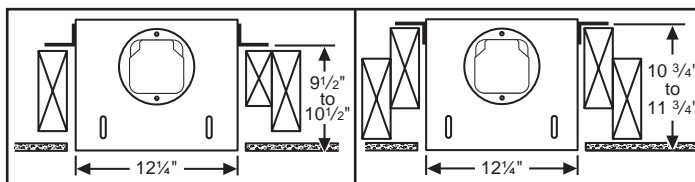
Mounting brackets in factory-shipped position. (Outlet parallel to joists.) (New construction)

Mounting brackets flipped over and mounted to outlet sides of housing. (Outlet parallel to joists.) (Existing construction)



Mounting brackets mounted to outlet sides of housing. (Outlet perpendicular to joists.) (New construction)

Mounting brackets flipped over to give approx. 1" more clearance. (Outlet parallel to joists.) (New construction)

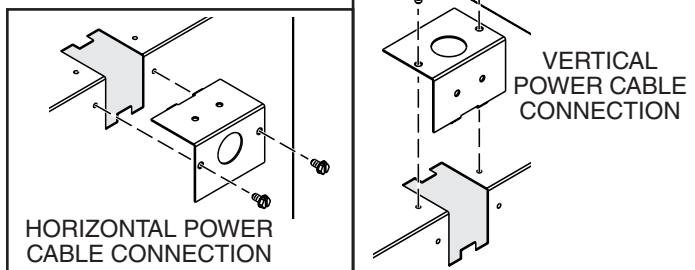


Mounting brackets mounted to top of sides of housing. (Outlet parallel to joists.) (New or existing construction)

Mounting brackets flipped over and mounted to top of sides of housing. (Outlet parallel to joists.) (New or existing construction)

WIRING OPTIONS

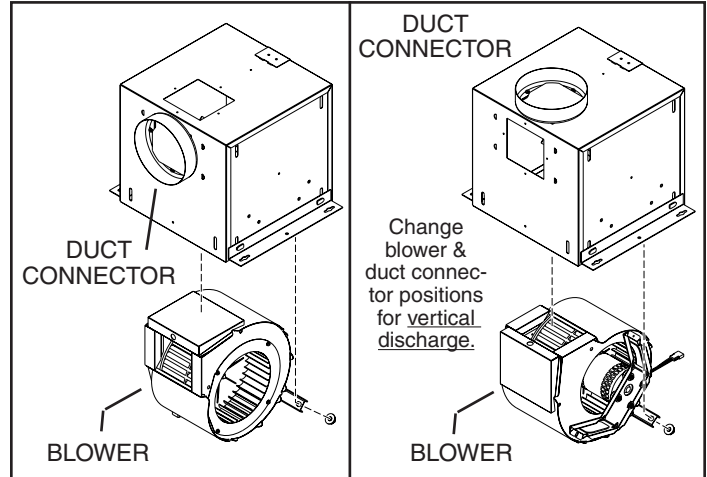
WIRING PLATE POSITION



Wiring plate mounts to side or top of housing.

DUCTING OPTIONS

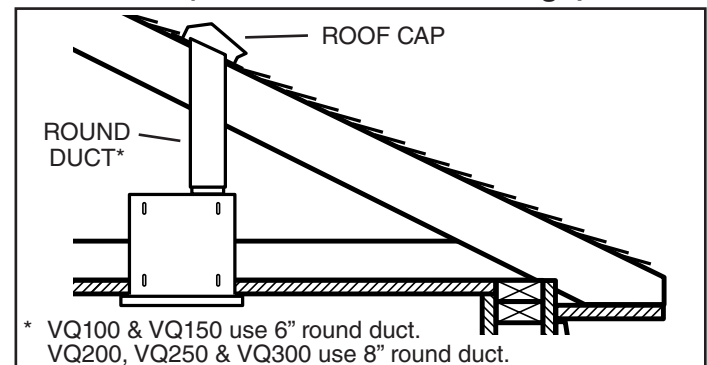
BLOWER DISCHARGE POSITIONS



Blower and duct connector in horizontal discharge position. (Factory shipped)

Blower and duct connector in vertical discharge position.

DUCTING (Vertical blower discharge)



Typical ductwork connection to a ventilator converted to vertical discharge.

USE AND CARE

Ventilator is designed for continuous operation. If desired, it may be controlled using an on/off switch or a solid-state, variable speed control. Follow wiring instructions packed with control, and adhere to all local and state codes, and the National Electrical Code.



WARNING: To reduce the risk of electric shock, disconnect from power supply before servicing.

To clean grille: Use appropriate vacuum attachment or remove grille and clean with a soft cloth and mild soap or detergent. Dry grille thoroughly before reinstalling.

To clean blower assembly: Remove grille, unplug blower from housing, remove blower mounting nuts, and carefully remove blower from housing. Use appropriate vacuum attachment or a soft cloth and mild soap or detergent to clean blower discharge area and wheel. **DO NOT ALLOW WATER TO ENTER MOTOR.** Make sure blower assembly is completely dry before reinstalling.

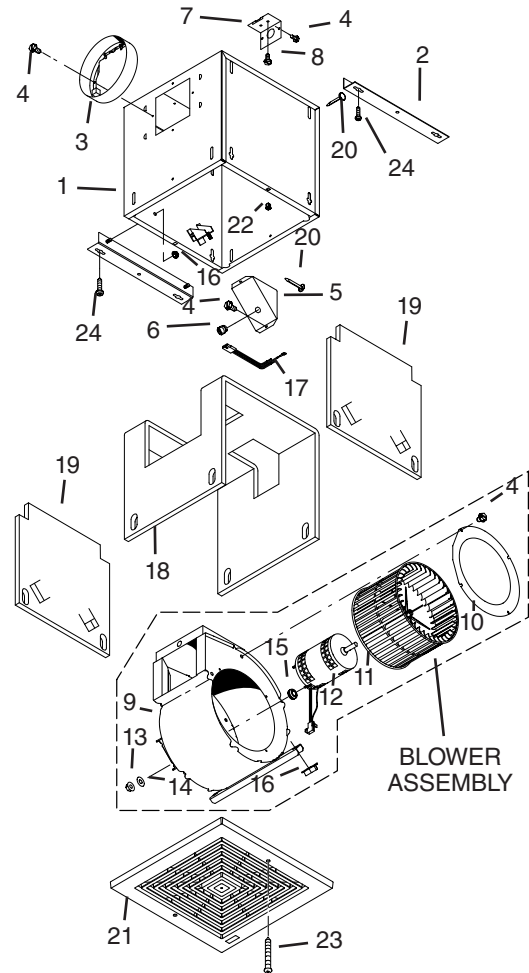
Motor is permanently lubricated. Do not oil or disassemble motor.



SERVICE PARTS

SERVICE PARTS

KEY NO.	PART NO.	DESCRIPTION
1	97014725	Housing Assembly (VQ100 & VQ150)
	97014726	Housing Assembly (VQ200, VQ250 & VQ300)
2	97014728	Mounting Bracket (2 req.)
3	97014760	Damper Assembly (6" dia.)
	97014761	Damper Assembly (8" dia.)
4	99150415	Screw, 8-18 x 1/4 (12 req.)*
5	98005513	Wire Box Cover
6	99400035	Strain Relief Bushing
7	98005512	Wiring Plate
8	99150471	Ground Screw, 10-32 x 1/2 (2 req.)
9	97014774	Scroll Assembly (VQ100 & VQ150)
	97014775	Scroll Assembly (VQ200, VQ250 & VQ300)
10	98009399	Inlet Ring
11	99110805	Blower Wheel
12	99080481	Motor (VQ100)
	99080482	Motor (VQ150)
	99080483	Motor (VQ200)
	99080484	Motor (VQ250)
	99080485	Motor (VQ300)
13	99260558	Lock Nut, 8-32 (4 req.)*
14	99250959	Washer (4 req.)*
15	99100491	Grommet (4 req.)
		Blower Assembly, Complete (Includes Key Nos. 9-15)
	97014800	(VQ100)
	97014801	(VQ150)
	97014802	(VQ200)
	97014803	(VQ250)
	97014804	(VQ300)
16	99260477	Nut, 1/4-20 (6 req.)*
17	97006039	Wire Harness
18	99500390	Wrapper Insulation
19	99500391	Side Insulation (2 req.)
20	99420466	Insulation Mounting Clip
21	99110807	Grille
22	99420470	Grille Nut (2 req.)
23	99150472	Grille Mounting Screw (2 req.)
24	99150591	Screw, 10-16 x 7/8 (4 req.)*



Order replacement parts by PART NO. - not by KEY NO.
* Standard hardware - may be purchased locally.

WARRANTY

LIMITED WARRANTY

WARRANTY AND DISCLAIMER: the Company extends this limited warranty to the original purchaser and warrants that products supplied by the Company, shall be free from original defects in workmanship and materials for two years from date of shipment (except for the warranty periods noted for products listed below), provided same have been properly handled, stored, installed, serviced, maintained and operated. This warranty shall not apply to products which have been altered or repaired without the Companys express authorization, or altered or repaired in any way so as, in the Companys judgment, to affect its performance or reliability, nor which have been improperly installed or subjected to misuse, negligence, or accident, or incorrectly used in combination with other substances. The Purchaser assumes all risks and liability for results of use of all products.

LIMITATION OF REMEDY AND DAMAGES: All claims under this warranty must be made in writing and delivered to P.O. Box 978, Muskogee, Oklahoma, 74402, within 15 days after discovery of the defect and prior to the expiration of two years from the date of shipment by the Company of the product claimed defective, and Purchaser shall be barred from any remedy if Purchaser fails to make such claim within such period. Within 30 days after receipt of a timely claim, the Company shall have the option either to inspect the product while in Purchaser's possession or to request Purchaser to return the product to the Company at Purchaser's expense for inspection by the Company. The Company shall replace, or at its option repair, free of charge, any product it determines to be defective, and it shall ship the repaired or replacement product to Purchaser F.O.B. point of shipment; provided, however, if circumstances are such as in the Companys judgment to prohibit repair or replacement to remedy the warranted defects, the Purchaser's sole and exclusive remedy shall be a refund to the Purchaser of any part of the invoice price, paid to the Company, for the defective product or part.

The Company is not responsible for the cost of removal of the defective product or part, damages due to removal, or any expenses incurred in shipping the product or part to or from the Companys plant, or the installation of the repaired or replaced product or part.

The warranties set forth above do not apply to any components, accessories, parts or attachments manufactured by other manufacturers; such being subject to the manufacturers warranty, if any. To the extent not prohibited by the manufacturers warranty, the Company shall pass through to Purchaser such manufacturers warranty.

THE COMPANYS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED AND WAIVED. THIS WARRANTY CONSTITUTES THE COMPANYS SOLE AND EXCLUSIVE WARRANTY FOR DEFECTIVE GOODS AND PURCHASERS SOLE AND EXCLUSIVE REMEDY FOR DEFECTIVE PRODUCTS.

No employee, agent, dealer, or other person is authorized to give any warranties on behalf of the Company or to assume for the Company any other liability in connection with any of its products except in writing and signed by an officer of the Company.

REPLACEMENT PARTS If replacement parts are ordered, purchaser warrants that the original components in which these replacement parts will be placed are in satisfactory working condition, and when said replacement parts are installed, the resultant installation will operate in a safe manner, at speeds and temperatures for which the original product was purchased.

TECHNICAL ADVICE AND RECOMMENDATIONS, DISCLAIMER: Notwithstanding any past practice or dealings or any custom of the trade, sales shall not include the furnishing of technical advice or assistance or system design. Any such assistance shall be at the Companys sole option and may be subject to additional charge.

The Company assumes no obligation or liability on account of any recommendations, opinions or advice as to the choice, installation or use of products. Any such recommendations, opinions or advice are given and shall be accepted at Purchaser's and End User's risk and shall not constitute any warranty or guarantee of such products or their performance.

LIMITATION OF LIABILITY The cumulative liability of the Company to the Purchaser and any other persons for all claims in any way relating to or arising out of the products, including, but not limited to, any cause of action sounding in contract, tort, or strict liability, shall not exceed the total amount of the purchase price paid for those products which are the subject of any such claim. This limitation of liability is intended to apply without regard to whether other provisions of this agreement have been breached or have proven ineffective even if the Company has been advised of the possibility of such claims or demands. In no event shall the Company be liable to the Purchaser or any other person for any loss of profits or any incidental, special, exemplary, or consequential damages for any claims or demands brought by the Purchaser or such other persons.

INDEMNITY The Companys maximum liability to Purchaser and to any end user is as set forth above. The Company makes no warranty to anyone for any products not manufactured by the Company and shall have no liability for any use or installation of any products (whether manufactured by the Company or other manufacturers) not specifically authorized by this sale. Purchaser acknowledges various warnings by the Company regarding the products and its installation and use. If the Company incurs any claims, lawsuits, settlements, or expenses (including attorney fees) for any loss, injury, death or property damage including, but not limited to, claims arising out of the Purchasers or any end users installation or use of the products, the Purchaser shall indemnify and hold the Company harmless.

WARNING

Acme products are designed and manufactured to provide reliable performance but they are not guaranteed to be 100% free of defects. Even reliable products will experience occasional failures and this possibility should be recognized by the Purchaser and all End Users. If these products are used in a life support ventilation system where failure could result in loss or injury, the Purchaser and all End Users should provide adequate back-up ventilation, supplementary natural ventilation or failure alarm system, or acknowledge willingness to accept the risk of such loss or injury.

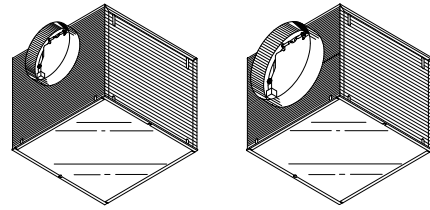
WARNING DO NOT USE in HAZARDOUS ENVIRONMENTS where fans electrical system could provide ignition to combustible or flammable materials unless unit is specifically built for hazardous environments. Comply with all local and national safety codes including the National Electrical Code (NEC) and National Fire Protection Act (NFPA).

CAUTION Guards must be installed when fan is within reach of personnel or within eight (8) feet (2.5 m) of working level or when deemed advisable for safety.

DISCLAIMER The Company has made a diligent effort to illustrate and describe the products accurately in all Company literature; however such illustrations and descriptions are for the sole purpose of identification and do not express or imply any warranty.



IN-LINE VENTILATORS



READ AND SAVE THESE INSTRUCTIONS

WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed in the warranty.
2. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
4. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
6. Ducted fans must always be vented to the outdoors.
7. To reduce the risk of fire, use only metal ductwork.
8. If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a GFCI (Ground Fault Interrupter) - protected branch circuit.
9. Never place a switch where it can be reached from a tub or shower.
10. This unit must be grounded.

CAUTION

1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc. off power unit.
3. **If ventilator is installed in an unconditioned space (such as an attic):** Surround the ventilator with thermal insulation - to minimize possible condensation.
4. Please read specification label on product for further information and requirements.

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This manual is divided into sections as follows:

“TYPICAL INSTALLATION”

This section shows a common installation in new and existing, frame construction.

- Mounting (new construction)
- Mounting (existing construction)
- Wiring
- Ducting (straight through blower discharge)

“MOUNTING OPTIONS”

“WIRING OPTIONS”

- Wiring Plate Position

“DUCTING OPTIONS”

- Blower Discharge Positions
- Ducting (right angle blower discharge)

“USE AND CARE”

“SERVICE PARTS”

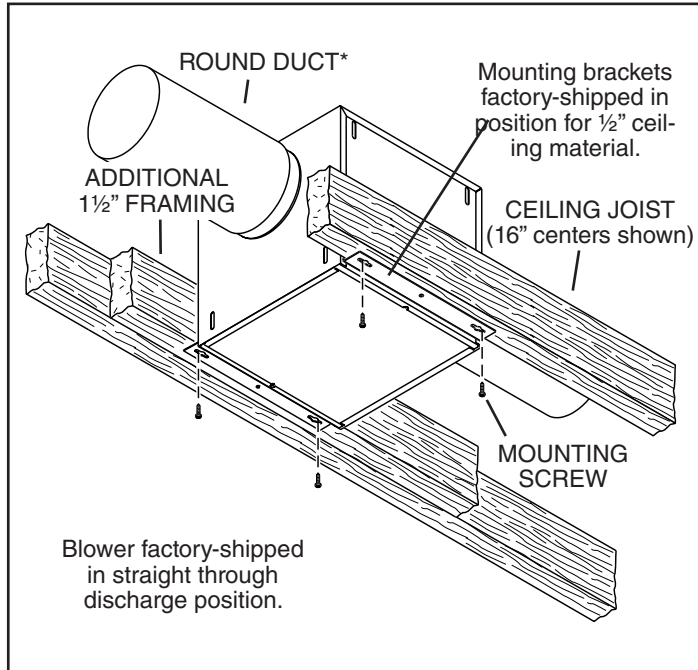
“WARRANTY”

**Installer: Leave this manual with the homeowner.
Homeowner: Use and Care information on page 3.**



TYPICAL INSTALLATION

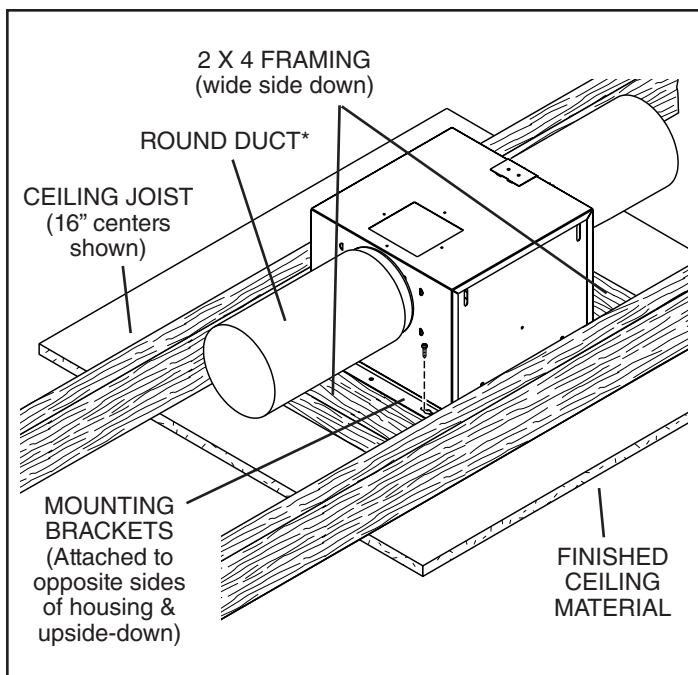
MOUNTING (*New Frame Construction*)



Blower factory-shipped in straight through discharge position.

Factory-shipped unit installed in new construction.

MOUNTING (*Existing Frame Construction*)

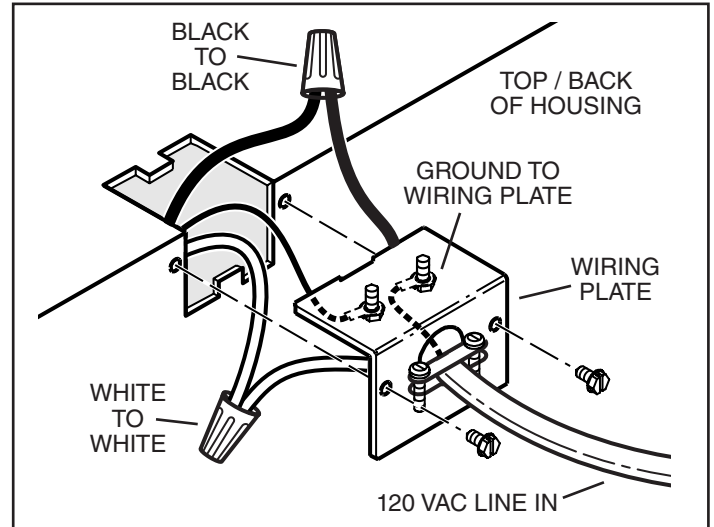


Factory-shipped unit installed in existing construction.

* VQL100 & VQL150 use 6" round duct.
 VQL200, VQL250 & VQL300 use 8" round duct.

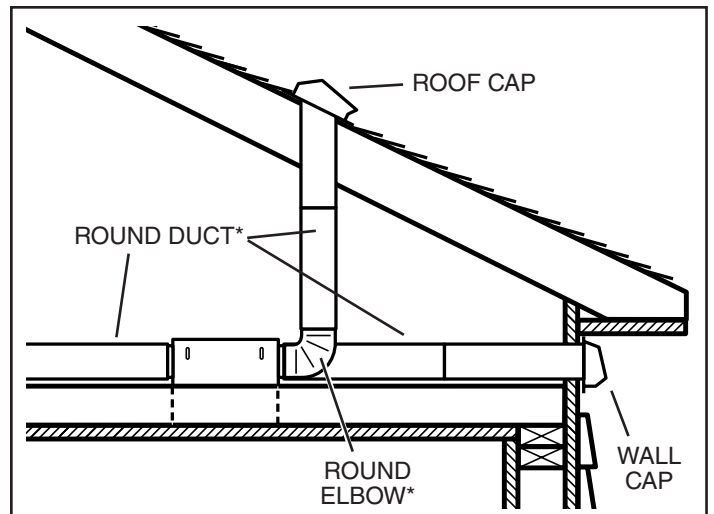
TYPICAL INSTALLATION

WIRING



Ventilator can be wired from outside of housing.
 Use UL approved connectors to wire per local codes.

DUCTING (*Horizontal blower discharge*)



Two ways to connect ductwork to a factory-shipped unit.

* VQL100 & VQL150 use 6" round duct.
 VQL200, VQL250 & VQL300 use 8" round duct.

IMPORTANT:

Remove shipping tape from damper

Remove the shipping tape from the damper flap and make sure that damper flap opens and closes freely inside the ductwork. Use duct tape to make ductwork connections secure and air-tight.

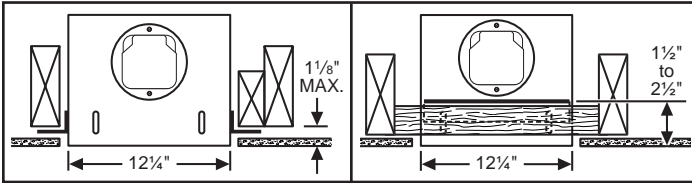
Remove shipping ring from blower inlet

Remove the shipping ring from the blower inlet before operating the ventilator.



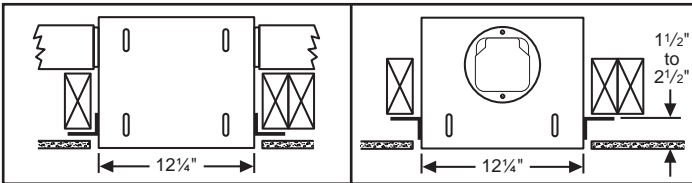
MOUNTING OPTIONS

¼-20 hex nuts secure mounting brackets to housing. Loosen and re-tighten or remove and replace nuts as necessary for desired mounting bracket position.



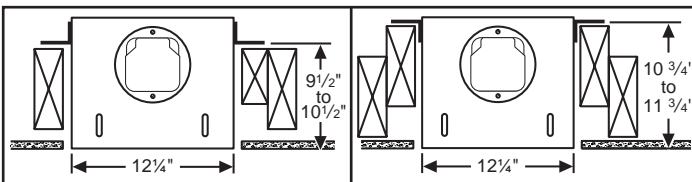
Mounting brackets in factory-shipped position. (Outlet parallel to joists.) (New construction)

Mounting brackets flipped over and mounted to outlet sides of housing. (Outlet parallel to joists.) (Existing construction)



Mounting brackets mounted to outlet sides of housing. (Outlet perpendicular to joists.) (New construction)

Mounting brackets flipped over to give approx. 1" more clearance. (Outlet parallel to joists.) (New construction)

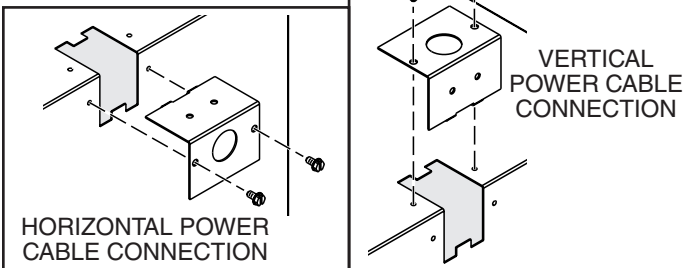


Mounting brackets mounted to top of sides of housing. (Outlet parallel to joists.) (New or existing construction)

Mounting brackets flipped over and mounted to top of sides of housing. (Outlet parallel to joists.) (New or existing construction)

WIRING OPTIONS

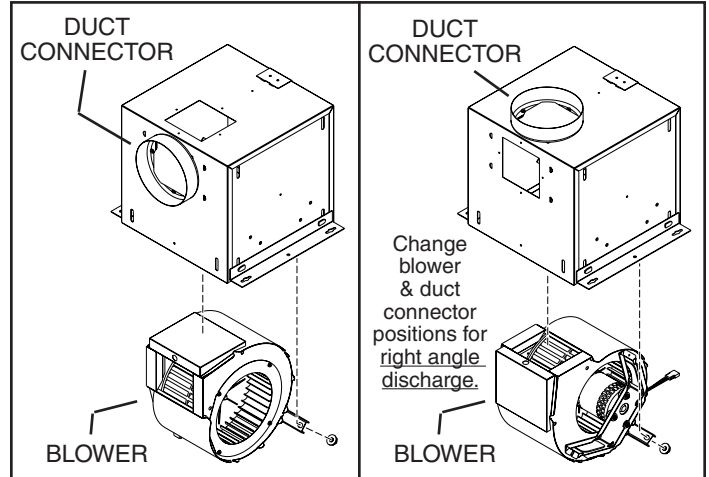
WIRING PLATE POSITION



Wiring plate mounts to side or top of housing.

DUCTING OPTIONS

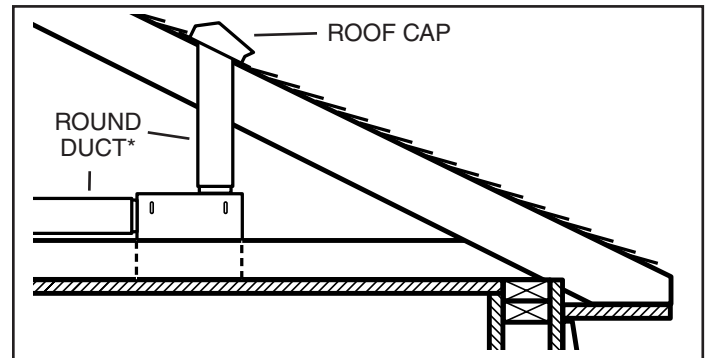
BLOWER DISCHARGE POSITIONS



Blower and duct connector in straight through discharge position. (Factory shipped)

Blower and duct connector in right angle discharge position.

DUCTING (Right angle blower discharge)



Typical ductwork connection to a ventilator converted to right angle discharge.

* VQL100 & VQL150 use 6" round duct.
VQL200, VQL250 & VQL300 use 8" round duct.

USE AND CARE

Ventilator is designed for continuous operation. If desired, it may be controlled using an on/off switch or an electronic, variable speed control. Follow wiring instructions packed with control, and adhere to all local and state codes, and the National Electrical Code.



WARNING: To reduce the risk of electric shock, disconnect from power supply before servicing.

To clean blower assembly: Remove access panel, unplug blower from housing, remove blower mounting nuts, and carefully remove blower from housing. Use appropriate vacuum attachment or a soft cloth and mild soap or detergent to clean blower discharge area and wheel. **DO NOT ALLOW WATER TO ENTER MOTOR.** Make sure blower assembly is completely dry before reinstalling.

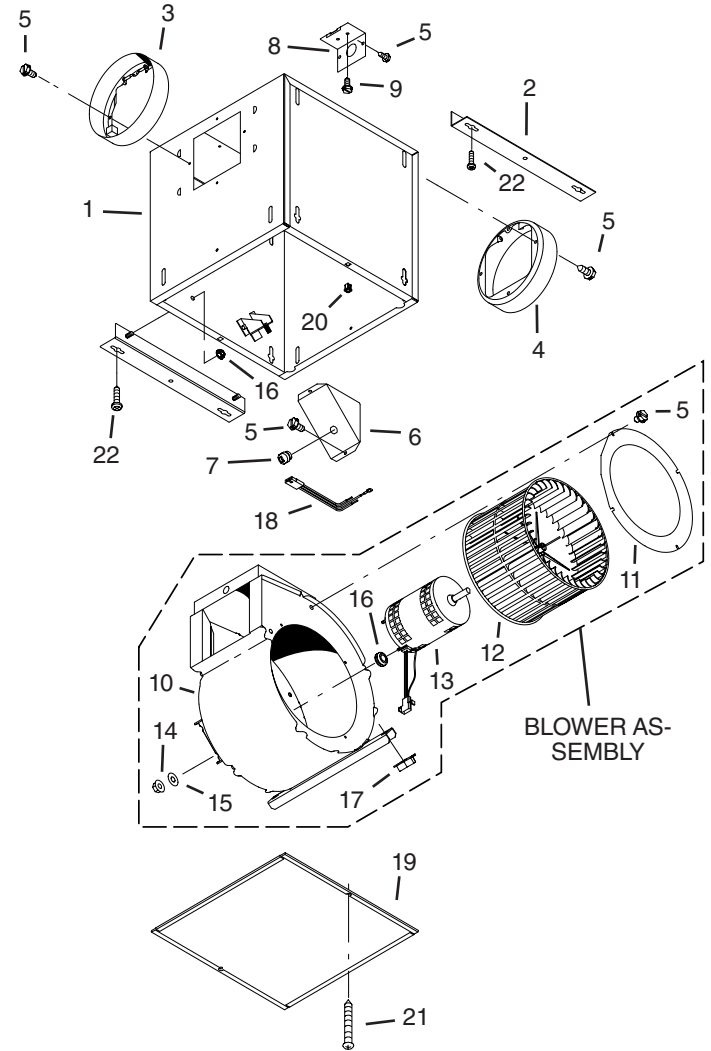
Motor is permanently lubricated. Do not oil or disassemble motor.



SERVICE PARTS

SERVICE PARTS

KEY NO.	PART NO.	DESCRIPTION
1	97014735	Housing Assembly (VQL100 & VQL150)
	97014736	Housing Assembly (VQL200, VQL250, & VQL300)
2	97014728	Mounting Bracket (2 req.)
3	97014760	Damper Assembly (6" dia.)
	97014761	Damper Assembly (8" dia.)
4	99390098	Duct Connector (6" dia.)
	99390099	Duct Connector (8" dia.)
5	99150415	Screw, 8-18 x 1/4 (12 req.)*
6	98005513	Wire Box Cover
7	99400035	Strain Relief Bushing
8	98005512	Wiring Plate
9	99150471	Ground Screw, 10-32 x 1/2 (2 req.)
10	97014774	Scroll Assembly (VQL100 & VQL150)
	97014775	Scroll Assembly (VQL200, VQL250, & VQL300)
11	98009399	Inlet Ring
12	99110805	Blower Wheel
13	99080481	Motor (VQL100)
	99080482	Motor (VQL150)
	99080483	Motor (VQL200)
	99080484	Motor (VQL250)
	99080485	Motor (VQL300)
14	99260558	Lock Nut, 8-32 (4 req.)*
15	99250959	Washer (4 req.)*
16	99100491	Grommet (4 req.)
		Blower Assembly, Complete (Includes Key Nos. 10-16)
	97014800	(VQL100)
	97014801	(VQL150)
	97014802	(VQL200)
	97014803	(VQL250)
	97014804	(VQL300)
17	99260477	Nut, 1/4-20 (6 req.)*
18	97006039	Wire Harness
19	98009417	Access Panel
20	99420470	Cover Nut (2 req.)
21	99150472	Cover Mounting Screw (2 req.)
22	99150591	Screw, 10-16 x 7/8 (4 req.)*



Order replacement parts by PART NO. - not by KEY NO.
* Standard hardware - may be purchased locally.

WARRANTY

LIMITED WARRANTY

WARRANTY AND DISCLAIMER: The Company extends this limited warranty to the original purchaser and warrants that products supplied by the Company, shall be free from original defects in workmanship and materials for two years from date of shipment (except for the warranty periods noted for products listed below), provided same have been properly handled, stored, installed, serviced, maintained and operated. This warranty shall not apply to products which have been altered or repaired without the Company's express authorization, or altered or repaired in any way so as, in the Company's judgment, to affect its performance or reliability, nor which have been improperly installed or subjected to misuse, negligence, or accident, or incorrectly used in combination with other substances. The Purchaser assumes all risks and liability for results of use of all products.

LIMITATION OF REMEDY AND DAMAGES: All claims under this warranty must be made in writing and delivered to P.O. Box 978, Muskogee, Oklahoma, 74402, within 15 days after discovery of the defect and prior to the expiration of two years from the date of shipment by the Company of the product claimed defective, and Purchaser shall be barred from any remedy if Purchaser fails to make such claim within such period. Within 30 days after receipt of a timely claim, the Company shall have the option either to inspect the product while in Purchaser's possession or to request Purchaser to return the product to the Company at Purchaser's expense for inspection by the Company. The Company shall replace, or at its option repair, free of charge, any product it determines to be defective, and it shall ship the repaired or replacement product to Purchaser F.O.B. point of shipment; provided, however, if circumstances are such as in the Company's judgment to prohibit repair or replacement to remedy the warranted defects, the Purchaser's sole and exclusive remedy shall be a refund to the Purchaser of any part of the invoice price, paid to the Company, for the defective product or part.

The Company is not responsible for the cost of removal of the defective product or part, damages due to removal, or any expenses incurred in shipping the product or part to or from the Company's plant, or the installation of the repaired or replaced product or part.

The warranties set forth above do not apply to any components, accessories, parts or attachments manufactured by other manufacturers; such being subject to the manufacturers warranty, if any. To the extent not prohibited by the manufacturers warranty, the Company shall pass through to Purchaser such manufacturers warranty.

THE COMPANY'S WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED AND WAIVED. THIS WARRANTY CONSTITUTES THE COMPANY'S SOLE AND EXCLUSIVE WARRANTY FOR DEFECTIVE GOODS AND PURCHASERS SOLE AND EXCLUSIVE REMEDY FOR DEFECTIVE PRODUCTS.

No employee, agent, dealer, or other person is authorized to give any warranties on behalf of the Company or to assume for the Company any other liability in connection with any of its products except in writing and signed by an officer of the Company.

REPLACEMENT PARTS If replacement parts are ordered, purchaser warrants that the original components in which these replacement parts will be placed are in satisfactory working condition, and when said replacement parts are installed, the resultant installation will operate in a safe manner, at speeds and temperatures for which the original product was purchased.

TECHNICAL ADVICE AND RECOMMENDATIONS, DISCLAIMER: Notwithstanding any past practice or dealings or any custom of the trade, sales shall not include the furnishing of technical advice or assistance or system design. Any such assistance shall be at the Company's sole option and may be subject to additional charge.

The Company assumes no obligation or liability on account of any recommendations, opinions or advice as to the choice, installation or use of products. Any such recommendations, opinions or advice are given and shall be accepted at Purchaser's and End User's risk and shall not constitute any warranty or guarantee of such products or their performance.

LIMITATION OF LIABILITY. The cumulative liability of the Company to the Purchaser and any other persons for all claims in any way relating to or arising out of the products, including, but not limited to, any cause of action sounding in contract, tort, or strict liability, shall not exceed the total amount of the purchase price paid for those products which are the subject of any such claim. This limitation of liability is intended to apply without regard to whether other provisions of this agreement have been breached or have proven ineffective even if the Company has been advised of the possibility of such claims or demands. In no event shall the Company be liable to the Purchaser or any other person for any loss of profits or any incidental, special, exemplary, or consequential damages for any claims or demands brought by the Purchaser or such other persons.

INDEMNITY. The Company's maximum liability to Purchaser and to any end user is as set forth above. The Company makes no warranty to anyone for any products not manufactured by the Company and shall have no liability for any use or installation of any products (whether manufactured by the Company or other manufacturers) not specifically authorized by this sale. Purchaser acknowledges various warnings by the Company regarding the products and its installation and use. If the Company incurs any claims, lawsuits, settlements, or expenses (including attorney fees) for any loss, injury, death or property damage including, but not limited to, claims arising out of the Purchaser's or any end users installation or use of the products, the Purchaser shall indemnify and hold the Company harmless.

WARNING

Acme products are designed and manufactured to provide reliable performance but they are not guaranteed to be 100% free of defects. Even reliable products will experience occasional failures and this possibility should be recognized by the Purchaser and all End Users. If these products are used in a life support ventilation system where failure could result in loss or injury, the Purchaser and all End Users should provide adequate back-up ventilation, supplementary natural ventilation or failure alarm system, or acknowledge willingness to accept the risk of such loss or injury.

WARNING DO NOT use in HAZARDOUS ENVIRONMENTS where fans electrical system could provide ignition to combustible or flammable materials unless unit is specifically built for hazardous environments. Comply with all local and national safety codes including the National Electrical Code (NEC) and National Fire Protection Act (NFPA).

CAUTION Guards must be installed when fan is within reach of personnel or within eight (8) feet (2.5 m) of working level or when deemed advisable for safety.

DISCLAIMER The Company has made a diligent effort to illustrate and describe the products accurately in all Company literature; however such illustrations and descriptions are for the sole purpose of identification and do not express or imply any warranty.

INSTALLATION AND MAINTENANCE



LPWA Series Architectural Wall Heaters

LPWA1222
LPWA2045
LPWA2445
LPWA2740
(Including Factory
Installed Options)

**UNIVERSAL
INSTRUCTIONS**

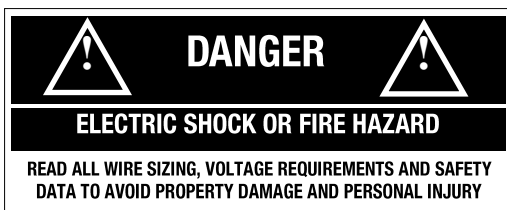


Figure 1



WARNING

READ CAREFULLY - Use the heater only as described in this manual. Any other use is not recommended and could result in fire, electric shock, and personal injury. Following these instructions will prevent difficulties that might occur during the installation and use of the heater. Please study the instructions first, as they may save considerable time and trouble during use addition to providing important safety information. Make sure to save these instructions for future use.

- WARNING 1.** Power must come to heater first.
- WARNING 2.** Read all instructions before wiring or using this heater.
- WARNING 3.** This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, boxes, etc., and curtains must be at least 3 feet away from the front and sides of heater.
- WARNING 4.** Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.
- WARNING 5.** Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a qualified electrician for repair before reusing.
- WARNING 6.** Do not use outdoors.
- WARNING 7.** To disconnect heater, turn controls to OFF, and turn OFF power from main service panel.
- WARNING 8.** Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock, fire, or damage to the heater.
- WARNING 9.** To prevent the possibility of fire, do not block air intakes or exhaust in any manner.
- WARNING 10.** A heater has hot and arching or sparking parts inside. Do not use it in areas where gasoline, paint, or any other flammable vapors or liquids are stored.
- WARNING 11.** Use this heater only as described in the manual. Any other use is not recommended by the manufacturer and may cause fire, electric shock, an explosion, injury or death to people and or property.
- WARNING 12.** This heater includes Smart limit protection that shuts down heater in the event of excessive over heating. To reset heater turn OFF power wait 15 minutes for limit to reset & turn power back ON.

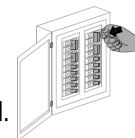


Figure 2

LPWA INSTALLATION INSTRUCTIONS

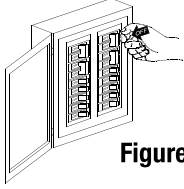


Figure 2-1

CAUTION!
Turn OFF all electrical power to install heater

Rating Label Location



Figure 3

ALL WARRANTIES ARE VOID IF THIS HEATER IS USED DURING CONSTRUCTION FOR HEATING.
King Electrical Mfg. Seattle Wa. U.S.A.
 Do Not Install Less Than 6" From Vertical Side Walls. Install Bottom Of Heater Not Less Than 4" Above The Finished Floor. The Electrical Power To The Heater Is To Be Disconnected Before The Grill Is Removed For Cleaning. Do Not Operate The Heater With Grill Removed. For Use With Wallbox LPW/UWIC.
 Installez La Partie 162mm Loins De Murage Verticale. Installez La Partie Inferieure Du Radiateur Au Moins A 100mm Au-dessus De Plancher Fini.
MODEL: LPW2740T WATTS: 4000 VOLTS: 277
 CIRCLE MAXIMUM WATTS THIS HEATER IS WIRED FOR
 277 VOLT-4000-3000-2000-1000
 MADE IN U.S.A.

DANGER

ELECTRIC SHOCK OR FIRE HAZARD

READ ALL WIRE SIZING, VOLTAGE REQUIREMENTS AND SAFETY DATA TO AVOID PROPERTY DAMAGE AND PERSONAL INJURY

Selecting a location for your heater:

Do Not install less than 6 inches from vertical side walls or open edge of door. This heater must have an unrestricted airflow. Do Not select a location where it is likely to be blocked by furniture, curtains, etc. Be sure the location selected allows sufficient space for the heater as shown below by Table 1. Do Not locate this heater in an area where combustible vapors, gases, flammable liquids, or excessive lint, dust or moisture is present.

Minimum Clearances for heater:

Front	TOP	BOTTOM	SIDES
36 in	12 in	4 in	6 in
0.9 m	30.5 cm	10.2 cm	15.2 cm

Table 1

Zero clearance to insulation.
 KO location as mounted in wall.

The wire and breaker sizing chart will give a general rule of installation size. Consult an electrician if you are not knowledgeable about wiring codes.

Wire & Breaker Sizing: WIRING: Branch Circuit Connection

Total Amps	Minimum AWG. Wire Size (Copper)	Circuit Breaker or Fuse Size
0 thru 12	#14	15 amp
12.1 thru 16	#12	20 amp
16.1 thru 24	#10	30 amp

Table 2

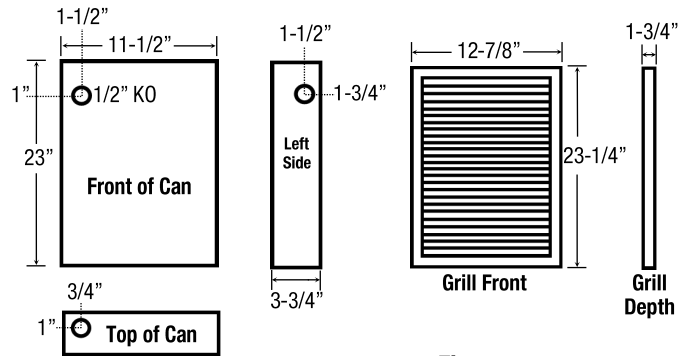


Figure 4

1. Connect heater only to the voltage, amperage and frequency specified on the nameplate.
2. Wiring procedures and connections shall be in accordance with all National and local codes having jurisdiction.
3. Set the bag containing the grill and packet with (4) grill screws aside.
4. Loosen mounting screws and remove fan heater assembly.
5. A knockout of 1/2 inch conduit size (7/8 inch) is provided in the back and side of the heater for power to enter. Provide proper strain relief connectors (not included) for your wire entering the wall box.
6. Install wall box a minimum of 6 inches from vertical side walls and 4 inches above floor.
7. Secure wall box to the 2 x 4 studs using the (2) holes on the side of the wall box. Secure to wall stud on opposite side if required.
8. Connect supply wires, attach ground feed wire to the green ground wire with wire nuts.
9. Reinstall heater assembly into wall box with screw at top of interior.
10. Install grill securely with screws provided. Do Not over tighten.
11. Test unit by turning thermostat up past room temperature. You will see a puff of smoke as the elements are energized and the fan turns on. This is a normal burn off of manufacturing lubricants and will dissipate in 5 minutes.
12. Heater will continue to run until the room temperature you set is reached and then turn itself off until temperature drops again.

NOTE ABOUT FAN DELAY FEATURE: The fan delay feature enables the fan to run after the thermostat turns off in order to remove residual heat from the elements. You may see the fan cycle on and off a few times until the elements have cooled. This is normal operation.

OPERATING INSTRUCTIONS

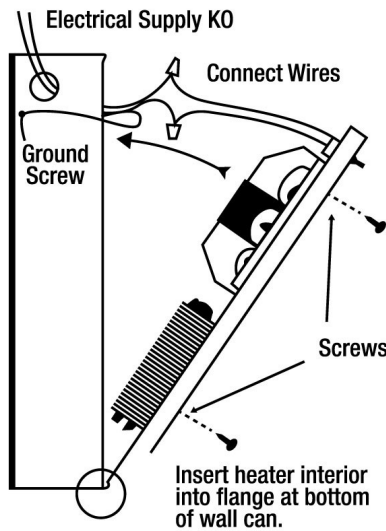


Figure 5

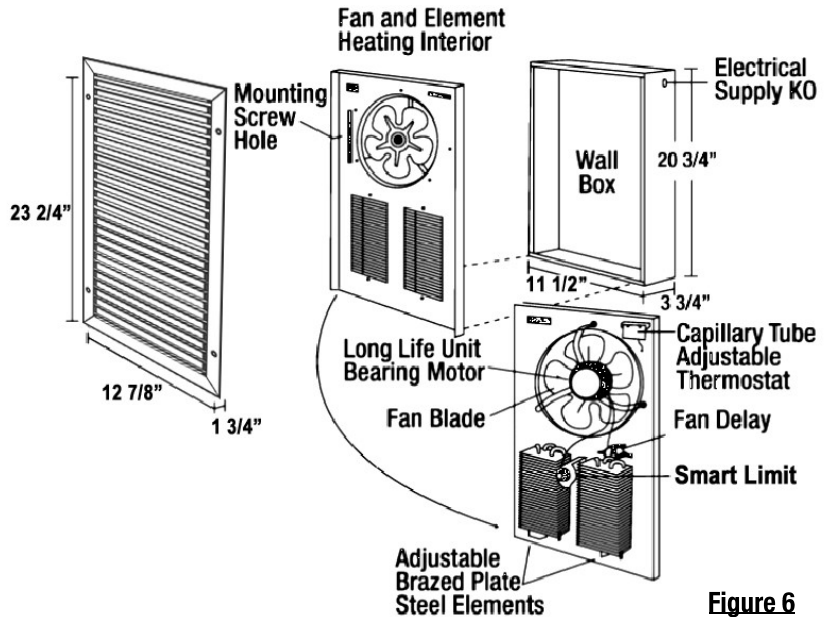


Figure 6

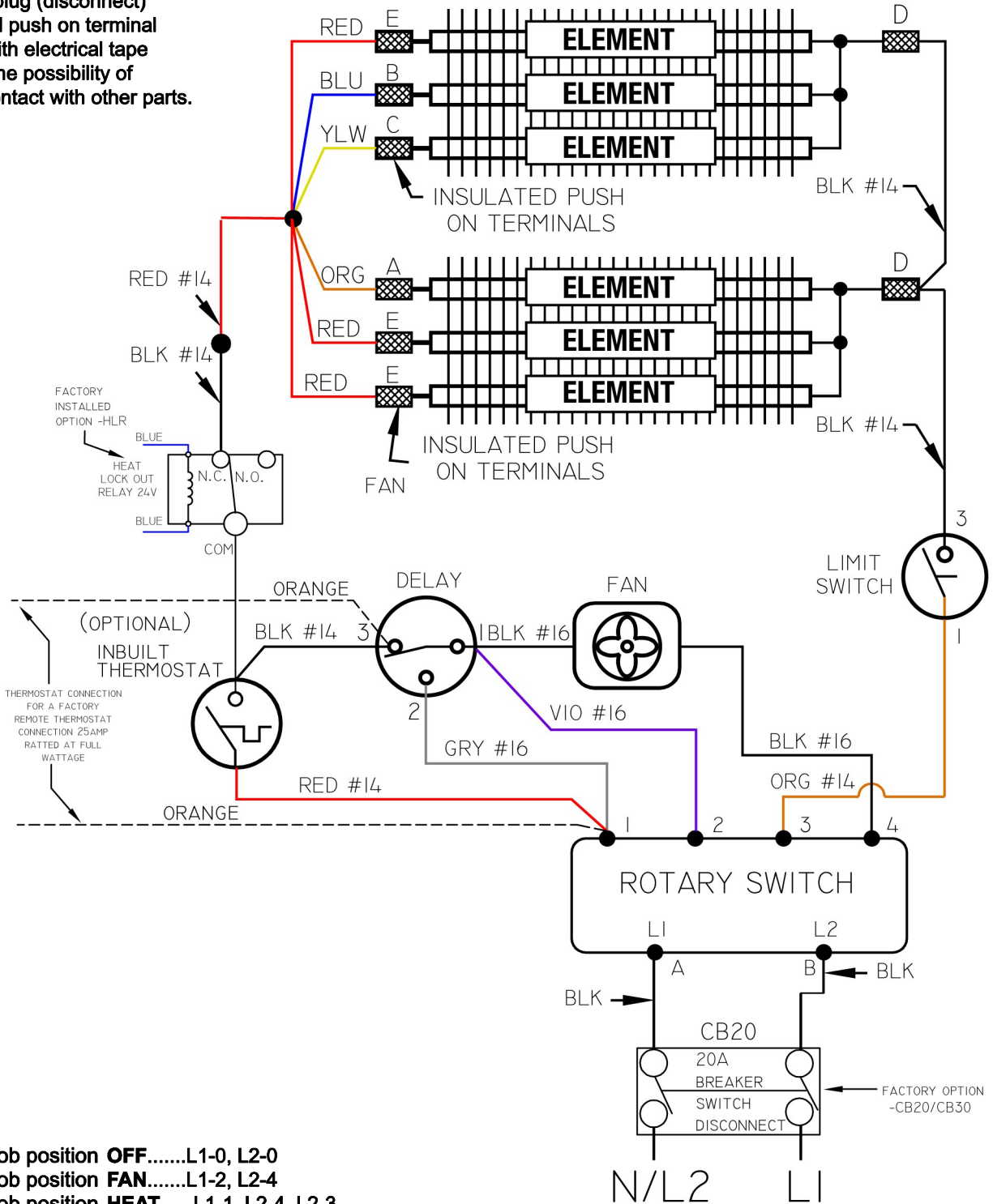
TROUBLESHOOTING

SYMPTOM	PROBLEM	SOLUTION
Breaker Trips	<ol style="list-style-type: none"> 1. Short Circuit 2. Overloaded Circuit 3. Improper Voltage 	<ol style="list-style-type: none"> 1. Find source of short. Trace heater circuit and verify the heater is wire properly. 2. Reduce wattage in circuit. Refer to circuit sizing table for maximum wattage. 3. Verify the heater voltage matches the supply voltage.
Heater not working	<ol style="list-style-type: none"> 1. No Power 2. Loose Connections 3. Defective Limit 	<ol style="list-style-type: none"> 1. Turn Breaker ON, turn thermostat ON, check that the breaker is position properly on panel bus-bar. A 2-Pole breaker must be connected to both bus-bars (A & B phase) to produce 240V power. 2. Tighten wire connections. 3. By-pass the limit to test. If heater works, replace the limit
Heater Smokes	<ol style="list-style-type: none"> 1. Oil on element 2. Needs Cleaning 	<ol style="list-style-type: none"> 1. It is normal for the element to burn off some light finishing oil used in the manufacturing process when first energized. Open windows and allow room to vent until it stops, usually within a few minutes. 2. Remove any dust or dirt accumulations.
Room Temperature does not match thermostat setting.	<ol style="list-style-type: none"> 1. Thermostat affected by another heat source. 2. Improper calibration 	<ol style="list-style-type: none"> 1. Sunlight or other heat sources can affect the thermostat. Move the thermostat to another location or remove the heat source. 2. Remove cover and adjust calibration screw.
Room Temperature swings from too hot to too cold.	<ol style="list-style-type: none"> 1. Defective or low quality thermostat 	<ol style="list-style-type: none"> 1. Replace with a better quality thermostat. Anticipated thermostats are fairly accurate; and electronic thermostat is best.

LPWA 120V / 208V / 240V STANDARD WIRING DIAGRAM

INSTALLATION INSTRUCTIONS

This heater is shipped from the factory wired for maximum wattage. To reduce the wattage unplug (disconnect) an insulated push on terminal and wrap with electrical tape to prevent the possibility of electrical contact with other parts.



- ⊖ knob position OFF.....L1-0, L2-0
- ⊙ knob position FAN.....L1-2, L2-4
- ⊕ knob position HEAT.....L1-1, L2-4, L2-3

FAN DELAY

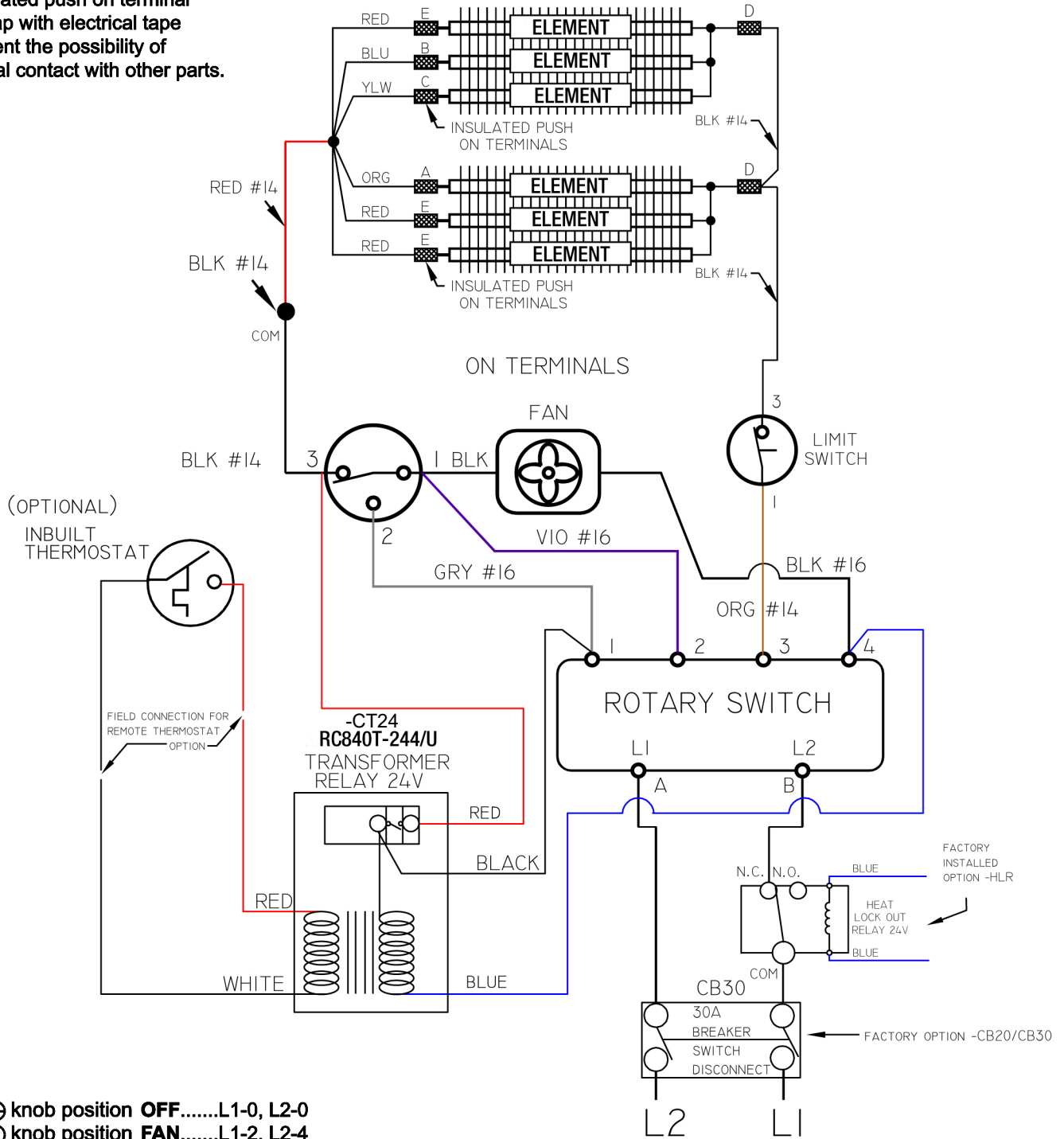
1-3 N.C., 1-2 N.C. 1-2 Closes on Temp Rise

Figure 7

LPWA 120V / 208V / 240V with CT24 Option WIRING DIAGRAM

INSTALLATION INSTRUCTIONS

This heater is shipped from the factory wired for maximum wattage. To reduce the wattage unplug (disconnect) an insulated push on terminal and wrap with electrical tape to prevent the possibility of electrical contact with other parts.



- ⊖ knob position OFF.....L1-0, L2-0
- ⊙ knob position FAN.....L1-2, L2-4
- ⊕ knob position HEAT.....L1-1, L2-4, L2-3

FAN DELAY

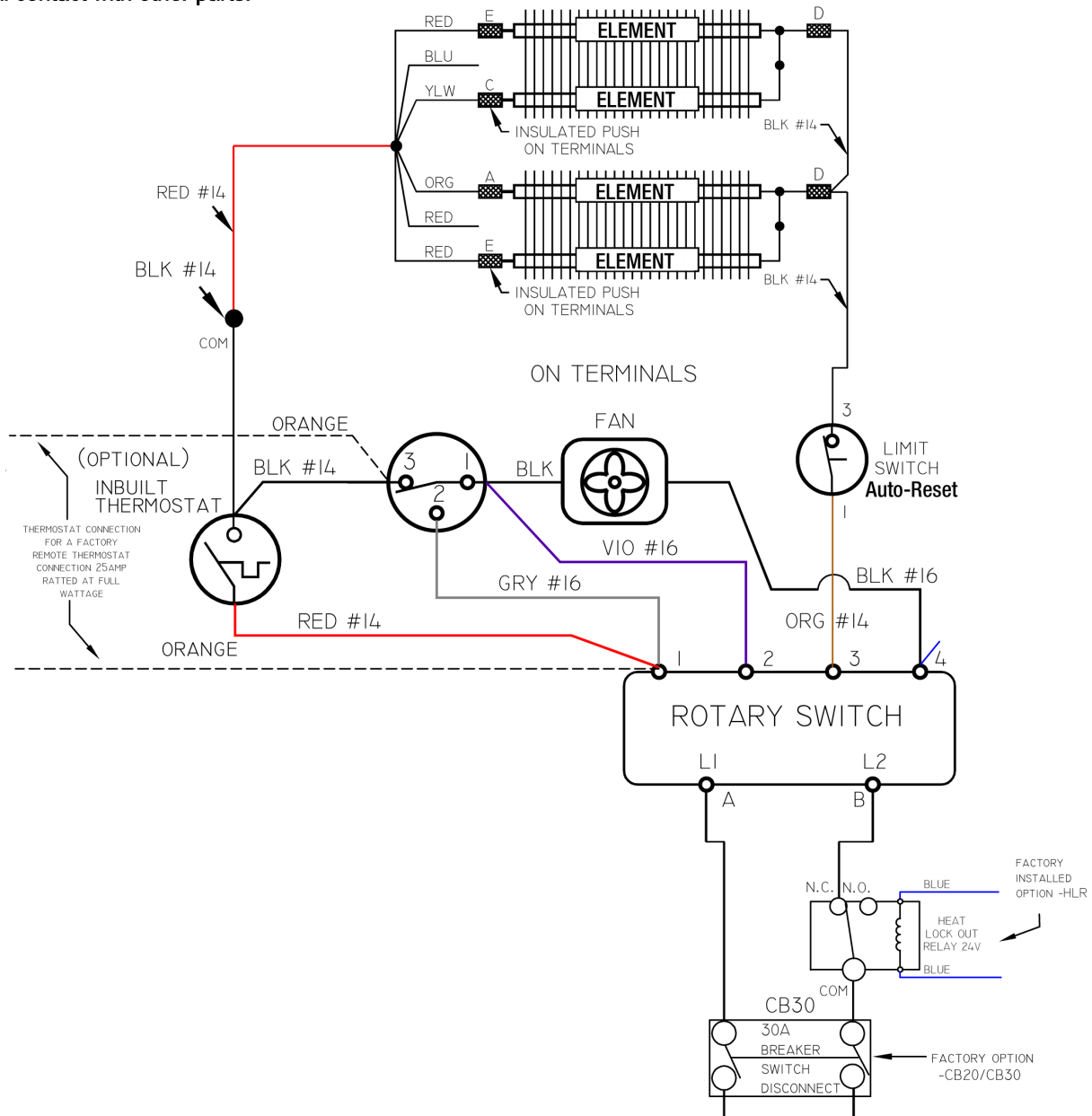
1-3 N.C., 1-2 N.C. 1-2 Closes on Temp Rise

Figure 8

LPWA 277 VOLT MODEL STANDARD WIRING DIAGRAM

INSTALLATION INSTRUCTIONS

This heater is shipped from the factory wired for maximum wattage. To reduce the wattage unplug (disconnect) an insulated push on terminal and wrap with electrical tape to prevent the possibility of electrical contact with other parts.



- ⊖ knob position OFF.....L1-0, L2-0
- ⊙ knob position FAN.....L1-2, L2-4
- ⊕ knob position HEAT.....L1-1, L2-4, L2-3

FAN DELAY

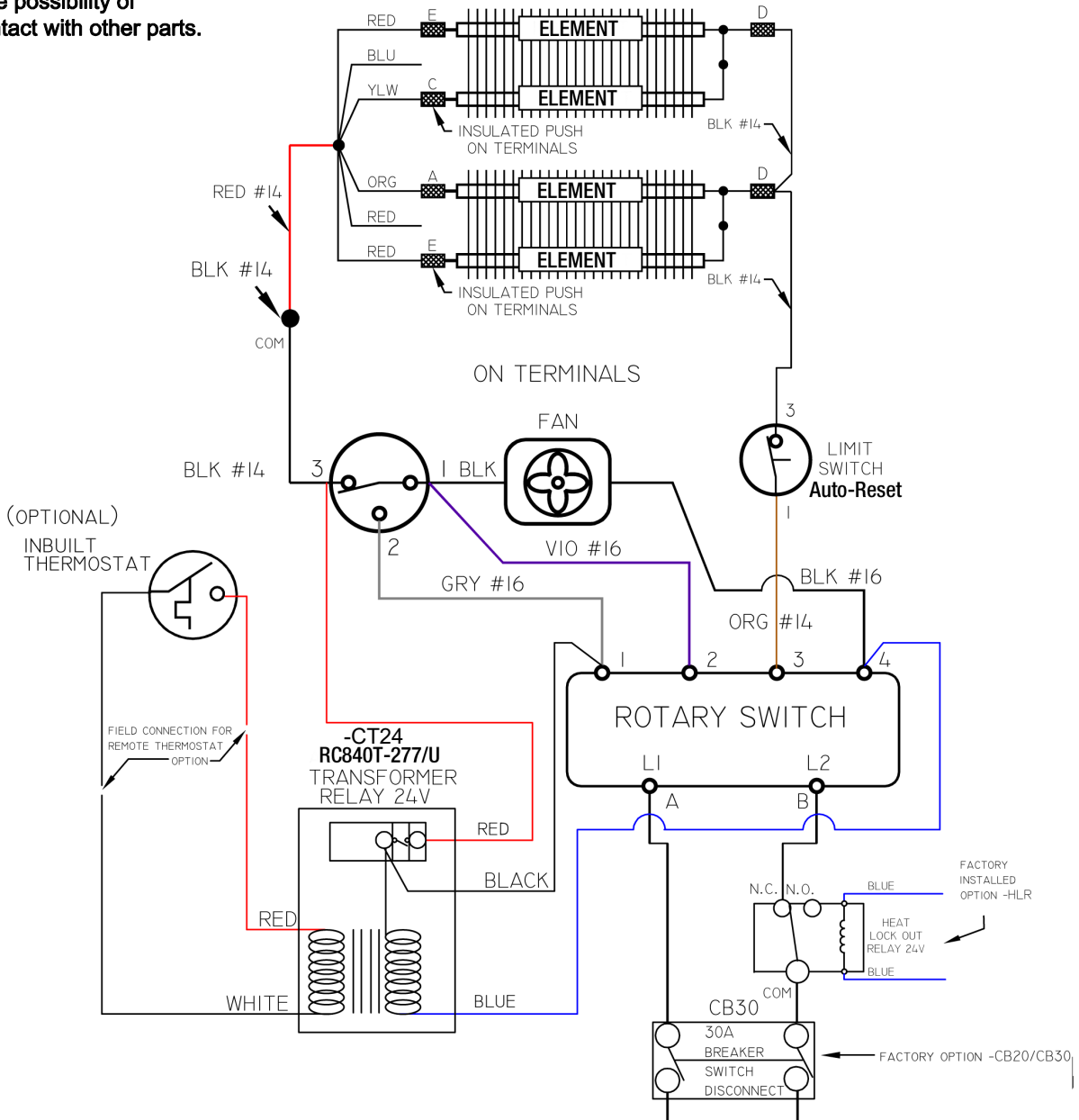
1-3 N.C., 1-2 N.C. 1-2 Closes on Temp Rise

Figure 9

LPWA 277 VOLT MODEL with CT24 Option WIRING DIAGRAM

INSTALLATION INSTRUCTIONS

This heater is shipped from the factory wired for maximum wattage. To reduce the wattage unplug (disconnect) an insulated push on terminal and wrap with electrical tape to prevent the possibility of electrical contact with other parts.



- ⊖ knob position **OFF**.....L1-0, L2-0
- ⊙ knob position **FAN**.....L1-2, L2-4
- ⊕ knob position **HEAT**.....L1-1, L2-4, L2-3

FAN DELAY

1-3 N.C., 1-2 N.C. 1-2 Closes on Temp Rise

Figure 9

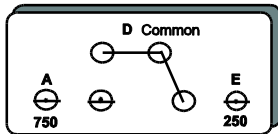
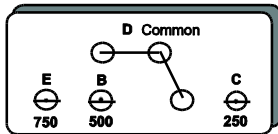
FIELD WATTAGE SELECTION

Field Wattage Selection

- A - ORANGE Disconnects 750 Watts
- B - BLUE Disconnects 500 Watts
- C - YELLOW Disconnects 250 Watts
- D - BLACK Do Not Disconnect (Common)
- E - RED Do Not Disconnect

120V 2250W

Pic-A-Watt®
Metal Sheath Element



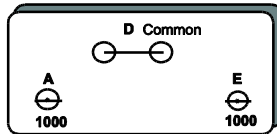
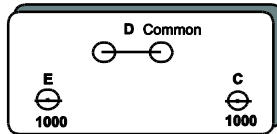
END VIEW OF ELEMENT
SHOWING QUICK CONNECT TERMINALS

Field Wattage Selection

- A - ORANGE Disconnects 1000 Watts
- D - BLACK Do Not Disconnect (Common)

277V 4000W

Pic-A-Watt®
Metal Sheath Element



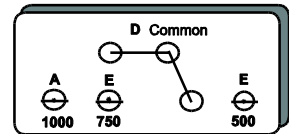
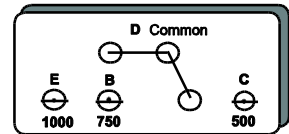
END VIEW OF ELEMENT
SHOWING QUICK CONNECT TERMINALS

Field Wattage Selection

- A - ORANGE Disconnects 1000 Watts
- B - BLUE Disconnects 750 Watts
- C - YELLOW Disconnects 500 Watts
- D - BLACK Do Not Disconnect (Common)
- E - RED Do Not Disconnect

208/240V 4500W

Pic-A-Watt®
Metal Sheath Element



END VIEW OF ELEMENT
SHOWING QUICK CONNECT TERMINALS

Figure 10

SMART LIMIT PROTECTION



This heater is equipped with a thermal overload SMART LIMIT PROTECTION which disconnects elements (fan delay & fan only function still works) in the event normal operating temperatures are exceeded. If thermal overload trips due to abnormal operating temperatures, thermal overload remains open until manually reset by turning the heater Off for 15 minutes. Inspect for any objects on or adjacent to the heater that may cause high temperatures. After inspecting the heater, keep the power to the heater off for 15 minutes to reset the SLP thermal protector. If the SLP thermal protector shuts the heater off again, immediately turn the heater OFF at the circuit breaker and inspect the heater for possible fan motor failure or dirt and lint on the heating element. Repeat the starting procedure.

DO NOT TAMPER WITH, BYPASS OR REMOVE THIS HIGH LIMIT DEVICE.

OPERATING INSTRUCTIONS

General information and guidelines:

This heater must be properly installed before it is used. DO NOT tamper with or change the operation of this heater. Service personnel refer to Maintenance & Warranty section for service of any type.

Operation:

1. This heater must be properly installed in accordance with the National Electrical Codes (NEC) & local electrical codes before it is used.
2. After the electric heater has been completely installed, all thermostats should be turned to LOW or NO HEAT. Turn ON breakers, test fan Only then turn to heat & turn up thermostat; wait 3 to 5 minutes. Check to see that the heater is operating correctly. If the heater is not operating, disconnect power by turning Off heater & breaker and check wiring connections.
3. Allow entire system to operate steadily for 1/2 hour. This should remove oily residue from manufacturing. (Some smoking may occur).
4. Select the setting for comfort on thermostat.
5. A safety limit control is provided to turn off the heater automatically if it is blocked or otherwise overheats due to an abnormal condition. DO NOT bypass or remove this safety device from the electrical circuit—see Warning Figure 2-2 on page 5. During normal use, this safety control should not operate. If you find that this control is operating, make sure the heater is not being blocked. If it continues to cycle the heater off, disconnect power to heater and have it checked and or repaired by a qualified electrician.

MAINTENANCE & WARRANTY

Maintenance & Cleaning: Basic maintenance is listed below and should be performed annually. When necessary, any required servicing should be performed by qualified service personnel. Your heater will give you years of service and comfort with only minimum care. To assure efficient operation follow the simple instructions below.

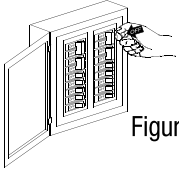


Figure 2

WARNING: Turn the electrical power OFF at the electrical panel board (circuit breaker or fuse box) and lock or tag this panel board door to prevent someone from turning on power while you are working on this heater. Failure to do so could result in serious electrical shock, burns, or possible death.

Before cleaning this heater, the heating element of the heater must be cool.

1. Before removing grille, turn the electrical power OFF. Circuit breakers are often not marked correctly and turning the wrong breaker off could mean electricity is flowing to the heater, even if the heater does not appear to be working. If you are uncomfortable working with electrical appliances, unable to follow these guidelines, or do not have the necessary equipment, consult a qualified electrician. Once you verify the power is off completely, proceed to the next step.
2. Remove screws and take off grille. Wash grille with hot soapy water and dry immediately
3. Using a hair dryer or vacuum on blow cycle, hold the fan in place to prevent it from turning and blow debris back through the element. Do not touch element. Vacuum loose debris without touching the elements.
4. Replace grille and secure with screws.
5. Turn thermostat to desired setting.
6. Turn power back ON at the electrical panel board.

WARRANTY INFORMATION

King Electrical Manufacturing Company will repair or replace, without charge to the original owner, any LPWA Series heater found to be defective or malfunctioning within 5 year of installation. This warranty requires the owner or his agent install the equipment in accordance with the National Electrical Code, any other applicable heating or electrical codes, and the manufacturer's installation instructions. It further requires that reasonable and necessary maintenance be performed on the unit. Failure to properly maintain the unit will result in the warranty being voided. The company is not liable for abuse or misuse of product as may be finally determined by the company. The customer shall be responsible for all costs incurred in the removal or reinstallation of products, including labor costs and shipping costs incurred to return products to King Manufacturing. King Manufacturing will repair or replace, at our option, at no charge to the customer with return freight paid by King. King Manufacturing shall not be liable for consequential damages arising with respect to the product, whether based upon negligence, tort, strict liability or contract. No other written or oral warranty applies, nor any warranties by representatives dealers, employees of King, or any other person. All returns require a King Return Goods Authorization (RGA); Unauthorized returns will be refused. Do not return malfunctioning/defective products to store.



Smart Heating Solutions



Smart Heating Solutions

INSTRUCTIONS KDS Series

WARNING

When using electrical appliances, basic precautions should always be taken to reduce the risk of fire, electrical shock and injury, including the following:

Read carefully these instructions before installation, operation of the heater. Failure to adhere to the instructions could result in fire, electric shock, serious personal injury, and death or property damage. Review frequently for continuing safe operation and instruction of future users, if necessary.

IMPORTANT INSTRUCTIONS

- 1- Read all instructions before installing or using this heater.
- 2- This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, like furniture, pillows, bedding, papers, clothes, and curtains at least 36 in. (915 mm) from the front of the heater.
- 3- Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.
- 4- Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.
- 5- Do not use outdoors.
- 6- Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the heater.
- 7- Do not block air intakes or exhaust in any way whatsoever.
- 8- This heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable liquids are used or stored.
- 9- Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury.
- 10- **AMERICAN VERSION ONLY:** This heater includes a visual alarm to warn that parts of the heater are getting excessively hot. If the light turns on, immediately turn the heater off and inspect for any objects on or adjacent to the heater that may have blocked the airflow or otherwise caused high temperatures to have occurred. If no obstruction is visible, the heater must be checked by a qualified person. **DO NOT OPERATE THE HEATER WHEN THE ALARM LIGHT IS ON.**
- 11- The thermostat should not be considered an infallible device in cases where maintaining a temperature is considered critical. Examples: Hazardous material storage, computer server room, etc. In these particular cases, it is imperative to add a monitoring system to avoid the consequences of a thermostat failure.

SAVE THESE INSTRUCTIONS

INSTALLATION INSTRUCTIONS

- The installation must be executed by a qualified technician.
- Must be installed solidly. This heater could weight up to 25 lb (11 kg).
- The motor is thermally protected.
- All wiring must be in accordance with National and local Electrical Codes.
- Heater must be grounded as a precaution against possible shock.
- To avoid possible electrical shock, disconnect all power at the main panel prior to wiring.
- Verify the power supply voltage coming to the heater matches the heater nameplate rating before energizing heater.
- When installed, heater must be electrically grounded in accordance with the National Electrical Code.

CAUTION:

- High temperature, risk of fire, keep electrical cords, drapery, furnishings, and other combustibles at least 36 in. (915 mm) from the front of the heater. To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the heater.
- Ceiling installation only.
- Use copper wire only.

STANDARD CEILING MOUNTING

1. Never install the air-forced diffuser at less than 8 ft. (250 cm) from the floor and 12 in. (30 cm) from adjacent walls.
2. Provide an exit for the power supply wires in the ceiling, under the heater.
3. Mount the ceiling support using provided screws. For drop ceiling mounting, the necessary kit is not provided.
4. Suspend the heater at the hangers of the ceiling support.
5. Convey the wires of power supply to the junction box of the heater and connect the heater leads to the supply leads according to the local and national codes. See wiring diagram.
6. Fold back the heater toward the ceiling and fix it using the screw provided..
7. Install the front cover using the 3 screws provided.

DROP CEILING MOUNTING with T-BAR option

1. Install the T-BAR on the ceiling using chains, steel wires or bar.
2. Mount the ceiling support on the T-BAR option.
3. Follow instructions 4 to 7 as above for STANDARD CEILING MOUNTING.

OPTIONS

See installation pamphlet provided with the various options for the installation of those options.

IMPORTANT
Connect the control (thermostat or relay) to the T1-T2 position on the terminal block. Do not interrupt power supply to control this heater.

OPERATING INSTRUCTIONS

The heater must be properly installed before it is used.

START UP

- Turn the power on at the circuit breaker panel.
- Electronic thermostat: be sure to set it on the fan mode.
- Built-in tamperproof thermostat: the setting can be done with a small slotted screwdriver.
- On a call for heat from either remote thermostat or unit mounted thermostat, the elements and fan will be energized.
- When the thermostat is satisfied, elements will be deenergized.
- The fan will continue to run until the residual heat is removed from the heater. Then the fan will stop.

Automatic Reset Thermal High Limit

The heater has an automatic reset thermal high limit that will deenergize the heating elements if the interior temperatures of heater exceed its setting. The limit will automatically reset when the heater interior temperatures fall below its setting.

AMERICAN VERSION ONLY

This heater includes a visual alarm to warn that parts of the heater are getting excessively hot. If the light turns on, immediately turn the heater off and inspect for any objects on or adjacent to the heater that may have blocked the airflow or otherwise caused high temperatures to have occurred. **DONOT OPERATE THE HEATER WHEN THE ALARM LIGHT IS ON.**

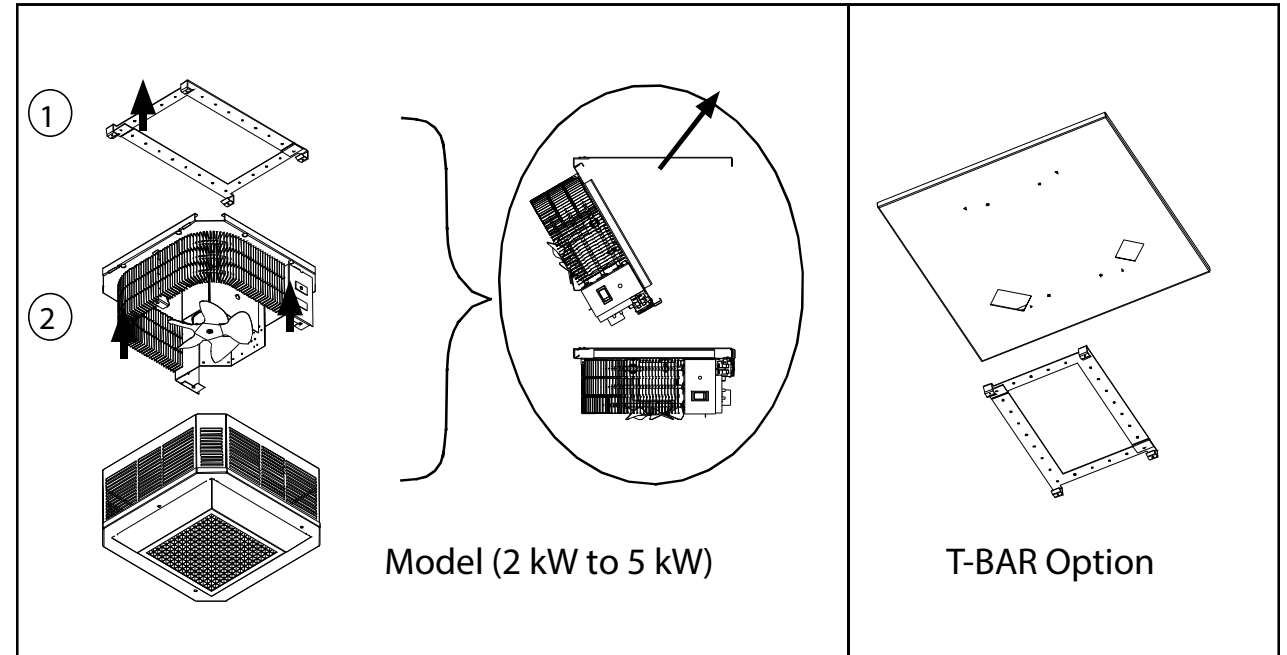
MAINTENANCE INSTRUCTIONS

- The heater motor is permanently lubricated.
- Wait until the housing and heating elements cool before performing maintenance.
- Once a year, remove the front cover and use a vacuum cleaner or compressed air to remove the dust accumulation inside the heater.
- Cleaning should be done while the heater is disconnected from the power supply circuit.
- A qualified technician should perform any other servicing.

EF-3 IOM

KEEP THIS INSTRUCTION PAMPHLET FOR THE USER

King Electrical Mfg. Company
9131 10th Avenue South, Seattle WA 98108
phone (206) 762-0400 • fax (206) 763-7738





Smart Heating Solutions

INSTRUCTIONS KDS Series



WARNING



When using electrical appliances, basic precautions should always be taken to reduce the risk of fire, electrical shock and injury, including the following:

Read carefully these instructions before installation, operation of the heater. Failure to adhere to the instructions could result in fire, electric shock, serious personal injury, and death or property damage. Review frequently for continuing safe operation and instruction of future users, if necessary.

IMPORTANT INSTRUCTIONS

- 1- Read all instructions before installing or using this heater.
- 2- This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, like furniture, pillows, bedding, papers, clothes, and curtains at least 36 in. (915 mm) from the front of the heater.
- 3- Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.
- 4- Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.
- 5- Do not use outdoors.
- 6- Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the heater.
- 7- Do not block air intakes or exhaust in any way whatsoever.
- 8- This heater has hot and arcing, or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable liquids are used or stored.
- 9- Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury.
- 10- The thermostat should not be considered an infallible device in cases where maintaining a temperature is considered critical. Examples: Hazardous material storage, computer server room, etc. In these particular cases, it is imperative to add a monitoring system to avoid the consequences of a thermostat failure.

SAVE THESE INSTRUCTIONS

INSTALLATION INSTRUCTIONS

- The installation must be executed by a qualified technician.
- Must be installed solidly. This heater could weight up to 35 lb (16 kg).
- The motor is thermally protected.
- All wiring must be in accordance with National and local Electrical Codes.
- Heater must be grounded as a precaution against possible shock.
- To avoid possible electrical shock, disconnect all power at the main panel prior to wiring.
- Verify the power supply voltage coming to the heater matches the heater nameplate rating before energizing heater.
- When installed, heater must be electrically grounded in accordance with the National Electrical Code.

CAUTION

- High temperature, risk of fire, keep electrical cords, drapery, furnishings, and other combustibles at least 36 in. (915 mm) from the front of the heater. To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the heater.
- Ceiling installation only.
- Use copper wire only.

STANDARD CEILING MOUNTING

1. Never install the air-forced diffuser at less than 8 ft. (250 cm) from the floor and 12 in. (30 cm) from adjacent walls.
2. Provide an exit for the power supply wires in the ceiling, under the heater.
3. Mount the ceiling support using provided screws. For drop ceiling mounting, the necessary kit is not provided.
4. Suspend the heater at the hangers of the ceiling support.
5. Convey the wires of power supply to the junction box of the heater and connect the heater leads to the supply leads according to the local and national codes. See wiring diagram.
6. Fold back the heater toward the ceiling and fix it using the screw provided..
7. Install the front cover using provided screws (4).

DROP CEILING MOUNTING with T-BAR option

1. Install the T-BAR on the ceiling using chains, steel wires or bar.
2. Mount the ceiling support on the T-BAR option.
3. Follow instructions 4 to 7 as above for STANDARD CEILING MOUNTING.

OPTIONS

See installation pamphlet provided with the various options for the installation of those options.

IMPORTANT
Connect the control (thermostat or relay) to the T1-T2 position on the terminal block. Do not interrupt power supply to control this heater.

OPERATING INSTRUCTIONS

The heater must be properly installed before it is used.

START UP

- Turn the power on at the circuit breaker panel.
- Electronic thermostat: be sure to set it on the fan mode.
- Built-in tamperproof thermostat: the setting can be done with a small slotted screwdriver.
- On a call for heat from either remote thermostat or unit mounted thermostat, the elements and fan will be energized.
- When the thermostat is satisfied, elements will be deenergized.
- The fan will continue to run until the residual heat is removed from the heater. Then the fan will stop.

Automatic Reset Thermal High Limit

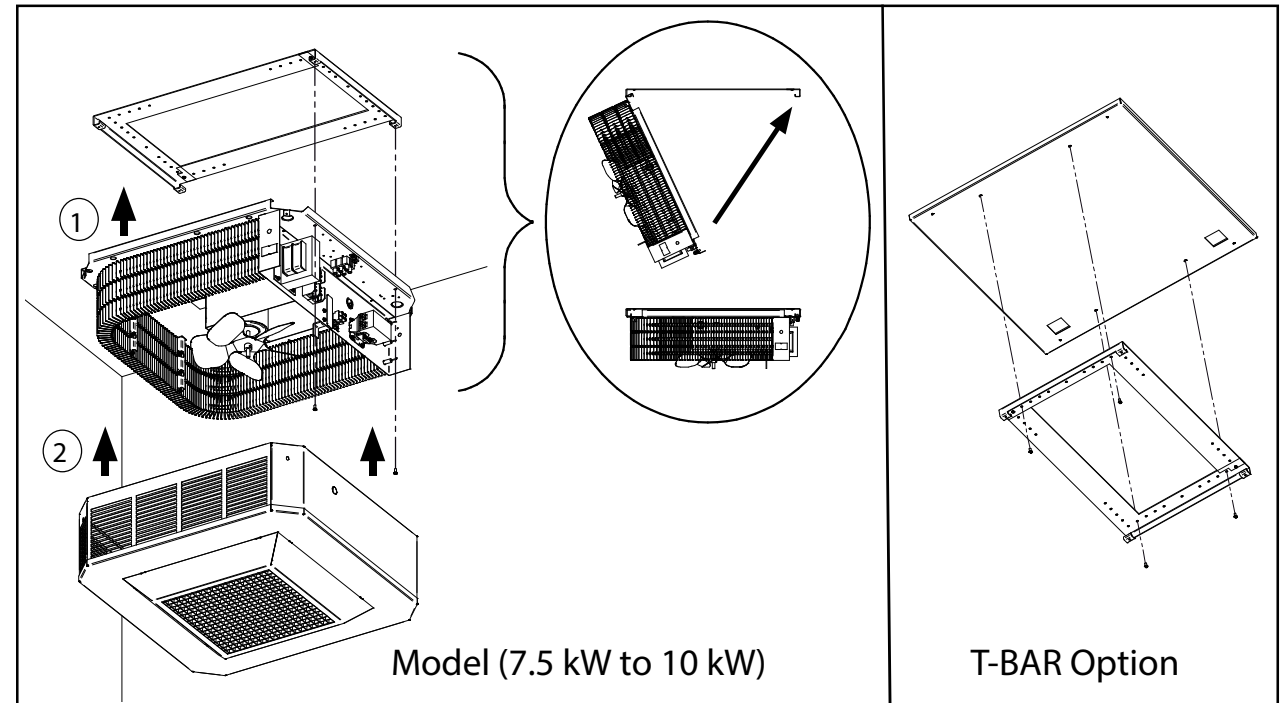
The heater has an automatic reset thermal high limit that will deenergize the heating elements if the interior temperatures of heater exceed its setting. The limit will automatically reset when the heater interior temperatures fall below its setting.

MAINTENANCE INSTRUCTIONS

- The heater motor is permanently lubricated.
- Wait until the housing and heating elements cool before performing maintenance.
- Once a year, remove the front cover and use a vacuum cleaner or compressed air to remove the dust accumulation inside the heater.
- Cleaning should be done while the heater is disconnected from the power supply circuit.
- A qualified technician should perform any other servicing.

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Model (7.5 kW to 10 kW)

T-BAR Option



Smart Heating Solutions

INSTRUCTIONS KDS Series



WARNING



When using electrical appliances, basic precautions should always be taken to reduce the risk of fire, electrical shock and injury, including the following:

Read carefully these instructions before installation, operation of the heater. Failure to adhere to the instructions could result in fire, electric shock, serious personal injury, and death or property damage. Review frequently for continuing safe operation and instruction of future users, if necessary.

IMPORTANT INSTRUCTIONS

- 1- Read all instructions before installing or using this heater.
- 2- This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, like furniture, pillows, bedding, papers, clothes, and curtains at least 36 in. (915 mm) from the front of the heater.
- 3- Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.
- 4- Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.
- 5- Do not use outdoors.
- 6- Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the heater.
- 7- Do not block air intakes or exhaust in any way whatsoever.
- 8- This heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable liquids are used or stored.
- 9- Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury.
- 10- **AMERICAN VERSION ONLY:** This heater includes a visual alarm to warn that parts of the heater are getting excessively hot. If the light turns on, immediately turn the heater off and inspect for any objects on or adjacent to the heater that may have blocked the airflow or otherwise caused high temperatures to have occurred. If no obstruction is visible, the heater must be checked by a qualified person. **DO NOT OPERATE THE HEATER WHEN THE ALARM LIGHT IS ON.**
- 11- The thermostat should not be considered an infallible device in cases where maintaining a temperature is considered critical. Examples: Hazardous material storage, computer server room, etc. In these particular cases, it is imperative to add a monitoring system to avoid the consequences of a thermostat failure.

SAVE THESE INSTRUCTIONS

INSTALLATION INSTRUCTIONS

- The installation must be executed by a qualified technician.
- Must be installed solidly. This heater could weight up to 31 lb (14 kg).
- The motor is thermally protected.
- All wiring must be in accordance with National and local Electrical Codes.
- Heater must be grounded as a precaution against possible shock.
- To avoid possible electrical shock, disconnect all power at the main panel prior to wiring.
- Verify the power supply voltage coming to the heater matches the heater nameplate rating before energizing heater.
- When installed, heater must be electrically grounded in accordance with the National Electrical Code.

CAUTION

- High temperature, risk of fire, keep electrical cords, drapery, furnishings, and other combustibles at least 36 in. (915 mm) from the front of the heater. To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the heater.
- Ceiling installation only.
- Use copper wire only.

STANDARD CEILING MOUNTING (Fig. 1)

1. Never install the air-forced diffuser at less than 8 ft. (250 cm) from the floor and 12 in. (30 cm) from adjacent walls.
2. Provide an opening in the ceiling of 23 X 23 X 6 3/16 in. (580 X 580 X 160 mm).
3. Convey the wires of power supply to the opening provided.
4. Remove the appropriate knock-out from the recess box for the electrical supply.
5. Attach firmly the heater using provided screws.
6. Connect the heater leads to the supply leads according to the national and local codes. See wiring diagram.
7. Install the front cover using provided screws (4).

SUSPENDED CEILING MOUNTING (Fig. 2)

1. Never install the air-forced diffuser at less than 8 ft. (250 cm) from the floor and 12 in. (30 cm) from adjacent walls.
2. Convey the wires of power supply to the ceiling space.
3. Suspend the heater firmly (without the front cover) using chains, steel wires (use the supplied hooks) or steel bar by taking care of leaving enough space between the heater and the drop ceiling in anticipation of step # 5.
4. Connect the heater leads to the supply leads according to the national and local codes. See wiring diagram.
5. Gently sit the front cover on the drop ceiling structure.
6. Lower the heater and adjust its height so that it rests on the front cover already in place.
7. Mount the front cover to the heater using provided screws (4).

OPTIONS

See installation pamphlet provided with the various options for the installation of those options.

IMPORTANT
Connect the control (thermostat or relay) to the T1-T2 position on the terminal block. Do not interrupt power supply to control this heater.

OPERATING INSTRUCTIONS

The heater must be properly installed before it is used.

START UP

- Turn the power on at the circuit breaker panel.
- Electronic thermostat: be sure to set it on the fan mode.
- Built-in tamperproof thermostat: the setting can be done with a small slotted screwdriver.
- On a call for heat from either remote thermostat or unit mounted thermostat, the elements and fan will be energized.
- When the thermostat is satisfied, elements will be deenergized.
- The fan will continue to run until the residual heat is removed from the heater. Then the fan will stop.

Automatic Reset Thermal High Limit

The heater has an automatic reset thermal high limit that will deenergize the heating elements if the interior temperatures of heater exceed its setting. The limit will automatically reset when the heater interior temperatures fall below its setting.

AMERICAN VERSION ONLY

This heater includes a visual alarm to warn that parts of the heater are getting excessively hot. If the light turns on, immediately turn the heater off and inspect for any objects on or adjacent to the heater that may have blocked the airflow or otherwise caused high temperatures to have occurred. **DO NOT OPERATE THE HEATER WHEN THE ALARM LIGHT IS ON.**

MAINTENANCE INSTRUCTIONS

- The heater motor is permanently lubricated.
- Wait until the housing and heating elements cool before performing maintenance.
- Once a year, remove the front cover and use a vacuum cleaner or compressed air to remove the dust accumulation inside the heater.
- Cleaning should be done while the heater is disconnected from the power supply circuit.
- A qualified technician should perform any other servicing.

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Fig. 1

Model (2 kW to 5 kW)
Standard Ceiling Mounting

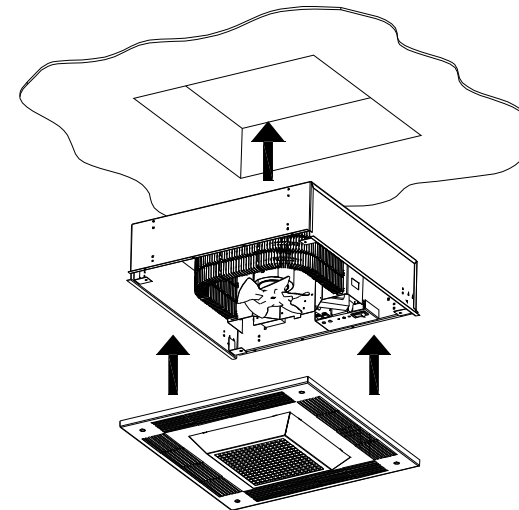


Fig. 2

Model (2 kW to 5 kW)
Drop Ceiling Mounting

